SHREE H. N. SHUKLA COLLEGE OF I.T. & MGMT.

(AFFILIATED TO SAURASHTRA UNIVERSITY)

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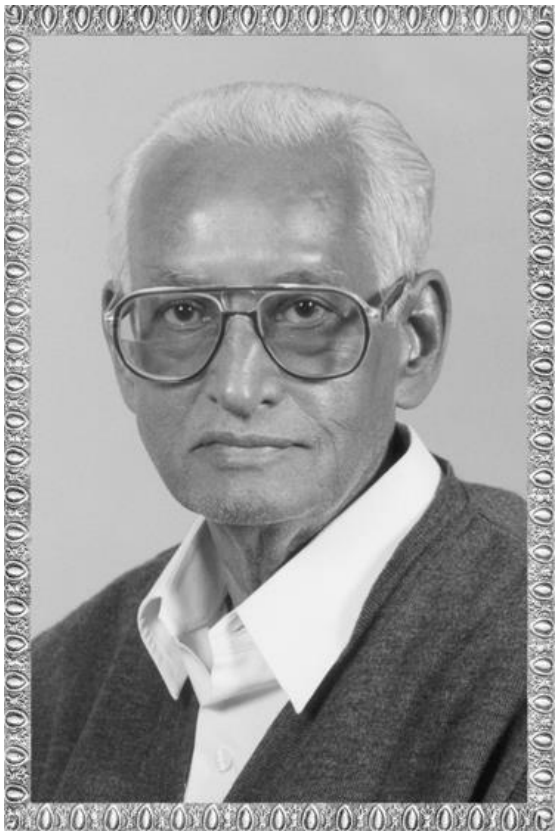

Lt. Shree Chimanbhai Shukla

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BCA/BSCIT SEM-1 INTERNET

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UNIT-1

INTRODUCTION TO INTERNET

- COMPUTER NETWORK
- TYPES OF COMPUTER NETWORK
- NETWORK TOPPOLOGY
- OSI REFERENCE MODEL
- TCP/IP
- INTERNET TERMINOLOGY
- ISP
- INTRANET
- VSAT
- URL
- PROTAL
- DOMAIN NAME SERVER
- WORLD WIDE WEB
- SEARCH ENGINE
- REMOTE LOGIN
- TELNET
- FTP
- E-MAIL
- E-COMMERCE, E-BUSINESS & M-COMMERECE
- E-GOVERNANCE
- WEBSITE BASICS (WEBPAGES , HTTP, PROTOCOL ADDRESS, WEB BROWSER, WEB SERVER, WEB HOSTING)

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- TYPES OF WEBSITE
- NETWORK SECURITY CONCEPTS (CYBER LAW, FIREWALL,COOKIES, HACKERS & CRACKERS)
- TYPES OF PAYMENT SYSTEM

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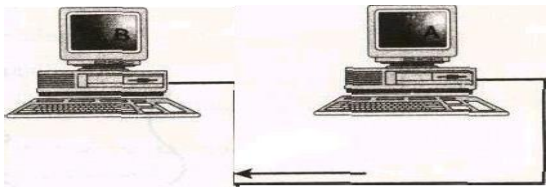
➢ WHAT IS COMPUTER NETWORK? (1 OR 2 M)

DETAIL

- Network is a group of computers connected to each other.
- Using network we can share resources and services.
- The shared resource can be data, a printer, a fax modem, or a service such as a database or an email system.
- The individual systems must be connected through a pathway (called the transmission medium) that is used to transmit the resource or service between the computers.
- All systems in the network must follow a set of common communication rules for data transmission.
- These set of common rules for data communication are known as protocols.



Advantages of Networking:

- The goal of computer networking is not simply to exchange data but to understand and use data received from other entities on the network.
- It reduces equipment costs.
- Networking is to provide different services like… filing services, printing services etc…
- Enabling centralized administration and security of the resources within the system.
- Supporting network applications such as electronic mail and database services

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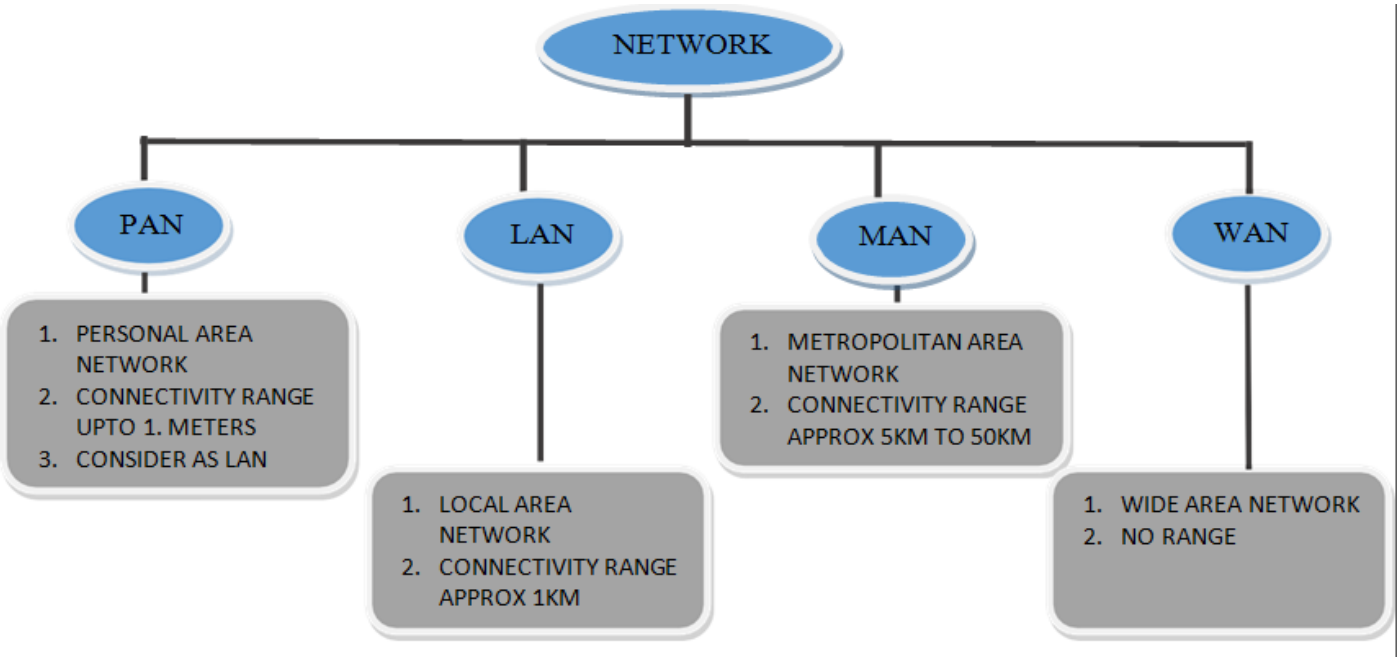
SR. No	QUESTION	ANSWER
1	NETWORK IS A GROUP OF…	INTERCONECTED COMPUTER SYSTEM
2	USING NETWORK WE CAN SHARE…	RESOURCES & SEVICES
3	WHAT KIND OF RESOURCES CAN BE SHARE…	DATA, PRINTER, DATABASE
4	COMMON RULES FOR DATA COMMUNICATION IS KNOWN AS..	PROTOCOL
5	GOAL OF COMPUTER NETWORK IS NOT EXCHANGE DATA. (TRUE OR FALSE)	TRUE
6	NETWORK IS USED FOR CENTRALIZED ADMINISRATION? (TRUE OR FALSE)	TRUE

- **EXPLAIN TYPES OF COMPUTER NETWORK. (2 OR 3 M)**



DETAIL

Networks come in different shapes and sizes. According to geographical size network

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basically classify in following three types.

1) LAN – Local Area Networks
2) MAN - Metropolitan Area Networks
3) WAN – Wide Area Networks

a. Local Area Networks (LANs)

- A Local Area Network (LAN) is a group of computers and network communication devices interconnected within a geographically limited area, such as a building or a campus.
- LANs are characterized by the following:
- They transfer data at high speeds (higher bandwidth).
- They exist in a limited geographical area.
- LANs are designed to allow resources to be shared between personal computers or workstations.

b. Metropolitan Area Networks (MANs)

- MAN is a connected network that spans the geographic boundaries of a city.
- By interconnecting smaller networks within a large geographic area, information iseasily disseminated throughout the network.
- Local libraries and government agencies often use a MAN to connect to citizens andprivate industries.
- Examples of MAN are Cable TV network, Cable through Internet service.

c. Wide Area Networks (WANs)

- A Wide Area Network (WAN) provides long-distance transmission of data, voice,image and video information over large geographical areas that may comprise acountry or whole world.
- WANs are characterized by the following:
- They exist in an unlimited geographical area.
- They usually interconnect multiple LANs.
- They often transfer data at lower speeds (lower bandwidth).

Connectivity and resources, especially the transmission media, usually are managed by a third-party carrier such as a telephone or cable company

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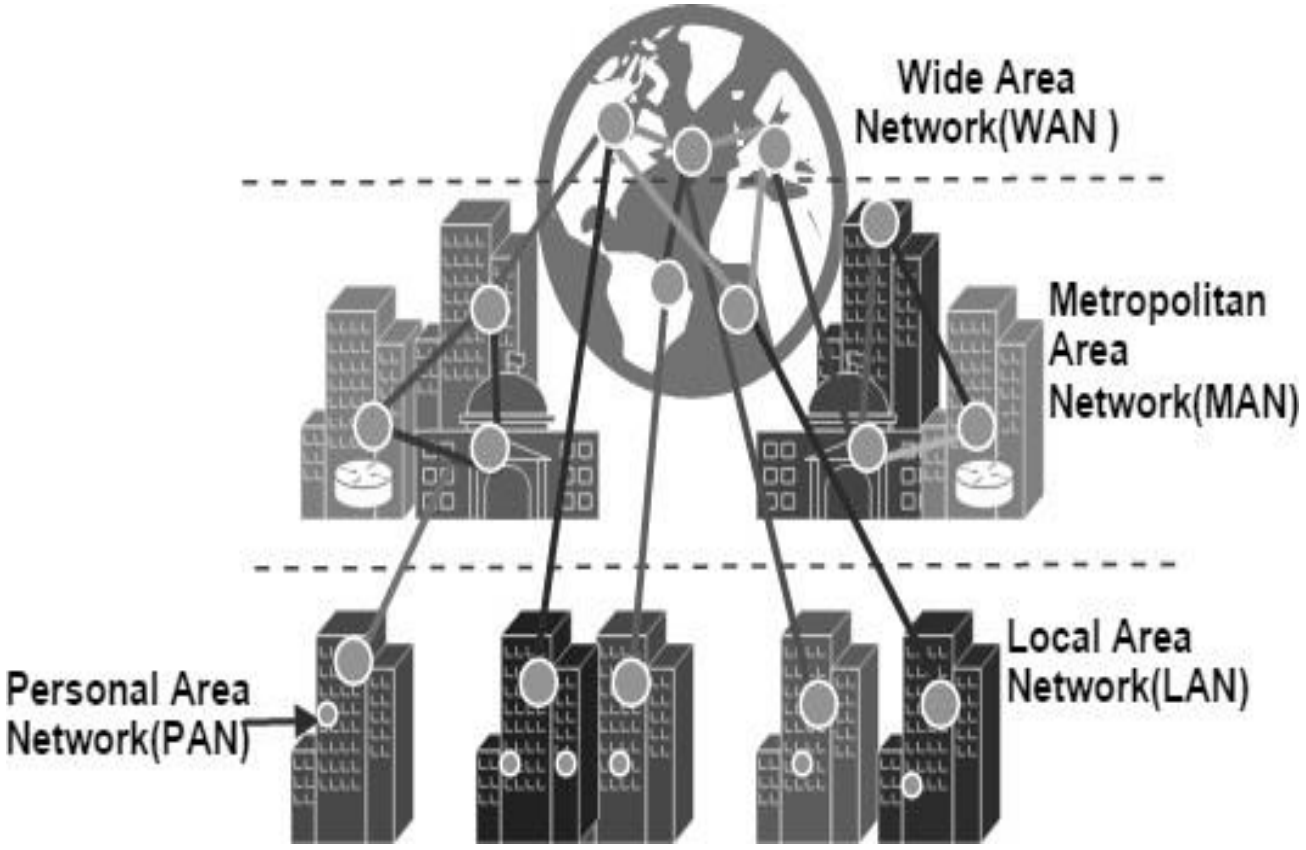
SR. NO	QUESTION	ANSWER
1	HOW MANY TYPES OF NETWORK ARE THARE?	3
2	LIST OUT TYPES OF NETWORK.	LAN,WAN,MAN
3	FULL FORM OF LAN_____	LOCAL AREA NETWORK
4	FULL FORM OF WAN_____	WIDE AREA NETWORK
5	FULL FORM OF MAN_____	METROPOLITAN AREA NETWORK
6	GEOGRAPHICAL AREA OF LAN IS___	BUILDING OR CAMPUS
7	GEOGRAPHICAL AREA OF MAN IS___	CITY TO CITY
8	GEOGRAPHICAL AREA OF WAN IS___	WORLD WIDE
9	BEST EXAMPLE OF WAN IS_____	WORLD WIDE WEB (WWW)



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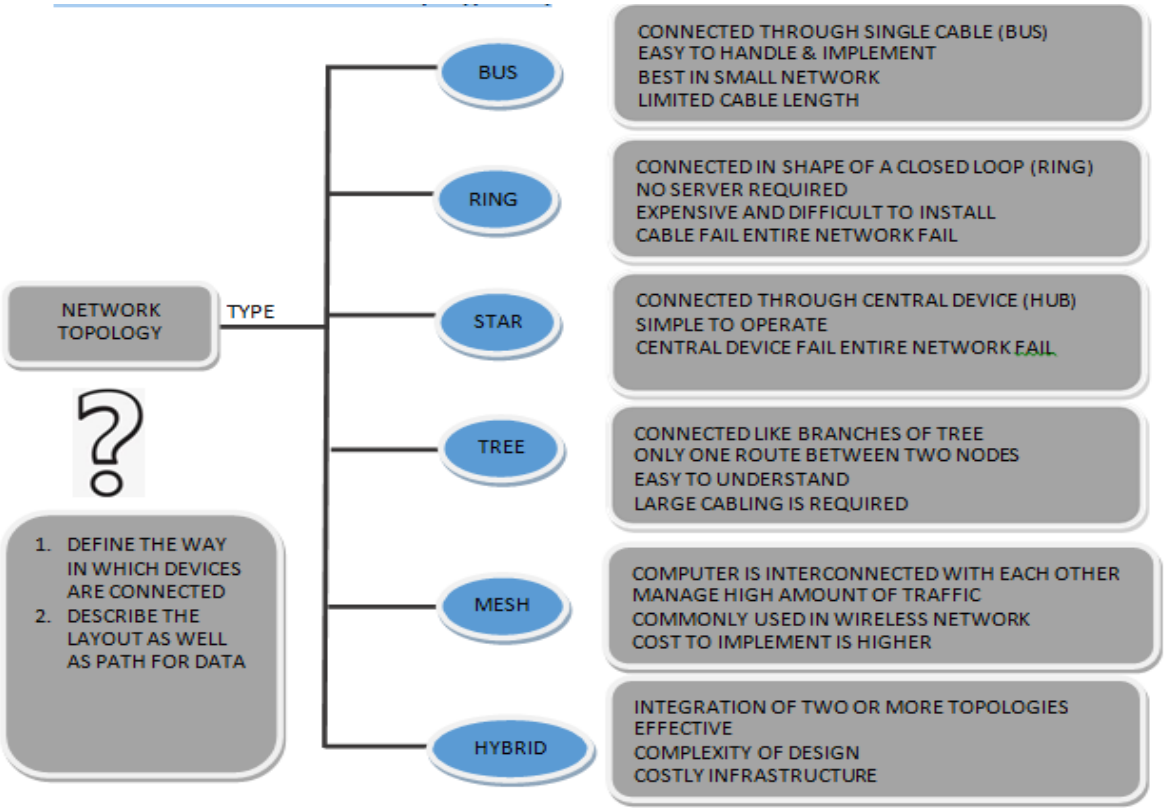
➢ EXPLAIN NETWORK TOPOLOGY. (5M)(MIMP)



DETAIL

The network topology defines the way in which computers, printers, and other devices are connected. A network topology describes the layout of the wire and devices as well as the paths usedby data transmissions.

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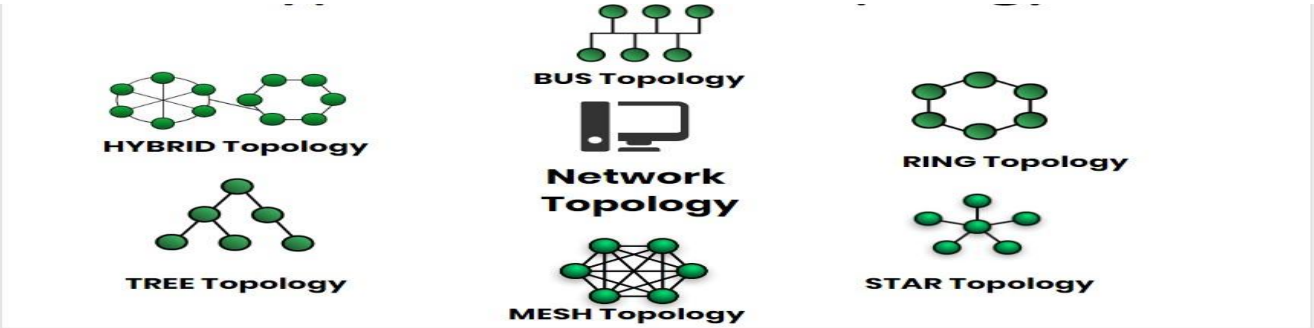

1. Bus Topology:

- All devices are connected to a central cable, called the bus or backbone.
- Bus networks are relatively inexpensive and easy to install for small networks.
- Ethernet systems use a bus topology. In Simple way we can say us (All devices share a common wire to transmit and receive data through using an arbitration method.)
- Commonly referred to as a linear bus, all the devices on a bus topology are connected by one single cable.

Advantages:

- It is easy to handle and implement.
- It is best suited for small networks

Disadvantages:

- The cable length is limited. This limits the number of stations that can be connected.
- This network topology can perform well only for a limited number of nodes.

2. Ring topology:

- All devices are connected to one another in the shape of a closed loop, so that each device is connected directly to two other devices, one on either side of it.
- Ring topologies are relatively expensive and difficult to install, but they

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offer high bandwidth and can span large distances.

- A ring is created to which each device attaches. A special signal, called a token travels around the ring letting it know that it is that device's turn to transmit.

Advantages:

- The data being transmitted between two nodes passes through all the intermediate nodes. A central server is not required for the management of this topology.

Disadvantages:

- The failure of a single node of the network can cause the entire network to fail.
- The movement or changes made to network nodes affects the performance of the entire network

3. Star topology:

- In star topology each device in the network is connected to a central device called hub.
- Unlike Mesh topology, star topology doesn't allow direct communication between devices, a device must have to communicate through hub.
- If one device wants to send data to other device, it has to first send the data to hub and then the hub transmit that data to the designated device.

Advantages:

- Less expensive because each device only need one I/O port and needs to be connected with hub with one link.
- Easier to install.
- Less amount of cables required

Disadvantages:

- If hub goes down everything goes down, none of the devices can work without

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hub.
- Hub requires more resources and regular maintenance

4. Tree topology:

- Tree topologies have a root node, and all other nodes are connected which form ahierarchy. So it is also known as hierarchical topology.
- Ideal if workstations are located in groups.
- Used in Wide Area Network.
- A tree topology includes multiple star topologies, which involve a variety of single nodesconnected to a central node.

Advantages:

- Failure of one node never affects the rest of the network.
- Node expansion is fast and easy.
- Detection of error is an easy process

Disadvantages:

- It is heavily cabled topology
- If more nodes are added, then its maintenance is difficult

5. Mesh Topology :

- The mesh topology connects all devices (nodes) to each other for redundancy and faulttolerance.
- It is used in WANs to interconnect LANs and for mission critical networks like those used bybanks and financial institutions.
- Implementing the mesh topology is expensive and difficult.

Advantage:

- The arrangement of the network nodes is such that it is possible to transmit datafrom one node to many other nodes at the same time.

Disadvantage:

- The arrangement wherein every network node is connected to every

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other node of the network, many of the connections serve no major purpose.

- This leads to the redundancy of many of the network connections.

6. Hybrid Topology :

- Hybrid topology is an integration of two or more different topologies to form a resultant topology which has many advantages (as well as disadvantages) of all the constituent basic topologies rather than having characteristics of one specific topology.
- This combination of topologies is done according to the requirements of the organization.
- For example, if there is a ring topology in one office department while a bus topology in another department, connecting these two will result in Hybrid topology.
- Star – Ring and Star – Bus networks are most common examples of hybrid network.

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS NETWORK TOPOLOGY?	ARANGEMENT OF NETORK
2	LIST OUT TYPES OFTOPOLOGY.	BUS, RING, STAR, TREE, MESH, HYBRID
3	BUS TOPOLOGY IS ALSO CALLED	LINEAR BUS TOPOLOGY
4	IS BUS TOPLOGY TRANSFER DATA IN ONE DIRECTION? (YES OR NO)	YES
5	IN RIING TOPOLOGY LAST NODE IS CONNECTED TO…	FIRST NODE
6	TROUBLESHOOTING IS DIFICULT IN RING TOPOLOGY.(TRUE OR FALSE)	TRUE
7	FALURE OF ONE COMPUTER DISTURB THE NETWORK IN RING TOPOLOGY. (TRUE OR FALSE)	TRUE
8	IN STAR TOPOLOGY EVERY NODE IS CONNECT TO….	CENTRAL DEVICE (HUB)

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9	IS BUS TOPOLOGY USED IN LARGE NETWORK?	NO
10	BUS TOPOLOGY IS SLOWER THAN	RING TOPOLOGY
11	HUB ACT AS_____IN STAR TOPOLOGY	REPEATER FOR DATA FLOW
12	PERFOMANCE OF STAR TOPOLOG IS	FAST WITH LOW NETWORK TRAFFIC
13	TROUBLESHOOTING IN STAR TOPOLOGY IS	EASY
14	IF HUB FAIL IN STAR TOPOLOGY THEN	ENTIRE NETWORK FAIL
15	LIST OUT TYPES OF MESH TOPOLOGY.	1. PARTIAL MASH 2. FULL MASH
16	IN MESH TOPOLOGY EACH CONNECTED CAN CARRY ITS OWN DATA LOAD. (TRUE OR FALSE)	TRUE
17	CABLING COST OF MESH TOPOLOGY IS	HIGH
18	TREE TPOLOGY IS ALSO CALLED	HIRARCHICAL TOPOLOGY
19	TREE TOPOLOGY IS USED IN	WWW (WIDE AREA NETWORK)
20	ERROR DETECTION IS EASY IN TREE TOPOLOGY.(TRUE OR FALSE)	TRUE
21	WHAT IS HYBRID TOPOLOGY?	COMBINATION OF TWO OR MORE TOPOLOGY

- **EXPLAIN OSI REFERENCE MODEL IN DETAIL. (5MARKS) (MIMP)**

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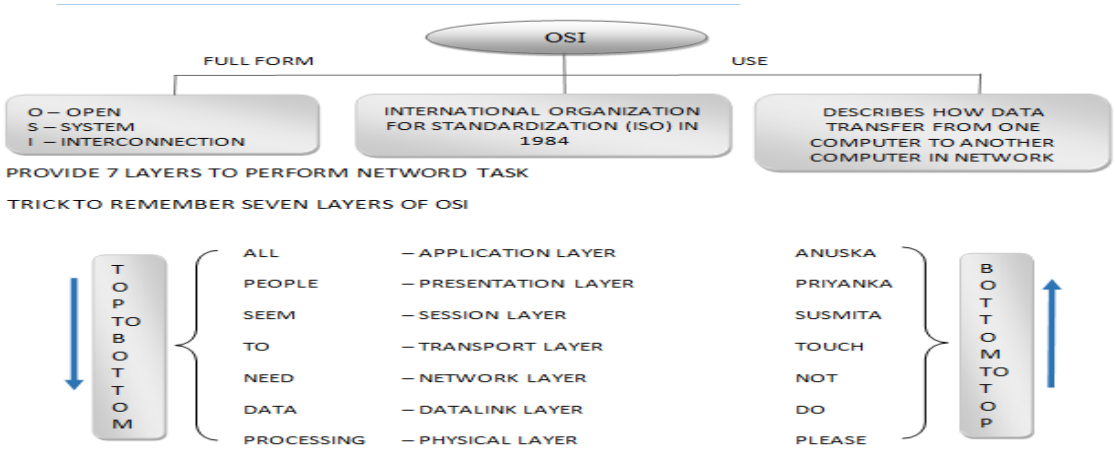

DETAIL

- International standard organization (ISO) established a committee in 1977 to develop architecture for computer communication.
- Open Systems Interconnection (OSI) reference model is the result of this effort.
- In 1984, the Open Systems Interconnection (OSI) reference model was approved as an international standard for communications architecture.
- Term “open” denotes the ability to connect any two systems which conform to the reference model and associated standards.
- The OSI model is now considered the primary Architectural model for inter-computer communications.
- The OSI model describes how information or data makes its way from application programmes (such as spreadsheets) through a network medium (such as wire) to another application programme located on another network.
- The OSI reference model divides the problem of moving information between computers over a network medium into SEVEN smaller and more manageable problems.
- This separation into smaller more manageable functions is known as layering.

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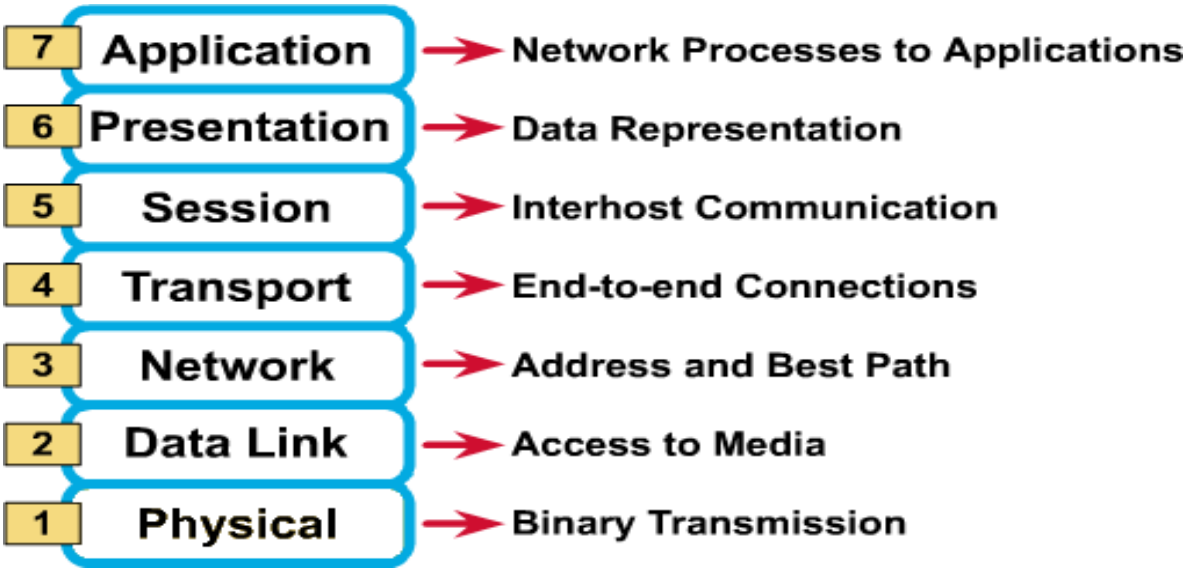

1. **Physical Layer :**
   - Provides physical interface for transmission of information.
   - Defines rules by which bits are passed from one system to another on a physical communication medium.
   - Covers all - mechanical, electrical, functional and procedural - aspects for physical communication.
   - Such characteristics as voltage levels, timing of voltage changes, physical data rates, maximum transmission distances, physical connectors, and other similar attributes are defined by physical layer specifications.

2. **Data Link Layer :**
   - Data link layer attempts to provide reliable communication over the physical layer interface.
   - Breaks the outgoing data into frames and reassemble the received frames.
   - Create and detect frame boundaries.
   - Handle errors by implementing an acknowledgement and retransmission scheme.
   - Implement flow control.
   - Supports points-to-point as well as broadcast communication.

3. **Network Layer :**

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- Implements routing of frames (packets) through the network.
- Defines the most optimum path the packet should take from the source to the destination
- Defines logical addressing so that any endpoint can be identified.
- Facilitates interconnection between heterogeneous networks (Internetworking).

4. Transport Layer:

- Purpose of this layer is to provide a reliable mechanism for the exchange of data between two processes in different computers.
- Ensures that the data units are delivered error free.
- Ensures that data units are delivered in sequence.
- Ensures that there is no loss or duplication of data units.
- Provides connectionless or connection oriented service.

5. Session Layer :

- Session layer provides mechanism for controlling the dialogue between the two end systems. It defines how to start, control and end conversations (called sessions) between applications.
- This layer requests for a logical connection to be established on an end-user's request.
- Any necessary log-on or password validation is also handled by this layer.
- Session layer is also responsible for terminating the connection.
-

6. Presentation Layer :

- Presentation layer defines the format in which the data is to be exchanged between the two communicating entities.
- Also handles data compression and data encryption (cryptography).

7. Application Layer:

- Application layer interacts with application programs and is the highest level of OSI model.
- Application layer contains management functions to support distributed applications.
- Examples of application layer are applications such as file transfer,

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electronic mail, remotelogin etc.

SR. NO	QUESTION	ANSWER
1	FULL FORM OF OSI_____	OPEN SYSTEM INTERCONNECTION
2	FULL FORM OF ISO_____	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
3	OSI WAS APPROVED IN___	1984
4	WHAT IS THE USE OF OSI MODEL?	ARCHITECTURE FOR COMPUTER COMMUNICATION
5	HOW MANY LAYERS ARE THERE IN OSI?	7
6	LIST OUT ALL LAYERS IN OSI	1. APPLICATION 2. PRESENTATION 3. SESSION 4. TRANSPORT 5. NETWORK 6. DATALINK 7. PHYSICAL
7	WHICH LAYER IS KNOWN AS HEART OF OSI?	TRANSPORT LAYER
8	FUNCTION OF APPLICATION LAYER___	NETWORK PROCESS TO APPLICATION
9	FUNCTION OF PRESENATION LAYER___	DATA REPRESENTATION
10	FUNCTION OF SESION LAYER_____	INTER-HOST COMMUNICATION
11	FUNCTION OF TRANSPORT LAYER____	END - TO – END CONNECTION
12	FUNCTION OF NETWORK LAYER_____	PATH DETERMINATION & IP
13	FUNCTION OF DATA LINK LAYER____	PHYSICAL ADDRESSING
14	FUNCTION OF PHYSICAL LAYER_____	BINARY TRANSMISSION

- **EXPLAIN TCP/IP (1 / 2 / 3 M)**

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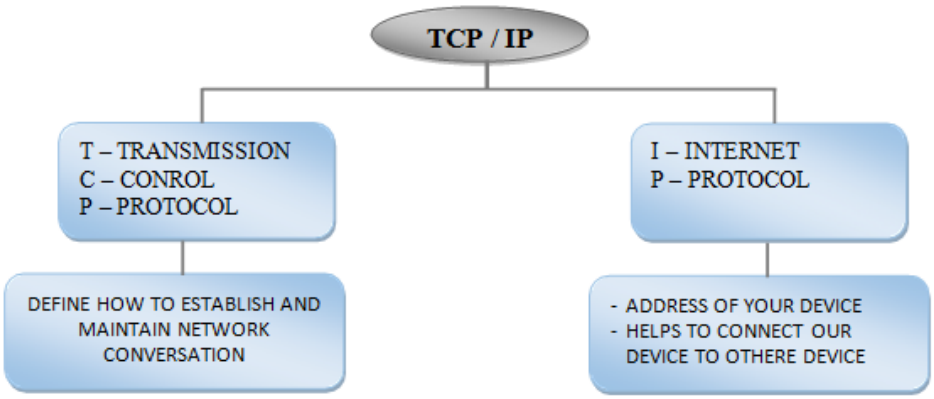

DETAIL:

- TCP/IP model, designed and developed by Department of Defence (DoD) in 1960s and isbased on standard protocols.
- It stands for Transmission Control Protocol/Internet Protocol.
- The TCP/IP model is a concise version of the OSI model. It contains four layers, unlikeseven layers in the OSI model. The layers are:
    1. Process/Application Layer
    2. Host-to-Host/Transport Layer
    3. Internet Layer
    4. Network Access/Link Layer
- TCP/IP, or the Transmission Control Protocol/Internet Protocol, is a suite of communication protocols used to interconnect network devices on the internet.
- TCP/IP can also be used as a communications protocol in a private computer network(an intranet or an extranet).
- Three of the most common TCP/IP protocols
    - HTTP
    - HTTPS
    - FTP

➢ Different layers of TCP/IP

1. Network Access Layer - This layer is concerned with building packets.

2. Internet Layer - This layer uses IP (Internet Protocol) to describe how packets are tobe delivered.

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3. Datagram Protocol)
and TCP (Transmission Control Protocol) to ensure the proper transmission of data.
4. Application Layer - This layer deals with application network processes. These processes include FTP (File Transfer Protocol), HTTP (Hypertext Transfer Protocol), and SMTP (Simple Mail Transfer Protocol).

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	FULL FORM OF TCP_____	TRANSMISSION CONTROL PROTOCOL
2	FULL FORM OF IP_____	INTERNET PROTOCOL
3	LIST OUT PROTOCOLS USED IN TCP/IP	1 – HTTP 2 – HTTPS 3 – FTP
4	FULL FORM OF HTTP_____	HYPER TEXT TRANSFER PROTOCOL
5	FULL FORM OF HTTPS_____	HYPER TEXT TRANSFER PROTOCOL SECURE
6	FULL FORM OF FTP_____	FILE TRANSFER PROTOCOL

- **EXPLAIN INTERNET TERMINOLOGY (1 M EACH)**

1. Bandwidth - The capacity of an electronic line, such as a communications network or computer
Channel, to transmit bits per second (bps).

2. Bitmap - A representation, consisting of rows and columns of dots, of a graphics image incomputer memory. The value of each dot (whether it is filled in or not) is stored in one or more bits of data. For simple monochrome images, one bit is sufficient to represent each dot, but for colors and shades of gray, each dot requires more than one bit of data.

3. Bits and bytes -

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Bit stands for binary digit: 0 or 1

A byte is made up of 8 bits

It takes 1 byte to store one ASCII character ASCII stands for the American Standard Code for Information Interchange

The combination of bits (which makes up one byte) below represents the letters below

A 0100 0001

B 0100 0010

C 0100 0011

K stands for kilo and = 1024 (2 to the tenth power)

M stands for mega. A MB, megabyte is about a million bytes (1024x1024) G stands for giga. A GB, gigabyte is about a billion bytes (1024x1024x1024) T stands for tera. A TB, terabyte is about a trillion!

RAM is usually measured in MB

Hard disk spaces is usually measured in gigabytes

4. Bookmark - a way of storing your favorite sites on the Internet. Browsers like Netscape or Internet Explorer let you to categorize your bookmarks into folders.

5. Browser - A software program that allows users to access the Internet.

6. CGI (Common Gateway Interface script) - a specificiation for transferring information between a Web server and a CGI program, designed to receive and and return data. The script can use a variety of languages such as C, Perl, Java, or Visual Basic. Many html pages that contain forms use a cgi program to process the data submitted by users/clients.

7. Cookie - Information (in this case URLs, Web addresses) created by a Web

server and stored on a user's computer. This information lets Web sites the user visits to keep of a user's browsing pattterns and preferences. People can set up their browsers to accept or not accept cookies.

8. Digit - A single character in a numbering system. In decimal, digits are 0 through 9. In binary, digits are 0 and 1. The os and 1s equate to "on and off functions. Digitization allows for perfect copying. When text, music, voice and video are in digitized, they can be electronically manipulated, preserved and regenerated without degradation of quality at high speed. Each copy of a computer file is exactly the same as the original.

9. Domain Name - A method of identifying computer addresses. Your e-mail address has a domain address. If you have an "edu" at the end of your e-mail address that means your account is affiliated with an educational institution. A "com" extension means you have a business account. A government account has a .gov suffix.

10..gif - (graphic interchange format) the usual format for a graphic that is not a photo. Animated gif files are embedded with coding that creates movement when the graphic is activated.

11. Home page - Generally the first page retrieved when accessing a Web site. Usually a "home" page acts as the starting point for a user to access information on the site. The "home" page usually has some type of table of contents for the rest of the site information or other materials. When creating Web pages, the "home" page has the filename "index.html," which is the default name. The "index" page automatically opens up as the "home" page.

12. Hyperlink - Text, images, graphics that, when clicked with a mouse (or activated by keystrokes) will connect the user to a new Web site. The link is usually obvious, such as underlined text or a "button" of some type, but not always.

13. Internet - A global network of thousands of computer networks linked by data

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lines and wirelesssystems.

14. URL - A universal resource locator (a computer address) that identifies the location andtype of resource on the Web. A URL generally starts with "http."

15. Vector - A line in computer graphics designated by its end points (x-y or x-y-z coordinates). A vector layer does not use pixels for storing image information. Instead, it stores a vector object as a set of properties that describe its attributes, dimensions, and position in the image. Each time an image is opened, these properties are used as instructions for drawing the objects. Because the objects are independent elements, you can move them without affecting the rest of the image.

16. Instant Messaging (IM) - a text-based computer conference over the Internet between two or morepeople who must be online at the same time. When you send an IM the receiver is instantly notified that she/he has a message.

17. IP Address - (Internet Protocol) The number or name of the computer from which you send and receive information on the Internet.

18. Modem - A device that connects your computer to the Internet, when you are not connected via a LAN (local area network, such as at work or on a campus.) Most people connect to a modem when using a home computer. The modem translates computer signals to analog signals which are sent via phone lines. The telephone "speaks" to the computer/server which provides your Internet access.

19. Newsgroup - An Internet "site" centered around a specific topic or course. Some newsreader software can "thread" discussion so there can be various topics centered around a central theme. An advantage over e-mail is that the messages are archived and don't reside in your e-mail account, taking up your memory, unless you set up a "sent mail" or "carbon copy" option. The messages can often be threaded according to a particular discussion.

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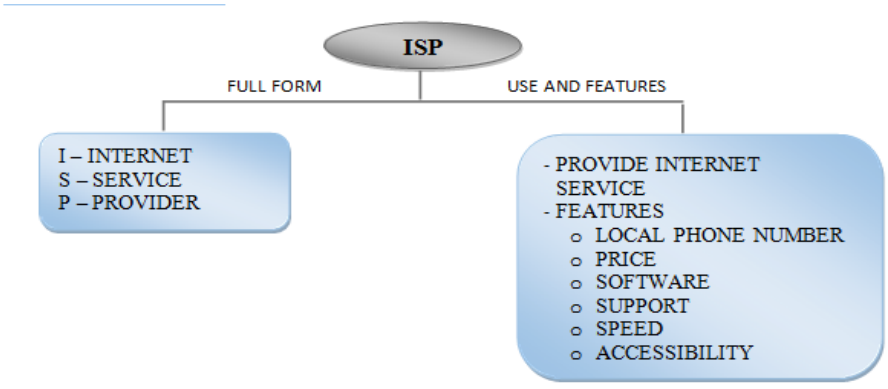
SR. NO	QUESTION	ANSWER
1	WHAT IS BANDWIDTH?	CAPACITY OF AN ELECTRONIC LINE
2	WHAT IS BITMAP?	IMAGE TYPE(COMBINATION OF ROW AND COLUMNS_
3	WHAT IS BIT?	BINARY DIGIT
4	8 BIT = _____	1 BYTE
5	FULL FORM OF CGI_____	COMMON GATWAY INTERFACE
6	WHAT IS DOMAIN NAME?	METHOD TO IDENTIFY COMPUTER ADDRESS
7	FULL FORM OF GIF_____	GRAPHIC INTERCHANGE FORMAT
8	WHAT IS HOME PAGE?	FIRST PAGE OF WEBSITE

- **EXPLAIN ISP (2 OR 3 M)**



DETAIL

- ISP: ISP is An Internet Service Provider (ISP) is an organization that provides dial-in Internet accounts, usually PPP, CSLIP or SLIP accounts, and also, sometimes Unix shell accounts
- Choosing an ISP: We should consider following features before choosing any ISP.

➢ **Features of ISP:**

- Local phone number: Most of ISPs have many phone numbers that

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your computer can call to connect to the Internet. By having a local phone number you don't need to spend more on long-distance charges for Internet connection.

- Price: ISPs generally charge for the hours or speed they provide. So, you can select your ISP by calculating your usage or speed required.
- Software: Some ISPs provide a CD-ROM or diskette with software that you can use to connect to and use the Internet. If you have Windows 95 or later or Mac with System 7.6.1 or later then your computer is already has the software that you need. But, for older versions you need to choose any ISP who can provide you software for Internetconnection compatible to your OS.
- Support: You never know when you're going to have a problem, so your ISP's technical support phone number (and e-mail help desk) should be open 24 hours a day, 7 days a week.
- Speed: Some ISPs have local access numbers that work with 28.8 Kbps, 33.6 Kbps, and 56 Kbps modems. Some also support high-speed connections such as ISDN and ADSL at extra cost.
- Accessibility: If the ISP's access numbers are frequently busy, you can waste a lot of time redialing until you connect. Ask Internet users in your area whether they have trouble getting connected to the ISP.

In addition to connection you to the Internet, here are some other features that yourInternet account may provide:

i. Pop mailboxes: Your account almost certainly comes with an e-mail mailbox on a POP server. Some ISPs provide more than one mailbox, so that each member of your family can read his or her mail separately, either as a part of the cost of the account or for an extra fee.
ii. Web server space: Most Internet accounts include a modest amount of

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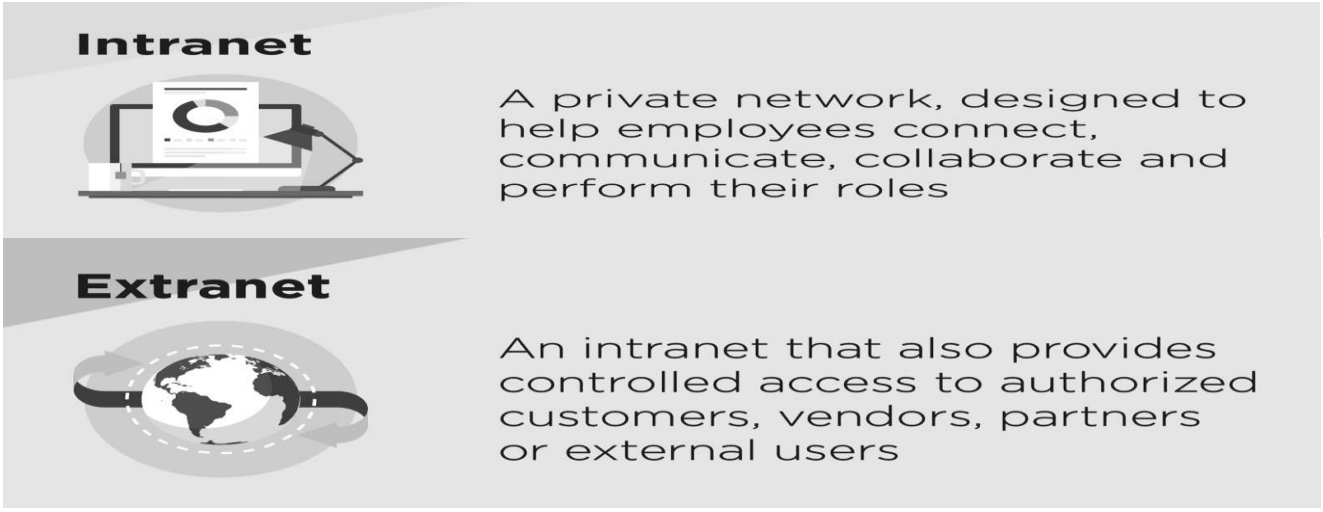
disk space on a Web server, so that you can make your own Web pages accessible to the Internet.

iii. Domain hosting: If you want your own domain name, most of ISPs can host your domain, so that e-mail to the domain lands in your mailbox, and Web addresses in your domain refer to Web pages that you store on your ISP's a Web server.

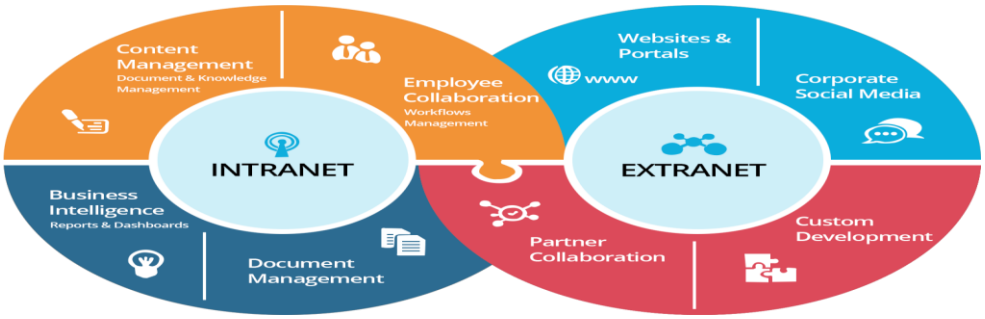
1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	FULL FORM OF ISP_____	INTERNET SERVICE PROVIDER
2	WHAT DOES ISP DO?	PROVIDE INTERNET SERVICE

- **EXPLAIN INTRANET & EXTRANET. (2 OR 3 M)**



USE OF INTRANET AND EXTRANET



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DETAIL

1. INTRANET:
   - An intranet is a private network that allows employees and staff in an enterprise to securely share knowledge and information easily within the company or organization.
   - Information, tools, directories, and services available on a company's intranet are typically unavailable to the general public.
   - The prefix "intra" implies that an intranet is designed for internal communications only. Intranets are usually restricted to specific local areanetworks (LANs) or wide area networks (WANs).

   FEATURES OF INTRANET:

   1. Improved internal communication.
   2. Efficient project management and workflow systems.
   3. Centralized information that connects members.
2. EXTRANET:
   - An extranet is a private network that powers internet technology and public telecommunication system to share part of a business's information or operations over a secure system with suppliers, vendors, partners, customers, or other businesses.
   - An extranet is often considered part of a company's intranet that is extended to authorized users outside of the organization.

   FEATURES OF INTRANET:

   1. Streamlines repetitive business processes.
   2. Increases customer satisfaction.
   3. Highly secure when properly designed

1 WORD QUESTION - ANSWER

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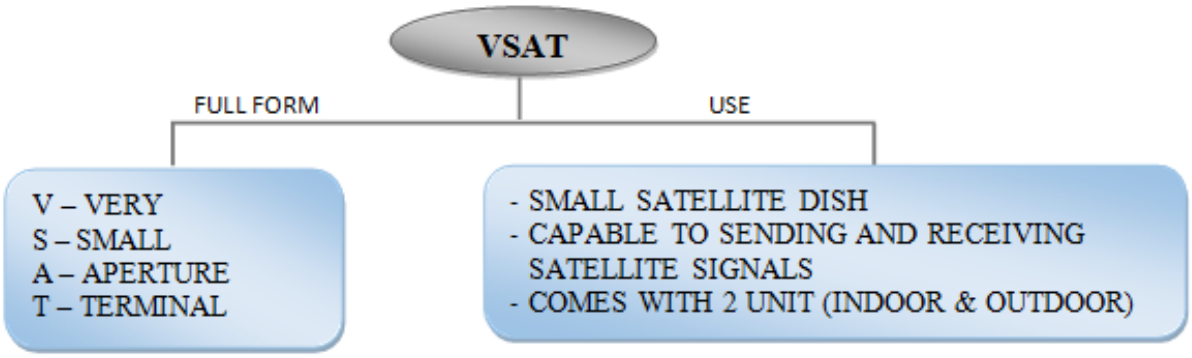
SR. NO	QUESTION	ANSWER
1	INTRANET MEANS____	PRIVATE INTERNET
2	EXTRANET MEANS___	INTRANET WITH CONTROL
3	EXTRANET IS USED TO EXCHANGE LARGE VOLUME OF DATA . (TRUE OR FALSE)	TRUE
4	EXTRANET IS USED FOR JOINT TRANING PROGRAM? (TRUE OR FALSE)	TRUE
5	INTRANET IS EXPENSIVE? (TRUE OR FALSE)	TRUE

- **EXPLAIN VSAT. (2 OR 3 M)**



DETAIL

- VSAT (Very Small Aperture Terminal) is a satellite communications system that serves home and business users.
- A VSAT end user needs a box that interfaces between the user's computer and an outside antenna with a transceiver.
- The transceiver receives or sends a signal to a satellite transponder in the sky. The satellite sends and receives signals from an earth station computer that acts as a hub for the system.
- Each end user is interconnected with the hub station via the satellite in a star topology.
- For one end user to communicate with another, each transmission has to

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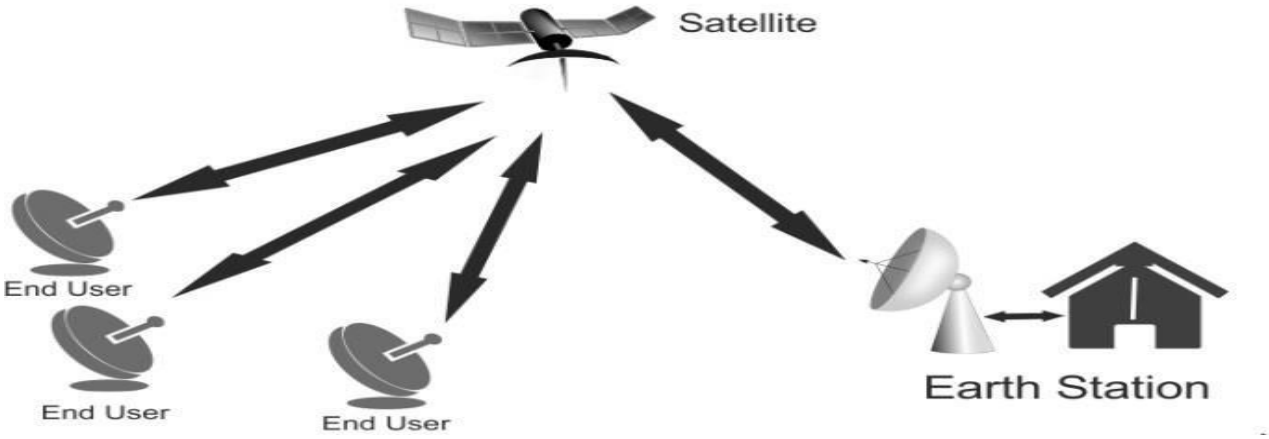
first go to the hub station which retransmits it via the satellite to the other end user's VSAT.

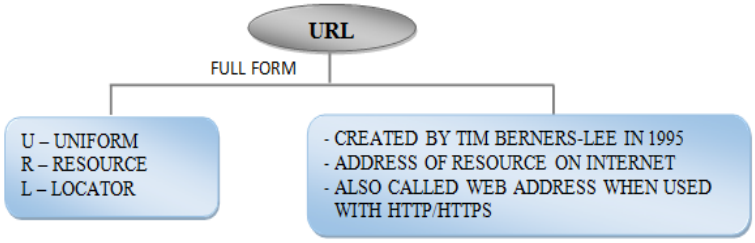
- VSAT handles data, voice, and video signals.



1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	FULL FORM OF VSAT ___	VERY SMALL APERTURE TERMINAL
2	WHAT IS THE USE OF VSAT?	RECEIVE & TRANSMIT REAL-TIME DATA
3	ONE OF THE LARGEST VSAT NETWORK IS_____	NSE (NATIONAL STOCK EXCHANGE)
4	HOW MANY UNITS AVALABLE IS VSAT?	2
5	LIST OUT UNITS AVALABLE IS VSAT?	INDOOR UNIT OUTDOOR UNIT

- **EXPLAIN URL. (2 OR 3 M)**



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DETAIL

- A URL identifies a particular Internet resource; for example, a web page, a gopherserver, a library catalog, and image or a file.
- URLs represent a standardized or unique addressing scheme for the Internet resources, and help users to locate these resources by indicating exactly where they are.
- Every resource available via the WWW has a unique URL.
- Every URL contains the following information:
  - The scheme name or protocol.
  - A colon, two slashes.
  - A host, normally called a domain name but sometimes as a literal IP address.
  - A colon followed by a port number.
  - Full path of the resource.

- for example **http://www.shreehnshuklagroupofcolleges.org/full-form**
  The above URL contains:
  - **protocol**: http
  - **host or domain**: www.shreehnshuklagroupofcolleges.org
  - **Path of the resource**: /full-form

SR. NO	QUESTION	ANSWER
1	FULL FORM OF URL ___	UNIFORM RESOURCE LOCATOR
2	WHAT IS USE OF URL?	ADDRESS OF A RESOURCE ON THE INTRENET
3	HOW MANY PROTOCOLS INCLUDE IN URL?	3
4	LIST OUT PROTOCOLS USED IN URL	HTTP,HTTPS,FTP
5	GIVE ONE EXAMPLE OF URL.	HTTP://WWW.HNSHUKLAGROUPOFCOLLEGES.ORG

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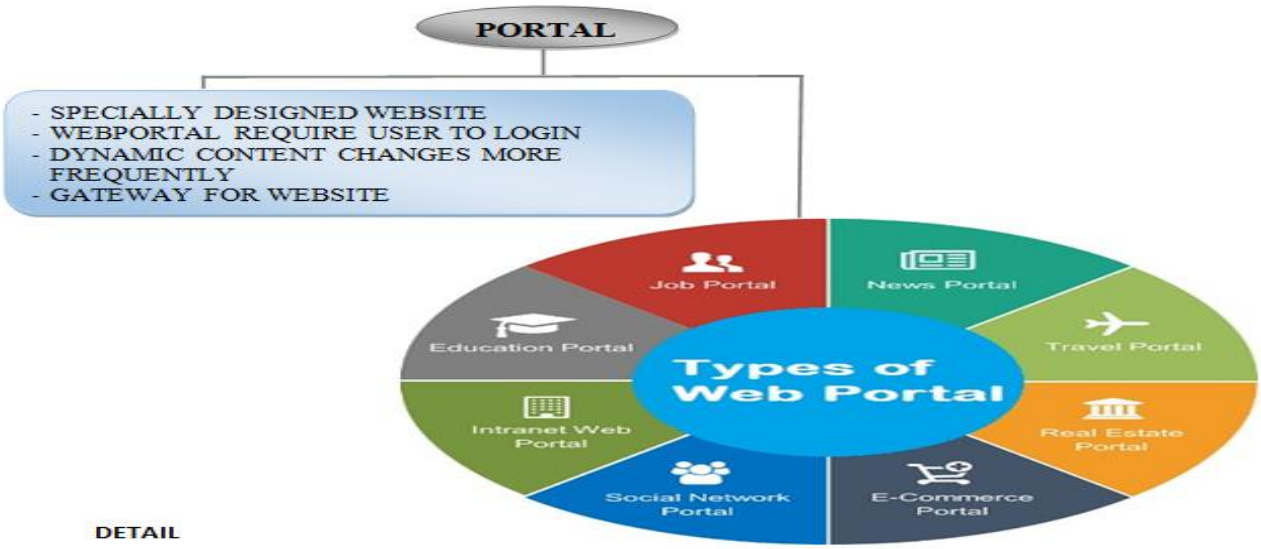
➢ EXPLAIN PORTAL. (2 OR 3 M)



DETAIL

- *Portal* is a term, generally synonymous with *gateway*, for a World Wide Web site that is or proposes to be a major starting site for users when they get connected to the Web or that users tend to visit as an anchor site.
- There are general portals and specialized or niche portals. Some major general portals include Yahoo, Excite, Netscape, Lycos, CNET, Microsoft Network, and America Online's AOL.com. Examples of niche portals include Garden.com (for gardeners), Fool.com (for investors), and SearchNetworking.com (for network administrators).
- A number of large access providers offer portals to the Web for their own users. Most portals have adopted the Yahoo style of content categories with a text-intensive, faster loading page that visitors will find easy to use and to return to. Companies with portal sites have attracted much stock market investor interest because portals are viewed as able to command large audiences and numbers of advertising viewers.
- Typical services offered by portal sites include a directory of Web sites, a facility to search for other sites, news, weather information, e-mail, stock quotes, phone and map information, and sometimes a community forum. Excite is among the first portals to offer users the ability to create a site that is personalized for individual interests.

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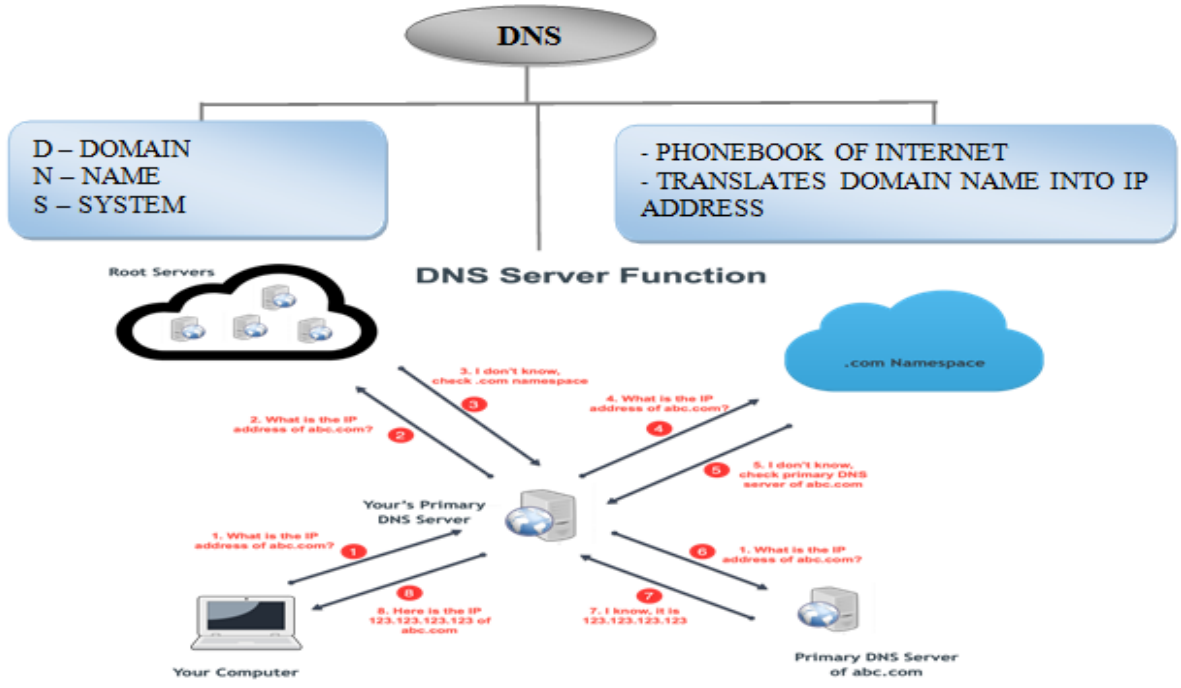
1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS PORTAL?	PORTAL = GATEWAY
2	TYPE OF PORTAL INCLUDE…	1) GENERAL PROTAL 2) SPECIALIZED PROTAL
3	LIST OUT OF GENERAL PORTAL.	YAHOO, NETSCHPS, CNET
4	LIST OUT SEPCIALIZED PORTAL	GARDEN.COM,

- **EXPLAIN DNS. (2 OR 3 M)**



DETAIL

- The Domain Name System (DNS) is the phonebook of the Internet.
- Humans access information online through domain names, like nytimes.com or espn.com.
- Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.

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- Each device connected to the Internet has a unique IP address which other machines use to find the device.
- DNS servers eliminate the need for humans to memorize IP addresses such as 192.168.1.1 (in IPv4), or more complex newer alphanumeric IP addresses such as 2400:c

How Does It Work

- Nameservers store DNS records which are the actual file that says "this domain" maps to "this IP address".
- They are actually distributed all around the world. These nameservers are called the root nameservers and instead of storing every domain ever, they store the locations of the TLD (top level domains).
- TLD's are the two or three character like .com that end a domain name. Each TLD has their own set of nameservers that store the information that says who is authoritative for storing the DNS records for that domain.
- The authoritative nameserver is typically the DNS provider or the DNS registrar (like GoDaddy that offers both DNS registration and hosting). And here we can find the DNS record that maps example.com to the IP address 127.66.122.88.

SR. NO	QUESTION	ANSWER
1	FULL FORM OF DNS	DOMAIN NAME SERVER
2	WHAT DOES DNS DO?	TRANSLATE IP ADDRESS TO HOST NAME TRANSLATE HOSTNAME TO IP ADDRESS
3	EXAMPLE OF HOSTNAME	WWW.YAHOO.COM
4	EXAMPLE OF IP ADDRESS	204.71.200.69

- **WHAT IS WWW? (1 / 2 / 3 M)**

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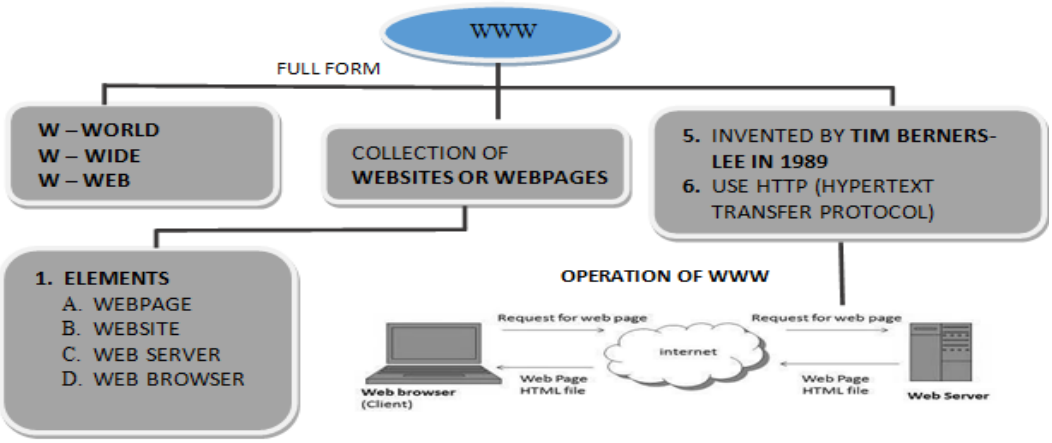

DETAIL

- The World Wide Web (abbreviated as **WWW** or **W3**, commonly known as **the Web)** is a software application that makes it easy and possible for nearly anyone to publish and browse hypertext documents on the Internet.
- WWW is a most common access method of internet resources(elements of web)

o **Elements of Web**

1. ***Web Page***

— A web page is a hypermedia document or we can say it is an HTML document that is stored on a web server. That has a URL so it can be accessed via the web.

2. ***Web Site***

— A web site is a collection of World Wide Web files that includes beginning file called home page and it belongs to particular person or organization.

3. ***Web Server***

— Web server is a computer that is connected via Internet and runs a program that takes responsibility of storing, retrieving, distributing web files.

4. ***Web Browser/Web Client***

— A web browser is a software application that functions as the interface between a user and the Internet. We can also say that it request web resources

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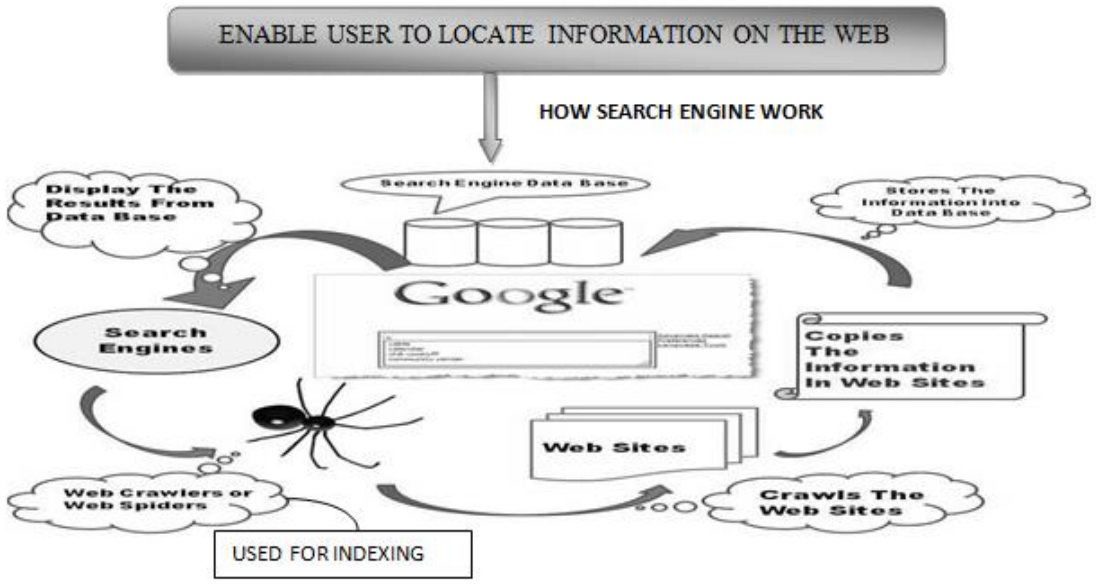
from web servers on the internet.

SR. NO	QUESTION	ANSWER
1	FULL FORM OF WWW_____	WORLD WIDE WEB
2	FATHER OF THE WEB_____	TIM BERNERS – LEE
3	WWW DEVELOPED / INVENTED IN _____	1989 – 1990
4	WHAT IS WWW?	COLLECTION OF WEBSITE / WEBPAGE
5	LIST OUT ELEMENTS OF WEB.	WEBPAGE, WEBSITE, WEB SERVER,WEB CLIENT
6	FULL FORM OF HTTP_____	HYPERTEXT TRANSFER PROTOCOL
7	WHAT IS WEBPAGE?	HYPERTEXT DOCUMENTS
8	WHAT IS WEBSITE?	COLLECTION OF WEB PAGES

- **WHAT IS SEARCH ENGINE. (2 OR 3 M)**



DETAIL

- A search engine is a program that does the following things
  1. Allow you to submit a form containing a query that consists of a word or phrase describing the specific information you are trying

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to locate on the web.

2. Searches its database to try to match your query.
3. Collects and returns a list of clickable URL's containing presentations that matchyour query.
4. Permits you to revise and resubmit a query.

- A number of search engines also provide URL's for related or suggested topics.
- Popular search engines:
  1. AltaVista-altavista.digital.com
  2. HotBot-www.hotbot.com
  3. WebCrawler-www.webcrawler.com
  4. Google-www.google.com
  5. Infoseek-www.infoseek.com

- ***Meta Search Engine***
  1. A meta search engine are all-in-one search engine performs a search by calling on morethan one other search engine to do the actual work.
  2. The results are then collected and duplicates are eliminated and the results are then ranked as how it matches your query. Then you are presented with the list of URL's.
- Popular Meta Search Engines
  1. MetaSearch-www.metasearch.com
  2. MetaCrawler-www.metacrawler.com
  3. Metafind-www.metafind.com

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS SEARCH ENGINE?	ONLINE TOOL THAT SEARCH RESULT FROM WEB
2	LIST OUT SOME POPULAR SEARCH ENGINE.	ALTAVIST,HOTBOT,GOOGLE,INFOSEEK

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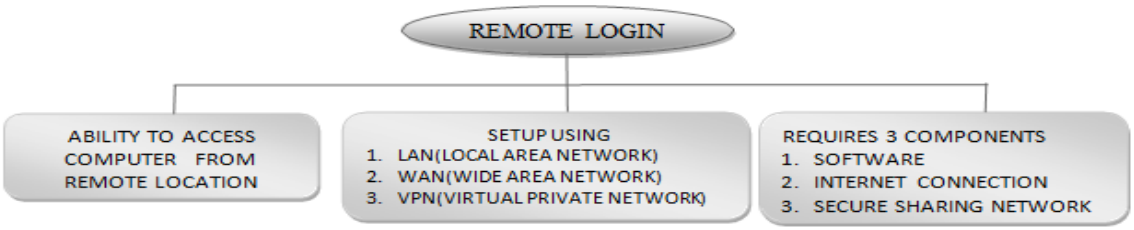
3	LIST OUT SOME POPULAR META SEARCH ENGINE.	METASEARCH, METAFIND
4	WHAT IS META SEARCH ENGINE?	SEARCH ENGINE THAT USE DATA FROM OTHER SEARCH ENGINE

➢ **EXPLAIN REMOTE LOGIN. (2 M)**



DETAIL

- Remote access refers to the ability to access a computer, such as a home computer or anoffice network computer, from a remote location.
- This allows employees to work offsite, such as at home or in another location, while still having access to a distant computer or network, such as the office network.
- Remote access can be set up using a local area network (LAN), wide area network (WAN) or even a virtual private network (VPN) so that resources and systems can be accessed remotely.
- Remote access is also known as remote login. To establish a remote connection, both the local machine and the remote computer/server must have remote-access software.
- Alternatively, there are service providers that offer remote access via the Internet.
- Remote login requires three basic components
    - Software Download
    - Internet Connection
    - Secure desktop sharing network

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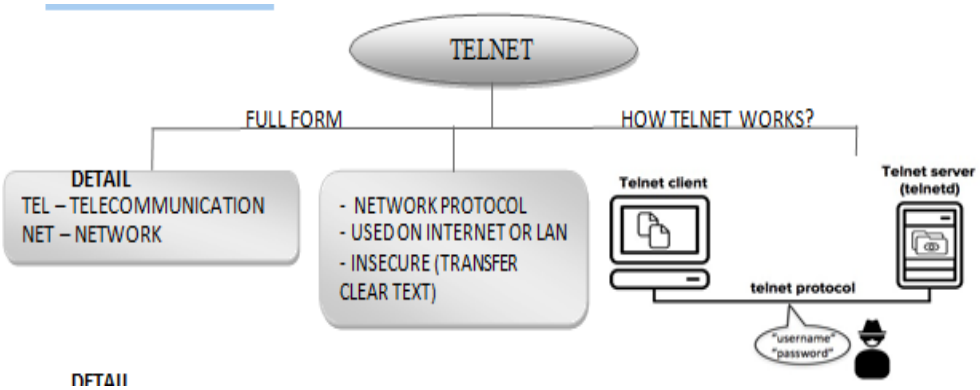
- To work with remote login both the host computer and all remote users have to download and install the same desktop sharing software. Desktop sharing softwaretypically includes two different programs.
    - The desktop sharing client that runs on the host computer.
    - A viewer program that allows the remote user to view the contents of the host computer's desktop in a resizable window.

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS REMOTELOGIN?	ABILITY TO ACCESS COMPUTER FROM REMOTE LOCATION
2	REMOTE ACCESS CAN BE SET UP USING_	LAN,WAN,VPN
3	LIST OUT REQUIRED COMPONENTS OF REMOTE ACCESS.	1. SOFTWARE 2. INTERNET CONNECTION 3. SECURE SHARING NETWORK
4	REMOTE ACCESS IS ALSO CALLED_	REMOTE LOGIN

➢ **EXPLAIN TELNET. (2 M)**



DETAIL

 TELNET (TELecommunication NETwork) is a network protocol used

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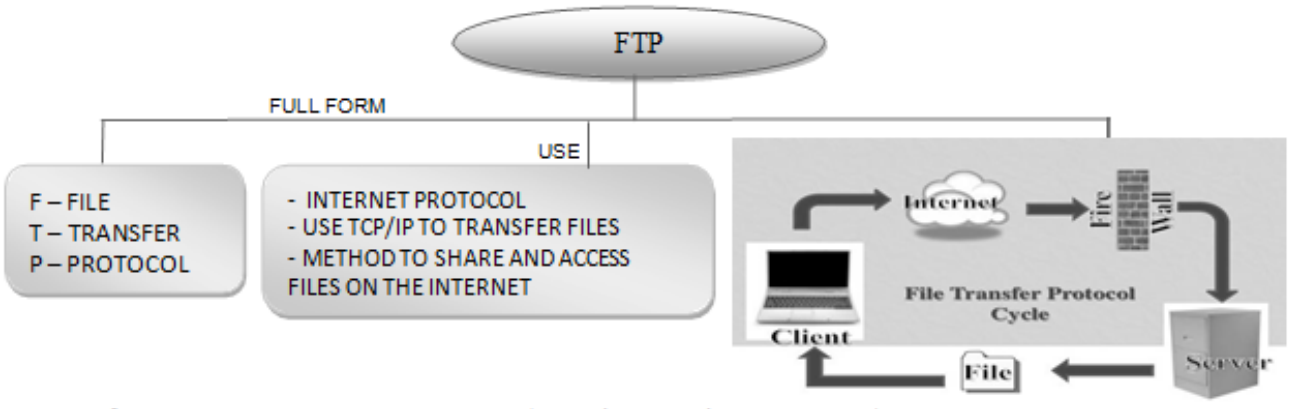
on the Internet orlocal area network (LAN) connections.

- A Telnet program allows a user on one system to login to a remote system and issue commands in a command window of the remote system.
- The telnet program runs on your computer to connect PC to a server on the network.
- You can then enter commands from your telnet program and they will be executed as ifyou were entering them directly on the server console.
- Telnet is a computer protocol that provides two-way interactive communication compatibility for computers on the internet and local area networks.
- Telnet is considered insecure because it transfers all data in clear text.

1 WORD QUESTION - ANSWER

SR.NO	QUESTION	ANSWER
1	FULL FORM OF TELNET_____	TELECOMMUNICATION NETWORK
2	WHAT IS TELNET?	NETWORK PROTOCOL
3	WHY TELNET IS INSECURE?	TRANSFER CLEAR TEXT
4	TELNET IS USED ON_____	INTERNET OR LAN

➢ **EXPLAIN FTP. (2 OR 3 M)(IMP)**



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DETAIL

- FTP (File Transfer protocol) is a standard Internet protocol for transmitting files between computers on the internet.
- FTP is an application protocol that uses the Internet's TCP/IP protocols.
- FTP is commonly used to transfer web pages files from their creator to the computer that acts as their server for everyone on the internet. It's also commonly used to download programs and other files to your computer from other servers.
- As a user, you can use FTP with a simple command line interface (for example, from the Windows MS-DOS Prompt window) or with a commercial program that offers a graphical user interface.
- Your Web browser can also make FTP requests to download programs you select from a Web page. Using FTP, you can also update (delete, rename, move, and copy) files at a server. You need to logon to an FTP server.

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	FULL FORM OF FTP	FILE TRANSFER PROTOCOL
2	FTP IS USED TO_____	TRANSFER FILE OVER THE INTERNET
3	FTP IS AN APPLICATION PROTOCOL? (TRUE OR FALSE)	TRUE
4	FTP USE WHICH PROTOCOL?	TCP/IP

- **EXPLAIN E-MAIL. (2 OR 3 M)**

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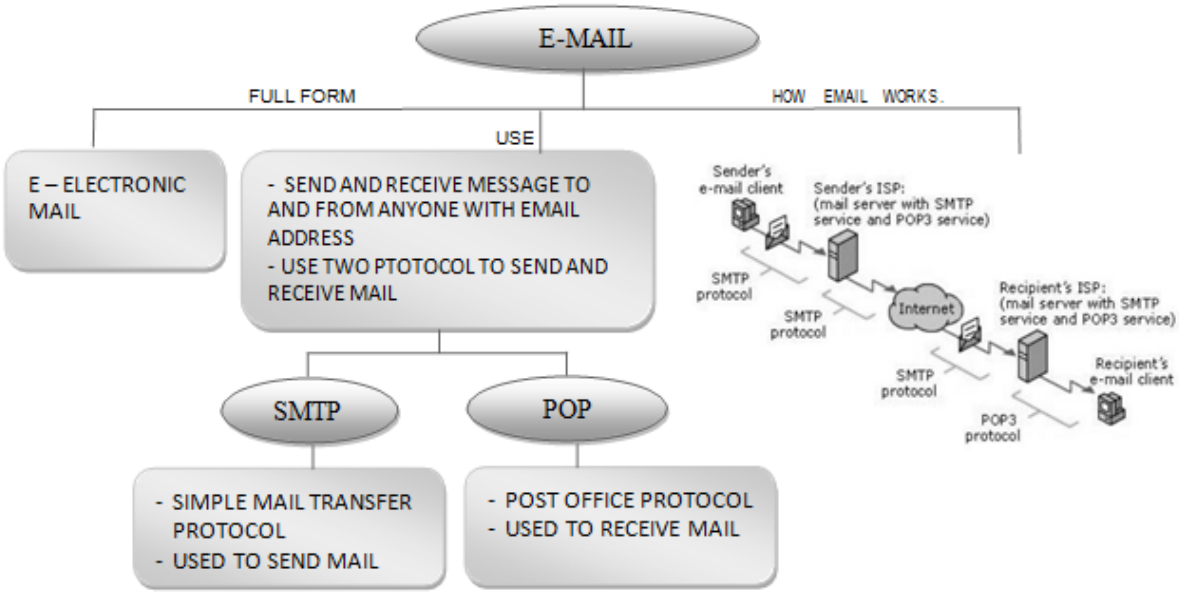

DETAIL

- Email, e-mail or electronic mail is the transmission of messages (emails or email messages) over electronic networks like the internet. It is also a method of exchanging digital messages from an author to one or more recipients.
- The first e-mail was sent by Ray Tomlinson in 1971. Tomlinson sent the e-mail to himself as a test e-mail message, containing the text "something like QWERTYUIOP."
- Email uses multiple protocols within the TCP/IP suite. For example, SMTP is used to send messages, while the POP protocol is used to retrieve messages from a mail server.

E-mail address breakdown

support@computerhope.com

- The first portion of all e-mail addresses, the part before the @ symbol, contains the alias, user, group, or department of a company. In our above example, support is the Technical Support department at

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Computer Hope.

- Next, the @ (at sign) is a divider in the e-mail address; it's required for all SMTP e-mail addresses since the first message was sent by Ray Tomlinson.

- Finally, computerhope.com is the domain name to which the user belongs. The .com is the TLD (top-level domain) for our domain.

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	E-MAIL STANDS FOR_____	ELECTRONIC MAIL
2	FIRST E-MAIL WAS SENT BY____	RAY TOMLINSON
3	FIRST E-MAIL WAS SENT IN_____	1971
4	TO SEND E-MAIL WHICH PROTOCOL IS USED	SMTP
5	TO RECEIVE E-MAIL WHICH PROTOCOL IS USED	POP
6	FULL FORM OF SMTP	SIMPLE MAIL TRANSFER PROTOCOL
7	FULL FORM OF POP	POST OFFICE PROTOCOL

- **EXPLAIN E-COMMERCE, E-BUSINESS & M-COMMERCE. (2 M EACH)**

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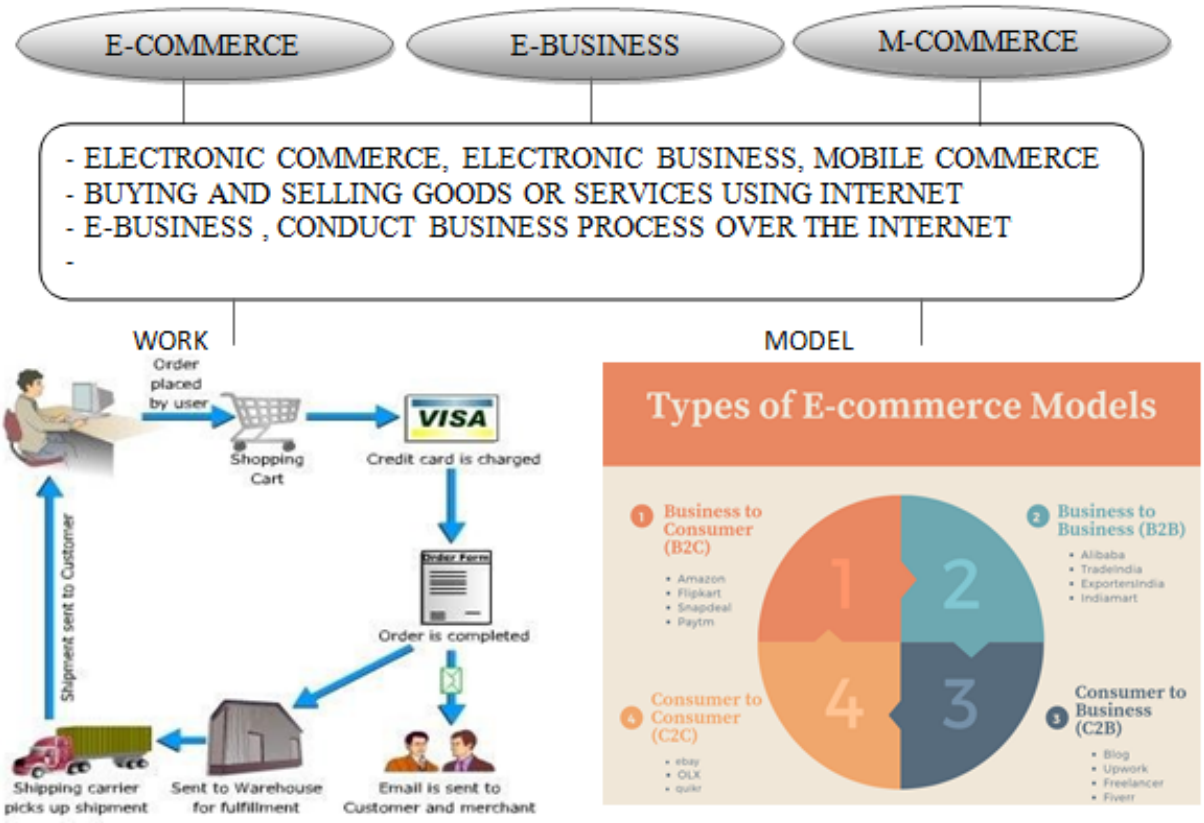

DETAIL

1. **E-COMMERCE**
   - E-commerce is the buying and selling of products and services by businesses and consumers over the Internet. People use the term "ecommerce" to describe encrypted payments on the Internet.
   - Benefits of E-Commerce:
     - Reduced costs by reducing labor, reduced paper work, reduced errors in keying in data, reduce post costs.
     - Reduced time. Shorter lead times for payment and return on investment in advertising, faster delivery of product
     - Flexibility with efficiency. The ability to handle complex situations, product ranges and customer profiles without the situation becoming

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unmanageable.

- Improve relationships with trading partners.

2. E-BUSINESS

- E-business (electronic business), derived from such terms as "e-mail" and "e- commerce," is the conduct of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners.
- For example, a successful shop front business may decide to create a website to promote their business but not actually sell products directly through the internet. Almost all businesses are now an e-business to at least some extent; however, many have taken a step further and are involved with e-commerce.

3. M-COMMERCE

- The phrase mobile commerce was originally coined in 1997 by Kevin Duffey at the launch of the Global Mobile Commerce Forum, to mean "the delivery of electronic commerce capabilities directly into the consumer's hand, anywhere, via wireless technology."
- Many choose to think of Mobile Commerce as meaning "a retail outlet in your customer's pocket."
- M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs).
- Known as next-generation e-commerce, m-commerce enables users to access the Internet without needing to find a place to plug in.
- The emerging technology behind m-commerce, which is based on the Wireless Application Protocol (WAP), has made far greater strides in Europe, where mobile devices equipped with Web-ready micro-browsers are much more common than in the United States.

1 **WORD QUESTION - ANSWER**

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SR. NO	QUESTION	ANSWER
1	FULL FORM OF E-COMMERCE	ELECTRONIC COMMERCE
2	FULL FORM OF E-BUSINESS	ELECTRONIC BUSINESS
3	FULL FORM OF M-COMMERCE	MOBILE COMMERCE
4	E-COMMERCE MEANS____	BUYING AND SELLING PRODUCT ONLINE
5	M-COMMERCE MEANS____	BUYING AND SELLING PRODUCT ONLINE THROUGE MOBILE
6	M-COMMERCE WAS COINED BY?	KEVIN DUFFEY
7	E-BUSINESS MEANS	ALL BUSINESS PROCESS ONLINE
8	FULL FORM OF WAP_____	WIRELESS APPLICATION PROTOCOL
9	FULL FORM OF PDA_____	PERSONAL DIGITAL ASSISTANTS

- **EXPLAIN E-GOVERNANCE. (2 M)**

- E-Governance can be defined as the application of information and communication technology (ICT) for providing government services, exchange of information, transactions, integration of previously existing services and information portals.
- The “e” in e-Governance stands for ‘electronic’.
- The use of electronic technologies in three areas of public action:

- relations between the public authorities and civil society the functioning of the public authorities at all stages of the democratic process (electronic democracy) the provision of public services (electronic public services)

- ***Objectives***
  - Better service delivery to citizens.

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- Ushering in transparency and accountability.
- Empowering people through information.
- Improve efficiency within Government i.e between centre-state or inter-states.
- Improve interface with business and industry.

1 **WORD QUESTION – ANSWER**

SR. NO	QUESTION	ANSWER
1	FULL FORM OF E-GOVERNANCE_	ELECTRONIC GOVERNANCE
2	E-GOVERNANCE IS USED FOR_	PROVIDE GOVERNMENT SERVICES ONLINE
3	OBJECTIVE OF E-GOVERNANCE_	BETTER SERVICE DELIVERY TO CITIZENS.USHERING IN TRANSPARENCY AND ACCOUNTABILITY.

- **EXPLAIN WEBSITE BASICS (2 OR 3 M EACH)**

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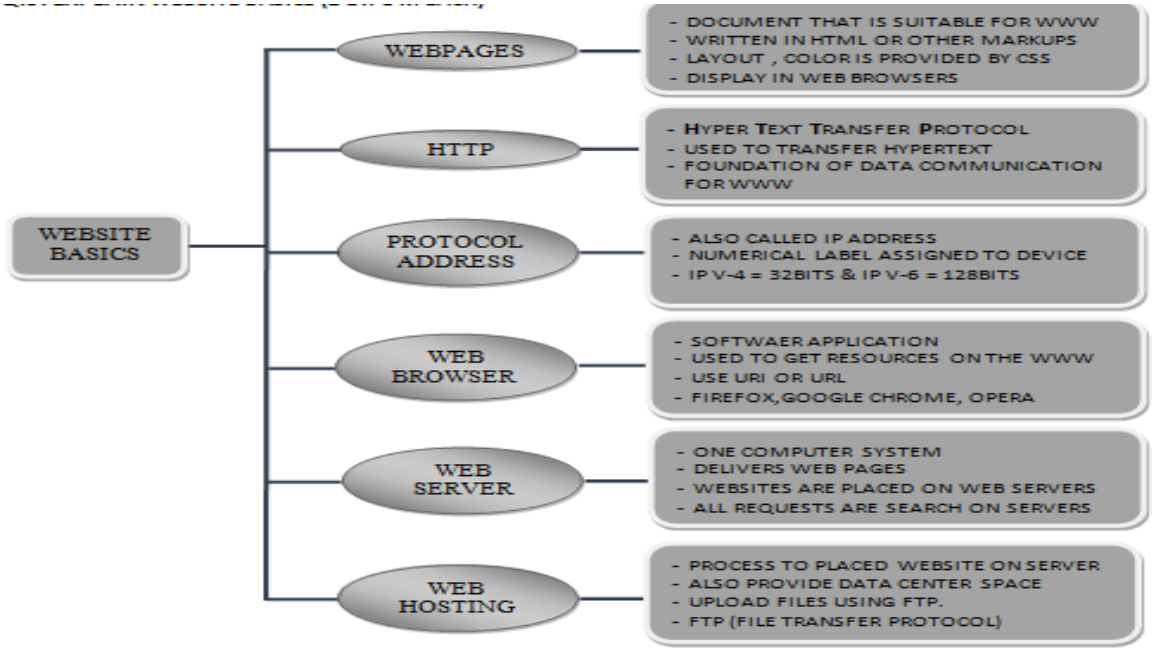

DETAIL

1. **Web Pages :-**

- A web page (or webpage) is a web document that is suitable for the World Wide Web and the web browser.
- A web browser displays a web page on a monitor or mobile device. The web page is what displays, but the term also refers to a computer file, usually written in HTML or comparable markup language.
- Web browsers coordinate the various web resource elements for the written web page, such as style sheets, scripts, and images, to present the web page.
- Typical web pages provide hypertext that includes a navigation bar or a sidebar menu to other web pages via hyperlinks, often referred to as links.
- On a network, a web browser can retrieve a web page from a remote web server. On a higher level, the web server may restrict access to only a private network such as a corporate intranet or it provides access to the World Wide Web.
- A static web page is delivered exactly as stored, as web content in the web server's file system, while a dynamic web page is generated by a web application that is drivenby server-side software or client-side scripting.
- Web pages usually include information as to the colors of text and

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backgrounds and very often also contain links to images and sometimes other types of media to be included in the final view.

- Layout, typographic and color-scheme information is provided by Cascading Style Sheet (CSS) instructions, which can either be embedded in the HTML or can be provided by a separate file, which is referenced from within the HTML.

2. Hyper Text Transfer Protocol :-

- The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems.
- HTTP is the foundation of data communication for the World Wide Web.
- Hypertext is structured text that uses logical links (hyperlinks) between nodes containing text. HTTP is the protocol to exchange or transfer hypertext.
- HTTP functions as a request–response protocol in the client–server computing model. A web browser, for example, may be the *client* and an application running on a computer hosting a web site may be the *server*.
- The client submits an HTTP *request* message to the server. The server, which provides *resources* such as HTML files and other content, or performs other functions on behalf of the client, returns a *response* message to the client.
- The response contains completion status information about the request and may also contain requested content in its message body.
- HTTP is designed to permit intermediate network elements to improve or enable communications between clients and servers.

3. Protocol Address :-

- An Internet Protocol address (IP address) is a numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the Internet Protocol for communication.
- An IP address serves two principal functions: host or network interface identification and location addressing.

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- Its role has been characterized as follows: "A name indicates what we seek. An address indicates where it is. A route indicates how to get there."
- The designers of the Internet Protocol defined an IP address as a 32-bit number and this system, known as Internet Protocol Version 4 (IPv4), is still in use today.
- However, because of the growth of the Internet and the predicted depletion of available addresses, a new version of IP (IPv6), using 128 bits for the address, was developed in 1995.
- IPv6 was standardized as RFC 2460 in 1998, and its deployment has been ongoing since the mid-2000s.
- IP addresses are usually written and displayed in human-readable notations, such as
  172.16.254.1 (IPv4), and 2001:db8:0:1234:0:567:8:1 (IPv6).
- The Internet Assigned Numbers Authority (IANA) manages the IP address space allocations globally and delegates five regional Internet registries (RIRs) to allocate IP address blocks to local Internet registries (Internet service providers) and other entities.

4. **Web Browser :-**
   - A web browser (commonly referred to as a browser) is a software application for retrieving, presenting, and traversing information resources on the World Wide Web.
   - An *information resource* is identified by a Uniform Resource Identifier (URI/URL) and may be a web page, image, video or other piece of content.
   - Hyperlinks present in resources enable users easily to navigate their browsers to related resources.
   - Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems.
   - The major web browsers are Firefox, Internet Explorer/Microsoft Edge, Google Chrome, Opera, and Safari.

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5. **Web Server : -**

- Web servers are computers that deliver (*serves up*) Web pages. Every Web server has an IP address and possibly a domain name. For example, if you enter the URL *http://www.webopedia.com/index.html* in your browser, this sends a request to the Web server whose domain name is *webopedia.com*.
- The server then fetches the page named *index.html* and sends it to your browser.
- Any computer can be turned into a Web server by installing server software and connecting the machine to the Internet.
- There are many Web server software applications, including public domain software and commercial packages.

6. **Web Hosting :-**

- A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via the World Wide Web.
- Web hosts are companies that provide space on a server owned or leased for use by clients, as well as providing Internet connectivity, typically in a data center.
- Web hosts can also provide data center space and connectivity to the Internet for other servers located in their data center, called colocation, also known as *Housing* in Latin America or France.
- The scope of web hosting services varies greatly. The most basic is web page and small-scale file hosting, where files can be uploaded via File Transfer Protocol (FTP) or a Web interface. The files are usually delivered to the Web "as is" or with minimal processing.

1 WORD QUESTION - ANSWER

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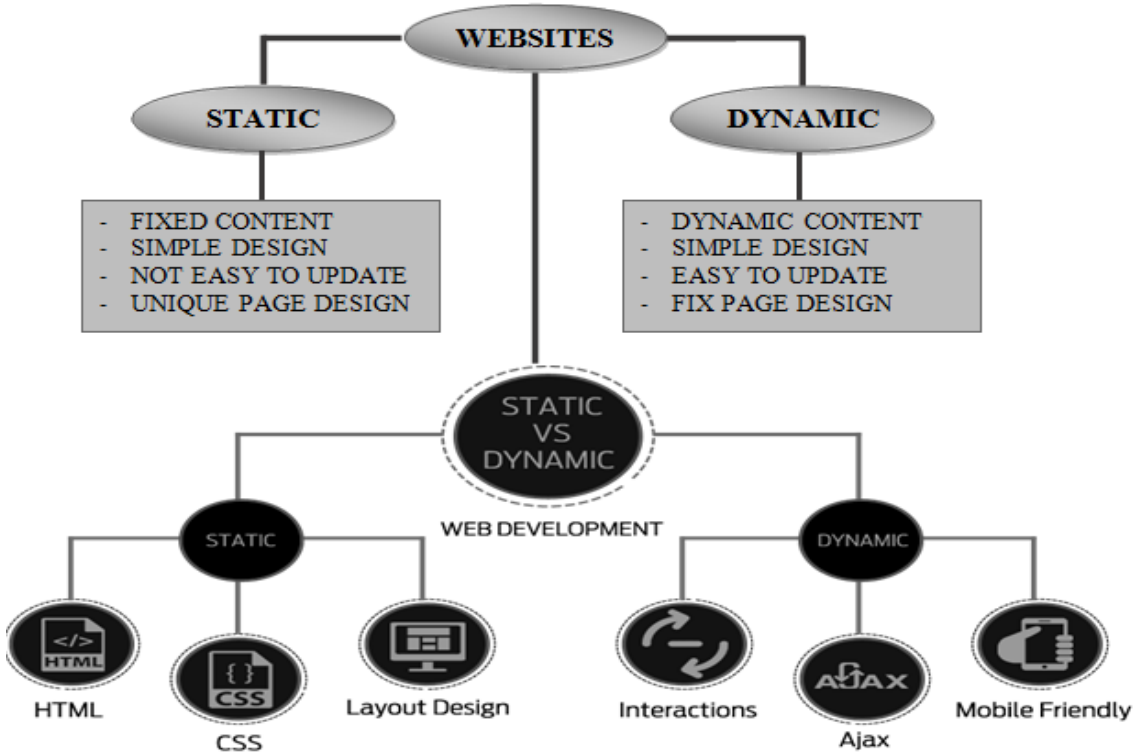
SR. NO	QUESTION	ANSWER
1	WHAT IS WEB PAGE?	DOCUMENT OF INTERNET
2	WEB PAGE WAS CREATED USING _____	HTML,CSS,JS
3	FULL FORM OF HTTP___	HYPER TEXT TRANSFER PROTOCOL
4	HTTP IS USED TO_____	CONVERT HYPER TEXT IN TO NORMAL TEXT
5	FULL FORM OF IP ADDRESS____	INTERNET PROTOCOL
6	VERSIONS OF IP ADDRESS	IPV 4,IPV 6
7	WHAT IS WEB BROWSER?	APPLICATION OF INTERNET USED TO ACCESS INTERNET
8	WHAT IS WEBSERVER?	WEB SERVERS ARE COMPUTER THAT DELIVER WEBPAGES
9	WHAT IS WEBHOSTING?	PROCESS TO PUT OUR WEBSITE ON WEBSERVER

- **EXPLAIN TYPES OF WEBSITE (5M) (MIMP)**



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Detail

- A **web** page or webpage is a document commonly written in HyperText Markup Language (HTML) that is accessible through the Internet or other network using an Internet browser.
- A **web** page is accessed by entering a URL address and may contain text, graphics, andhyperlinks to other **web** pages and files.

Static v Dynamic Website Design

- There are basically two main types of website - static and dynamic.
- A static site is one that is usually written in plain HTML and what is in the code of thepage is what is displayed to the user.
- A dynamic site is one that is written using a server-side scripting language such as PHP,ASP, JSP, or ColdFusion.
- In such a site the content is called in by the scripting language from other files or from a
  database depending on actions taken by the user.

Static sites - advantages

- Flexibility is the main advantage of a static site - every page can be different if desired, to match the layout to different content, and the designer is free to put in any special effects that a client may ask for in a unique way on different pages.
- This allows theming - for instance an author may want a different theme for a different book and associated pages or perhaps for a series of books, in order to match the cover designs or the context of the stories.
- Cost is generally lower up-front than a dynamic site.

Static sites - disadvantages

- The main problem with any static site appears when you wish to update the content. Unless you are conversant with HTML and the design methods used in the site then you have to go back to the designer to have

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any content changes made.

- This may be perfectly ok when a new page is required which needs design input, but if all you want to do is change some text then it can be a nuisance for both client and designer.
- The second main problem is scalability. If you wish to sell products on your site and you have a lot of them then you may have to construct individual pages for each one, which can take considerable time, effort and cost.

Dynamic sites - advantages

- The main advantages of dynamic sites are that by connecting them to databases you can easily pull in information in an organized and structured way to create product pages or categories of related products sorted in a variety of different ways depending on how the user wants to view them.
- This ability to connect to a database means that you can also create a content management system - an interface which allows the client to input and manage data via a web-based series of administration pages.

Responsive Website :-

- Responsive web design (RWD) is an approach to web design aimed at crafting sites to provide an optimal viewing and interaction experience—easy reading and navigation with a minimum of resizing, panning, and scrolling—across a wide range of devices (from desktop computer monitors to mobile phones).
- A site designed with RWD adapts the layout to the viewing environment by using fluid, proportion-based grids, flexible images, and CSS3 media queries, an extension of the `@media` rule, in the following ways:

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- The fluid grid concept calls for page element sizing to be in relative units like percentages, rather than absolute units like pixels or points.
- Flexible images are also sized in relative units, so as to prevent them from displaying outside their containing element.
- Media queries allow the page to use different CSS style rules based on characteristics of the device the site is being displayed on, most commonly the width of the browser.
- Responsive web design has become more important as the amount of mobile traffic now accounts for more than half of total internet traffic. Therefore, Google announced Mobilegeddon (April 21, 2015) and started to boost the ratings of sites that are mobile friendly if the search was made from a mobile device. This has the net effect of penalizing sites that are not mobile friendly.

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS STATIC WEBSITE?	- FIXED CONTENT - SIMPLE DESIGN - NOT EASY TO UPDATE - UNIQUE PAGE DESIGN
2	WHAT IS DYNAMIC WEBSITE?	- DYNAMIC CONTENT - SIMPLE DESIGN - EASY TO UPDATE - FIX PAGE DESIGN
3	STATIC WEBSITE IS CREATED USING.	HTML, CSS
4	DYNAMIC WEBSITE IS CREATED USING.	PHP, ASP.NET
5	WHAT IS RESPONSIVE WEBSITE?	OPEN WEBSITE IN ANY DEVICE
6	WHICH CSS FUNCTION IS USED IN RESPONSIVE WEBSITE?	@MEDIAQUERY

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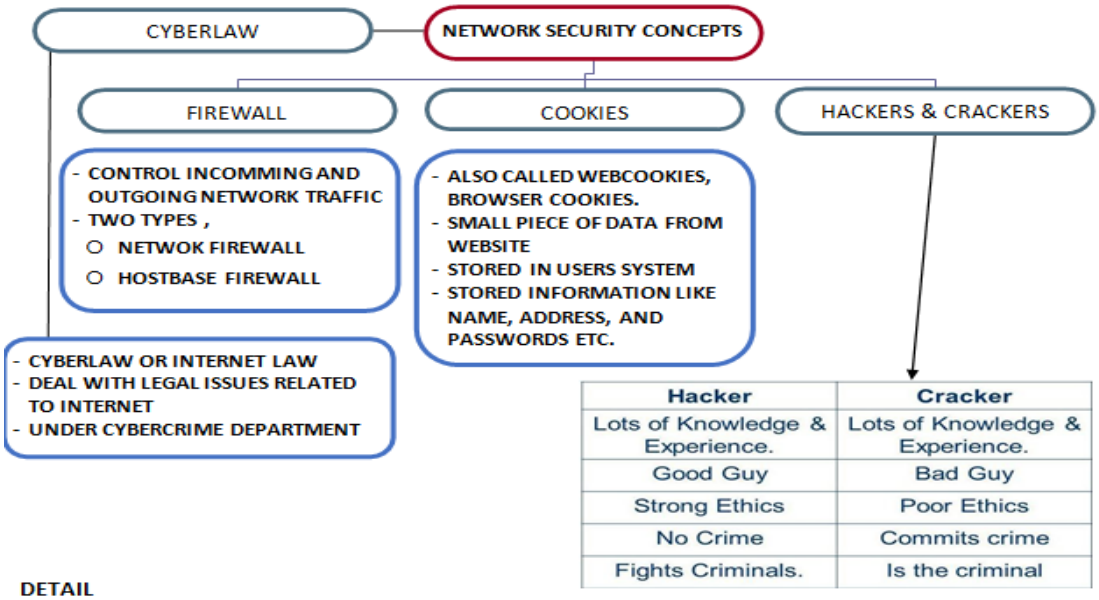
➢ EXPLAIN NETWORK SECURITY CONCEPTS (3M EACH)



DETAIL

1. Cyber Law :-

- Cyber law or Internet law is a term that encapsulates the legal issues related to use ofthe Internet.
- It is less a distinct field of law than intellectual property or contract law, as it is a domaincovering many areas of law and regulation.
- Some leading topics include internet access and usage, privacy, freedom of expression,and jurisdiction.
- "Computer law" is a third term which tends to relate to issues including both Internet law and the patent and copyright aspects of computer technology and software.
- There are rules on the uses to which computers and computer networks may be put, in particular there are rules on unauthorized access, data privacy and spamming.
- There are also limits on the use of encryption and of equipment which may

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be used to defeat copy protection schemes. The export of hardware and software between certain states within the United States is also controlled.

2. **Firewall : -**

- In computing, a firewall is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules.
- A firewall typically establishes a barrier between a trusted, secure internal network and another outside network, such as the Internet, that is assumed not to be secure or trusted.
- Firewalls are often categorized as either *network firewalls* or *host-based firewalls*. Network firewalls are a software appliance running on general purpose hardware or hardware- based firewall computer appliances that filter traffic between two or more networks.
- Host-based firewalls provide a layer of software on one host that controls network traffic in and out of that single machine.
- Firewall appliances may also offer other functionality to the internal network they protect such as acting as a DHCP or VPN server for that network.

3. **Cookies : -**

- An HTTP cookie (also called web cookie, Internet cookie, browser cookie or simply cookie) is a small piece of data sent from a website and stored in the user's web browser while the user is browsing.
- They can also be used to remember arbitrary pieces of information that the user previously entered into form fields such as names, addresses, passwords, and credit card numbers.
- Other kinds of cookies perform essential functions in the modern web. Perhaps most importantly, authentication cookies are the most common method used by web servers to know whether the user is logged in or not, and which account they are logged in with.
- Without such a mechanism, the site would not know whether to send a page

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containing sensitive information, or require the user to authenticate them by logging in.

- The security of an authentication cookie generally depends on the security of the issuing website and the user's web browser, and on whether the cookie data is encrypted.
- Security vulnerabilities may allow a cookie's data to be read by a hacker, used to gain access to user data, or used to gain access (with the user's credentials) to the website to which the cookie belongs (see cross-site scripting and cross-site request forgery for examples).

4. **Hackers and Crackers:-**

- A cracker (also known as a black hat hacker) is an individual with extensive computer knowledge whose purpose is to breach or bypass internet security or gain access to software without paying royalties.
- The general view is that, while hackers build things, crackers break things. Cracker is the
  name given to hackers who break into computers for criminal gain; whereas, hackers can also be internet security experts hired to find vulnerabilities in systems.
- These hackers are also known as white hat hackers. Crackers' motivations can range from profit, a cause they believe in, general maliciousness or just because they like the challenge.
- They may steal credit card numbers, leave viruses, destroy files or collect personal information to sell.
- Crackers can also refer to those who reverse engineer software and modify it for their own amusement.
- The most common way crackers gain access to networks or systems is through social engineering, whereby the cracker contacts employees at a company and tricks them into divulging passwords and other information that allows a cracker to gain access.

1 WORD QUESTION - ANSWER

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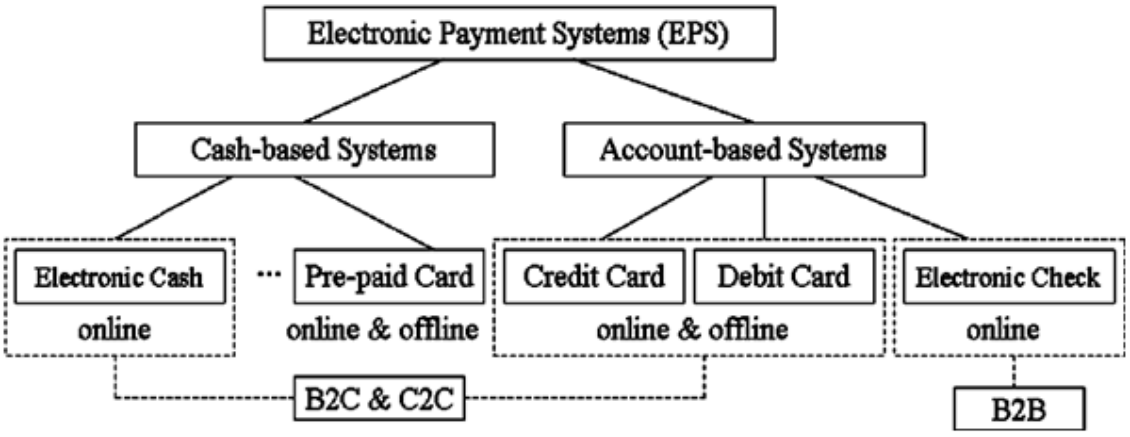
SR. NO	QUESTION	ANSWER
1	WHAT IS CYBER LAW?	- CYBERLAW OR INTERNET LAW - DEAL WITH LEGAL ISSUES RELATED TO INTERNET - UNDER CYBERCRIME DEPARTMENT
2	WHAT IS FIREWALL?	- CONTROL INCOMMING AND OUTGOING NETWORK TRAFFIC - TWO TYPES , o NETWOK FIREWALL o HOSTBASE FIREWALL
3	WHAT IS COOKIES?	- ALSO CALLED WEBCOOKIES, BROWSER COOKIES. - SMALL PIECE OF DATA FROM WEBSITE
4	WHAT IS HACKER?	PERSON WITH LOTS OF EXPERIENCE

- **EXPLAIN DIGITAL PAYMENT SYSTEM (ELECTRONIC PAYMENT SYSTEM) (2 OR 3M EACH)**



DETAIL

1. **Electronic Cheque : -**

- An electronic cheque is an electronic copy (scanned image) of a real cheque, which is then transferred by email. In addition to the cheque's 'real'

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signature, the transfer must be digitally signed using the sender's private key to authenticate the transfer.

- Electronic checks have been developed in response to the transactions that have arisen in the world of electronic commerce. Electronic checks can be used to make a payment for any transaction that a paper check can cover and are governed by the same laws that apply to paper checks.

2. **Smart Card : -**

- A smart card, chip card, or integrated circuit card (ICC) is any pocket-sized card that has embedded integrated circuits.
- Smart cards are made of plastic, generally polyvinyl chloride, but sometimes polyethylene terephthalate based polyesters, acrylonitrile butadiene styrene or polycarbonate.
- Since April 2009, a Japanese company has manufactured reusable financial smart cards made from paper.
- Smart cards can be either contact or contactless smart card. Smart cards can provide personal identification, authentication, data storage, and application processing.
- Smart cards may provide strong security authentication for single sign-on (SSO) within large organizations.

3. **Debit / Credit Card : -**

- Debit and credit cards offer more than a way to access money without having to carry around cash or a bulky checkbook.
- **Debit cards** are like digitized versions of checkbooks; they are linked to your bank account (usually a checking account), and money is debited (withdrawn) from the account as soon as the transaction occurs.
- **Credit cards** are different; they offer a line of credit (i.e., a loan) that is interest-free if the monthly credit card bill is paid on time. Instead of being connected to a personal bank account, a credit card is connected to the bank or financial institution that issued the card. So when you use a credit card, the issuer pays the merchant and you go into debt to the card issuer.

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	Cradit card	**Debit card**
About	Credit cards are lines of credit. When you use a credit card, the issuer puts money toward the transaction. This is a loan you are expected to pay back in full (usually within 30 days), unless you want to be charged interest.	Any time you use a debit card to buy something, money is deducted from your account. With a debit card, you can really only spend the money you have available to you.
Connected To	Not required to be connected to a checking account.	Checking or Savings Account
Monthly Bills	Yes	No
Interest Charged	If a credit card bill is not paid in full, interest is charged on outstanding balance. The interest rate is usually very high.	No interest is charged because no money is borrowed.

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	FULL FORM OF EPS_____	ELECTRONIC PAYMENT SYSTEM
2	LIST OUT ELECTRONIC PAYMENT SYSTEM	1.E CHEQUE 2.SMART CARD 3.CRADIT CARD / DEBIT CARD
3	CRADIT CARD PROVIDE MONTHLY BILLS… (YES OR NO)	YES
4	DEBIT CARD PROVIDE MONTHLY BILLS… (YES OR NO)	NO
5	SMART CARD IS ALSO KNOWN AS_____	ICC
6	FULL FORM OF ICC_	INTEGRATED CIRCUIT

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		CARD

UNIT-2

- ***BASICS OF HTML & ADVANCE HTML***

- FUNDAMENTALS OF HTML & BASIC TAGS & ATTRIBUTES
- FORMATTING TAGS
- LIST TAGS
- LINK TAG
- ADDING IMAGES
- TABLE TAG
- FRAME TAG
- INTRODUCTION OF HTML 5 & SYNTEX
- HTML 5 DOCUMENT STRUCTURE
- ATTRIBUTES OF HTML 5
- WEB FORMS
- AUDIO & VIDEO TAG
- CANVAS TAG
- INSERTING SPECIAL CHARACTERS

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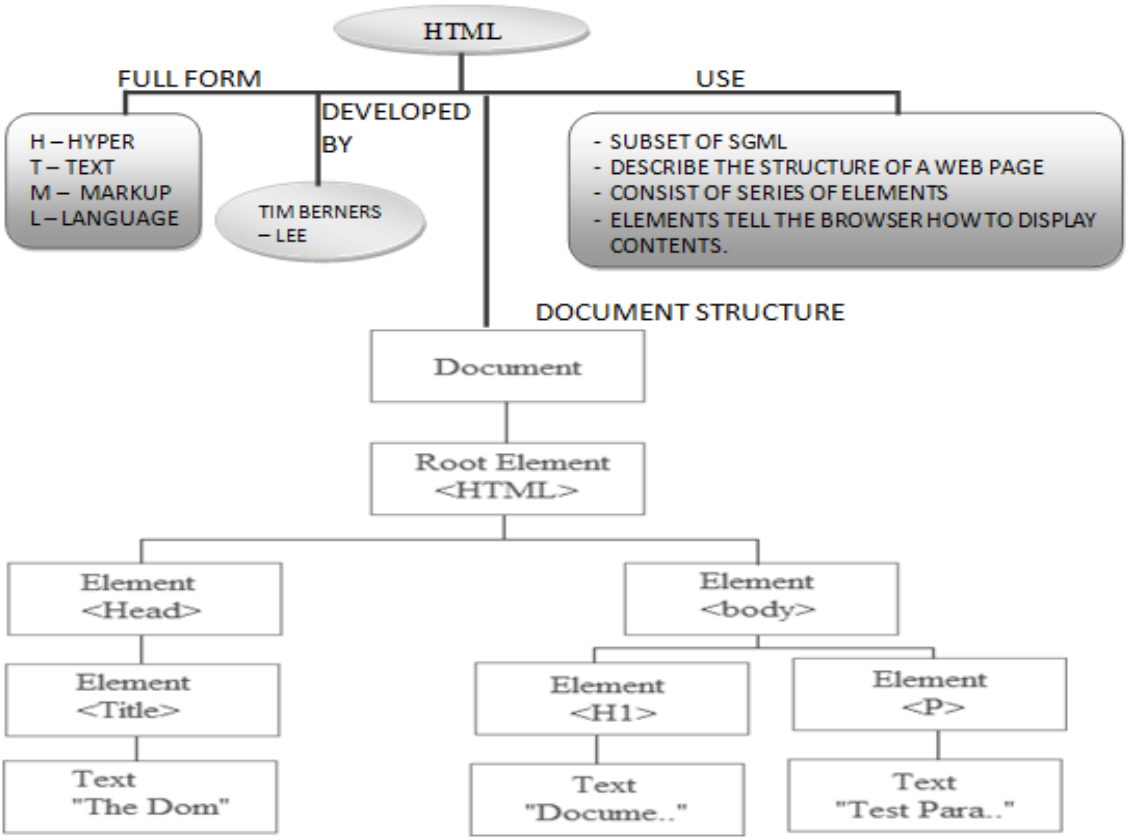
- **WHAT IS HTML? EXPLAIN ELEMENTS AND STRUCTURE OF HTML (1 / 2 / 3 M)**



DETAILS

1) <u>UNDERSTANDING HTML</u>

- HTML was originated by Tim Berners-Lee.
- HTML developed a few years ago as a subset of *SGML* (*Standard Generalized Mark-up Language*) which is a higher-level mark-up language that has long been a favorite of the Department of Defense.
- Any HTML document is also valid for SGML.
- HTML is a Hyper Text Markup Language that is used to develop web pages.

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- HTML is not a programming language like C, C++ and Java etc.
- It is a cross platform markup language that is design to be flexible enough to display text and other elements like graphical on a variety of views.
- The HTML documents consist of special Tags that are embedded in an ASCII document.
- These Tags are interpreted by web browser like Internet Explorer, Netscape Navigatoretc.

2) BASIC ELEMENTS OF HTML

- Basic elements of HTML are TAGS , ATTRIBUTES , URL

1. TAG

- The basic building blocks of HTML Tags are the part of HTML that tells a web browser How to display Text and Graphics.
- A tag is always enclosed in angle brackets and most tags come in pairs with anopening tag and closing tag.
- The closing tag is same as opening tag but start with forward slash.
- You can create a tag in either uppercase or lowercase because HTML is not acase sensitive.
- **For Example** <Title> Welcome To HNS </Title>
- This tag tells a web browser to format the text string "Welcome to HNS"display in the title bar of your web browser.
- Here <Title> is a opening tag and </Title> is closing tag.

2. ATTRIBUTES

- Attributes are used with Tag that provides the exact information and actions.
- For Example <IMG Src ="D:\Picture\First.jpg">
- Here <IMG> tag tells a web browser to display a graphical image but which image? Then SRC attribute give picture file path information and display that picture in the browser.

3. URL (Uniform Resource Locator)

- Web resources are access by a descriptive address known as Uniform Resource Locator (URL).

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3) Basic Tags and AttributesHTML (outermost tag)

- The HTML tag identifies a document as an HTML document.
- All HTML documents should start with the <HTML> tag and end with the </HTML> tag.

Syntax

<HTML>...</HTML>

Example

The following example begins and ends a short document with the HTML

tag.

```
<HTML>
<BODY>
   This is a small HTML file.
</BODY>
</HTML>
```

HEAD (document header)

- The HEAD tag defines an HTML document header.
- The header contains information about the document rather than information tobe displayed in the document.
- You should put all header information between the <HEAD> and </HEAD> tags,which should precede the BODY tag.
- The HEAD tag can contain TITLE, BASE, SCRIPT, STYLE, and LINK tags.

Syntax

<HEAD>...</HEAD>

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Example

```
<HEAD>
<TITLE>HNS</TITLE>
</HEAD>
```

BODY (main content of document)

- The BODY tag specifies the main content of a document.
- You should put all content that is to appear in the web page between the <BODY> and </BODY> tags.
- The BODY tag has attributes that let you specify characteristics for the document.
- You can specify the background color or an image to use as a tiled background for the Window in which the document is displayed.
- You can specify the default text color, active link color, unvisited link color, and visited link color.

Syntax

```
<BODY BACKGROUND="bgURL"
BGCOLOR="color"TEXT="color" >
----------
</BODY>
```

BACKGROUND="bgURL"

- Specifies an image to display in the background of the document.
- The URL value can be an absolute URL (for example, “http://www.rcompany.com/images/image1.html") or a relative URL (for Example, "images/image1.gif").
- The image is tiled, which means it is repeated in a grid to fill the entire window or frame where the document is displayed.

BGCOLOR="color"

- Sets the color of the background.

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TEXT="color"

- Sets the color of normal text (that is, text that is not in a link) in thedocument.

Example

The following example sets the background color to light yellow, ordinary text to black, unvisited links to blue, visited links to green, and active links to red:

```
<BODY BGCOLOR="#FFFFAA" TEXT="black" >
</BODY>
```

Comments:

Comments in HTML take the form:

<!-- *comment here* -->

For example:

```
<!-- red background -->
<BODY BGCOLOR="red">
```

Title (Document Title) :

- The TITLE tag specifies the title of the document.
- This title appears in the title bar of the browser window.
- If no title is specified, the default title depends on the browser being used.
- This tag Used within HEAD tag.

Example

```
<HTML>
  <HEAD>
    <TITLE>HTML Tag Reference</TITLE>
```

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```
</HEAD>
</HTML>
```

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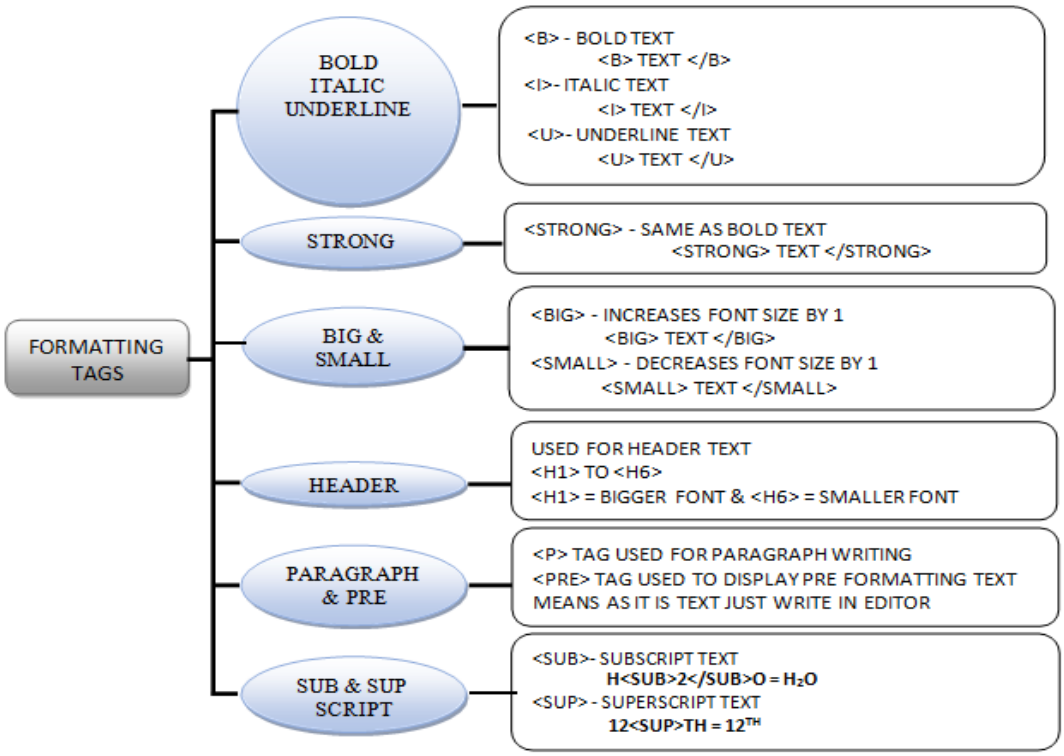
SR. NO	QUESTION	ANSWER
1	FULL FORM OF HTML____	HYPERTEXT MARKUP LANGUAGE
2	FATHER OF THE HTML_____	TIM BERNERS – LEE
3	HTML IS A SUBSET OF_____	SGML
4	FULL FORM OF SGML	STANDARD GENERALIZED MARKUP LANGUAGE
5	HTML IS A _____	MARKUP LANGUAGE
6	<BODY> TAG SPECIFIES THE_____	MAIN CONTENT OF THE PAGE
7	<TITLE> TAG SPECIFIES THE_____	TITLE OF THE DOCUMENTS
8	LIST OUT BASIC ELEMENTS OF HTML	TAGS, ATTRIBUTES, URL

- **EXPLAIN FORMATTING TAGS. (1 OR 2 M EACH)(WITH EXAMPLE 3M)**



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DETAIL

- **P (Paragraph)**
  - The P tag displays a paragraph.
  - All P elements start on a new line and are usually preceded by extra space.
  - You can also use the P tag to insert a line break with extra space.
  - The closing </P> tag guarantees that the paragraph is followed by extra
  - space. Omitting the closing </P> tag often has no effect.

Syntax

<P ALIGN="LEFT"|"CENTER"|"RIGHT" >…</P>

ALIGN

- Specifies the horizontal alignment of the paragraph.
- The value can be one of these:
  - LEFT aligns the paragraph flush left (the default).
  - CENTER centers the paragraph.
  - RIGHT aligns the paragraph flush right.

Example

The following example displays two paragraphs.

<P>Use the P tag to display paragraphs. The P element starts on a new line, and is preceded by extra space.

<P>

you can also use the P tag to insert a line break with extra space. In most, but not all, cases, it is OK to omitthe closing tag.

Output

Use the P tag to display paragraphs. The P element starts on a new line, and is precededby extra space.

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You can also use the P tag to insert a line break with extra space. In most, but not all,cases, it is OK to omit the closing tag.

- **PRE (preformatted text, fixed-width font)**
  - The PRE tag displays preformatted text in a fixed-width font.
  - The PRE element displays all white space and line breaks exactly as they appear insidethe <PRE> and </PRE> tags.
  - Using this tag, you can insert and reproduce formatted text, preserving its originallayout.
  - This tag is frequently used to show code listings, tabulated Information, and
  - blocks of text that were created for some text-only form, such as electronic mailmessages and news postings.

Syntax:

<PR>…….

</PRE>

Example:

<PRE>9/20/97 8:00 a.m.Room 218

9/21/97 9:00 a.m.Room 218

9/22/97 2:00 p.m.Room 111 </PRE>

Output:

9/20/97 8:00 a.m.Room 218

9/21/97 9:00 a.m.Room 218

9/22/97 2:00 p.m.Room 111

- **B (boldface)**

The B tag displays text in boldface type.

Syntax

<B>...</B>

Example

My preferred browser is <B>Netscape Navigator</B>.

Output

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My preferred browser is **Netscape Navigator**.

- **U (Underline)**
  a. The U tag underlines the text it encloses.
  b. Gaps between words in the enclosed text are also underlined.

Syntax

<U>...</U>

Example

<U>All the text in this paragraph is underlined.</U>

Output

All the text in this paragraph is underlined

- **I (Italic)**
  a. The I tag displays text in italic.

Syntax

<I>...</I>

Example

Putting text in <I> italic </I> can slant its meaning.

Output

Putting text in *italic* can slant its meaning.

- **TT (Typewriter Font)**
  - The TT tag displays text in the fixed-width font.

Syntax

<TT>...</TT>

- **STRIKE (strikeout type)**
  - The STRIKE tag displays text with a line (strike) through it.
  - The STRIKE tag has the same effect as the S tag.

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Syntax

<STRIKE>...</STRIKE>

Example

<STRIKE> Hello How Are You ? </STRIKE>

Output

~~Hello How Are You?~~

- **SUB (subscript)**

  - The SUB tag displays text as a subscript.
  - A subscript appears slightly below the baseline (bottom edge) and in a smallerfont.

Syntax

_{...}

Example

The chemical notation for water is H₂0.

Output

The chemical notation for water is H20.

- **SUP (superscript)**

  - The SUP tag displays text as a superscript.
  - A superscript appears slightly above the top of the preceding text and in a smallerFont.

Syntax

^{...}

Example

If Einstein was right, then E=mc².

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Output

If Einstein was right, then $E=mc^2$.

- **BIG (bigger font size)**

  - The BIG tag increases the font size from its current value by 1.
  - It has the same effect as using the FONT tag with a SIZE value of +1.

Syntax

<BIG>...</BIG>

- **STRONG (strong emphasis)**

  - The STRONG tag displays text with a strong emphasis.
  - Netscape Navigator uses boldface to indicate strong emphasis.

Syntax

<STRONG>...</STRONG>

Example

<STRONG>CAUTION!</STRONG>Do not press the reset key

Output

CAUTION! Do not press the reset key

- **SMALL (smaller font size)**

  - The SMALL tag reduces the font size from its current value by 1.
  - It has the same effect as using the FONT tag with a SIZE value of -1.

Syntax

<SMALL>...</SMALL>

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- **Font (font color, face, and size)**

  - The FONT tag lets you change the color, size, and typeface (font family) of the font.
  - All text between the <FONT> and </FONT> tags is displayed with the specified font characteristics.
  - If the BASEFONT tag has previously been used to set the base font, font size Changes specified with the SIZE attribute in the FONT tag are relative to the base font. Otherwise they are relative to the default font for the browser.

  Syntax

```
<FONT
 COLOR="color"
 FACE="fontlist"
 SIZE="number">
...
</FONT>
```

COLOR="color"

- defines the desired text color.

FACE="fontlist"

- specifies a comma-separated list of font faces.
- Navigator uses the first font in the list if it is available, otherwise it uses the second font in the list if it is available, and so on.
- If none of the specified fonts are available, no font face change occurs.

SIZE="number"

- Defines the relative *size* of the font, in a range from 1 to 7, with

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a default sizeof 3.

- A value of 1 results in the smallest font, and a value of 7 results in the largestfont.
- You can also specify the size using a plus or minus sign in front of the numberto change the size with respect to the base font size.

Example

```
<FONT face="timesroman,serif"
    size=18 color=red> Red font that
    has a size of 18 points.
</font>
```

SR. NO	QUESTION	ANSWER
1	<P> TAG IS USED FOR _____	WRITING PARAGRAPH
2	HEADING TEGS ARE_____	<H1> TO <H6>
3	<PRE> TAG IS USED FOR ____	WRITE PREFORMATTING TEXT
4	<B> TAG IS USED FOR _____	FOR BOLD FONT
5	<I> TAG IS USED FOR _____	FOR ITALIC FONT
6	<U> TAG IS USED FOR _____	FOR UNDERLINE TEXT
7	<BIG> TAG INCREASES FONT SIZE BY_	1
8	<SMALL> TAG DECREASES FONT SIZE BY__	1
9	WHAT IS THE USE OF <SUP> TAG?	DISPLAY TEXT IN SUPER SCRIPT
10	WHAT IS THE USE OF <SUB> TAG?	DISPLAY TEXT IN SUB SCRIPT

Q.2. EXPLAIN LIST TAGS WITH EXAMPLE. (3 OR 5M)(IMP)

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DETAILS

- **OL (Ordered List)**
  - The OL tag displays an ordered, or numbered, list.
  - The default numbering style is determined by the browser, but you can use the
  - tag's TYPE attributes to change the numbering sequence and numbering style.
  - Use the LI tag to designate the individual list items.

Syntax

<OL

START="*value*"

TYPE="A"|"a"|"I"|"i"|"1" >

START="*value*"

</OL>

START="value"

- Indicates the starting number for the list.
- The number must be a positive integer.

TYPE

- Defines the type of numbering sequence used for each list item.
- The value can be one of the following:
  - **A** specifies a sequence of uppercase letters
  - **a** specifies a sequence of lowercase letters
  - **I** specifies a sequence of uppercase Roman numerals
  - **i** specifies a sequence of lowercase Roman numeral
  - **1** specifies a sequence of numbers.

Example

The following example uses the LI tag to define three list elements in an ordered list. The numbers are shown as roman numerals and the first item has the number three.

<OL START="3" TYPE="I">

<LI> Use a text editor or Netscape Composer to create your HTML file.

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```
<LI> Put the HTML files on a web server.
<LI> Test the files by viewing them in a web browser
</OL>
```

Web Browser Display Following Output

III. Use a text editor such as Netscape Composer to create your HTML file.
IV. Put the HTML files on a web server.
V. Test the files by viewing them in a web browser.

- **UL (Unordered List)**
  - The UL tag displays a bulleted list.
  - You can use the tag's TYPE attribute to change the bullet style.
  - Use the LI tag to designate the individual list items in the list.

Syntax

```
<UL TYPE="CIRCLE"|"DISC"|"SQUARE" </UL>
```

TYPE

- Defines the type of bullet used for each list item.
- The value can be one of the following:
- **CIRCLE** specifies a hollow bullet.
- **DISC** specifies a solid round bullet (Netscape Navigator's default).
- **SQUARE** specifies a square bullet.

Example

```
<UL TYPE=SQUARE>
<LI>Edit web pages directly in Navigator
<LI> Easy options for setting background and link colors
<LI>As easy to use as any text editor
<LI> No need to learn HTML
</UL>
```

- **LI (List Item)**

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- The LI tag indicates an itemized element, which is usually preceded by a bullet, a
- number, or a letter.
- The LI tag is used inside list elements such as OL (ordered list) and UL
- (unordered list)
- The LI tag does not require a closing tag.

Syntax

<LI TYPE="DISC"|"CIRCLE"|"SQUARE"|"A"|"a"|"I"|"i"|"1" >

TYPE

The value can be one of the following:

- **CIRCLE** specifies a hollow bullet.
- **DISC** specifies a solid round bullet.
- **SQUARE** specifies a square bullet.
- **A** specifies a sequence of uppercase letters
- **a** specifies a sequence of lowercase letters
- **I** specifies a sequence of uppercase Roman numerals
- **i** specifies a sequence of lowercase Roman numeral
- **1** specifies a sequence of numbers.

The values DISC, CIRCLE, and SQUARE can be used in unordered lists, while the values A, a, I, i, and 1 can be used in ordered lists that have a numerical sequence.

- **DL(definition list)**
  - The DL tag encloses a definition list.
  - A definition list contains terms, which are defined with the DT tag, and definitions, whichare defined with the DD tag.

Syntax

<DL>…..</DL>

a. **DT(definition term)**
   - The DT tag specifies a term in a definition list.
   - The DT tag must be used in a DL tag.
   - Usually a DT tag is followed by a DD tag that describes the term in the DT tag.
   - The DT tag does not require a closing tag.

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b. DD(definition description/data)

- The DD tag displays a definition description in a definition list.
- The DD tag must be used within a DL tag and usually follows immediately after aDT tag that indicates the term being defined.
- The DD tag does not require a closing tag.

Example For <DL> <DT> <DD> Tag

```
<DL>
    <DT>HTML
        <DD>This tag marks a text file as an HTML document.
    <DT>HEAD
        <DD>This tag encloses the heading for the HTMLdocument.
    <DT>BODY
        <DD>This tag displays the body for the HTML document.
    <DT>DL
        <DD>This tag displays a definition list in the HTMLdocument.
    <DT>DT
        <DD>This tag displays a term in a definition list.
    <DT>DD
        <DD>This tag displays a definition description.
</DL>
```

Web Browser Display Following Output

HTML: This tag marks a text file as an HTML document.

HEAD: This tag encloses the heading for the HTML document.

BODY: This tag displays the body for the HTML document.

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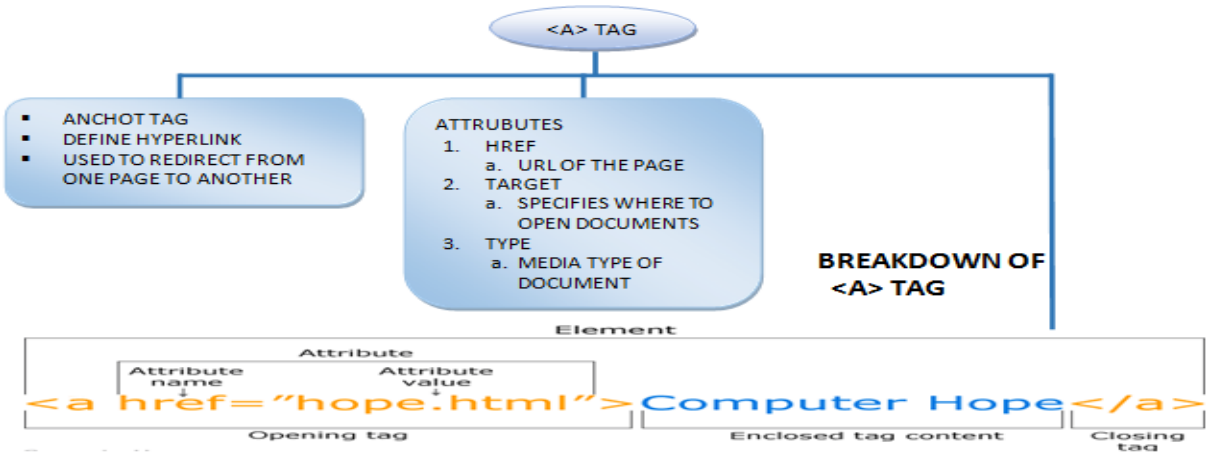
DL : This tag displays a definition list in the HTML document.

DT : This tag displays a term in a definition list.

DD : This tag displays a definition description.

SR. NO	QUESTION	ANSWER
1	LIST OUT ALL LIST TAGS.	1. <OL> 2. <UL> 3. <DL>
2	<OL> TAG IS USED FOR_____	CREATING ORDERED LIST
3	<UL> TAG IS USED FOR_____	CREATING UNORDERED LIST
4	<DL> TAG IS USED FOR_____	CREATING DEFINITION LIST
5	<LI> TAG IS USED FOR _____	REPRESENT ITEMS IN LIST
6	FULL FORM OF <DT>_____	DEFINITION TERM
7	FULL FORM OF <DD>_____	DEFINITION DESCRIPTION
8	VALUES FOR TYPE ATTRIBUTE IN <OL> TAG ARE_____	- TYPE = 1 - TYPE = A - TYPE = a - TYPE = I - TYPE = i
9	VALUES FOR TYPE ATTRIBUTE IN <UL> TAG ARE_____	- TYPE = DISC - TYPE = SQUARE - TYPE = CIRCLE

➢ **EXPLAIN LINK TAGS WITH EXAMPLE (ANCHOR TAG). (3 M)(IMP)**



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DETAILS

- A hypertext link is a piece of content that the user can click to invoke an action.
- The most common actions are scrolling to a different place in the current document and opening a new document.
- A hypertext link can contain text and/or graphics.
- To define a hypertext link, use the <A> tag with an HREF attribute to indicate the start of the hypertext link, and use the </A> tag to indicate the end of the link.
- When the user clicks any content between the <A HREF> and </A> tags, the link is activated.
- The value of the HREF attribute must be a URL.
- Most browsers display hypertext links in a color different from that of the rest of the document so that users can easily identify them.

Syntax

<A HREF="location"> ... </A>

HREF="location"

- Specifies a destination URL for the link.
- The most common value here is a document name or an anchor.
- To specify a document to open, provide the URL for the document, either as an absolute or relative URL.
- An example of an absolute URL is:
  HREF=http://home.netscape.com/index.html
- An example of a relative URL is:
  HREF="documents/nextdoc.html"

EXAMPLE

```
<html>
    <body>
```

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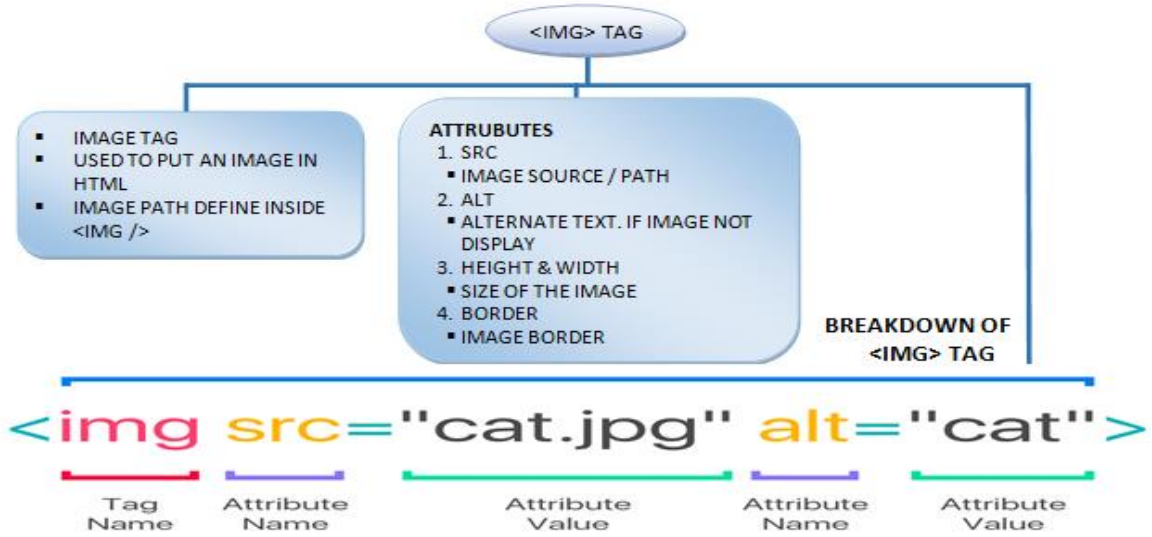
Click on thislink to go on home page of SHREE H.N.SHUKLA GROUP OF COLLEGES.
</body></html>

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHICH TAG IS USED TO GIVE HYPERLINK?	<A> TAG
2	<A> TAG IS USED FOR_____	REDIRECT FROM ONE PAGE TO ANOTHER
3	LIST OUT SIMPLE ATTRIBUTES OF <A> TAG	1. HREF 2. TARGET 3. TYPE
4	HREF ATTRIBUTE IS USED FOR_____	URL OF THE PAGE
5	TARGET ATTRIBUTE IS USED FOR____	SPECIFIES WHERE TO OPEN DOCUMENTS
6	TYPE ATTRIBUTE IS USED FOR_____	MEDIA TYPE OF DOCUMENT

Q.2. EXPLAIN IMAGE TAGS WITH EXAMPLE. (3 M)(MIMP)



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DETAILS

- The IMG tag specifies an image to be displayed in an HTML document.
- An image can be a plain image that simply appears on the page.
- An image can be embedded in an <A HREF> tag so that the user can click it to open a URL.
- An image can also be an image map, which has multiple click able areas that each link todifferent URLS.

Syntax

<IMG SRC="location" ALT="alterntiveText" ALIGN="alignment" BORDER="borderWidth" HEIGHT="height" WIDTH="width" HSPACE="horizMargin" VSPACE="verticalMargin" >

SRC="location"

- The SRC attribute is required.
- Specifies the URL of the image to be displayed in the document.

ALT="alternativeText"

- Specifies text to be displayed if the browser does not support the IMG tag or if the userhas suspended image loading in the browser.

ALIGN

- Specifies the alignment of the image in relation to the surrounding text.
- If you do not specify a value for ALIGN, Navigator uses BOTTOM as the default.
- Values are Left,right,center,middle,top,bottom

BORDER="borderWidth"

- Specifies the width, in pixels, of a border around the image.
- The value must be an integer.

HEIGHT="height"

- Specifies the height of the image, either in pixels or as a percentage of the height of the window, frame, or positioned block of HTML that contains the image.

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- To indicate a number of pixels, specify the value as an integer, for example, "100". To indicate a percentage, specify the value as an integer followed by the percentage sign, for example "20%".

WIDTH="width"

- Specifies the width of the image either in pixels or as a percentage of the window, frame,or positioned block of HTML containing the image.
- To indicate a number of pixels, specify the value as an integer, for example, "100". To indicate a percentage, specify the value as an integer followed by the percentage sign, for example, "20%".

HSPACE="horizMargin"

- Specifies a margin in pixels between the left and right edges of the image and surrounding text and images.
- Give the value as an integer.

VSPACE="verticalMargin"

- Specifies a margin in pixels between the top and bottom edges of the image and surrounding text and images.
- Give the value as an integer.

EXAMPLE

```
<html>
    <body>
        <img src="smiley.gif" alt="Smiley face" width="42" height="42">
    </body></html>
```

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHICH TAG IS USED TO DISPLAY IMAGE ON PAGE?	<IMG> TAG
2	FULL FORM OF SRC IS_____	SOURCE
3	LIST OUT SIMPLE ATTRIBUTES OF <IMG>	1. SRC

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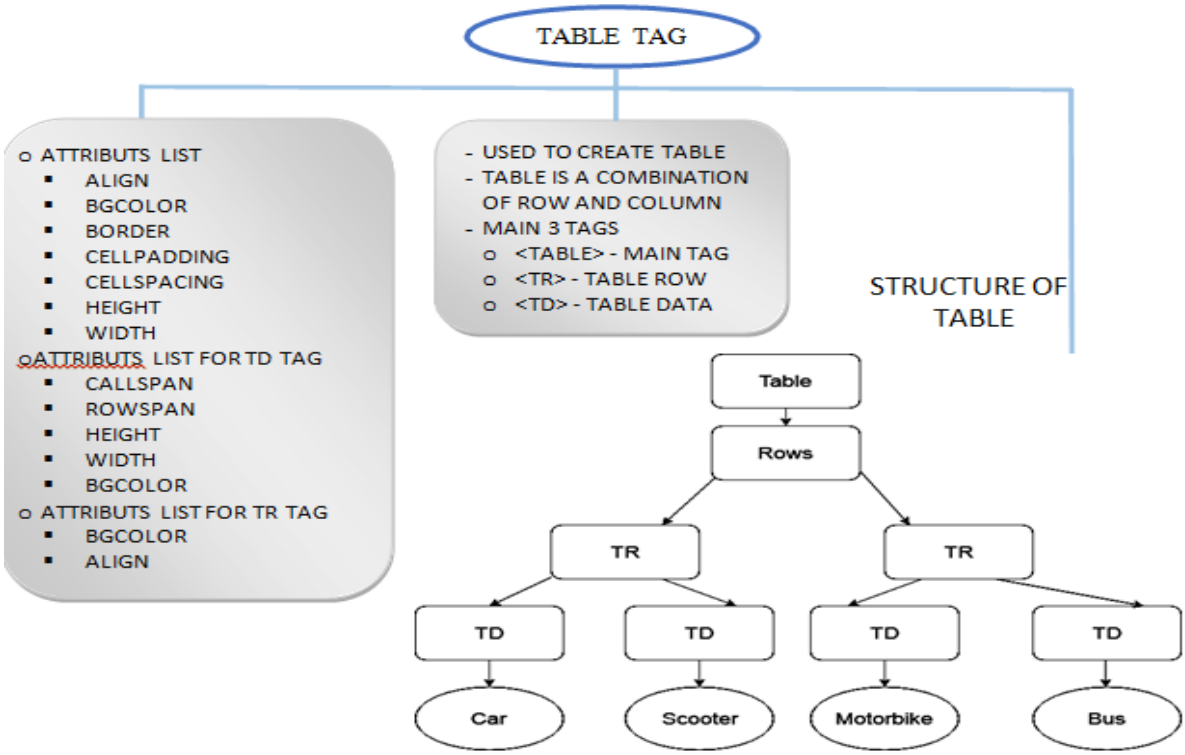
	TAG	

		2. ALT 3. HEIGHT & WIDTH 4. BORDER
4	SRC ATTRIBUTE IS USED FOR_____	IMAGE SOURCE / PATH
5	ALT ATTRIBUTE IS USED FOR_____	ALTERNET TEXT, IF IMAGE NOT DISPLAY
6	HEIGHT & WIDTH ATTRIBUTES ARE USED FOR_____	SIZE OF THE IMAGE
7	BORDER ATTRIBUTE IS USED FOR___	PUT BORDER ON IMAGE
8	HSPACE ATTRIBUTE IS USED FOR___	SPACE BETWEEN LEFT & RIGTH EDGES
9	VSPACE ATTRIBUTE IS USED FOR___	SPACE BETWEEN TOP & BOTTOM EDGES

Q.2. EXPLAIN TABLE TAG WITH EXAMPLE. (3 OR 5M)(MIMP)



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DETAIL

i) TABLE (table)

- The TABLE tag defines a table.
- Inside the TABLE tag, use the TR tag to define rows in the table, use the TH tag
- to define row or column headings, and use the TD tag to define table cells.

Syntax

```
<TABLE
    ALIGN="LEFT|RIGHT|CENTER"
    BGCOLOR="color"
    BORDER="value"
    CELLPADDING="value"
    CELLSPACING="value"
    HEIGHT="
    height"
    WIDTH="
    width" >
</TABLE>
```

ALIGN

- Specifies the horizontal placement of the table.
- LEFT aligns the table on the left (the default).
- The content following the table flows to the right of the table.
- RIGHT aligns the table on the right.
- The content following the table flows to the left of the table.
- CENTER aligns the table in the center.

BGCOLOR="color"

- Sets the color of the background for the table.
- This color can be overridden by a BGCOLOR tag in the TH, TR, or TD tags.

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BORDER="value"

- Indicates the thickness, in pixels, of the border to draw around the table.
- Give the value as an integer.
- A value of 0 means the table has no border.
- You can also supply the BORDER attribute without specifying a value for it to indicate that the table has a border of the default thickness.

CELLPADDING="value"

- Determines the amount of space, in pixels, between the border of a cell and thecontents of the cell.
- The default is 1.

CELLSPACING="value"

- Determines the amount of space, in pixels, between individual cells in a table.
- The default is 2.

HEIGHT="height"

- Specifies the height of the table.
- The default is the optimal height determined by the contents of each cell.
- The height value can be a number of pixels, given as an integer, or a percentage of the height of the page or parent element, given as an integer followed by thepercent sign.
- The table is scaled to fit the specified height and width.

WIDTH="width"

- Defines the width of the table.
- The default is the optimal width determined by the contents of each cell.
- The width value can be a number of pixels, given as an integer, or a percentage of the width of the page or parent element, given as an integer followed by the percentsign.
- The table is scaled to fit the specified height and width.

ii) CAPTION (table caption)

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- The CAPTION tag defines a caption for a table.
- Place the CAPTION tag within the TABLE tag but not inside the TD or the TR tags, whichindicate table cells and table rows respectively.

Syntax

<CAPTION ALIGN="BOTTOM"|"TOP">...</CAPTION>

ALIGN

- Specifies the placement of the caption within a table.
- BOTTOM places the caption at the bottom of the table.
- TOP places the caption at the top of the table. TOP is the default.

iii) TR (table row)

- The TR tag specifies a table row.
- Use the TR tag inside a TABLE tag.
- The TR tag can contain TH tags, which indicate table headings, and TD tags, which indicatetable cells.

Syntax

<TR ALIGN="CENTER|LEFT|RIGHT" BGCOLOR="color" > </TR>

ALIGN

- specifies the horizontal placement of the table:
- CENTER centers the table .
- LEFT aligns the table to the left (the default).
- RIGHT aligns the table to the right.

BGCOLOR="color"

- sets the default color of the background of the table row.
- Table cells defined with the TD tag inside the row can set their own backgroundcolor.

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iv) TD (table data)

i. The TD tag specifies text in a cell in a table.
ii. Use the TD tag inside a TR tag inside a TABLE tag.

Syntax

```
<TD
    ALIGN="CENTER|LEFT|RIGHT" BGCOLOR="color"
  COLSPAN="value"
  ROWSPAN="value"
  HEIGHT="pixelHeight"
  WIDTH="pixelWidth"></TD>
```

ALIGN

- Specifies the horizontal placement of the contents of the table cell:
- CENTER centers the content within the cell.
- LEFT aligns the content with the cell's left edge (the default).
- RIGHT aligns the content with the cell's right edge.

VALIGN

- Specifies the vertical placement of the contents of the cell:
- BASELINE aligns the content with the cell's baseline.
- BOTTOM aligns the content with the cell's bottom.
- MIDDLE centers the content within the cell (the default).
- TOP aligns the content with the cell's top.

BGCOLOR="color"

- Sets the color of the background of the table cell.

COLSPAN="value"

- Indicates the number of columns the cell spans.
- Give the number as an integer.

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ROWSPAN="value"

- Indicates the number of rows the cell spans.
- Give the value as an integer.

HEIGHT="pixelHeight"

- Specifies the suggested height of the table cell, in pixels.

WIDTH="pixelWidth"

- specifies the suggested width of the table cell, in pixels.

v) **TH (table heading)**

- The TH tag specifies a table cell whose contents are usually displayed in a bolder
- font than those of regular table cells.
- The intent of the TH tag is that you use it for column or row headings.

Syntax

<TH ALIGN="CENTER|LEFT|RIGHT" ></TH>

Example Of Table Tags

```
<TABLE BGCOLOR=yellow BORDER CELLPADDING="8" CELLSPACING="4" COLS="3">
    <TR><TH> English </TH><TH> Spanish </TH><TH> German </TH></TR>
    <TR><TD> one </TD><TD> uno </TD><TD> ein </TD></TR>
    <TR><TD> two </TD><TD> dos </TD><TD> zwei </TD></TR>
    <TR><TD> three </TD><TD> tres </TD><TD> drei </TD></TR>
    <CAPTION ALIGN="BOTTOM"> <B>Table 1</B>: Tables are as easy as one, two,three
    </CAPTION>
</TABLE>
```

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Output

English	Spanish	German
one	uno	ein
two	dos	zwei
three	tres	drei

Table 1: Tables are as easy as one, two, three

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHICH TAG IS USED TO CREATE TABLE?	<TABLE> TAG
2	WHAT IS THE USE OF <TR> TAG?	CREATE TABLE RAW
3	WHAT IS THE USE OF <TD> TAG?	TO DISPLAY DATA IN TABLE
4	WHAT IS THE USE OF <TH> TAG?	CREATE TABLE HEADING
5	WHAT IS THE USE OF CELLPADDING ATTRIBUTE?	SPACE BETWEEN CELL BORDER AND CONTENT
6	WHAT IS THE USE OF CELLSPACING ATTRIBUTE?	SPACE BETWEEN TWO CELLS
7	BORDER ATTRIBUTE IS USED FOR___	PUT BORDER ON TABLE
8	BGCOLOR ATTRIBUTE IS USED FOR_____	BACKGROUND COLOR OF TABLE
9	TO MARGE ROWS AND COLUMNS WHICH	COLSPAN AND ROWSPAN

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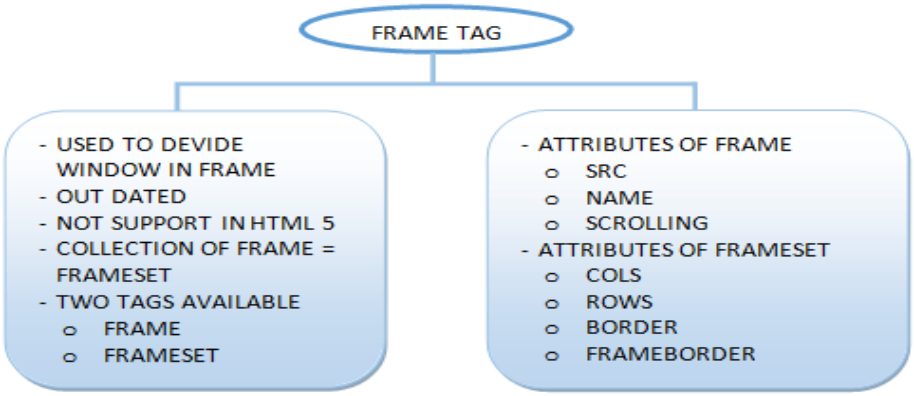
	ATTRIBUTES ARE USED?	

- **EXPLAIN FRAME TAG WITH EXAMPLE. (3 M)**



DETAILS

i) FRAMESET (set of frames)

- The FRAMESET tag defines a set of frames that appear in a web browser window.
- The FRAMESET tag contains one or more FRAME tags that each describes a frame.
- The only place the FRAMESET tag can be used is in a frame definition document, which is an HTML document that contains the FRAMESET and FRAME tags that describe the framesets and frames that make up a Navigator window.
- An HTML document that contains a FRAMESET tag cannot contain a BODY tag.
- A frameset can specify that its frames be laid out in rows or columns.

Syntax

```
<FRAMESET
    COLS="columnWidthList"
    ROWS="rowHeightList"
    BORDER="pixWidth"
    BORDERCOLOR="color"
    FRAMEBORDER="YES"|"NO
    ">
```

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</FRAMESET>

- You must supply at least one of the COLS or ROWS attributes.

COLS="columnWidthList"

- Specifies a comma-separated list of values giving the width of each frame in the frameset.
- If one of the values is missing, the browser sizes the corresponding frame to fit the space available.
- The browser may approximate some values to make the total width of the columns equal to the width of the window.
- The value of each item in the column WidthList can be one of the following:
  - Width of a frame in pixels.
  - Width of a frame as a percentage of its parent frame or window.
- An asterisk (*), which means "as much space as possible," which is the space left over after space has been allocated to all columns that specify their width as pixel value or a percentage value.
- The total available leftover space is divided equally between all columns that use an asterisk.

ROWS="rowHeightList"

- Specifies a comma-separated list of values giving the height of each frame in the frameset.
- If one of the values is missing, the corresponding frame is sized to fit the space available.

BORDER="pixWidth"

- specifies the thickness of frame borders for all frames in an outermost frameset.
- A setting of 0 causes all frames in the frameset to have no border between them.
- A setting of 3 causes a border of 3 pixels.
- If no BORDER tag is present, the default is 5 pixels.

BORDERCOLOR="color"

- specifies the color of a frame's borders.

FRAMEBORDER

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- Determines how frame borders are displayed.
- YES results in an outline-3D border.
- NO suppresses the 3D border.

ii) FRAME (window region)

- The FRAME tag creates a frame, which is an individual, independently scrollable region of aweb browser.
- The FRAME tag must be used within a FRAMESET tag.
- The FRAMESET tag contains a set of FRAME tags, which each define a frame in the mainwindow.
- Each frame has a distinct URL that determines the content displayed by the frame.

Syntax

```
<FRAME
 BORDERCOLOR="c
 olor"
 FRAMEBORDER="
 YES"|"NO"
 MARGINHEIGHT="marginHeight"
 MARGINWIDTH="marginWidth"
 NAME="frameName"    NORESIZE
 SCROLLING="YES"|"NO"|"AUTO
 "  SRC="URL" >
```

BORDERCOLOR="color"

- Specifies the color of the frame's borders.

FRAMEBORDER

- Determines whether or not the frame has visible borders.
- YES results in an outline-3D border.
- NO suppresses the 3D border.

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MARGINHEIGHT="marginHeight"

- Specifies a margin, in pixels, between the top and bottom edges of the frame andthe frame contents.

MARGINWIDTH="marginWidth"

- Specifies a margin, in pixels, between the left and right edges of the frame and theframe contents.

NAME="frameName"

- Specifies the name of the frame.
- The value of the NAME attribute must begin with an alphanumeric character.

NORESIZE

- Specifies that users cannot resize the frame.
- If a frame adjacent to an edge is not resizable, the entire edge is not resizable, and consequently other frames adjacent to that edge are not resizable.

SCROLLING

- Specifies whether scrollbars are available on a frame:
- YES specifies that scrollbars are always available.
- NO specifies that scrollbars are never available.
- AUTO specifies that the browser determine whether to display scroll bars based onthe size of the frame and its content.
- If you do not specify a value for SCROLLING, the default value is AUTO.

SRC="URL"

- Specifies the URL for the document to be displayed in the frame.

1 WORD QUESTION - ANSWER

2 – Vaishalinagar
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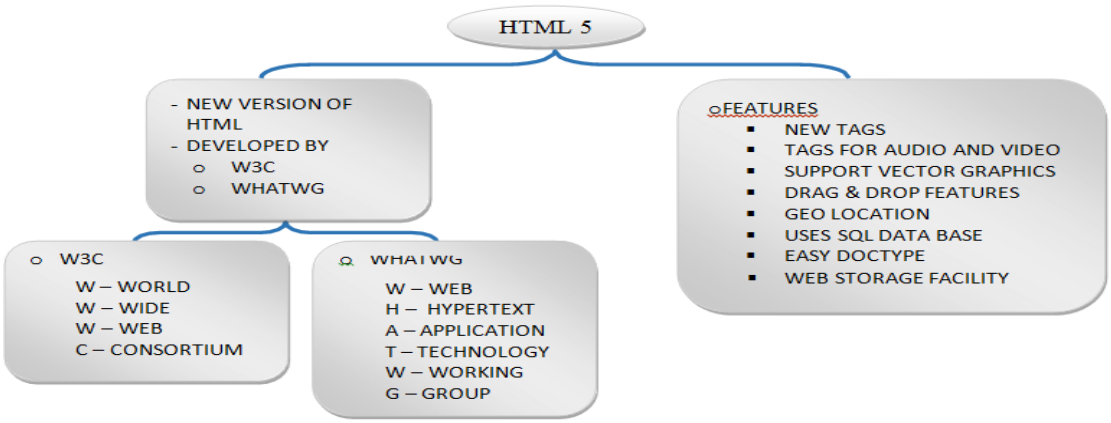
SR. NO	QUESTION	ANSWER
1	HOW TO DEVIDE BROWSER WINDOW?	USING FRAME TAG
2	FRAMESET TAG MEANS_____	SET OF FRAMES
3	FRAME TAG IS AVAILABLE IN HTML 5____	NO
4	ALTERNATE OF FRAME TAG IS__	DIV TAG
5	COLS ATTRIBUTE IS USED FOR_	WIDTH OF EACH FRAME
6	ROWS ATTRIBUTE IS USED FOR_	HEIGHT OF EACH FRAME
7	BORDER ATTRIBUTE IS USED FOR___	PUT BORDER ON FRAME
8	BGCOLOR ATTRIBUTE IS USED FOR_____	BACKGROUND COLOR OF FRAME

- **EXPLAIN HTML 5 WITH DOCUMENT STRUCTURE AND ATTRIBUTES. (3 OR 5 M)(IMP)**



DETAIL

- The parent concern of HTML5, The **Web Hypertext Application Technology Working Group (WHATWG)** along with **World Wide Web Consortium (W3C)** began work on the new standard in 2004.
- In April 2010, Apple CEO Steve Jobs issued a public letter claiming HTML5

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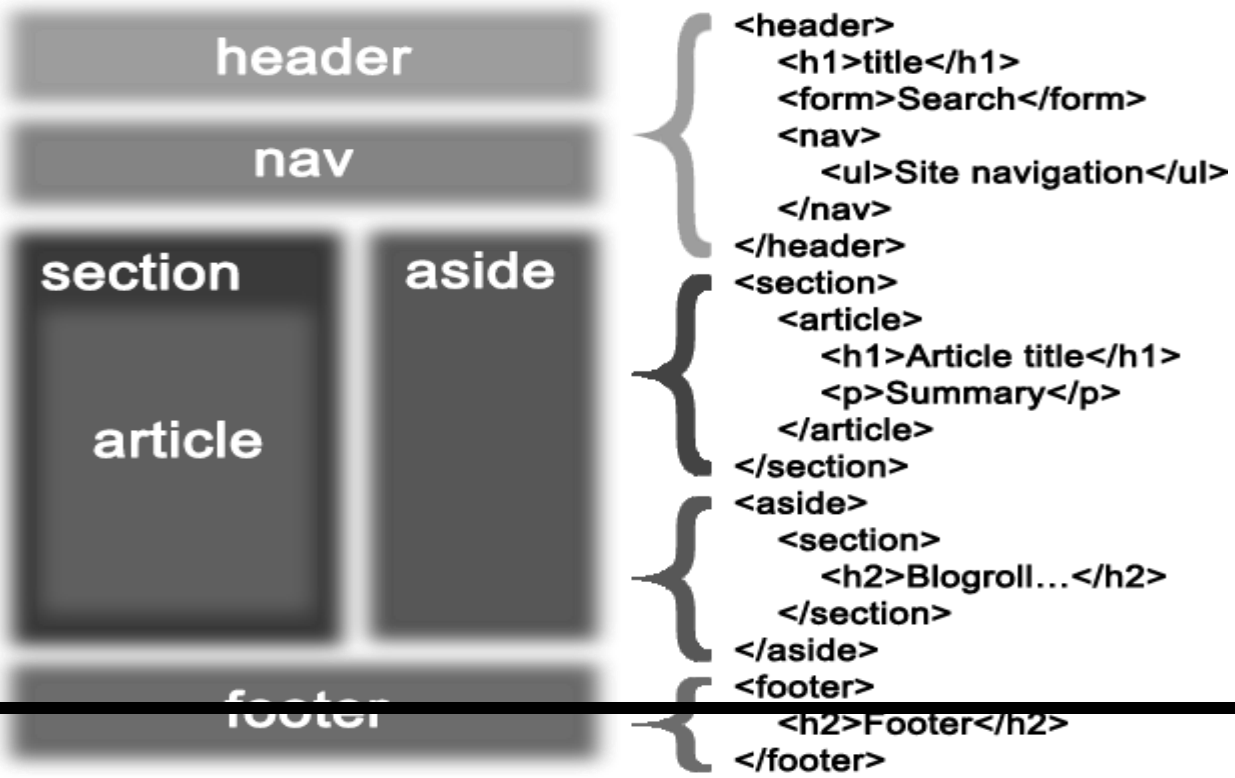
will replace Adobe Flash as far watching Video and many other similar consumption of content is concerned

- Using HTML5 you can make web document much more meaningfully to read (for Search Engines as well as for authors).

Features:

- It has introduced new multimedia features which supports audio and video controls by using
  <audio> and <video> tags.
- There are new graphics elements including vector graphics and tags.
- Drag and Drop- The user can grab an object and drag it further dropping it on a new location.
- Geo-location services- It helps to locate the geographical location of a client.
- Web storage facility which provides web application methods to store data on web browser.
- Uses SQL database to store data offline.
- Allows to draw various shapes like triangle, rectangle, circle, etc.
- Easy DOCTYPE declaration i.e. <!doctype html>



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- **DOCUMENT STRUCTURE OF HTML 5 (MIMP)**

DETAIL

Content structure

In HTML 4 there is no structure specialized tags, the content is structured with

 and other containers. HTML 5 introduces multiple tags to help represent the usual structure of documents.

<header>

Contains an introduction to a part or the whole page.

<footer>

Contains information that are usually placed at the end of a section. We can put it at the end of a section or page, but also anywhere in the section. For example it contains a link on the index, which can be placed below the title.

<section>

Sections mark out parts of content. It is then up to the webmaster to associate a style sheet or using them dynamically in scripts. Very basically, we can frame a section with a border, or separate it from the above by a space.

<hgroup>

Represents the header of a section. The <header> tag may contain at the beginning a <hgroup> tag.

<nav>

This container is intended to enclose a group of links.

<article>

Denotes a typical content that can be found on different pages, or even different sites. This can be a forum post, a newspaper article and this is for tools to

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extract more easily the content (by separating the unnecessary data such as navigation menus).

<aside>

To delimit something separate to the actual content, and may define a sidebar.

<address>

- **HTML 5 ATTRIBUTES**

  - Elements may contain attributes that are used to set various properties of an element.
  - Some attributes are defined globally and can be used on any element, while others are defined for specific elements only. All attributes have a name and a value and look like as shown below in the example
  - Following is the example of an HTML5 attributes which illustrates how to mark up a div
    element with an attribute named class using a value of "example" −a value of "example" −

    ```
    <div class="example">...</div>
    ```

  - Attributes may only be specified within start tags and must never be used in end tags.
  - HTML5 attributes are case insensitive and may be written in all uppercase or mixed case, although the most common convention is to stick with lowercase.

Standard Attributes

- The attributes listed below are supported by almost all the HTML 5 tags.

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Attribute	Function
accesskey	Specifies a keyboard shortcut to access an element.
align	Horizontally aligns tags
background	Places an background image behind an element
bgcolor	Places a background color behind an element
class	Classifies an element for use with Cascading Style Sheets.
title	"Pop-up" title for your elements.
valign	Vertically aligns tags within an HTML element.
width	Specifies the width of tables, images, or table cells.

Custom Attributes

- A new feature being introduced in HTML 5 is the addition of custom data attributes.
- A custom data attribute starts with **data-** and would be named based on yourrequirement. Following is the simple example −

  ..

- The above will be perfectly valid HTML5 with two custom attributes called *data-subject* and *data-level*. You would be able to get the values of these attributes using JavaScript APIs or CSS in similar way as you get for standard attributes.

1 WORD QUESTION - ANSWER

SR.NO	QUESTION	ANSWER
1	WHO DEVELOPED HTML5?	WHATWG & W3C
2	FULL FORM OF WHATWG_____	W – WEB H – HYPERTEXT A – APPLICATION

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		T – TECHNOLOGY W – WORKING G – GROUP
3	FULL FORM OF W3C	W – WORLD W – WIDE W – WEB C – CONSORTIUM
4	HTML5 SUPPORT GIO LOCATION SERVICE? (YES OR NO)	YES
5	WHAT <HEADER> TAG DOES?	INTRODUCTION OF WHOLE PAGE
6	WHAT <FOOTER> TAG DOES?	CONTAIN INFORMATION SET AT THE END OF THE PAGE
7	WHAT <SECTION> TAG DOES?	MARK OUT PART OF CONTENT
8	WHAT <HGROUP> TAG DOES?	REPRESENT HEADER SECTION
9	WHAT <NAV> TAG DOES?	PROVIDE NAVIGATION
10	HOW MANY ATTRIBUTES ARE THERE IN HTML5?	2
11	LIST OUT ATTRIBUTES IN HTML5.	STANDARD ATTRIBUTES CUSTOM ATTRIBUTES
12	WHAT DOES ACCESSKEY ATTRIBUTE DOES?	KEYBOARD SHORTCUT TO ACCESS ELEMENTS
13	WHAT DOES ALIGN ATTRIBUTE DOES?	HORIZONTALLY ALIGN ELEMENTS
14	WHAT DOES VALIGN ATTRIBUTE DOES?	VERTICALLY ALIGN ELEMENTS

- **EXPLAIN WEB FORMS. (3 OR 5 M)(MIMP)**

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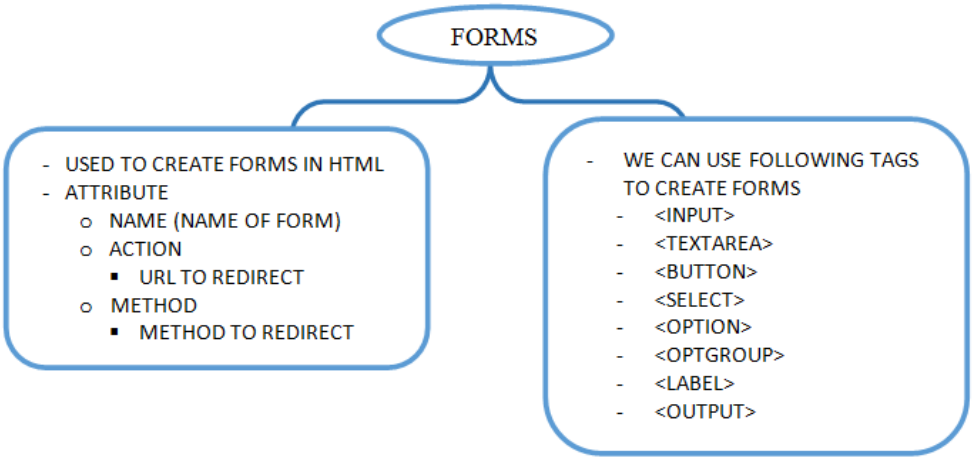

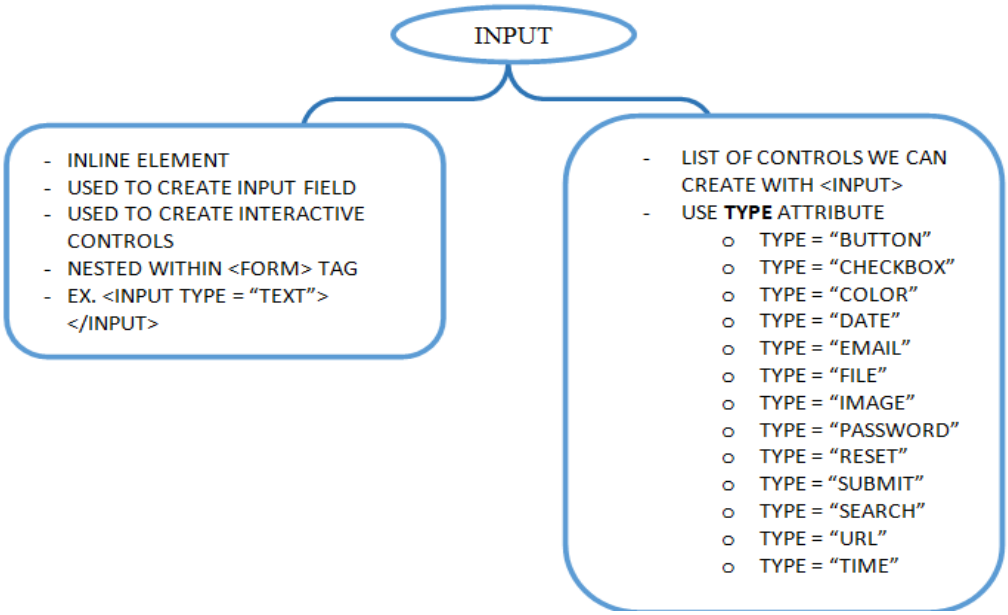

DETAIL

- **FORMS**

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Definition and Usage

- The <form> tag is used to create an HTML form for user input.
- A form can contain input elements like text fields, checkboxes, radio-buttons, submitbuttons and more.
- A forms can also contain select menus, textarea, fieldset, legend, and label elements.
- Forms are used to pass data to a server.

Attribute	Value	Description
action	*URL*	Specifies where to send the form-data when a form is submitted

Example

A simple HTML form with two input fields and one submit button:

```
<form action="form_action.asp" method="get">
 First name: <input type="text" name="fname" /><br />
 Last name: <input type="text" name="lname" /><br />
 <input type="submit" value="Submit" />
</form>
```

HTML 5 WEB FORM

- Web Forms 2.0 is an extension to the forms features found in HTML4.
- Form elements and attributes in HTML5 provide a greater degree of semantic mark-up than HTML4 and remove a great deal of the need for tedious scripting and styling that was requiredin HTML4.
- **The <input> element in HTML4**
  - HTML4 input elements use the type attribute to specify the data type.
- **The <input> element in HTML5**
  - Apart from the above mentioned attributes, HTML5 input elements introduced several new values for the type attribute. These are listed

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below.

1) **HTML <input> tag**

Definition and Usage

- The <input> tag is used to select user information.
- An input field can vary in many ways, depending on the type attribute. An input field can be a text field, a checkbox, a password field, a radio button, a button, and more.

Attribute	Value	Description
accept	*MIME_type*	Specifies the types of files that can be submitted through a fileupload (only for type="file")
align	left right top middl e botto m	Deprecated. Use styles instead. Specifies the alignment of an image input (only for type="image")
alt	*text*	Specifies an alternate text for an image input (only for type="image")
checked	checked	Specifies that an input element should be preselected when the page loads (for type="checkbox" or type="radio")
disabled	disabled	Specifies that an input element should be disabled when thepage loads
maxlength	*number*	Specifies the maximum length (in characters) of an input field (for type="text" or type="password")
name	*name*	Specifies a name for an input element
readonly	*readonly*	Specifies that an input field should be read-only (for type="text" or type="password")
size	*number*	Specifies the width of an input field

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src	*URL*	Specifies the URL to an image to display as a submit button
type	*button checkbox file hidden image password radio reset submit text*	Specifies the type of an input element
value	*value*	Specifies the value of an input element

INPUT TAG (TYPE ATTRIBUTE)

The available types are as follows:

Type	Description	Spec
button	A push button with no default behavior displaying the value ofthe value attribute, empty by default.	
checkbox	A check box allowing single values to be selected/deselected.	
color	A control for specifying a color; opening a color picker when active insupporting browsers.	HTML5
date	A control for entering a date (year, month, and day, with no time). Opens a date picker or numeric wheels for year, month, day when active in supporting browsers.	HTML5
email	A field for editing an email address. Looks like a text input, but has validation parameters and relevant keyboard in supporting browsers and devices with dynamic keyboards.	HTML5
file	A control that lets the user select a file. Use the accept attribute to define thetypes of files that the control can select.	
image	A graphical submit button. Displays an image defined by the src attribute.The alt attribute displays if the image src is missing.	
password	A single-line text field whose value is obscured. Will alert user if site is not	

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	secure.	
radio	A radio button, allowing a single value to be selected out of multiple choiceswith the same name value.	
reset	A button that resets the contents of the form to default values. Not	
	recommended.	
search	A single-line text field for entering search strings. Line-breaks are automatically removed from the input value. May include a delete icon in supporting browsers that can be used to clear the field. Displays a search icon instead of enter key on some devices with dynamic keypads.	HTML5
submit	A button that submits the form.	
text	The default value. A single-line text field. Line-breaks are automatically removed from the input value.	
url	A field for entering a URL. Looks like a text input, but has validation parameters and relevant keyboard in supporting browsers and devices with dynamic keyboards.	HTML5

1 WORD QUESTION - ANSWER

SR. NO	**QUESTION**	ANSWER
1	WHAT IS THE USE OF FORM TAG?	TO CREATE FORM IN HTML
2	WHAT ACTION ATTRIBUTE DO?	PROVIDE URL TO REDIRECT
3	WHICH TWO METHODS ARE USED FOR METHOD ATTRIBUTE?	GET METHOD & POST METHOD
4	WHICH TAGS ARE USED TO CREATE FORMS?	<FORM> <INPUT> <TEXTAREA> <BUTTON> <SELECT> <OPTION> <OPTGROUP>
5	READONLY ATTRIBUTE USE FOR___	MAKE ELEMENT READ

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		ONLY
6	INPUT TAG IS USED TO_____	INPUT ELEMENTS IN FORMS
7	LIST OUT INPUT ELEMENTS.	TEXT RESET SUBMIT COLOR DATE DATE-TIME URL SEARCH PASSWORD IMAGE FILE
8	VALUE ATTRIBUTE IS USED TO_____	SPECIFIES VALUE FOR INPUT
9	MAXLENGTH IS USED TO_____	SPECIFIES MAXIMUM VALUE FOR INPUT
13	WHAT DOES ALIGN ATTRIBUTE DOES?	HORIZONTALLY ALIGN ELEMENTS

- **EXPLAIN AUDIO & VIDEO TAG. (2 OR 3M)(IMP)**

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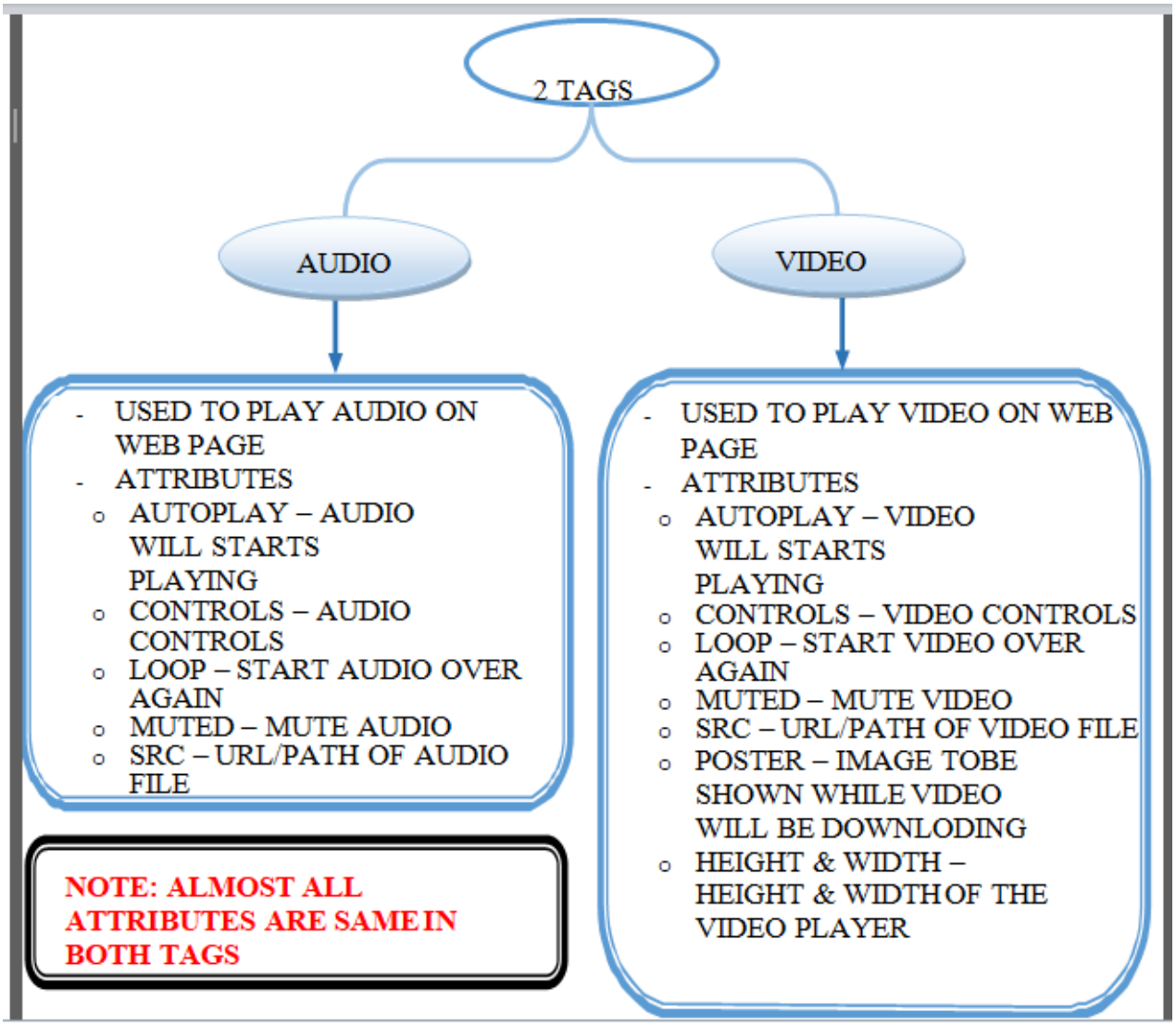

DETAIL

1. **VIDEO TAG**
   - The <video> element is used to embed video content in an HTML document withoutrequiring any additional plugin like Flash player.
   - Support for the <video> element varies accross browsers. At the moment, there are three main video formats that is supported for the video element: MP4, Ogg and WebM.

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- SYNTAX

HTML / XHTML: <video> ... </video>

Attribute	Value	Description
autoplay	autoplay	This Boolean attribute specifies that the video will automatically start playing as soon as it can do so without stopping to finish loading the data.
controls	controls	If specified, the browsers will display controls to allow the user to controlvideo playback, such as play/pause, volume, etc.
height	*pixels*	Sets the height of the video's display area.
loop	loop	This Boolean attribute specifies that the video will automatically start over
		again, upon reaching the end.
muted	muted	This Boolean attribute specifies whether the video will be initially silenced. The default value is false, meaning that the audio will be played when the video is played.
poster	URL	Specifies an image to be shown while the video is downloading, or until the user hits the play button. If this attribute isn't specified, nothing is displayed until the first frame of the video is available; then the first frame is displayed as the poster.
src	URL	Specifies the location of the video file to embed. Alternatively, you can use the preferred <source> tag as it allows for multiple options.
width	pixels	Sets the width of the video's display area.

EXAMPLE

```
<video controls="controls">
  <source src="shuttle.mp4" type="video/mp4">
  <source src="shuttle.ogv" type="video/ogg">
  Your browser does not support the HTML5 Video element.
```

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</video>

2. **AUDIO TAG**
   - The <audio> element is used to embed audio content in an HTML document withoutrequiring any additional plug-in like Flash player.
   - SYNTAX
     HTML / <audio>. </audio>
     XHTML:

Attribute	Value	Description
autoplay	autoplay	This Boolean attribute specifies that the audio will automatically start playing as soon as it can do so without stopping to finish loading the data.
controls	controls	If specified, the browsers will display controls to allow the user to control audioplayback, such as play/pause, volume, etc.
loop	loop	This Boolean attribute specifies that the audio will automatically start overagain, upon reaching the end.
muted	muted	This Boolean attribute specifies whether the audio will be initially silenced. The default value is false, meaning that the audio will be played.
src	*URL*	Specifies the location of the audio file. Alternatively, you can use thepreferred <source> tag as it allows for multiple options.

EXAMPLE

```
<audio controls="controls">
<source src="birds.mp3" type="audio/mpeg">
<source src="birds.ogg" type="audio/ogg">
Your browser does not support the HTML5 Audio element.
</audio>
```

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1 WORD QUESTION - ANSWER

SR. NO	**QUESTION**	ANSWER
1	WHICH TAG IS USED TO PLAY AUDIO ON WEBPAGE?	<AUDIO>
2	WHICH TAG IS USED TO PLAY VIDEO ON WEBPAGE?	<VIDEO>
3	CONTROLS ATTRIBUTE IS USED FOR_____	DISPLAY AUDIO AND VIDEO CONTROLS
4	IN SRC ATTRIBUTE WE CAN PASS____	URL / PATH OF OUR AUDIO ORVIDEO FILE
5	LOOP ATTRIBUTE SPECIFIES_____	THAT AUDIO / VIDEO STARTS AGAIN AND AGAIN
6	MUTED ATTRIBUTE IS USED TO_____	MUTE AUDIO / VIDEO

- **EXPLAIN CANVAS TAG. (2 OR 3M)(IMP)**

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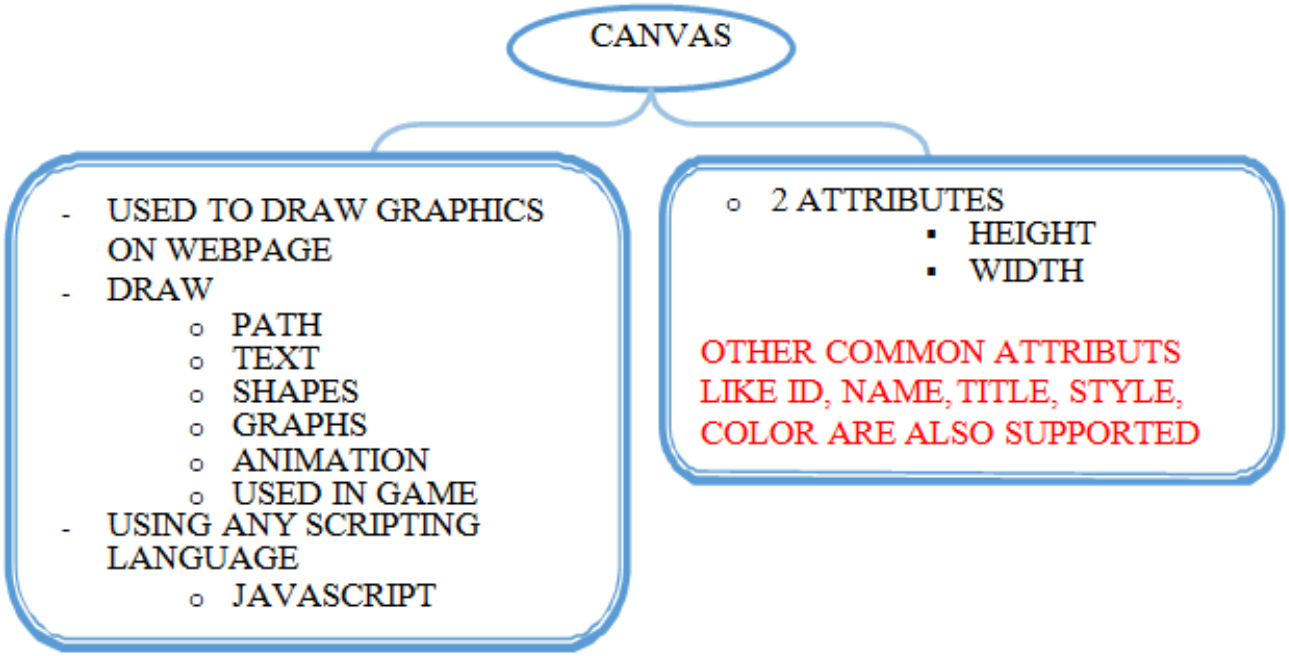

DETAIL

- The <canvas> element defines a region in the document, which can be used to draw graphics onthe fly via scripting (usually JavaScript).
- For example, it can be used to draw path and shapes, graphs or even perform animations.
- The <canvas> element is only a container for graphics. You must use a script to actually drawthe graphics.
- Canvas has several methods for drawing paths, boxes, circles, text, and adding images.

Canvas Examples

- A canvas is a rectangular area on an HTML page. By default, a canvas has no border and nocontent.
- The markup looks like this:

```
<canvas id="myCanvas" width="200" height="100"></canvas>
```

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SYNTAX

HTML / XHTML: <canvas> </canvas>

Basic Canvas Example

```
<canvas id="myCanvas" width="200" height="100" style="border:1px solid #000000;">
</canvas>
```

Drawing with JavaScript

```
var c = document.getElementById("myCanvas"); var
ctx = c.getContext("2d");
ctx.fillStyle = "#FF0000";
ctx.fillRect(0,0,150,75);
```

Draw a Line

```
var c = document.getElementById("myCanvas"); var
ctx = c.getContext("2d");
ctx.moveTo(0,0); ctx.lineTo(200,100);
ctx.stroke();
```

Draw a Circle

```
var c = document.getElementById("myCanvas"); var
ctx = c.getContext("2d");
ctx.beginPath();
ctx.arc(95,50,40,0,2*Math.PI);ctx.stroke();
```

Draw a Text

```
var c = document.getElementById("myCanvas"); var
ctx = c.getContext("2d");
ctx.font = "30px Arial";
ctx.fillText("Hello World",10,50);
```

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UNIT-3

CASCADING STYLE SHEET

- INTRODUCTION TO CSS & TYPES OF CSS
- CLASS & ID SELECTOR
- CSS FONT PROPERTY
- CSS TEXT PROPERTY
- CSS BACKGROUND PROPERTY
- CSS MARGIN PROPERTY
- CSS LIST PROPERTY
- INTRODUCTION TO CSS 3
- CSS 3 BORDER PROPERTY
- CSS 3 GRADIENT PROPERTY
- CSS 3 DROP SHADOW PROPERTY
- CSS 3 2D & 3D TRANSFORM PROPERTY
- CSS 3 TRANSITION PROPERTY
- CSS 3 BOX SIZING PROPERTY
- CSS 3 POSITION PROPERTY
- CSS 3 MEDIA QUERY

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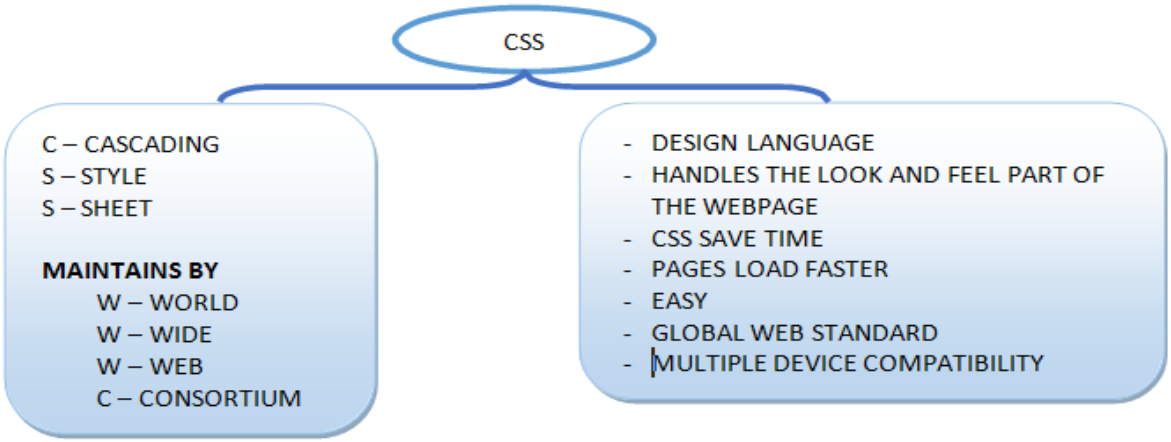
- **WHAT IS CSS? EXPLAIN TYPES OF CSS (3 OR 5 M) (MIMP)**



DETAILS

CSS INTORDUCTION

- **CSS** stands for **C**ascading **S**tyle **S**heets
- Styles define how to display HTML elements
- Styles are normally stored in Style Sheets
- CSS describes **how HTML elements are to be displayed on screen, paper, or in othermedia**
- CSS **saves a lot of work**. It can control the layout of multiple web pages all at once
- External style sheets are stored in CSS files
- CSS Solved a Big Problem
  - HTML was NEVER intended to contain tags for formatting a web page!
  - HTML was created to describe the content of a web page, like:
    - <h1>This is a heading</h1>
    - This is a paragraph.

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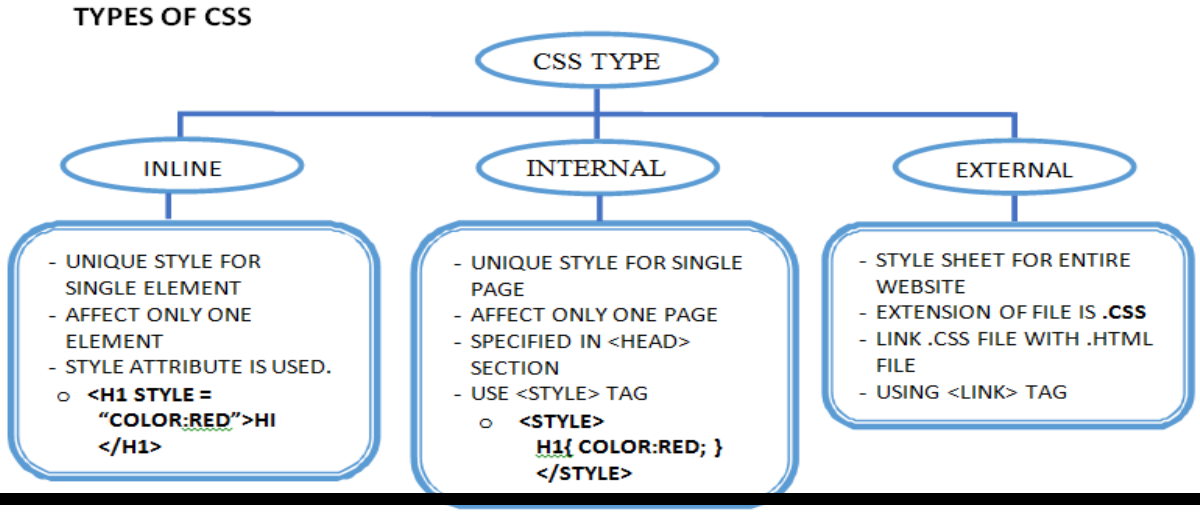
When tags like <font>, and color attributes were added to the HTML 3.2specification, it started a nightmare for web developers.

- To solve this problem, the World Wide Web Consortium (W3C) created CSS.
- CSS removed the style formatting from the HTML page!

Advantages of CSS

- **CSS saves time** − You can write CSS once and then reuse same sheet in multiple HTML pages.
- **Pages load faster** − If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
- **Easy maintena**nce − To make a global change, simply change the style, and all elements
in all the web pages will be updated automatically.
- **Superior styles to HTML** − CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
- **Multiple Device Compatibility** − Style sheets allow content to be optimized for morethan one type of device.
- **Global web standards** − Now HTML attributes are being deprecated and it is beingrecommended to use CSS.



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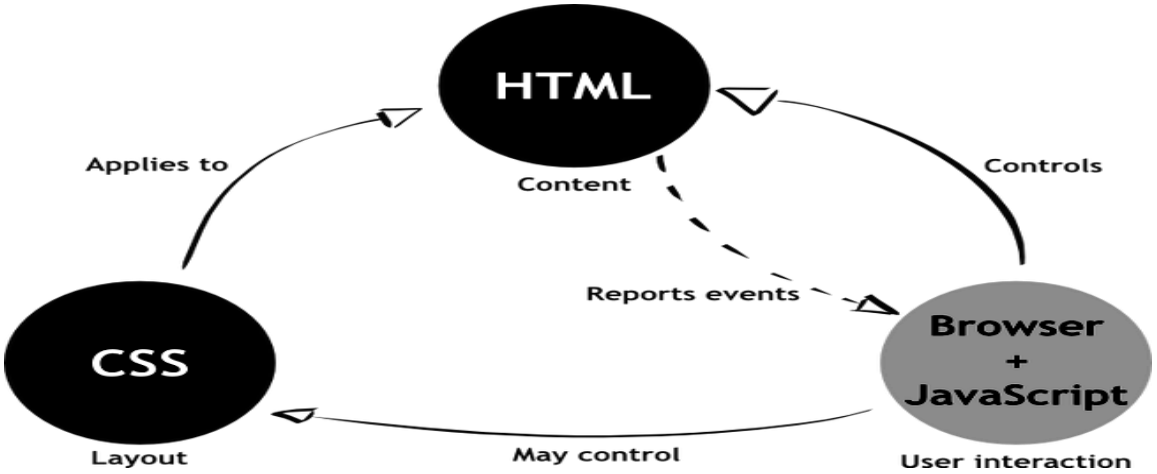
WORKING OF HTML, CSS & JAVASCRIP



How to Insert a Style Sheet

- When a browser reads a style sheet, it will format the document according to it. There arethree ways of inserting a style sheet:
  1. External Style Sheet
  2. Internal Style Sheet
  3. Inline Style

1.External Style Sheet

- An external style sheet is ideal when the style is applied to many pages.
- With an external style sheet, you can change the look of an entire Web site bychanging one file.
- Each page must link to the style sheet using the <link> tag.
- The <link> tag goes inside the head section:

```
<head>
    <link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
```

- The browser will read the style definitions from the file mystyle.css,

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and format thedocument according to it.

- An external style sheet can be written in any text editor. The file should not contain any html tags. Your style sheet should be saved with a .css extension.
- An example of a style sheet file is shown below:

```
Hr {color: sienna}
p {margin-left: 20px}
body {background-image: url("images/back40.gif")}
```

2. Internal Style Sheet

- An internal style sheet should be used when a single document has a unique style. You define internal styles in the head section by using the <style> tag, like this:

```
<head>
    <style type="text/css">
        hr {color: sienna}
        p {margin-left: 20px}
        body {background-image: url("images/back40.gif")}
    </style>
</head>
```

- The browser will now read the style definitions, and format the document according to it.

3. Inline Style Sheet

- An inline style loses many of the advantages of style sheets by mixing content with presentation. Use this method sparingly, such as when a style is to be applied to a single occurrence of an element.
- To use inline styles you use the style attribute in the relevant tag. The style attribute can contain any CSS property.

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- The example shows how to change the color and the left margin of a paragraph:

```
<p style="color: sienna; margin-left:
20px">This is a paragraph</p>
```

1 WORD QUESTION - ANSWER

SR. NO	**QUESTION**	ANSWER
1	FULL FORM OF CSS____	CASCADING STYLE SHEET
2	CSS WAS MANAGED BY_____	W3C
3	FULLFORM OF W3C_____	WORLD WIDE WEB CONSORTIUM
4	CSS IS USED TO_____	HANDLES THE LOOK AND FEEL PART OF THE WEBPAGE
5	HOW MANY TYPES OF CSS ARE THERE?	3
6	LIST OUT TYPES OF CSS.	1. INLINE 2. INTERNAL 3. EXTERNAL
7	INLINE CSS IS USED TO GIVE_____	UNIQUE STYLE FOR SINGLE ELEMENT
8	INTERNAL CSS IS USED TO GIVE_____	UNIQUE STYLE FOR SINGLE PAGE
9	WHAT IS THE USE OF EXTERNAL STYLE SHEET?	STYLE SHEET FOR ENTIRE WEBSITE
10	GIVE THE EXTENSION OF EXTERNAL STYLE SHEET.	.CSS

- **EXPLAIN CLASS SELECTOR AND ID SELECTOR (3 M) (MIMP)**

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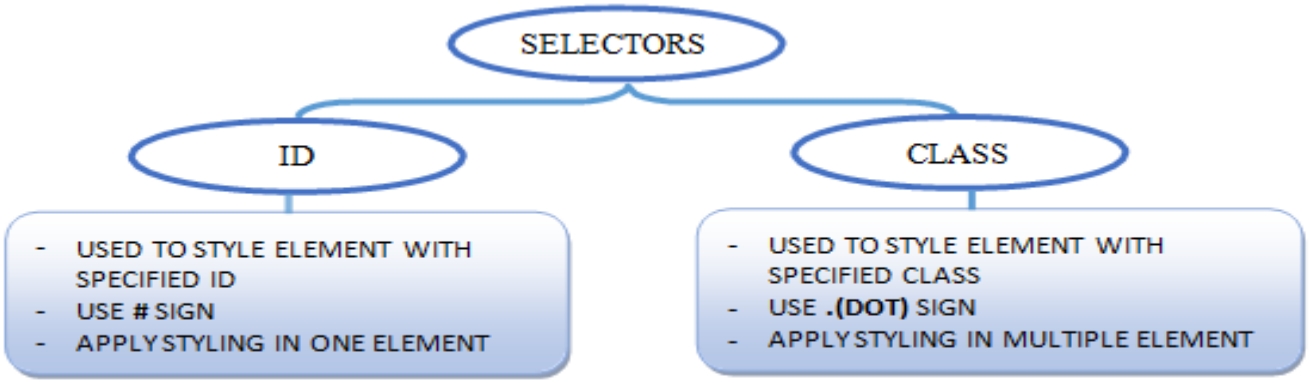

DETAIL

Class Selector

- With the class selector you can define different styles for the same type of HTML element.
- Say that you would like to have two types of paragraphs in your document: one right-aligned paragraph, and one center-aligned paragraph. Here is how you can do it with styles:

```
p.right {text-align: right}
p.center {text-align: center}
```

- You have to use the class attribute in your HTML document:

```
<p class="right">
        This paragraph will be right-aligned.
</p>
<p class="center">
        This paragraph will be center-aligned.
</p>
```

- To apply more than one class per given element, the syntax is:

```
<p class="center bold">
        This is a paragraph.
```

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```
</p>
```

- You can also omit the tag name in the selector to define a style that will be used by all HTML elements that have a certain class. In the example below, all HTML elements with class="center" will be center-aligned:

```
.center {text-align: center}
```

- In the code below both the h1 element and the p element have class="center". This means that both elements will follow the rules in the ".center" selector:

```
<h1 class="center">
This heading will be center-aligned
</h1>
<p class="center">
        This paragraph will also be center-aligned.
</p>
```

The id Selector

- The id selector uses the id attribute of an HTML element to select a specific element.
- The id of an element is unique within a page, so the id selector is used to select one unique element!
- You can also define styles for HTML elements with the id selector. The id selector is defined as a #.
- The style rule below will match the element that has an id attribute with a value of "green":

```
#green {color: green}
```

- The style rule below will match the p element that has an id with a value of "para1":

```
p#para1{
text-align:
center;
color: red}
```

1 WORD QUESTION - ANSWER

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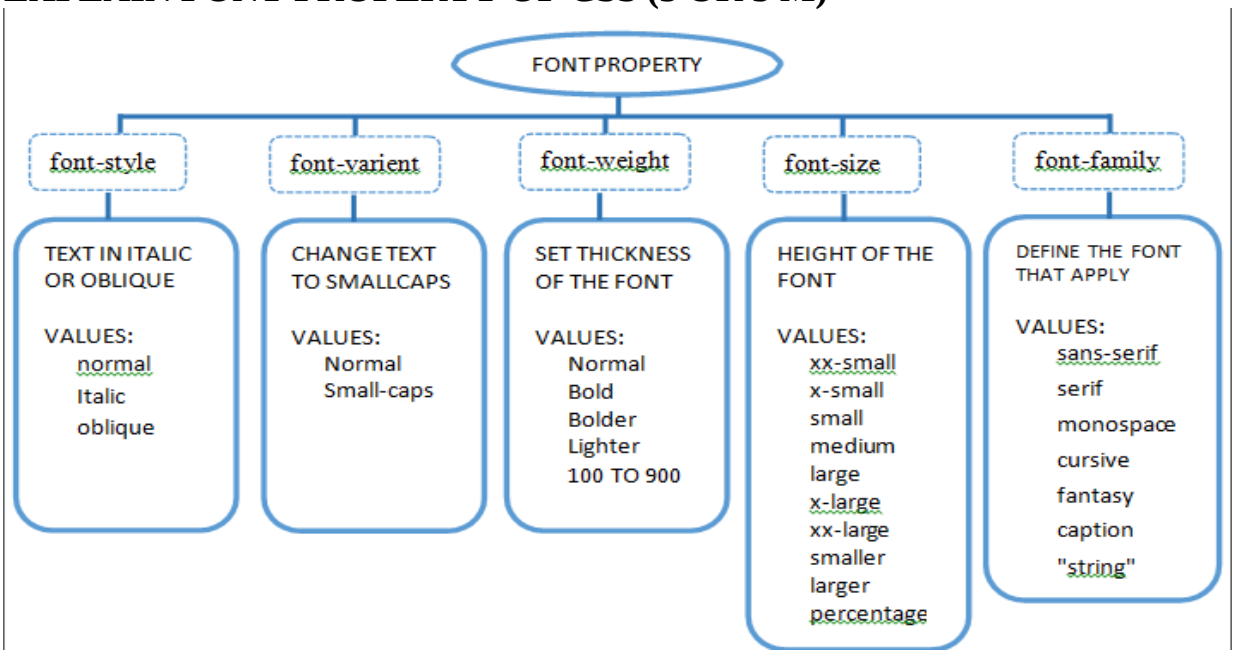
SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF CLASS SELECTOR?	APPLY STYLING IN MULTIPLE ELEMENT
2	WHAT IS THE USE OF ID SELECTOR?	APPLY STYLING IN ONE ELEMENT
3	WHICH SIGN IS USED TO DECLARE CLASS SELECTOR?	.(DOT)
4	WHICH SIGN IS USED TO DECLARE ID SELECTOR?	#
5	HOW MANY TYPES OF SELECTORS ARE THERE?	2

- **EXPLAIN FONT PROPERTY OF CSS (3 OR 5 M)**



DETAIL

- The CSS font properties allow you to change the font family, boldness, size, and the style ofa text.

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1. font-family Property

- The font-family property is a prioritized list of font family names and/or generic familynames for an element.
- The browser will use the first value it recognizes.
- Separate each value with a comma, and always offer a generic-family name as the lastalternative.

Value	Description
family-name *generic-family*	A prioritized list of font family names and/or generic family names for an element.

Example

```
body{font-family: courier, serif}
p{font-family: arial, "lucida console", sans-serif }
<p style="font-family: arial, 'lucida console', sans-serif">
```

2. font-style Property

- The font-style property sets the style of a font.

Value	Description
Normal	Default. The browser displays a normal font
Italic	The browser displays an italic font
oblique	The browser displays an oblique font

Example

```
Body { font-style: italic }
```

3. font-weight Property

- The font-weight property sets how thick or thin characters in text should bedisplayed.

Value	Description

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Normal	Default. Defines normal characters
Bold	Defines thick characters
Bolder	Defines thicker characters
Lighter	Defines lighter characters
100 t o900	Defines from thin to thick characters. 400 is the same as normal, and 700 is the sameas bold

Example

```
p{ font-weight: bold}
```

4. font-size Property

- The font-size property sets the size of a font.

Value	Description
xx-small x-small small medium	Sets the size of the font to different sizes, from xx-small to xx-large.Default value: medium
large x-large xx-large	
smaller	Sets the font-size to a smaller size than the parent element
larger	Sets the font-size to a larger size than the parent element
length	Sets the font-size to a fixed size
%	Sets the font-size to a % of the parent element

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Example

```
body{ font-size: x-
large}p{ font-size:
```

5. font-variant property

- The font-variant property is used to display text in a small-caps font, which means that all the lower case letters are converted to uppercase letters, but all the letters in the small- caps font have a smaller font-size compared to the rest of the text.

Value	Description
Normal	Default. The browser displays a normal font
small-caps	The browser displays a small-caps font

Example

```
P{font-variant: small-caps}
```

SR. NO	QUESTION	ANSWER
1	FONT PROPERTIES ARE USED TO___	WORK WITH FONTS
2	FONT-STYLE PROPERTY SET FONT IN_	ITALIC & OBLIQUE
3	FONT-VARIENT PROPERTY SET FONT IN_	SMALL-CAPS
4	FONT-WEIGHT PROPERTY SET _____	THICKNESS OF THE FONT
5	FONT-SIZE PROPERTY SET _____	SIZE OF THE FONT
6	FONT-FAMILY PROPERTY DEFINE_____	FONT THAT APPLY ON TEXT
7	GIVE EXAMPLE OF FONT-FAMILY.	font-family: arial
8	GIVE EXAMPLE OF FONT-STYLE.	font-style: italic
9	GIVE EXAMPLE OF FONT-SIZE.	font-size: x-large
10	GIVE EXAMPLE OF FONT-VARIANT.	font-variant: small-caps

- **EXPLAIN TEXT PROPERTY OF CSS (3 OR 5 M)**

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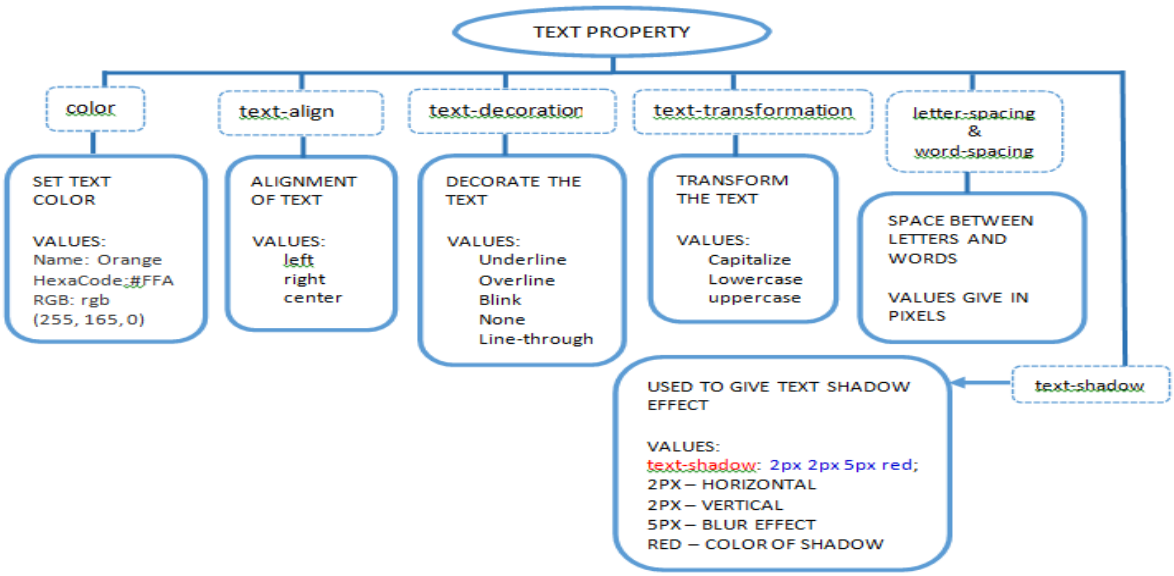

DETAIL

- The CSS text properties allow you to control the appearance of text.
- It is possible to change the color of a text, increase or decrease the space between characters in a text, align a text, decorate a text, indent the first line in a text, and more

1. color Property

- The color property sets the color of a text.

Examples

```
Body { color: rgb(255,255,0)}
```

Value	Description
color	The color value can be a color name (red), a rgb value (rgb(255,0,0)), or a hex number(#ff0000). Default value: Browser dependent

2. text-align Property

- The text-align property aligns the text in an element.

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Examples

```
P{ text-align: center}
```

Value	Description
Left	Aligns the text to the left. Default value: Browser dependent
right	Aligns the text to the right
center	Centers the text
justify	

3. word-spacing Property

- The word-spacing property increases or decreases the white space between words.

Examples

```
P{word-spacing: 30px}
p{ word-spacing: -
```

Value	Description
normal	Default. Defines normal space between words
length	Defines a fixed space between words

4. letter-spacing Property

- The letter-spacing property increases or decreases the white space between characters.

Examples

```
P{ letter-spacing: 12px}
p{letter-spacing: -
```

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Value	Description
normal	Default. Defines normal space between characters
length	Defines a fixed space between characters

5. TEXT DECORATION

Text decoration is used to add or remove decorations from the text. **Text decoration can be underline, overline, line-through or none.** Syntax:

```
body{
    text-decoration:decoration type;
    }
```

EXAMPLE

```
<!DOCTYPE html>
<html>
<body>
 <p style="text-decoration: underline;">Text is underline decorate</p>
 <p style="text-decoration: overline;">Text is overline decorate</p>
 <p style="text-decoration: blink;">Text is blink decorate</p>
 <p style="text-decoration: line-through">Text is line delete decorate</p>
 <p style="text-decoration: none;">Text is nothing any decorate value</p>
</body>
</html>
```

6. text-transformation

CSS text-transformation property use to text transform.

CSS text-transformation possible value capitalize, lowercase and uppercase in a text.

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CSS text-transformation property value capitalize, it means first letter capital for all word.

Example

```
<!DOCTYPE html>
<html>
<body>
 <p style="text-transform: capitalize">This text transform to capital.</p>
 <p style="text-transform: lowercase">This text transform to lowercase.</p>
 <p style="text-transform: uppercase">This text transform to uppercase.</p>
</body>
</html>
```

7.text-shadow

CSS text-shadow property is use to decorate text and apply shadow effect style.

Example

```
<!DOCTYPE html>
<html>
<body><p style="text-shadow: 4px 4px 8px
orange;">This text is represent text shadow effect.</p></body></html>
```

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	TEXT PROPERTIES ARE USED TO___	DECORATE TEXT
2	COLOR PROPERTY IS USED TO SET___	COLOR OF THE TEXT
3	TEXT-ALIGN PROPERTY IS USED FOR _____	ALIGNMENT OF THE TEXT
4	TEXT-DECORATION PROPERRTY IS USED TO_____	DECORATE THE TEXT UNDERLINE,OVERLINE,BLINK
5	TEXT-TRANSFORMATION PROPERTY IS USED TO_____	TRANSFORM TEXT IN TO UPPERCASE,

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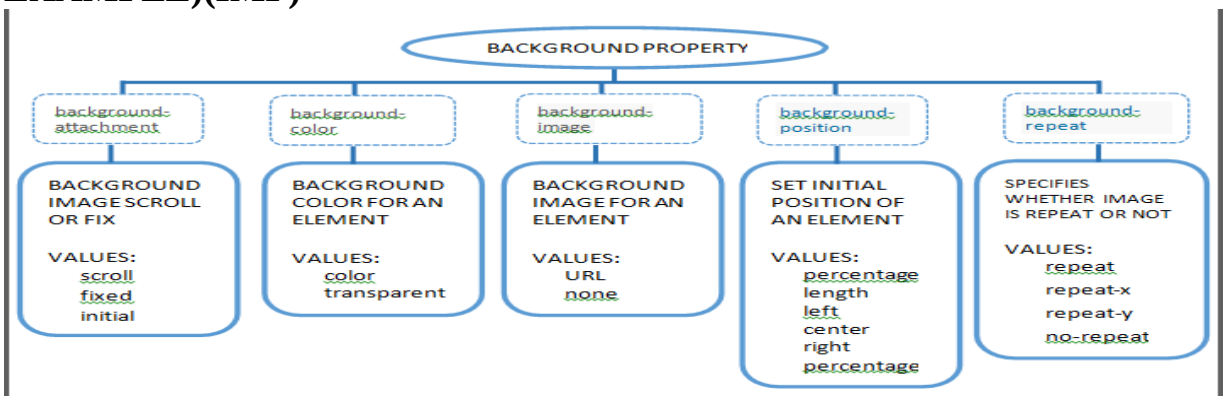
		LOWERCASE
6	LETTER-SPACING PROPERTY IS USED TO GIVE	SPACE BETWEEN LETTERS
7	LETTER-SPACING PROPERTY IS USED TO GIVE	SPACE BETWEEN WORDS
8	TEXT-SHADOW PROPERTY IS USED TO GIVE	SHADOW EFFECT ON TEXT
9	GIVE EXAMPLE OF TEXT-ALIGN	text-align: center
10	GIVE EXAMPLE OF TEXT-DECORATION.	font-variant: small-caps;
11	GIVE EXAMPLE OF TEXT-TRANSFORMATION.	text-transform: capitalize;
12	GIVE EXAMPLE OF TEXT-SHADOW	text-shadow: 4px 4px 8px orange;

- **EXPLAIN BACKGROUND PROPERTY OF CSS (3 OR 5 M)(WITH EXAMPLE)(IMP)**



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DETAIL

o The CSS background properties allow you to control the background color of an element, set an image as the background, repeat a background image vertically or horizontally, and position an image on a page.

1. **background-attachment**
   - The background-attachment CSS property defines whether the background image scrolls with the document, or remains fixed to the viewing area.
   - **Syntax**
     The syntax of the property is given with:

```
background-attachment: scroll | fixed | initial | inherit
```

   - **Example**

```
body {
  background-image:
  url("images/recycle.jpg");
  background-attachment: fixed;
}
```

   - **Property Values**

Value	Description
scroll	The default value. The background image is fixed with regard to the element itself and scrollwithin the viewport along with its containing element.
fixed	The background image is fixed with regard to the viewport and doesn't move with theelement.
local	The background image stays fixed with regard to the element's contents: if the element has a scrolling mechanism, the background scrolls with the element's contents.
initial	Sets this property to its default value.

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inherit	If specified, the associated element takes the computed value of its parentelement background-attachment property.

2. **background-color**
   - The background-color CSS property sets the background color of an element. You can setcolor of the background either through a color value or the keyword transparent.
   - The background of an element is the total size of the element, including padding andborder (but not the margin).
   - **Syntax**

```
background-color: color | transparent | initial | inherit
```

   - **Example**

```
body {
  background-color: yellow;}h1 {
  background-color: rgb(255,0,0);}p {
  background-color: #00ff00;}
```

   - **Property Values**

Value	Description
color	Specifies the background color. Look at CSS Color Values for the list of possible colorvalues.
transparent	Sets the background-color to transparent i.e. content and background of the element behind the element with transparent background will be visible through. This is default.
initial	Sets this property to its default value.

3. **background-image**

   - The background-image CSS property sets the background image for an

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element. It is often more convenient to use the shorthand background property.

- **Syntax**

  background-image: url | none | initial | inherit

- **Example**

```
body {
  background-image: url("images/pattern.jpg");
}
```

- **Property Values**

Value	Description
url	The location of the image resource to be used as a background image.
none	The default value. If specified, no background image will be displayed.
initial	Sets this property to its default value.

4. **background-position**
   - The background-position CSS property sets the initial position (i.e. origin) of theelement's background-image.
   - It is often more convenient to use the shorthand background property.
   - **Syntax**

     background-position: [percentage | length | left | center | right] values | initial | inherit

   - Example

```
p {
  background-image:
  url("images/smiley.png");
  background-position: 50% center;}
```

   - **Property Values**

Value	Description
bottom	Equivalent to 100% for the vertical position.

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center	Equivalent to 50% for the horizontal position if it is not otherwise given, or 50% for thevertical position if it is.
left	Equivalent to 0% for the horizontal position.
right	Equivalent to 100% for the horizontal position.
top	Equivalent to 0% for the vertical position.
length	Actual pixel lengths. For example, with a value pair of '10px 20px', the upper left corner of the image is placed 10px to the right and 20px below the upper left corner of theelement's box.
percentage	A percent of the element size. For example, with a value pair of '0% 0%', the upper left corner of the image is aligned with the upper left corner of the element's box.
initial	Sets this property to its default value.

1. **background-repeat**
   - The background-repeat CSS property specifies whether the background-image is repeated or tiled after it has been sized and positioned, and how.
   - It is often more convenient to use the shorthand background property.
   - **Syntax**

     background-repeat: repeat | repeat-x | repeat-y | no-repeat | initial | inherit

   - **Example**

```
body {
  background-image:
  url("images/gradient.png");
  background-repeat: repeat-x;}
```

   - **Property Values**

Value	Description
repeat	The default value. The background image will be repeated both vertically and horizontally.

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repeat-x	The background image will be repeated horizontally only.
repeat-y	The background image will be repeated vertically only.
no-repeat	The background image will not be repeated.
initial	Sets this property to its default value.

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF BACKGROUND PROPERTIES?	TO SET THE BACKGROUND OF WEBPAGE OR ELEMENTS
2	BACKGROUND-ATTACHMENT PROPERTY IS USED FOR_____	BACKGROUND IMAGE SCROLL OR FIX
3	BACKGROUND-COLOR PROPERTY IS USED TO SET_____	BACKGROUND COLOR FOR AN ELEMENT
4	BACKGROUND-IMAGE PROPERTY IS USED TO SET_____	BACKGROUND IMAGE FOR AN ELEMENT
5	BACKGROUND-POSITION PROPERTY IS USED TO _____	SET INITIAL POSITION OF AN ELEMENT
6	BACKGROUND-REPETE PROPERTY IS USED TO _____	SPECIFIES WHETHER IMAGE IS REPEAT OR NOT
7	GIVE EXAMPLE OF BACKGROUND-ATTACHMENT	background-attachment: fixed;
8	GIVE EXAMPLE OF BACKGROUND-COLOR.	background-color: #00ff00;
9	GIVE EXAMPLE OF BACKGROUND-IMAGE.	background-image: url("images/pattern.jpg");
10	GIVE EXAMPLE OF BACKGROUND-POSITION	background-position: 50% center;
11	GIVE EXAMPLE OF BACKGROUND-REPETE	background-repeat: repeat-x;

- **EXPLAIN MARGIN AND PADDING PROPERTIES OF CSS (2 OR 3 M)(5 M WITH EXAMPLE)(IMP)**

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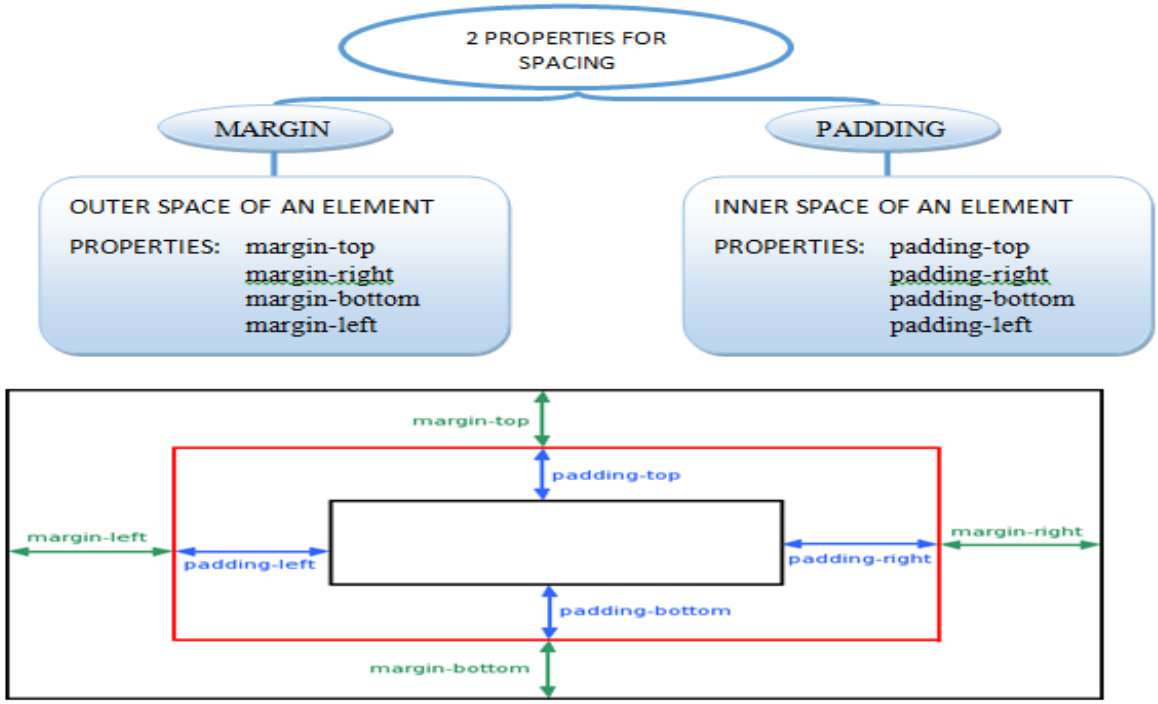

DETAIL

1. MARGIN PROPERTY

- The margin CSS property sets the margin on all four sides of the element. It is a shorthand property for margin-top, margin-right, margin-bottom, and margin- left property.
- **Syntax**

```
margin: [ length | percentage | auto ]| initial | inherit
```

- **Example**

```
h1 {
margin-left: 25px;
}
```

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```
p {
margin: 50px 100px;
}
```

- This shorthand notation can take one, two, three, or four whitespace separated values.
  - If one value is set, this margin applies to all 4 sides.
  - If two values are set, the first value applies to top and bottom, the second value applies to the right and left side.
  - Three values apply to the top, horizontal (i.e. right and left) and bottom side.
  - Four values apply to the top, right, bottom, left side in that order.

- **Property Values**

Value	Description
margin-top	Sets the top margin of the element.
margin-right	Sets the right margin of the element.
margin-bottom	Sets the bottom margin of the element.
margin-left	Sets the left margin of the element.
initial	Sets this property to its default value.
inherit	If specified, the associated element takes the computed value of its parent element margin property.

2. PADDING PROPERTY

- The padding CSS property sets the padding on all four sides of the element. It is a shorthand property for padding-top, padding-right, padding-bottom, and padding- left property.
- **Syntax**

padding: [length | percentage] 1 to 4 values | initial | inherit

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- Example

```
p.one {
        padding-right: 20px;
        }
          p.two {
            padding: 35px 15px;
          }
```

- This shorthand notation can take one, two, three, or four whitespace separated values.
  - If one value is set, this padding applies to all 4 sides.
  - If two values are set, the first value applies to top and bottom, the second value applies to the right and left side.
  - Three values apply to the top, horizontal (i.e. right and left) and bottom side.
  - Four values apply to the top, right, bottom, left side in that order.
- **Property Values**

Value	Description
padding-top	Sets the padding to the top side of an element.
padding-right	Sets the padding to the right side of an element.
padding-bottom	Sets the padding to the bottom side of an element.
padding-left	Sets the padding to the left side of an element.
initial	Sets this property to its default value.
inherit	If specified, the associated element takes the computed value of its parent element padding property.

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF MARGIN PROPERTIES?	OUTER SPACE OF AN ELEMENT
2	WHAT IS THE USE OF PADDING PROPERTIES?	INNER SPACE OF AN ELEMENT

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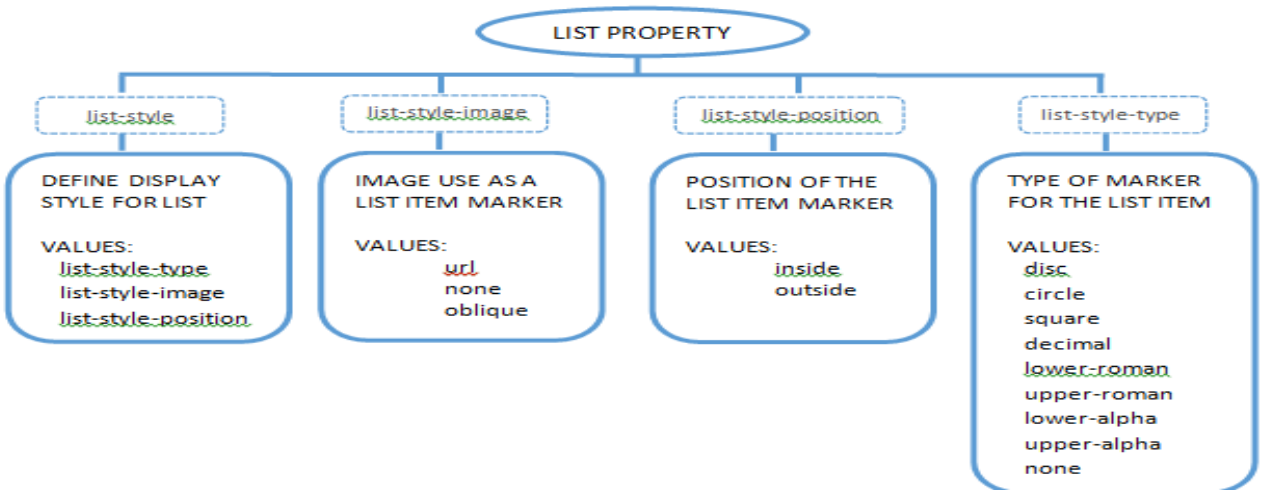
3	MARGIN-TOP PROPERTY IS USED TO SET _____	TOP MARGIN OF AN ELEMENT
4	MARGIN-RIGHT PROPERTY IS USED TO SET_____	RIGHT MARGIN OF ANELEMENT
5	MARGIN-LEFT PROPERTY IS USED TO _____	LEFT MARGIN OF AN ELEMENT
6	MARGIN-BOTTOM PROPERTY IS USED TO _____	BOTTOM MARGIN OF AN ELEMENT
7	PADDING-TOP PROPERTY IS USED TO SET _____	PADDING TO THE TOP OF AN ELEMENT
8	PADDING -RIGHT PROPERTY IS USED TO SET_____	PADDING TO THE RIGHT OF AN ELEMENT
9	PADDING -LEFT PROPERTY IS USED TO _____	PADDING TO THE LEFT OF AN ELEMENT
10	PADDING -BOTTOM PROPERTY IS USED TO _____	PADDING TO THE BOTTOM OF AN ELEMENT

- **EXPLAIN LIST PROPERTIES OF CSS (2 OR 3 M)**



Detail

Types of HTML Lists

- There are three different types of list in HTML:
  - Unordered lists — A list of items, where every list items are marked

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with bullets.
- Ordered lists — A list of items, where each list items are marked with numbers.
- Definition list — A list of items, with a description of each item.

Styling Lists with CSS

- CSS provides the several properties for styling and formatting the most commonly usedunordered and ordered lists.
- These CSS list properties typically allow you to:
  - Control the shape or appearance of the marker.
  - Specify an image for the marker rather than a bullet point or number.
  - Set the distance between a marker and the text in the list.
  - Specify whether the marker would appear inside or outside of the box containingthe list items.

1. LIST-STYLE

- The list-style CSS property defines the display style for list items.
- It is a shorthand property for setting the individual list properties i.e. list-style-type, list-style-position, and list-style-image in a single declaration.
- **Syntax**

list-style: [list-style-type list-style-position list-style-image] | initial | inherit

- **Example**

```
ul { list-style: circle inside; }

ol { list-style: upper-latin outside;}
```

- **Property Values**

Value	Description
list-style-type	Specifies the marker style for a list-item.
list-style-position	Specifies the position of the list-item marker.
list-style-image	Specifies the image to be used as a list-item marker.
initial	Sets this property to its default value.
inherit	If specified, the associated element takes the computed value of its parentelement list-style property.

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2. **LIST-STYLE-IMAGE**

The list-style-image CSS property specifies an image to be used as a list-item marker.

Syntax

list-style-image: url | none | initial | inherit

Example

```
ul { list-style-image:
url("images/arrow.png");}
```

- **Property Values**

Value	Description
url	The location of image to be used as a list-item marker.
none	No marker image will be displayed. Instead, the list-style-type property will control whattype of list marker will be rendered – if any. This is default.
oblique	Selects a font that is labeled oblique in the user agent's font database.
initial	Sets this property to its default value.

3. **LIST-STYLE-POSITION**

- The list-style-position CSS property specifies the position of list-item marker with respect tothe list item's principal block box.
- **Syntax**

list-style-position: inside | outside | initial | inherit

- **Example**

```
Ol {list-style-position:inside;}

Ul{list-style-position:outside;}
```

- **Property Values**

Value	Description

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inside	The list marker is placed as the first inline box in the principal block box, before theelement's content.
outside	The list marker is placed outside the principal block box. This is default.
initial	Sets this property to its default value.

4. LIST-STYLE-IMAGE

- The list-style-type CSS property specifies the type of marker for the list-items.
- **Syntax**

list-style-type: disc | circle | square | decimal | lower-roman | upper-roman | lower-alpha | upper-alpha | none | initial | inherit

EXAMPLE

```
ol { list-style-type: decimal-leading-zero;}
```

- **Property Values**

Value	Description
disc	The marker is a filled circle.
circle	The marker is a hollow circle.
square	The marker is a filled square.
decimal	The marker is a –Decimal numberBeginning with 1.
lower-roman	The marker is – Lowercase roman numeralsE.g. i, ii, iii, iv, v, ...
upper-roman	The marker is –Uppercase roman numerals E.g. I, II, III, IV, V, ...
lower-alpha	The marker is –Uppercase Latin letters E.g. a, b, c, ... z
upper-alpha	The marker is –Uppercase Latin letters E.g. A, B, C, ... Z
none	Specifies no marker.
initial	Sets this property to its default value.

1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF LIST PROPERTIES?	USED TO STYLE LIST(OL , UL , DL)
2	LIST-STYLE-IMAGE PROPERTY IS USED TO SET_____	IMAGE AS A LIST ITEM MARKER
3	LIST-STYLE-TYPE PROPERTY IS USED TO	TYPE OF MARKER FOR THE

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	SET_____	LIST ITEM
4	LIST-STYLE-POSITION PROPERTY IS USED TO SET_____	POSITION OF THE LIST ITEM MARKER
5	GIVE THE EXAMPLE OF LIST-STYLE-IMAGE.	list-style-image: url("images/arrow.png");
6	GIVE THE EXAMPLE OF LIST-STYLE- TYPE.	list-style-type: decimal-leading-zero;
7	GIVE THE EXAMPLE OF LIST-STYLE-POSITION.	list-style-position: inside;

- **WRITE A NOTE ON CSS 3 (3 M)**
  - Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup language.CSS3 is a latest standard of css earlier versions(CSS2).The main difference between css2 and css3 is follows
    - Media Queries
    - Namespaces
    - Selectors Level 3
    - Color

- **CSS3 modules**
  - CSS3 is collaboration of CSS2 specifications and new specifications, we can called this collaboration is **module**. Some of the modules are shown below
    - Selectors
    - Box Model
    - Backgrounds
    - Image Values and Replaced Content
    - Text Effects
    - 2D Transformations
    - 3D Transformations
    - Animations
    - Multiple Column Layout
    - User Interface

SR. NO	QUESTION	ANSWER
1	WHAT IS CSS3?	NEW VERSION OF CSS

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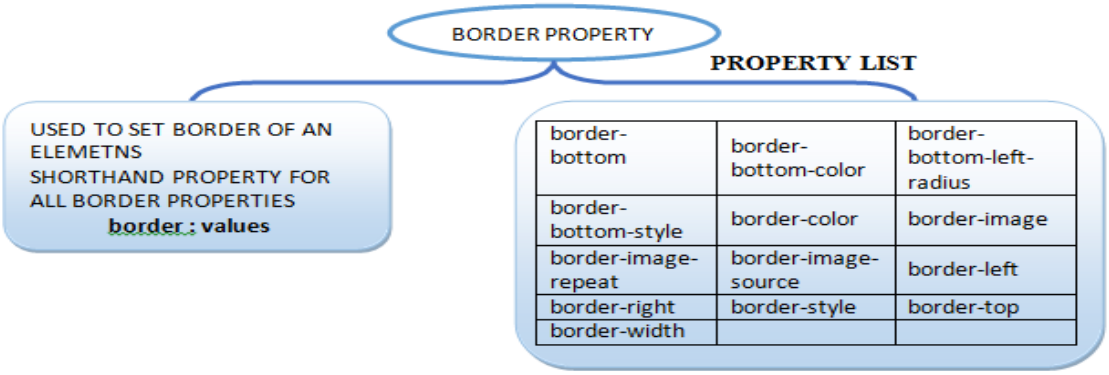
2	CSS 3 PROVIDE_____	MEDIA QUERY NAME SPACE SELECTOR LEVEL 3 COLORS
3	LIST OUT MODULES AVAILABLE IN CSS3.	SELECTORS BOX MODEL BACKGROUND TEXT EFFECT 2D & 3D ANIMATION

- **EXPLAIN CSS 3 BORDER PROPERTY. (3 M)**



DETAIL

- The border property sets the width, style, and color for all four sides of an element's border.
- It is a shorthand property for setting the individual border properties i.e. border-width, border-style, and border-color in a single declaration.
- **Syntax**

```
border : [ border-width border-style border-color ] | initial | inherit
```

- **Example**

```
h1 {
```

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```
    border: 5px solid #ff0000;
}
p {
    color:
    #00ff00;
    border: 5px
    solid;
}
```

- **Property Values**

Value	Description
border -width	Sets the width of the border of an element.
border-style	Sets the line style of the border of an element.
border-color	Sets the color of the border of an element.
initial	Sets this property to its default value.
inherit	If specified, the associated element takes the computed value of its parentelement border property.

OTHER PROPERTIES

Property	Description
border	Sets the width, style, and color for all four sides of an element'sborder.
border-bottom	Sets the width, style, and color of the bottom border of an element.
border-bottom-color	Sets the color of the bottom border of an element.
border-bottom-left-radius	Defines the shape of the bottom-left border corner of an element.
border-bottom-right-radius	Defines the shape of the bottom-right border corner of an element.
border-bottom-style	Sets the style of the bottom border of an element.
border-bottom-width	Sets the width of the bottom border of an element.

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border-color	Sets the color of the border on all the four sides of an element.
border-image	Specifies how an image is to be used in place of the border styles.
border-image-outset	Specifies the amount by which the border image area extends beyond the border box.
border-image-repeat	Specifies whether the image-border should be repeated, rounded or stretched.
border-image-slice	Specifies the inward offsets of the image-border.
border-image-source	Specifies the location of the image to be used as a border.
border-image-width	Specifies the width of the image-border.
border-left	Sets the width, style, and color of the left border of an element.
border-left-color	Sets the color of the left border of an element.
border-left-style	Sets the style of the left border of an element.
border-left-width	Sets the width of the left border of an element.
border-radius	Defines the shape of the border corners of an element.
border-right	Sets the width, style, and color of the right border of an element.
border-right-color	Sets the color of the right border of an element.
border-right-style	Sets the style of the right border of an element.
border-right-width	Sets the width of the right border of an element.
border-style	Sets the style of the border on all the four sides of an element.
border-top	Sets the width, style, and color of the top border of an element.
border-top-color	Sets the color of the top border of an element.
border-top-left-radius	Defines the shape of the top-left border corner of an element.
border-top-right-radius	Defines the shape of the top-right border corner of an element.
border-top-style	Sets the style of the top border of an element.
border-top-width	Sets the width of the top border of an element.

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border-width	Sets the width of the border on all the four sides of an element.

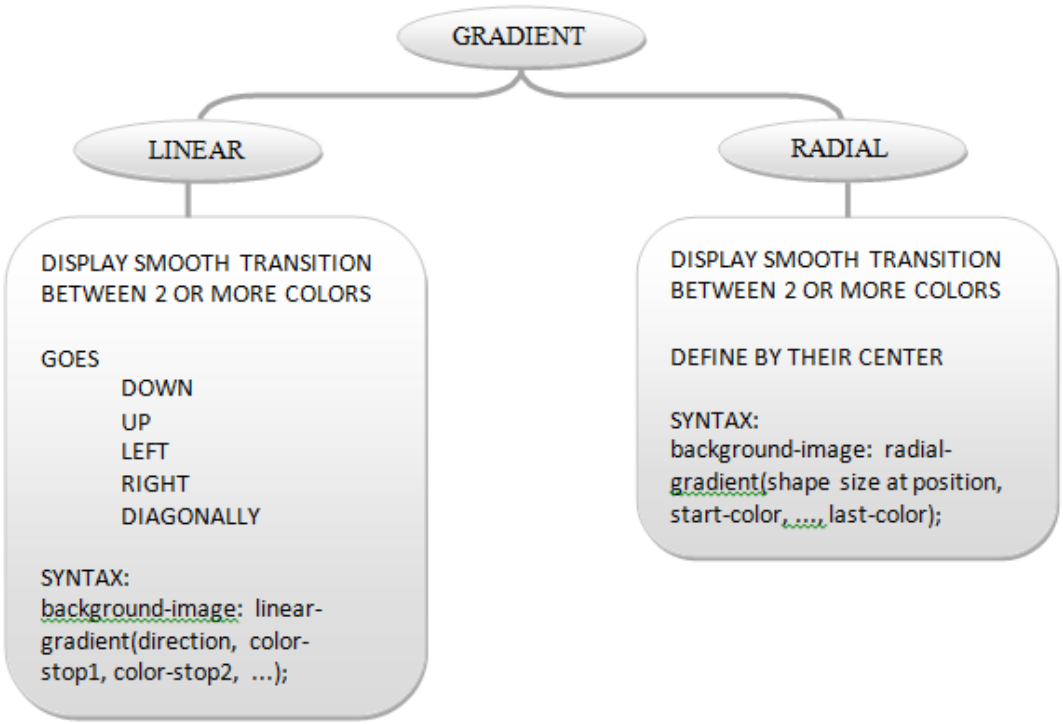
1

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF BORDER PROPERTIES?	USED TO SET ELEMENT BORDER
2	GIVE EXAMPLE OF SHORTHAND BORDER PROPERTY.	Border : [border-width border-style border-color]

NOTE: ALL ABOVE PROPERTIES ARE CONSIDER AS 1 MARK QUESTIONS

- **EXPLAIN CSS 3 GRADIENT PROPERTY. (3 M) (IMP)**



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DETAIL

- The CSS3 gradient feature **provides a flexible solution to generate smooth transitions between two or more colors**.
- Earlier, to achieve such effect we had to use the images.
- Using CSS3 gradients you can reduce the download time and saves the bandwidth usages.
- The elements with gradients can be scaled up or down to any extent without losing the quality, also the output will render much faster because it is generated by the browser.

Gradients are available in two styles: linear and radial.

Creating CSS3 Linear Gradients

- To create **a linear gradient you must define at least two color stops**.
- However to create more complex gradient effects you can define more color stops.
- Color stops are the colors you want to render smooth transitions among.
- You can also set a starting point and a direction (or an angle) along which the gradient effect is applied.
- The basic syntax of creating the linear gradients using the keywords can be given with:

linear-gradient(direction, color-stop1, color-stop2, ...)

- **Linear Gradient - Top to Bottom**
  - The following example will create a linear gradient from top to bottom. This is default.

```
.gradient {
  /* Fallback for browsers that don't support
  gradients */background: red;
  /* For Safari 5.1 to 6.0 */
  background: -webkit-linear-gradient(red, yellow);
  /* For Internet Explorer 10 */
  background: -ms-linear-gradient(red, yellow);
  /* Standard syntax */
  background: linear-gradient(red, yellow);
```

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```
}
```

- **Linear Gradient - Left to Right**
  - The following example will create a linear gradient from left to right.

```
.gradient {
  /* Fallback for browsers that don't support gradients */
  background: red;
  /* For Safari 5.1 to 6.0 */
  background: -webkit-linear-gradient(left, red, yellow);
  /* For Internet Explorer 10 */
  background: -ms-linear-gradient(left, red, yellow);
  /* Standard syntax */
  background: linear-gradient(to right, red, yellow);
}
```

- **Linear Gradient - Diagonal**
  - You can also create a gradient along the diagonal direction.
  - The following example will create a linear gradient from the bottom left corner tothe top right corner of the element's box.

```
.gradient {
  /* Fallback for browsers that don't support
  gradients */background: red;
  /* For Safari 5.1 to 6.0 */
  background: -webkit-linear-gradient(bottom left, red, yellow);
  /* For Internet Explorer 10 */
  background: -ms-linear-gradient(bottom left, red, yellow);
  /* Standard syntax */
  background: linear-gradient(to top right, red, yellow);
}
```

- **Creating CSS3 Radial Gradients**

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- In a radial gradient color emerge from a single point and smoothly spread outward in a circular or elliptical shape rather than fading from one color to another in a single direction as with linear gradients.
- The basic syntax of creating a radial gradient can be given with:

  radial-gradient(shape size at position, color-stop1, color-stop2, ...);
- The arguments of the radial-gradient() function has the following meaning:
  - position — Specifies the starting point of the gradient, which can be specified in units (px, em, or percentages) or keyword (left, bottom, etc).
  - shape — Specifies the shape of the gradient's ending shape. It can be circle or ellipse.
  - size — Specifies the size of the gradient's ending shape. The default is farthest-side.
- **Example**

```
.gradient {
  /* Fallback for browsers that don't support gradients */background: red;
  /* For Safari 5.1 to 6.0 */
  background: -webkit-radial-gradient(red, yellow, lime);
  /* For Internet Explorer 10 */
  background: -ms-radial-gradient(red, yellow, lime);
  /* Standard syntax */
  background: radial-gradient(red, yellow, lime);
}
```

- **Setting the Shape of Radial Gradients**

```
.gradient {
  /* Fallback for browsers that don't support gradients */background: red;
  /* For Safari 5.1 to 6.0 */
```

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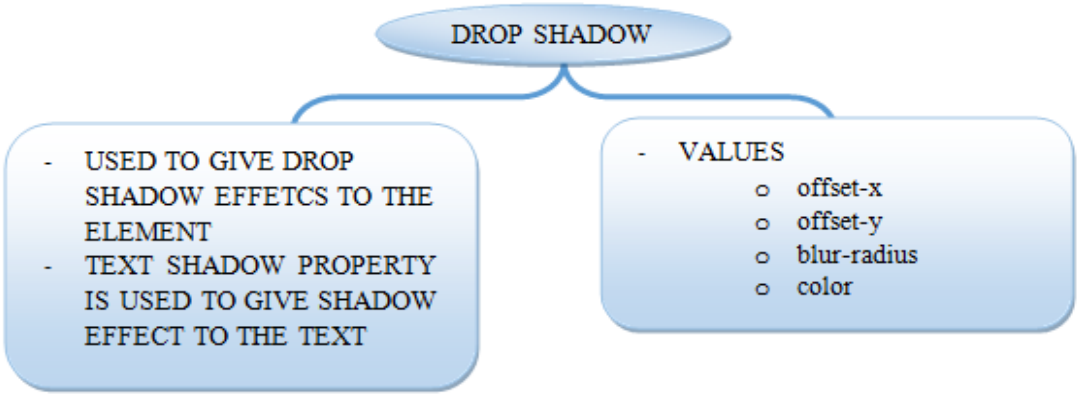
```
background: -webkit-radial-gradient(circle, red, yellow, lime);
/* For Internet Explorer 10 */
background: -ms-radial-gradient(circle, red, yellow, lime);
/* Standard syntax */
background: radial-gradient(circle, red, yellow, lime);}
```

1 WORD QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF GRADIENT PROPERTIES?	TRANSITIONS BETWEEN TWO OR MORE COLORS
2	LIST OUT GRADIENT PROPERTIES IN CSS3.	1. LINIAR GRADIENT 2. RADIAL GRADIENT
3.	WHAT IS THE USE OF LINEAR GRADIENT?	TWO OR MORE COLORS WITH LINEAR LINE
4.	WHAT IS THE USE OF RADIAL GRADIENT?	TWO OR MORE COLORS DEFINED BY THEIR CENTER
5.	GIVE THE EXAMPLE OF LINEAR GRADIENT.	background: linear-gradient(to top right, red, yellow);
6.	GIVE THE EXAMPLE OF RADIAL GRADIENT.	background: radial-gradient(circle, red, yellow, lime)

- **EXPLAIN CSS 3 DROP SHADOW PROPERTY. (3 M)**



DETAIL

- The CSS3 gives you ability to add drop shadow effects to the elements like you do in Photoshopwithout using any images.

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- Prior to CSS3, sliced images are used for creating the shadows around the elements that wasquite annoying.
- **CSS3 box-shadow Property**
  - The box-shadow property can be used to add shadow to the element's boxes.
  - You can even apply more than one shadow effects using a comma-separated list ofshadows.
  - The basic syntax of creating a box shadow can be given with: box-shadow: offset-x offset-y blur-radius color;
  - The components of the box-shadow property have the following meaning:

offset-x — Sets the horizontal offset of the shadow.

offset-y — Sets the vertical offset of the shadow.

blur-radius — Sets the blur radius. The larger the value, the bigger the blur and more the shadow's edge will be blurred. Negative values are not allowed.

color — Sets the color of the shadow. If the color value is omitted or not specified, it takes the value of the color property.

Example:

```
<!DOCTYPE html>
<html ><head><style>
.box{
        width:          200px;
  height:150px;
  background: #112BCC;
box-shadow: 5px 5px 10px red, 10px 10px 20px yellow;
}
```

output

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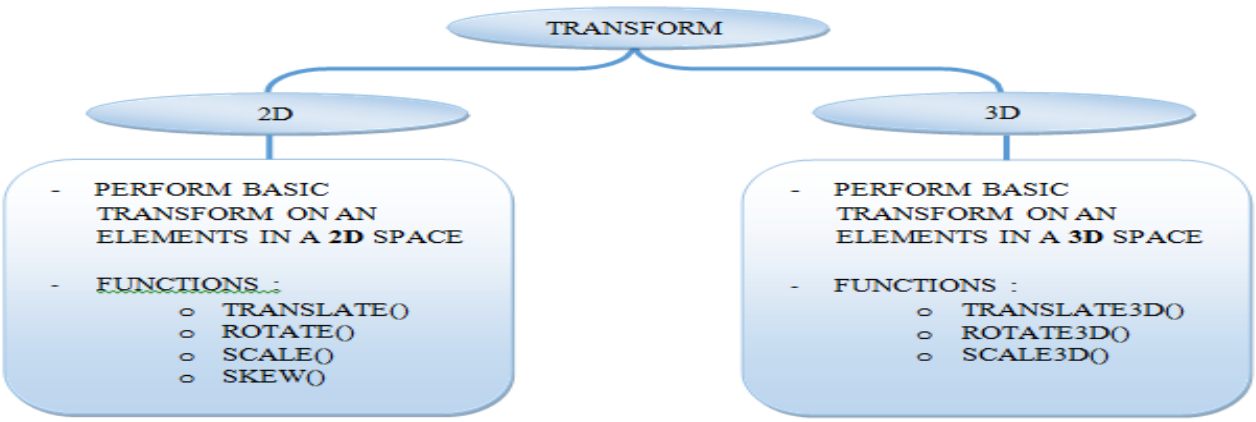
1 WORD QUESTION – ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF BOX SHADOW PROPERTY?	DROP SHGADOW EFFECT TO THE ELEMENTS
2	WHAT IS OFFSET-X AND OFFSET-Y VALUES?	HORIZONTAL & VERTICAL OFSETS OF SHADOW
3.	WHAT IS BLUR-RADIUS VALUE?	SHADOW'S EDGE WILL BE BLURRED
4.	WHAT IS COLOR VALUE?	COLOR OF THE SHADOW
5.	GIVE THE EXAMPLE OF BOX SHADOW.	background: linear-gradient(to top right, red, yellow);

- **EXPLAIN CSS 3 2D & 3D TRANSFORM PROPERTY. (3 OR 5M) (MIMP)**



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DETAIL

1. **2D Transformation of Elements**

- With CSS3 2D transform feature you can perform basic transform manipulations such as move, rotate, scale and skew on elements in a two-dimensional space.
- A transformed element doesn't affect the surrounding elements, but can overlap them, justlike the absolutely positioned elements.
- Using CSS Transform and Transform Functions

a. **The translate() Function**

i. Moves the element from its current position to a new position along the X and Y axes. This can be written as translate(tx, ty). If ty isn't specified, its value is assumed to be zero.

Example

```
img {
    -webkit-transform: translate(200px, 50px); /* Chrome, Safari,Opera */
    -moz-transform: translate(200px, 50px); /* Firefox */
    -ms-transform: translate(200px, 50px); /* IE 9 */
```

b. **transform: translate(200px, 50px); /* Standard syntax */ The rotate() Function**

i. The rotate() function rotates the element around its origin (as specified by the transform-origin property) by the specified angle. This can be writtenas rotate(a).

Example

```
img {
    -webkit-transform: rotate(30deg); /* Chrome, Safari, Opera */
    -moz-transform: rotate(30deg); /* Firefox */
```

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```
        -ms-transform: rotate(30deg); /* IE 9 */
        transform: rotate(30deg); /* Standard syntax */
    }
```

The function rotate(30deg) rotates the image in clockwise direction about its origin by the angle 30 degrees. You can use negative values to rotate the element counter-clockwise.

c. The scale() Function

i. The scale() function increases or decreases the size of the element. It can be written as scale(sx, sy). If sy isn't specified, it is assumed to be equal to sx.

Example

```
img {
        -webkit-transform: scale(1.5); /* Chrome, Safari, Opera */
        -moz-transform: scale(1.5); /* Firefox */
        -ms-transform: scale(1.5); /* IE 9 */
        transform: scale(1.5); /* Modern Browsers */
}
```

The function scale(1.5) proportionally scale the width and height of the image 1.5 times to its original size. The function scale(1) or scale(1, 1) has no effect on the element.

d. The skew() Function

i. The skew() function skews the element along the X and Y axes by the specified angles. It can be written as skew(ax, ay). If ay isn't specified, its value is assumed to be zero.

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Example

```
img {
  -webkit-transform: skew(-40deg, 15deg);  /* Chrome, Safari, Opera */
   -moz-transform: skew(-40deg, 15deg);  /* Firefox */
    -ms-transform: skew(-40deg, 15deg);  /* IE 9 */
      transform: skew(-40deg, 15deg);  /* Modern Browsers */
}
```

The function skew(-40deg, 15deg) skews the element -40 degree horizontally

along the x-axis, and 15 degree vertically along the y-axis.

1. 2D Transform Functions

Function	Description
translate(tx,ty)	Moves the element by the given amount along the X and Y-axis.
translateX(tx)	Moves the the element by the given amount along the X-axis.
translateY(ty)	Moves the the element by the given amount along the Y-axis.
rotate(a)	Rotates the element by the specified angle around the origin of the element, asdefined by the transform-origin property.
scale(sx,sy)	Scale the width and height of the element up or down by the given amount. Thefunction scale(1,1) has no effect.
scaleX(sx)	Scale the width of the element up or down by the given amount.
scaleY(sy)	Scale the height of the element up or down by the given amount.
skew(ax,ay)	Skews the element by the given angle along the X and Y-axis.
skewX(ax)	Skews the element by the given angle along the X-axis.
skewY(ay)	Skews the element by the given angle along the Y-axis.

2. 3D Transformation of Elements

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- With CSS3 3D transform feature you can perform basic transform manipulations such as move, rotate, scale and skew on elements in a three-dimensional space.
- A transformed element doesn't affect the surrounding elements, but can overlap them, just like the absolutely positioned elements. However, the transformed element still takes space in the layout at its default (un-transformed) location.
- Using CSS Transform and Transform Functions
- The CSS3 transform property uses the transform functions to manipulate the coordinate system used by an element in order to apply the transformation effect.

a. **The translate3d() Function**

- Moves the element from its current position to a new position along the X, Y and Z-axis. This can be written as translate(tx, ty, tz). Percentage values are not allowed for third translation-value parameter (i.e. tz).

Example:

```
.container
  { width:
  125px;
  height: 125px;
  perspective: 500px;
  border: 4px solid
  #e5a043;
  background:
  #fff2dd;
}
.transformed {
  -webkit-transform: translate3d(25px, 25px, 50px); /*
  Chrome, Safari,
```

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```
Opera */
  transform: translate3d(25px, 25px, 50px); /* Standard syntax
  */
}
```

The function translate3d(25px, 25px, 50px) moves the image 25 pixels along the positive X and Y-axis, and the 50 pixels along thepositive Z-axis.

a. The scale3d() Function

- The scale3d() function changes the size of an element. It can be written as scale(sx, sy, sz). The effect of this function is not evident unless you use it in combination with other transform functions such as rotate and the perspective, as shown in the example below.

Example

```
.container
  { width:
  125px;
  height:
  125px;
  perspective: 300px;
  border: 4px solid
  #6486ab;
  background:
  #e9eef3;
}
.transformed {
  -webkit-transform: scale3d(1, 1, 2) rotate3d(1, 0, 0, 60deg); /*
  Chrome,
Safari, Opera */
  transform: scale3d(1, 1, 2) rotate3d(1, 0, 0, 60deg); /*
  Standard syntax
```

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```
*/
}
```

The function scale3d(1, 1, 2) scales the elements along the Z-axis and the function rotate3d(1, 0, 0, 60deg) rotates the image along the X-axis by theangle 60 degrees.

3D Transform Functions

Function	Description
translate3d(tx,ty,tz)	Moves the element by the given amount along the X, Y & Z-axis.
translateX(tx)	Moves the element by the given amount along the X-axis.
translateY(ty)	Moves the element by the given amount along the Y-axis.
translateZ(tz)	Moves the element by the given amount along the Z-axis.
rotate3d(x,y,z, a)	Rotates the element in 3D space by the angle specified in the last parameter,around the [x,y,z] direction vector.
rotateX(a)	Rotates the element by the given angle around the X-axis.
rotateY(a)	Rotates the element by the given angle around the Y-axis.
Function	Description
rotateZ(a)	Rotates the element by the given angle around the Z-axis.
scale3d(sx,sy,sz)	Scales the element by the given amount along the X, Y and Z-axis. The function scale3d(1,1,1) has no effect.
scaleX(sx)	Scales the element along the X-axis.
scaleY(sy)	Scales the element along the Y-axis.
scaleZ(sz)	Scales the element along the Z-axis.

1 MARK QUESTION - ANSWER

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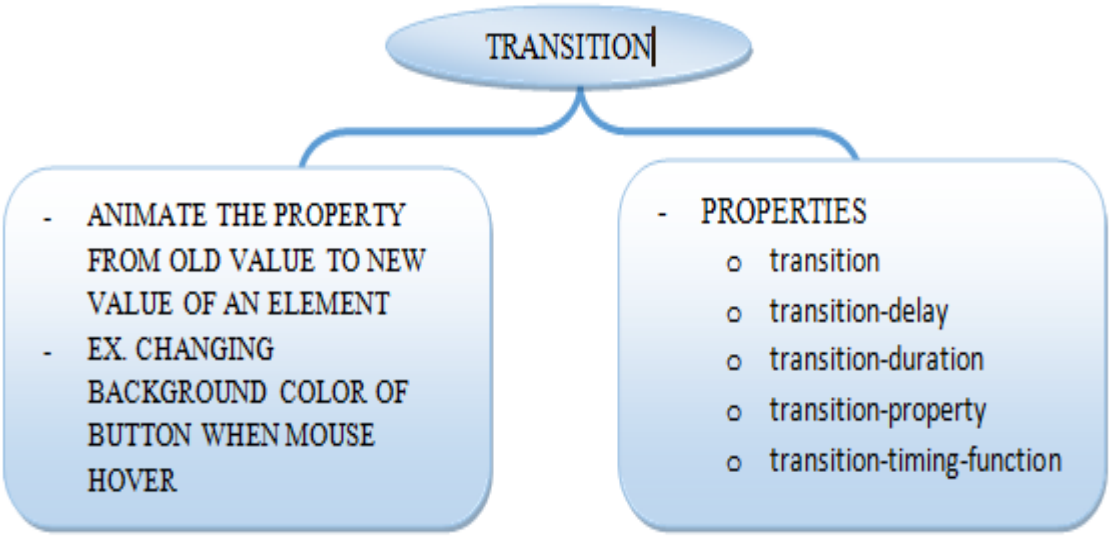
SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF 2D TRANSFORM?	PERFORM BASIC TRANSFORM ON AN ELEMENTS IN A 2D SPACE
2	WHAT IS THE USE OF 3D TRANSFORM?	PERFORM BASIC TRANSFORM ON AN ELEMENTS IN A 3D SPACE
3.	TRANSLATE() IS USED TO____	MOVES THE ELEMENT BY THE GIVEN AMOUNT ALONG THE X AND Y-AXIS.
4.	ROTATE() IS USED TO_____	ROTATES THE ELEMENT BY THE SPECIFIED ANGLE
5.	SCALE() IS USED TO_____	SCALE THE WIDTH AND HEIGHT OF THE ELEMENT UP OR DOWN
6.	SKEW() IS USED TO_____	SKEWS THE ELEMENT BY THE GIVEN ANGLE
7.	TRANSLATE3D() IS USED TO___	MOVES THE ELEMENT BY THE GIVEN AMOUNT ALONG THE X, Y & Z-AXIS.
8.	ROTATE3D() IS USED TO_____	ROTATES THE ELEMENT IN 3D SPACE
9.	SCALE3D() IS USED TO_____	SCALES THE ELEMENT BY THE GIVEN AMOUNT ALONG THE X, Y AND Z-AXIS

- **EXPLAIN CSS TRANSITION PROPERTY. (3 M)**



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DETAIL

- Normally when the value of a CSS property changes, the rendered result is instantly updated. A common example is changing the background color of a button on mouse hover.
- In a normal scenario the background color of the button is changes immediately from the oldproperty value to the new property value when you place the cursor over the button.
- CSS3 introduces a new transition feature that allows you to animate a property from the oldvalue to the new value smoothly over time.
- The following example will show you how to animate the background-color of an HTML buttonon mouse hover.

Example

```
button {
  background: #fd7c2a;
  /* For Safari 3.0+ */
  -webkit-transition-property: background;
  -webkit-transition-duration: 2s;
  /* Standard syntax */
  transition-property:
  background;  transition-
  duration: 2s;
}
button:hover  {
  background:
  #3cc16e;
}
```

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Performing Multiple Transitions

Each of the transition properties can take more than one value, separated by commas, which provides an easy way to define multiple transitions at once with different settings.

Example

```
button {
  background:
  #fd7c2a;     border:
  3px solid #dc5801;
  /* For Safari 3.0+ */
  -webkit-transition-property: background, border;
  -webkit-transition-duration: 1s, 2s;
  /* Standard syntax */
  transition-property:
  background,  border; transition-
  duration: 1s, 2s;
}
button:hover      {
  background:
  #3cc16e;
  border-color:
  #288049;
}
```

CSS3 Transition Properties

Property	Description
transition	A shorthand property for setting all the four individual transition properties in a single declaration.
transition-delay	Specifies when the transition will start.

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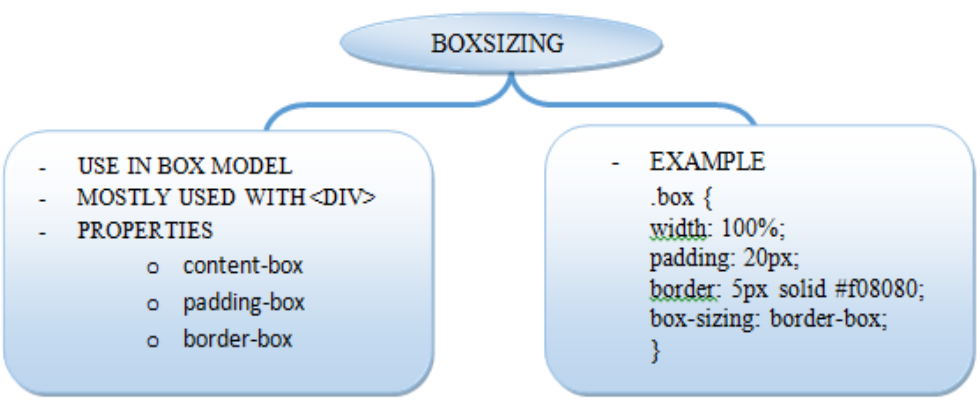
transition-duration	Specifies the number of seconds or milliseconds a transition animation should take to complete.
transition-property	Specifies the names of the CSS properties to which a transition effect should be applied.
transition-timing-function	Specifies how the intermediate values of the CSS properties being affected by a transition will be calculated.

1 MARK QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHAT IS THE USE OF TRANSITION TRANSFORM?	ANIMATE THE PROPERTY FROM OLD VALUE TO NEW VALUE OF AN ELEMENT
2	TRANSITION-DELAY PROPERTY IS USED TO_	SPECIFIES WHEN THE TRANSITION WILL START
3.	TRANSITION-DURATION PROPERTY IS USED TO SPECIFIES_____	NUMBER OF SECONDS OR MILLISECONDS A TRANSITION ANIMATION SHOULD TAKE TO COMPLETE.

- **EXPLAIN CSS 3 BOXSIZING PROPERTY. (2 M)**



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DETAIL

- The box-sizing CSS property is used to alter the default CSS box model, which is normally used by the browser to calculate the widths and heights of the elements.
- **Syntax**

box-sizing:	content-box | padding-box | border-box | initial | inherit

Example

```
.box {
width:50%;
padding:15px;
float:left;
border: 5px solid #000;
box-sizing: border-box;
}
```

Property Values

Value	Description
content-box	The specified width and height properties include only the content of the element. It does not include the padding, border or margin.
padding-box	The specified width and height properties include the padding size, and do not include the border or margin.
border-box	The specified width and height properties include the padding and border, but not the margin.
initial	Sets this property to its default value.
inherit	If specified, the associated element takes the computed value of its parent element box-sizing property.

1 MARK QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHICH PROPERTY IS USED TO SET BORDER BOX OF DIV TAG?	BOX SIZING

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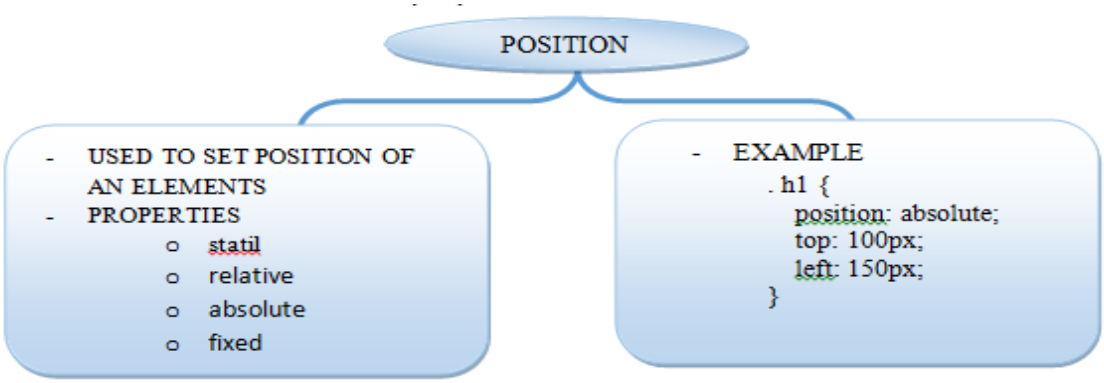
2	WHICH PROPERTY IS USED TO SET HEIGHT, WIDTH, PADDING AND BORDER OF BOX?	BORDER-BOX
3.	WHICH PROPERTY IS USED TO SET HEIGHT, WIDTH, AND PADDING OF BOX?	PADDING-BOX
4	WHICH PROPERTY IS USED TO SET HEIGHT & WIDTH OF BOX?	CONTENT-BOX

- **EXPLAIN CSS 3 POSITION PROPERTY. (2 M)**



DETAIL

- The position CSS property specifies how an element is positioned.
- Tip: Elements with a position other than static are said to be positioned. Their vertical placementin the stacking context is determined by the z-index property.
- **Syntax:**

position:	static | relative | absolute | fixed | initial | inherit

Example

```
h1 {
  position:
  absolute;
  top: 100px;
  left: 150px;
}
```

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Property Values

Value	Description
static	The element's box is a normal box, laid out according to the normal flow. The top, right,bottom, left, and z-index properties are ignored for static boxes. This is default value.
relative	The element is positioned relative to its normal position (this is called the position in normalflow).
absolute	The element is positioned relative to its first ancestor element whose position value is otherthan static.
fixed	The element is fixed with respect to the screen's viewport and doesn't move when scrolled.When printing, the element is printed on every page.
initial	Sets this property to its default value.
inherit	If specified, the associated element takes the computed value of its parent element positionproperty.

1 MARK QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHICH PROPERTY IS USED TO SET POSITION OF AN ELEMENT?	POSITION
2	DEFAULT VALUE OF POSITION PROPERTY IS_____	STATIC
3.	WHICH PROPERTY FOLLOW ITS FIRST ANCESTOR ELEMENT?	ABSOLUTE

- **EXPLAIN CSS 3 MEDIA QUERIES. (3 OR 5 M)(MIMP)**

- Media queries allow you to customize the presentation of your web pages for a specific range of devices like mobile phones, tablets, desktops, etc. without any change in markups.
- Media queries can be used to check many things, such as:
  - width and height of the viewport
  - width and height of the device
  - orientation (is the tablet/phone in landscape or portrait mode?)

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- resolution

- Using media queries are a popular technique for delivering a tailored style sheet to tablets,iPhone, and Androids.
- A media query consists of a media type and zero or more expressions that match the type and conditions of a particular media features such as device width or screen resolution.
- Since media query is a logical expression it can be resolve to either true or false.
- The result of the query will be true if the media type specified in the media query matches the type of device the document is being displayed on, as well as all expressions in the media query are satisfied.
- When a media query is true, the related style sheet or style rules are applied to the target device. Here's a simple example of the media query for standard devices.

Syntax

- A media query consists of a media type and can contain one or more expressions, which resolveto either true or false.

```
@media not|only mediatype and (expressions) {
CSS-Code;
                    }
```

Example

```
  /* Smartphones (portrait and landscape)     */
@media screen and (min-width: 320px) and (max-width: 480px)
 {
   /* styles */
}
   /* Smartphones (portrait)----- */
    @media screen and (max-width: 320px)
    {
      /* styles */
```

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```
    }
/* Smartphones (landscape) ---- */
@media screen and (min-width: 321px){
  /* styles */
}
/* Tablets, iPads (portrait and landscape)-- */
@media screen and (min-width: 768px) and (max-width: 1024px){
  /* styles */
}
/* Tablets, iPads (portrait) ---- */
@media screen and (min-width: 768px){
  /* styles */
}
/* Tablets, iPads (landscape) --- */
@media screen and (min-width: 1024px){
  /* styles */
}
/* Desktops and laptops ----- */
@media screen and (min-width: 1224px){
  /* styles */
}
/* Large screens ------ */
@media screen and (min-width: 1824px){
  /* styles */
}
```

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Tip: Media queries are an excellent way to create responsive layouts. Using media queries you can customize your website differently for users browsing on devices like smart phones or tablets without changing the actual content of the page.

1 MARK QUESTION - ANSWER

SR. NO	QUESTION	ANSWER
1	WHICH PROPERTY IS USED TO CREATE RESPONSIVE WEB DESIGN?	MEDIA QUERY
2	WRITE DOWN SYNTAX OF MEDIA QUERY.	@media not|only mediatype and (expressions) {CSS-Code; }
3.	WRITE QUERY RELATED TO SMARTPHONES (PORTRAIT AND LANDSCAPE) MODE	@media screen and (min-width: 320px) and (max-width: 480px){ /* styles */ }
4.	WRITE QUERY FOR TABLETS, IPADS (PORTRAIT AND LANDSCAPE)	@media screen and (min-width: 768px) and (max-width: 1024px){ /* styles */ }
5.	WRITE QUERY FOR DESKTOPS AND LAPTOPS MODE	@media screen and (min-width: 1224px){ /* styles */ }
6.	WRITE QUERY FOR LARGE SCREENS	@media screen and (min-width: 1824px){ /* styles */ }

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UNIT-4

JAVASCRIPT

- INTRODUCTION TO JAVASCRIPT
- VARIABLES
- OPERATORS
- CONDITIONAL STATEMENTS
- LOOPING STATEMENTS
- BREAK AND CONTINUE STATEMENTS
- DIALOG BOXES
- ARRAYS
- USER DEFINED FUNCTIONS(UDF)
- BUILT IN FUNCTIONS
- EVENTS
- DOM OBJECT
- HISTORY OBJECT
- FORM AND EMAIL VALIDATION

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- **WRITE A NOTE ON JAVASCRIPT. (3 OR 5 MARKS)**

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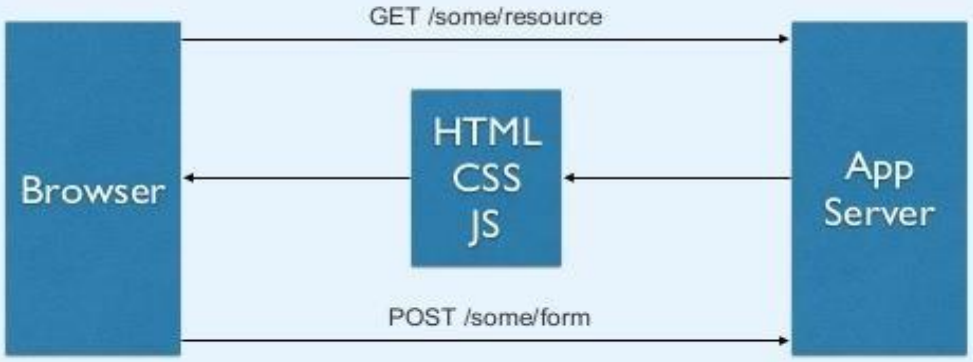
Traditional Web Apps



What is JavaScript?

- Client Side Scripting Language
- JavaScript is not Java
- Used to provide instant feedback
  - Better Usability
  - Richer Web Applications
- Works the DOM (i.e. HTML, XML, etc...)

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- JavaScript is the most popular scripting language on the internet, and works in all major

  browsers, such as Internet Explorer, Firefox, Chrome, Opera, and Safari.
- JavaScript is a language that is used to make web pages interactive.
- It runs on your user's computer and so does not require constant downloads from yourweb site.
- JavaScript was designed to add interactivity to HTML pages.
- JavaScript is a scripting language.
- A scripting language is a lightweight programming language.
- JavaScript is usually embedded directly into HTML pages.
- JavaScript is an interpreted language (means that scripts execute without preliminarycompilation).
- Everyone can use JavaScript without purchasing a license.
- Using JavaScript user can add events on your website.
- Using JavaScript user can check the data before it is submitted to the server.

How to write JavaScript code into html page?

- The HTML **<script>** tag is used to insert a JavaScript into an HTML page.
- Inside <script> tag t**ype** attribute is used to specify the scripting language.
- JavaScript can write into two sections either between <HEAD> tag or between <BODY>tag.
- If user writes code in <body> section then JavaScript code will be executed immediatelyafter the page has been load.
- If user writes code in <head> section then JavaScript code will be

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executed depends onuser's requirement.

Syntax:

<HTML>
<BODY>
<SCRIPT TYPE = "TEXT/JAVASCRIPT">
. . . . Between these two tags All JavaScript code will Be Written
</SCRIPT>
</BODY>
</HTML>

You can also write like **<SCRIPT LANGUAGE = "JAVASCRIPT">.**

The **document.write()** command is used to display the messages on the screen.

For Example:

This code will display hello word on browser.

```
<Html>
    <Body>
        <script language = "JavaScript">
            document.write('hello
            word');
        </script>
    </body>
</html>
```

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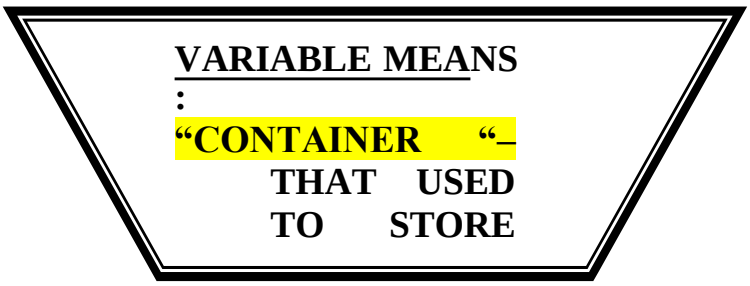
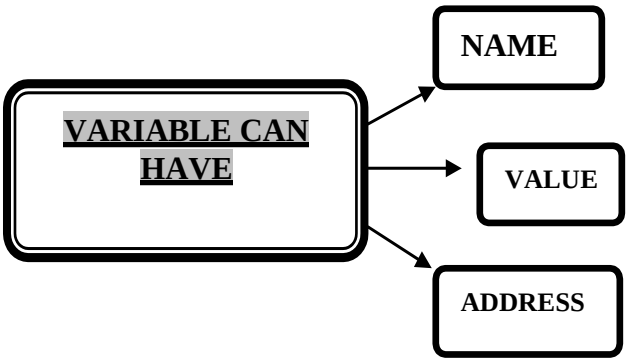
1 MARKS Question – Answer

SR.NO.	QUESTION	ANSWER
1	WHAT IS JAVASCRIPT?	CLIENT SIDE SCRIPTING LANGUAGE
2	WHY WE USE JAVASCRIPT IN OUR WEBSITE?	ADD CONTENT TO A WEBPAGE DYNAMICALLY
3	WHICH TAG IS USE TO INSERT JAVASCRIPT CODE INHTML?	<SCRIPT> TAG
4	IS JAVASCSRIPT IS LIGHTWEIGHT?(YES OR NO)	YES
5	IS JAVASCRIPT IS FREE FOR ALL?(YES OR NO)	YES

- **EXPLAIN JAVASCRIPT VARIABLES (2 OR 3 MARKS)**





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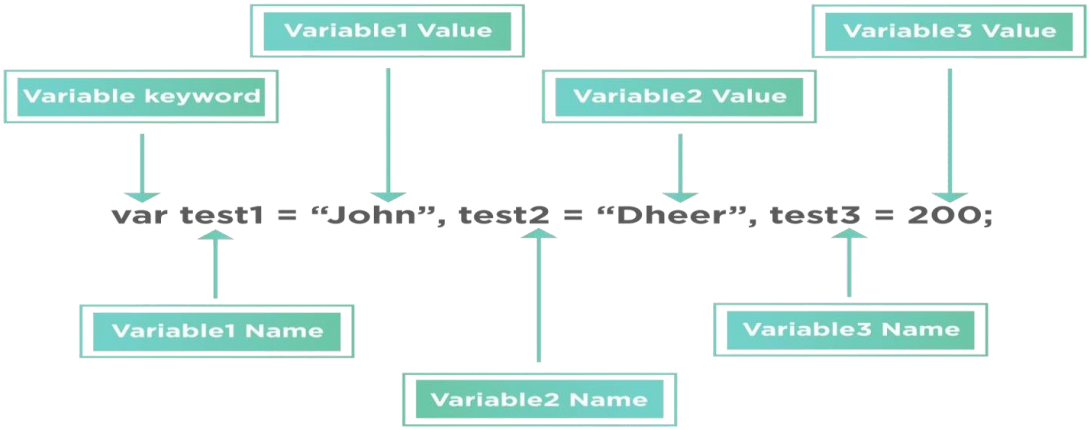

- Variable is container for storing the information.
- Variable names are case sensitive. (x and X are two different variable).
- Variable names must be started with letter or underscore.
- To declare variable in JavaScript **VAR** statement is used.
- Syntax: VAR <variable name>

NOTE: it is not compulsory to declare variable in JavaScript before its use.

- If you assign values to variables that have not yet been declared, the variables will automatically be declared.

```
<Html>
    <Body>
        <script language = "JavaScript">
            var x = 10; <-------variable x is declared.
            var y = 20; <-------variable y is declared.
            z = x+y;    < ------- variable z is not declared.
            document.write('addition is' + z);
        </script>
    </body>
</html> (semicolon in JavaScript is optional)
```

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- A variable declared within a JavaScript function becomes **LOCAL** and can only be accessed within that function. (The variable has local scope).
- You can have local variables with the same name in different functions, because local variables are only recognized by the function in which they are declared.
- Local variables are destroyed when you exit the function.
- Variables declared outside a function become **GLOBAL**, and all scripts and functions on the web page can access it.
- Global variables are destroyed when you close the page.
- If you declare a variable, without using "var", the variable always becomes **GLOBAL**.

1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	Variable is used to store different types of _	values
2	Variable can store on different _____	Memory Location
3	Variable can have _____	Unique Address

- **EXPLAIN JAVASCRIPT OPERATOR (3 OR 5 MARKS)**

Operator means to "Operate something".
Operator can have different Operand or Values

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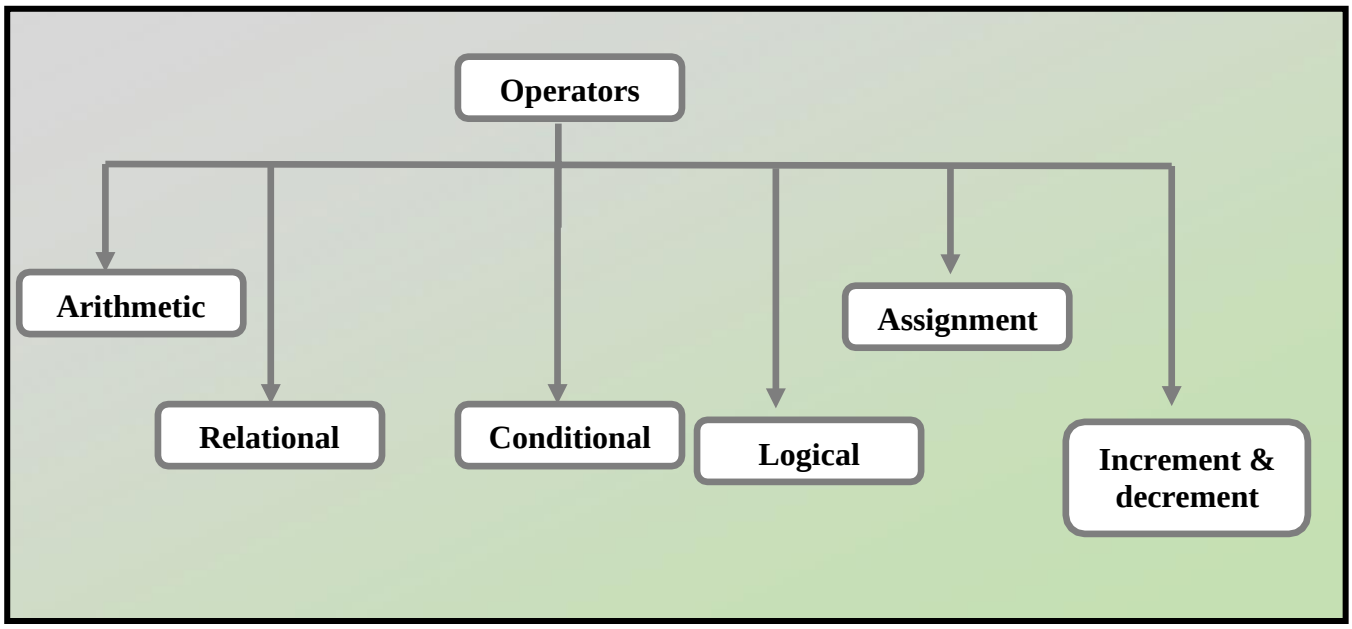

ARITHMATIC OPERATOR:

- Arithmetic operators are used to perform arithmetic between variables and/orvalues.
- Given that **y=5**, the table below explains the arithmetic operators:

Operator	Description	Example	Result
+	Addition	x=y+2	x=7
-	Subtraction	x=y-2	x=3
*	Multiplication	x=y*2	x=10
/	Division	x=y/2	x=2.5
%	Modulus(division remainder)	x=y%2	x=1
++	Increment	x=++y	x=6
--	Decrement	x=--y	x=4

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ASSIGNMENT OPERATOR:

- Assignment operators are used to assign values to JavaScript variables.
- Given that **x=10** and **y=5**, the table below explains the assignment operators:

Operator	Example	Same As	Result
=	x=y		x=5
+=	x+=y	x=x+y	x=15
-=	x-=y	x=x-y	x=5
*=	x*=y	x=x*y	x=50
/=	x/=y	x=x/y	x=2
%=	x%=y	x=x%y	x=0

COMPARISION OPERATOR:

- Comparison operators are used in logical statements to determine equality ordifference between variables or values.
- Given that **x=5**, the table below explains the comparison operators:

Operator	Description	Example
==	**is equal to**	**x==8 is false**
===	**is exactly equal to (valueand type)**	**x===5 is true x==="5" is false**
!=	**is not equal**	**x!=8 is true**
>	**is greater than**	**x>8 is false**
<	**is less than**	**x<8 is true**
>=	**is greater than or equal to**	**x>=8 is false**
<=	**is less than or equal to**	**x<=8 is true**

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How Can it be Used

Comparison operators can be used in conditional statements to compare values andtake action depending on the result:

For Example:

If (age<18)

document.write("Too young");

LOGICAL OPERATOR:

- Logical operators are used to determine the logic between variables or values.
- Given that **x=6 and y=3**, the table below explains the logical operators:

Operator	Description	Example
&&	and	(x < 10 && y >1) is true
||	or	(x==5 || y==5)is false
!	not	!(x==y) is true

CONDITIONAL OPERATORS:

- JavaScript also contains a conditional operator that assigns a value to avariable based on some condition.

Syntax:

<Variable name> = <condition>? value1: value2

Example:

x = (y == 5)? “x is true”:”x is false”

Here if value of y is 5 then value of x = “x is true”

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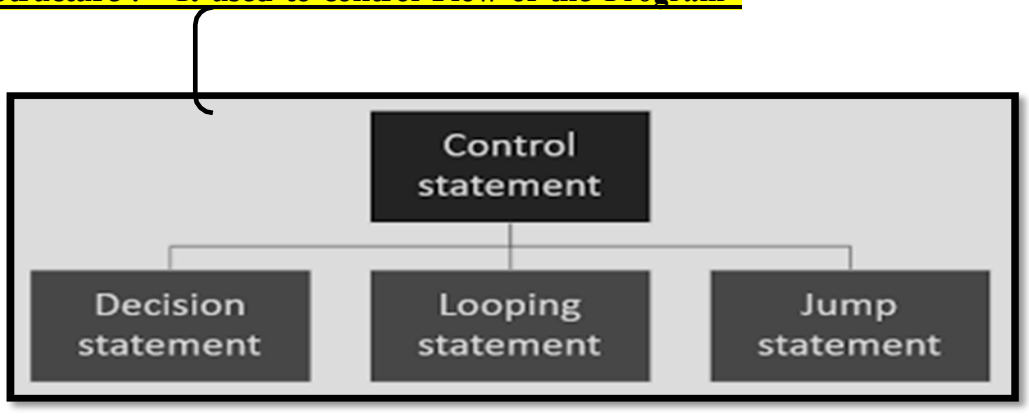
If value of y is not 5 then value of = "x is false"

1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	Conditional Operator in c language can be_and	? and :
2	_____operator can find how many bytes an operand can occupies	Sizeof
3	_____operator can used to link related expression together.	Comma
4	_____operator is known as assignment operator	=(equal to)
5	If condition is false , logical operator can return _	0
6	Precedence of operator is known as _____	Hierarchy

Q.4. EXPLAIN CONDITIONAL STATEMENTS (3 OR 5 MARKS)

Control Structure :- "It used to control Flow of the Program"



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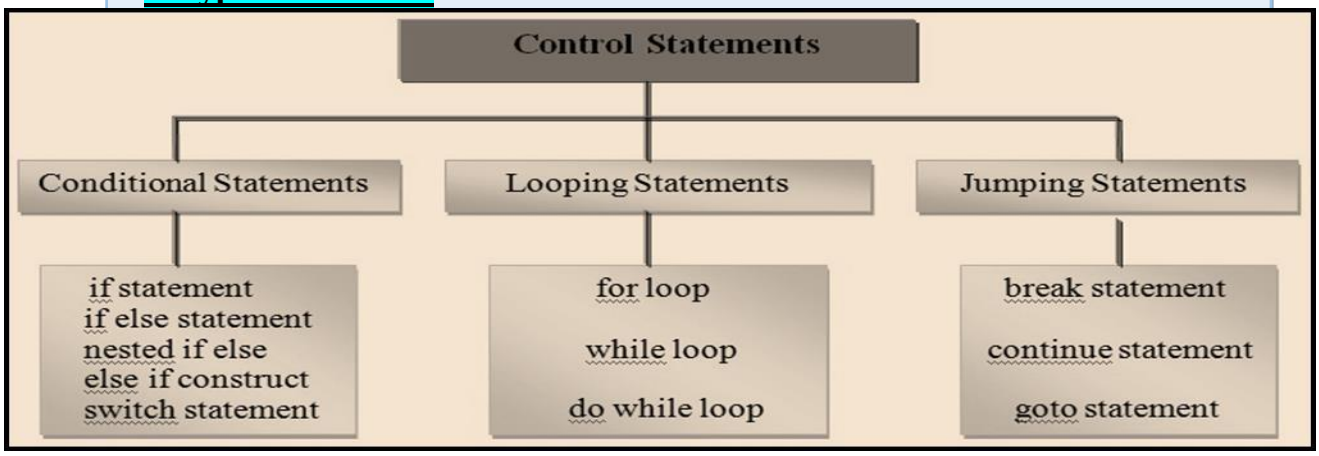
If Statement :-

" To check condition & return result "

IF types / Flavors :-



- Conditional statements in JavaScript are used to perform different actions based ondifferent conditions.
- Very often when you write code, you want to perform different actions for different decisions. You can use conditional statements in your code to do this.
- In JavaScript we have the following conditional statements:

  - **if statement** - use this statement if you want to execute some code only ifa specified condition is true

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- **if...else statement** - use this statement if you want to execute some codeif the condition is true and another code if the condition is false
- **if...else ifelse statement** - use this statement if you want to select one any blocks of code to be executed
- **switch statement** - use this statement if you want to select one of manyblocks of code to be executed.

IF STATEMENT:

You should use if statement if you want to execute some code only if aspecified condition is True.

Syntax:

```
If <condition>{
        JavaScript code executed if condition becomes true. }
```

Example:

```
<script language =
        "javascript">x = 5; y = 6;
        if (x<6){
                document.write(' x is greater'); }
</script>
```

Note that if is written in lowercase letters. Using uppercase letters (IF) will generate a *JavaScript* error!

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IF...ELSE STATEMENT:

If you want to execute some code if a condition is true and another code if the condition is not true, use if else statement.

Syntax

```
if (condition){
    Code to be executed if condition is true}
else{
    Code to be executed if condition is not true }
```

Example:

```
<script language = "javascript">x =
5;
        y = 6;
        if (x > y) {
            document.write('x is greater');
        }else
        {document.write('y is greater');}</script>
```

IF…ELSE IF…ELSE STATEMENT:

It is used when user have two or more condition to check for execution of code.

Syntax:

```
if <condition1>
{
    Code if condition 1 is true;
}else if <condition2>{
    Code if condition 2 is true;
}else
{
    Code if no condition becomes true;}
```

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1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	How Many Control Structures available in JS ? Givename.	5 (two) If Statement Switch Statement
2	If any condition become false ,statement following _____will be execute.	Else
3	In nested if first of all___condition will be checked.	Outer
4	How mamy flavors/types of If statement.Give name.	4(four) Simple if If else If…else..if…elseNested if
5	Which indicate easy way to represent multiple conditions at the same time?	Else…if

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Example

```
<script language = "javascript">
        x=5;
        y=6;
        z=7;
        if(x>y && x>z)
        {
                document.write('x is greater');
        }
        else if(y>x && y>z)
        {
                document.write('y is greater');
        }
        else
        {
        document.write('z is greater');
        }
        </script>
```

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➢ SWITCH STATEMENT:

SWITCH CASE :-
" MULTI WAY DECISION

CASE :- WE CAN CREATE *ANY NUMBER OF CASE VALUES* INSIDE SINGLE

DEFAULT :- IT EXECUTE WHEN NO ANY CASE VALUE

- use the switch statement to select one of many blocks of code to be executed

```
Syntax
   :
      switch (n)
                  case 1:
                        Execute code block
                        1
                  case 2:
                        Execute code block
                        2
                  default:
                        Code to be executed if n is
                        Different from case 1 and 2}
```

- First we have a single expression *n* (most often a variable), that is evaluatedonce.

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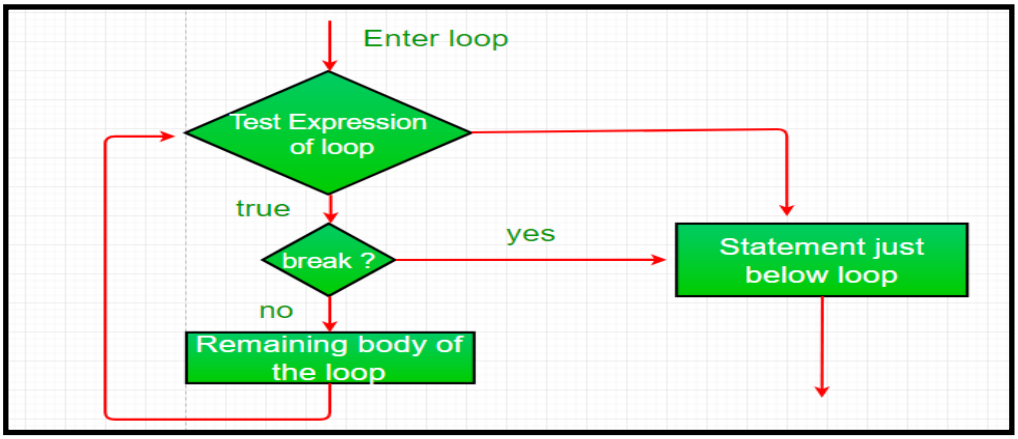
- The value of the expression is then compared with the values for each case in the structure.
- If there is a match, the block of code associated with that case is executed.
- Use break to prevent the code from running into the next case automatically.
- **1 Word Question – Answer**

SR.NO.	QUESTION	ANSWER
1	Switch represent _____	Multiway Decision Statement
2	If no any case value match with condition then statement following__will execute.	Default
3	_____statement is used to terminate particular case.	Break
4	In switch case statement , any case value will be followed by____sign.	: (Colon)
5	Write down syntax to represent switch statement	Switch(Expression)

➢ **EXPLAIN JAVASCRIPT BREAK & CONTINUE STATEMENTS (3 MARKS)**



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BREAK STATEMENTS

- The break statement "jumps out" of a loop.
- The continue statement "jumps over" one iteration in the loop.
- **The Break Statement**
- You have already seen the break statement used in an earlier chapter of this tutorial. It was used to "jump out" of a switch() statement.
- The break statement can also be used to jump out of a loop.

- The **break statement** breaks the loop and continues executing the code after

  the loop (if any):

Example

```
for (var i = 0; i < 10; i++)
{if (i == 3)
{
    break;
}
text += "The number is " + i + "<br>";
}
```

- Since the if statement has only one single line of code, the braces can beomitted:

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```
for (var i = 0; i < 10; i++)
{if (i == 3) break;
 text += "The number is " + i + "<br>";
}
```

CONTINUE STATEMENT

- The **continue statement** breaks one iteration (in the loop), if a specified condition occurs, and continues with the next iteration in the loop.
- This example skips the value of 3:

Example

```
for (var i = 0; i <= 10; i++)
 {if (i == 3)
continue;
text += "The number is " + i + "<br>";
}
```

1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	How many jumping statements available in c?	3(Break ,Continue,Goto)
2	_____statement is used to terminate fromthe loop.	Break
3	_____statement is used to pass control tothe next iteration.	Continue
4	_____statement is used to jump from onepoint to another point.	Goto

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- **EXPLAIN DIALOG BOXES IN JAVASCRIPT (5 MARKS)(MIMP)**

  In JavaScript we can create three kinds of popup boxes: **Alert box, Confirm box, andPrompt box**.

  - **Alert Box**
    - An alert box is often used if you want to make sure information comesthrough to the user.
    - When an alert box pops up, the user will have to click "OK" to proceed.

Syntax:

```
alert("sometext");
```

Example:

```
<html>
<body>
<script type="text/javascript">
alert("Hello! I am an alert box!");
</script>
</body>
</html>
```

CONFORM BOX

- A confirm box is often used if you want the user to verify

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or acceptsomething.

- When a confirm box pops up, the user will have to click either "OK" or"Cancel" to proceed.
- If the user clicks "OK", the box returns true. If the user clicks "Cancel", thebox returns false.

Syntax:

confirm("sometext")

Example:

```
<script type="text/javascript">
        a = confirm('press ok
        button');if (a==true)
                alert('you press ok button');
        else
                alert('you press cancel button');
</script>
```

PROMPT BOX

- A prompt box is often used if you want the user to input a value beforeentering a page.
- When a prompt box pops up, the user will have to click either "OK" or"Cancel" to proceed after entering an input value.

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- If the user clicks "OK" the box returns the input value. If the user clicks"Cancel" the box returns null.

Syntax:

prompt (“sometext”, “default value”);

Example:

```
<script type="text/javascript">
        name=prompt("Please enter your name","tejas");
        document.write("Hello " + name + "! How are you today?");
</script>
```

➢ EXPLAIN LOOPING STRUCTURE IN JAVA SCRIPT (3 OR 5 MARKS)(IMP)

Loop Means “ to execute block of code repeatedly”.

Looping statements also called “Iterative statements”.

WHILE LOOP

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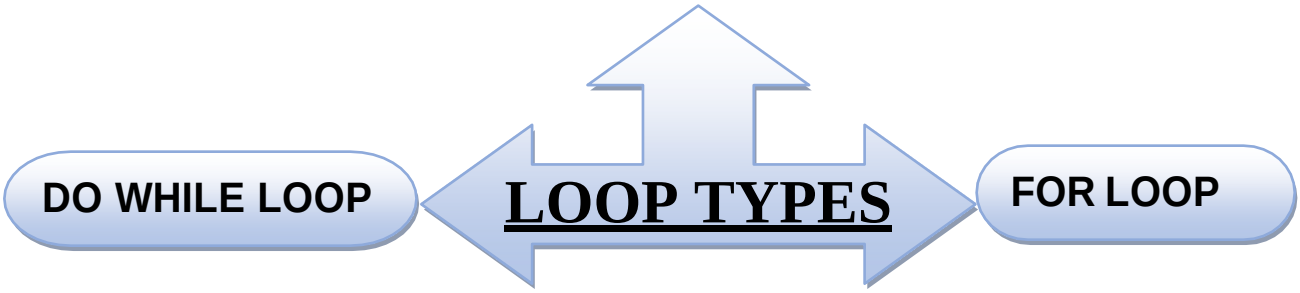
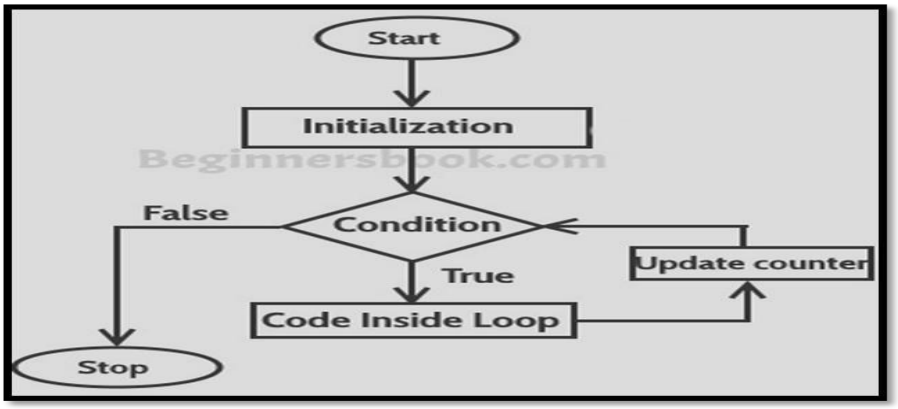


LOOP EXECUTION :-



- Looping refers to the ability of a block of code to repeat itself.
- This repetition can be for a predefined number of times or it can go until certain conditions are met.
- For instance, a block of code needs to be executed till the value of a variable becomes 20 (Conditional Looping), or a block of code needs to be repeated 7 times.
- For this purpose, JavaScript offers 2 types of loop structures:
    1) For Loops - This loop iterate a specific number of times as specified.

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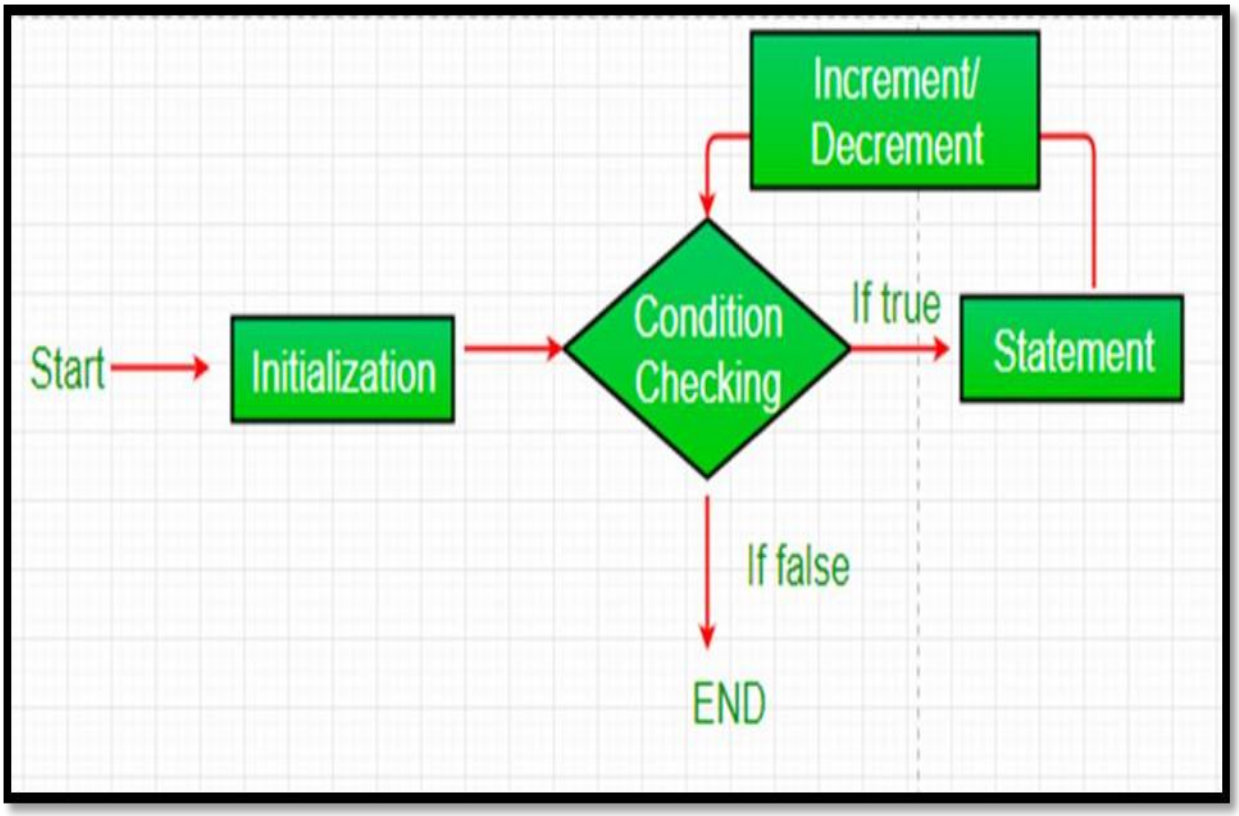
2) While Loops – This is Conditional Loops, which continue until a condition is met.



FOR LOOP:

Syntax

```
for (expression1; condition;
expression2)
{
        // Javascript commands…
}
```

Where,

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- Expression1 sets up a counter variable and assigns the initial value.
- Condition specifies the final value for the loop to fire (i.e. the loop fires till condition evaluates to true).
- Expression2 specifies how the initial value in expression1 is incremented.

Example:

```
<script language =
        "javascript">for(n=10;
        n>=1; n--)
        {
                document.write(n);
        }
</script>
```

WHILE LOOP:

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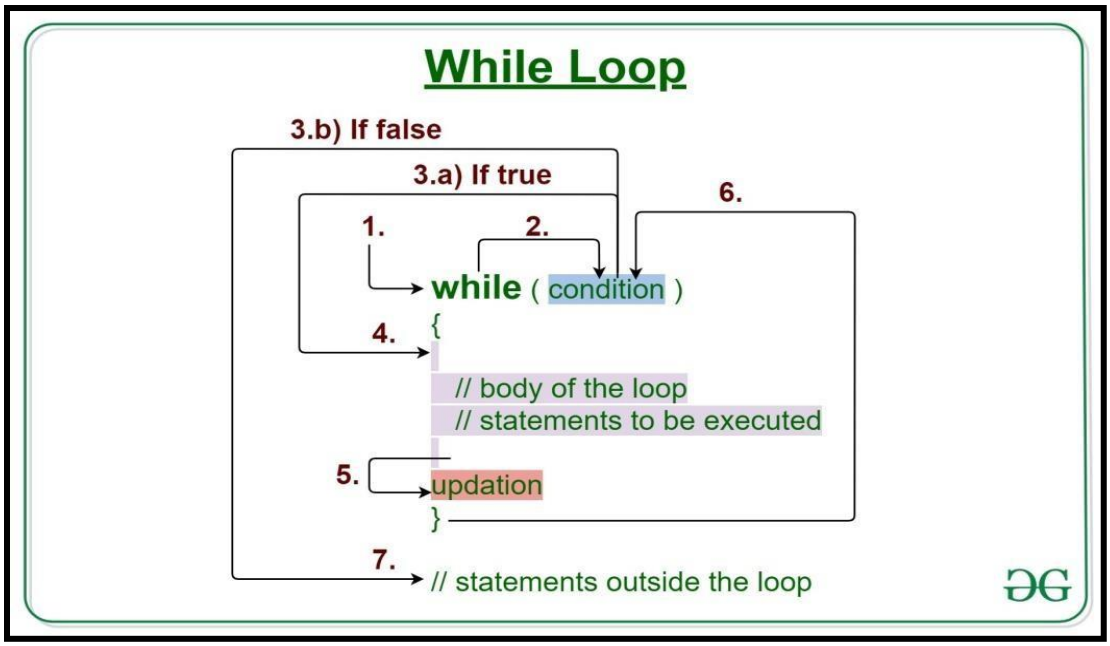

Syntax

```
while (condition)
{
        Javascript
        code…
}
```

- Where, the **condition** is a valid JavaScript expression that evaluates to a Booleanvalue.
- The JavaScript commands execute as long as the condition is true.

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Example

```
<script language
="javascript">
    var n=1;
    while
    (n<=10)
    {
        document.write(n);
        n++;
    }
```

- **Give difference between While loop & Do .. While loop.**

While Loop	**Do..While Loop**
1)While loop is known as Entry Controlled Loop.	1)Do..While loop is known as Exit controlled Loop.
2) In While loop if condition become false then no any output will be given.	2)n Do..While loop if the condition become true than atleast one loop will be execute &output will be display.
3)There is no terminating semicolon(;) at the end of loop.	3)There is terminating semicolon(;) at the end of do..while loop.

4)Syntax :
While (<condition>
{
<Statements>
}
	4)Syntax :
	do
	{
	<Statements>
	} While (<condition>;

- **Give difference between While loop & For loop.**

While Loop	**For Loop**
1)While loop is bit slower than for	1)For loop is faster than while loop.

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loop.

2) While loop is not suitable for simple Initialization.

3)Syntax :
While (<condition>
{
<Statements>
}

2)For loop is more suitable when there is
Simple initialization.

3)Syntax :
For(<Initialization>;<Condition>;
<Inc./Dec.>)
{
<Statements>
}

Give difference between Break & Continue.

While Loop	**For Loop**
1) Break is used to terminate the block & get the control out of the loop.	1) Continue is used to get the control to the next iteration of theloop.
2) Break statement can be used in both switch case & loop.	2) Continue statement can be only used with looping statement.
3)Syntax : <break>;	3)Syntax : <continue>;

1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	Looping statements are also known as _____ statements	Iterative
2	_____Loop is known as Entry Control Loop.	While
3	_____Loop is known as Exit control Loop.	Do While
4	In Do while Loop condition will be terminated with _____.	Semi Colon(;)
5	_____Loop is known as faster loop in c.	For

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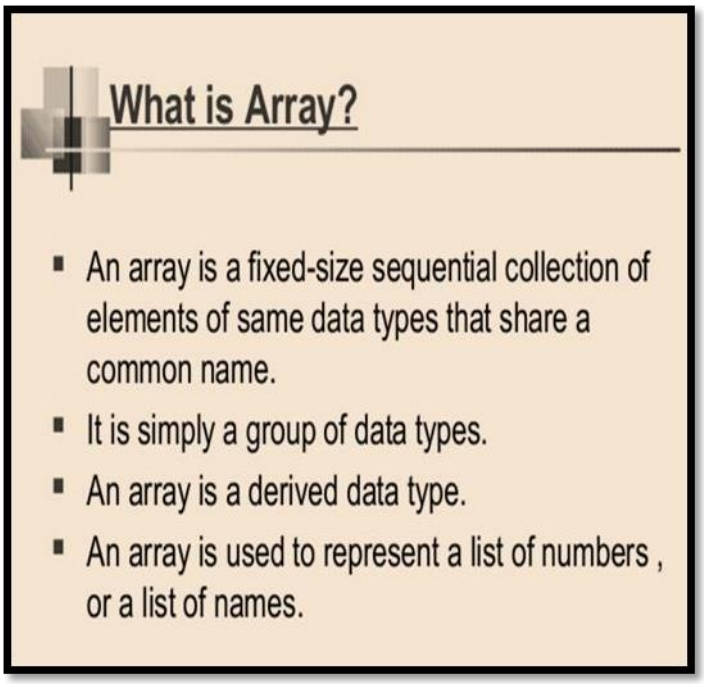
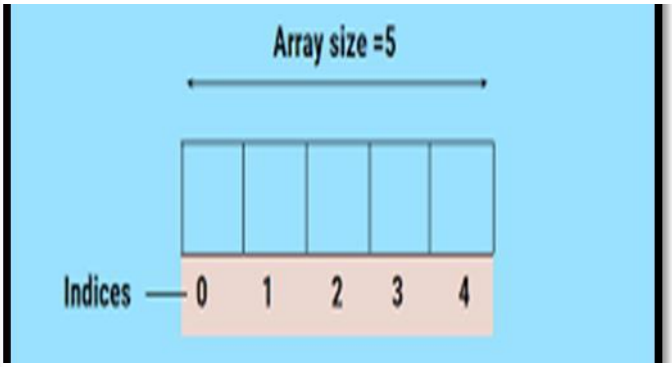
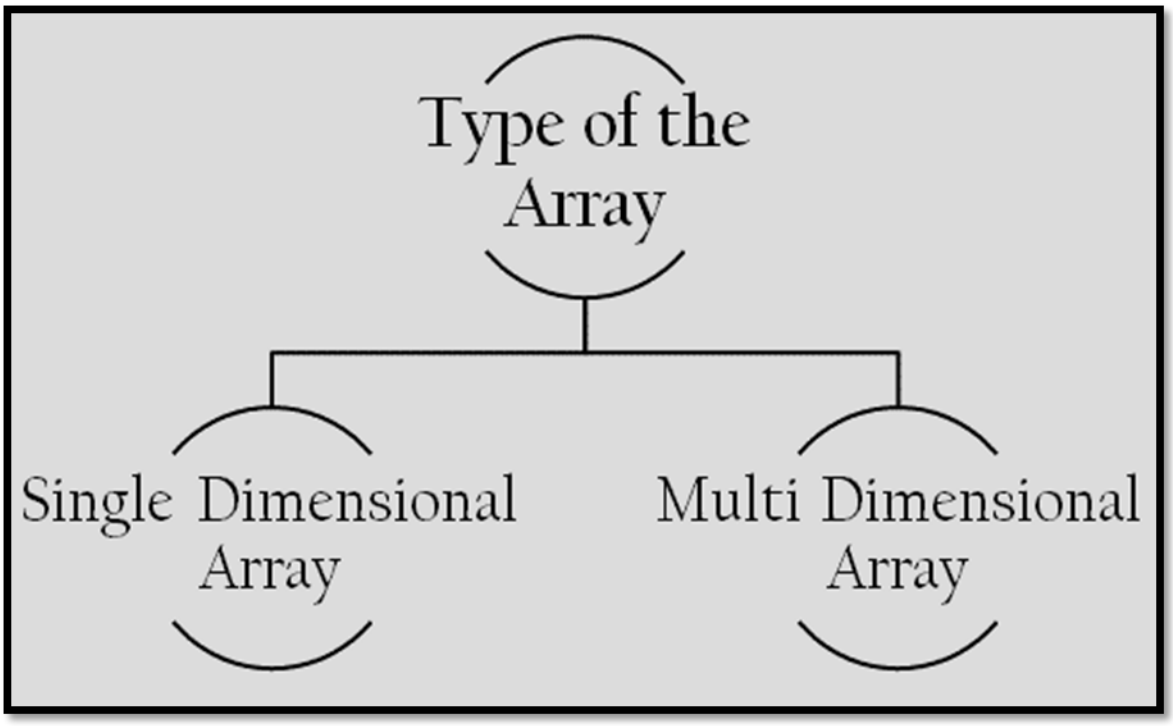
- **EXPLAIN ARRAY IN JAVA SCRIPT (3 MARKS)(IMP)**







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- An array is a special variable, which can hold more than one value, at a time.
- If you have a list of items (a list of car names, for example), storing the cars in singlevariables could look like this:

```
var car1="Saab";

var car2="Volvo";

var car3="BMW";
```

- However, what if you want to loop through the cars and find a specific one? And what ifyou had not 3 cars, but 300?
- The best solution here is to use an array!
- An array can hold all your variable values under a single name. And you can access thevalues by referring to the array name.
- Each element in the array has its own ID so that it can be easily accessed.
- An array can be defined in three ways.

The following code creates an Array object called myCars:

1)
```
var myCars=new Array();
//regular array
myCars[0]="Saab";
myCars[1]="Volvo";
myCars[2]="BMW";
```

2)
```
var myCars=new Array("Saab","Volvo","BMW"); // condensed array
```

3)
```
var myCars=["Saab","Volvo","BMW"]; // literal array
```

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Access an Array

- You can refer to a particular element in an array by referring to the name ofthe array and the index number.
- The index number starts at 0.
  EXAMPLE: document.write(myCars[0]);

1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	What is Array?	Group of Elements having samename and type.
2	Array is_____datatype.	Derived
3	Array is used to represent ____	Collection
4	Types of array can be_____& _____	Single/One dimension& Multi/Two dimension

- **WRITE A NOTE ON USER DEFINED FUNCTION(UDF) (3 MARKS OR 5 MARKS)**

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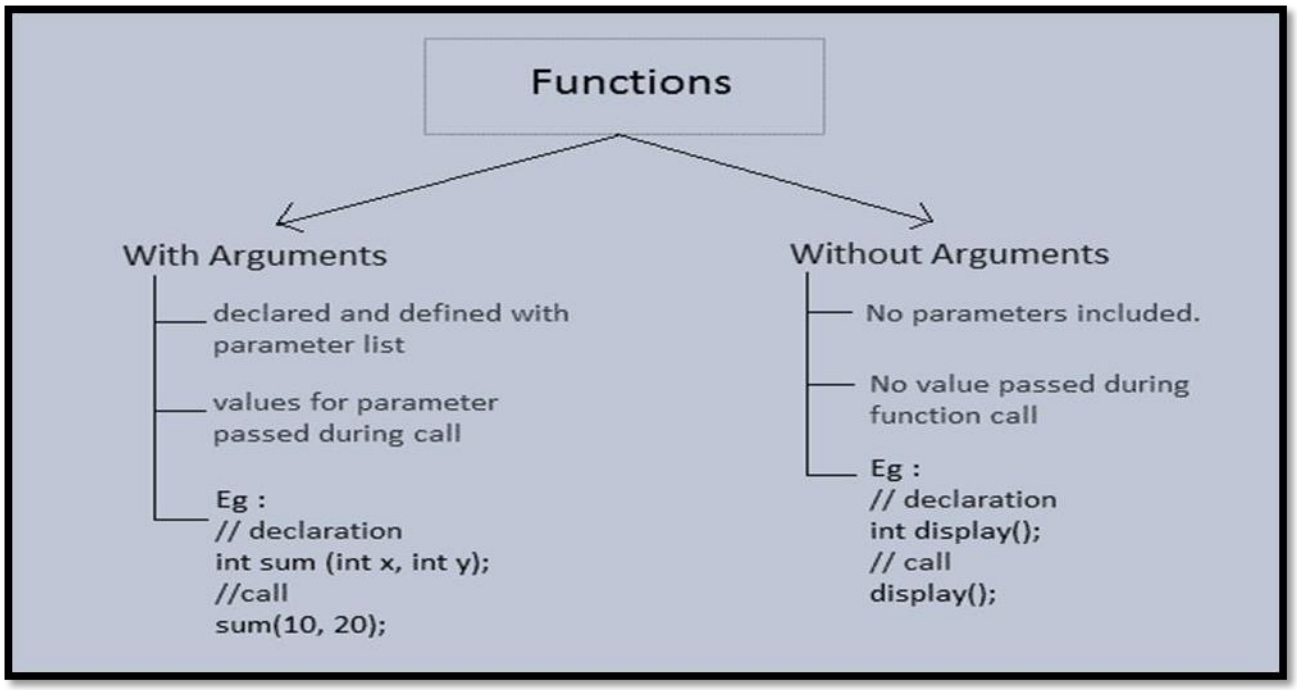

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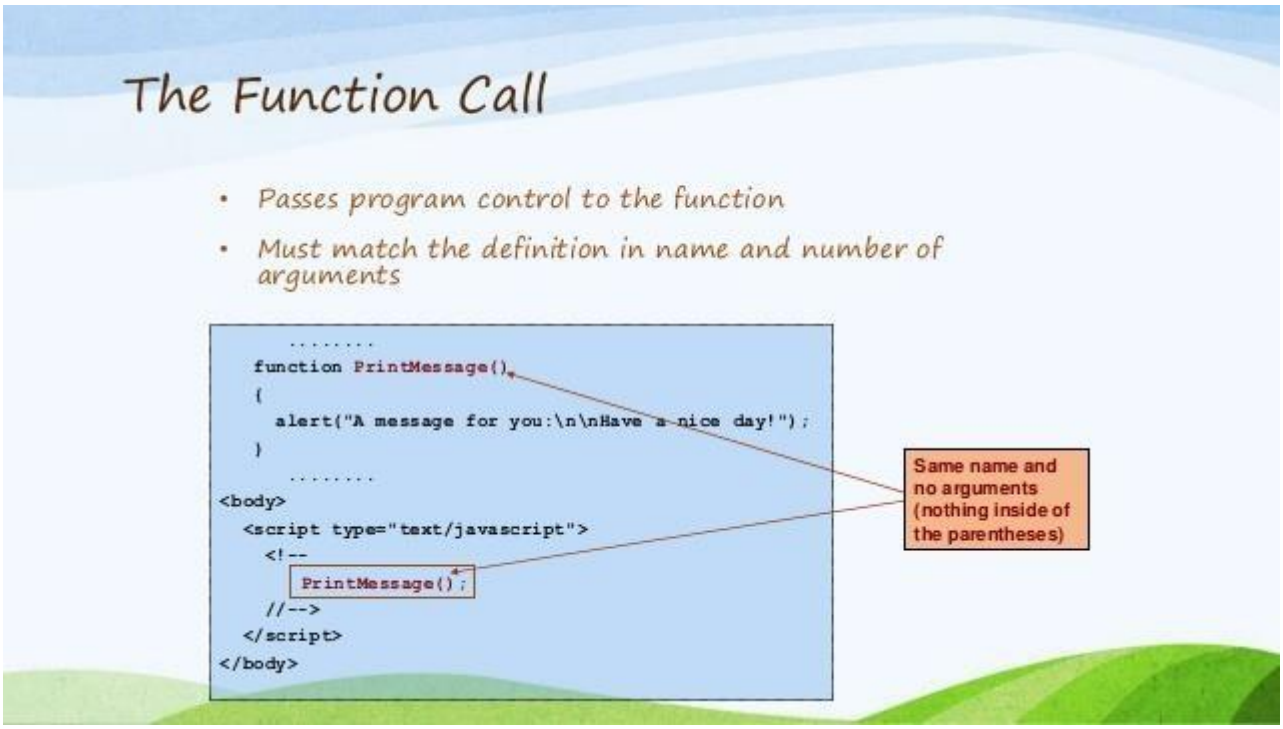

- Functions offer the ability to group together JavaScript program code that performs a specific task into a single unit that can be used repeatedly whenever required in a JavaScript program.
- A user defined function first needs to be declared and coded.
- Once this is done the function can be invoked by calling it using the name given to the function when it was declared.
- Functions can accept information in the form of arguments and can return results.
- Appropriate syntax needs to be followed for declaring functions, invoking them, passing them values and accepting their return values.

Declaring Function:

- Functions are declared and created using the **function** keyword. A

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functioncontain the following:

- A name for the function.
- A list of parameters (arguments) that will accept values passed tothe function when called.
- A block of JavaScript code that defines what the function does

```
Syntax:
        function <function name>(parameter1,parameter2,..)
        {
                // JavaScript code…
        }
```

- A <function name> is case sensitive, can include underscore (_), and has to startwith a letter.
- The list of **parameters** passed to the function appears in parentheses andcommas separate members of the list.

Place of Declaration:

i) Functions can be declared anywhere within an HTML file.

ii) Preferably, functions are created within the <HEAD>…<HEAD> tags of the HTMLfile.

iii) This ensures that all functions will be *parsed* before they are invoked or called.

iv) If the function is called before it is declared and parsed, it will lead to an errorcondition.

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```
<html>
   <head>
<script language="javascript">
                    function printnm()  {
            var user="shri";
            document.write("name is : ");
                              document.write(user);

                  }
</script></head>
  <body onLoad="printnm();">

  </body></html>
```

Passing Parameters:

- Values can be passed to function parameters when a 'parameterized' function is called. Values are passed to the function by listing them in the parentheses following the function name.
- Multiple values can be passed, separated by commas provided that the function has been coded to accept multiple parameters.

The return Statement

- The return statement is used to specify the value that is returned from the function.
- So, functions that are going to return a value must use the return statement.

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Example:

```
function prod(a, b)
{
        x=a*b;
        return x;
 }
Product=prod (2, 3);
```

Now variable product contains the 6;

1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	FULL FORM OF UDF_	USER DEFINE FUNCTION
2	USE OF UDF_____	CREATE OUR OWN FUNCTION
3	WHICH KEY WORD IS USED TO CREATE UDF?	FUNCTION KEYWORD

- **BUILT IN FUNCTION IN JAVASCRIPT (2 , 3 OR 5 MARKS)**
  - **STRING FUNCTION:**

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1) charAt()

Syntax: <string>.charAt(num);

Purpose:

- This function returns the character located at position passed in to the argument.
- This indexing is done from left to right starting with the 0 (zero) position.
- If the num passed is not a valid index in the string, -1 is returned.

Example:

```
<script language = "javascript">
    var x = "This is a test, small
    test.";y = x.charAt(5);
    document.write('character at 5th position is '+y);
</script>
```

Output: character at 5th position is i

2) concat()

Syntax: <string>.concat(string2);

Purpose:

- This function is used to join more than one string with string1.
- In argument of this function user can give more than one string.

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Example:

```
<script language =
        "javascript">var x =
        "hi";
        var y = "hw r
        u?"; var z =
        x.concat(y);
        document.write('final string is  '+z);
</script>
```

3) indexOf():

Syntax: <string>.indexOf(<string or char to search>, [index]);

Purpose:

- This method is used to find the position of specified string or charstarting from specified index.
- This method starts to find string from starting position (left to right).
- Here index in argument is optional if it is not defined that start form zero position.

Example:

```
<script
        language="JavaScript
        ">x = "Hello World!";
        document.write("index of l is from 5th position
"+x.indexOf("l",5)+'<br>');
        document.write("index of l is "+x.indexOf("l"));
</script>
```

Output: index of l is from 5th position 9 index of l is 2

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4) lastIndexOf():

Syntax: <string>.lastIndexOf(<string or char to search>, [index]);

Purpose:

- This method is used to find the position of specified string or charstarting from specified index.
- This method starts to find string from ending position (right to left).

Example:

```
<script
        language="JavaScript
        ">x = "Hello World!";
        document.write("index of l is from 5th position
"+x.lastIndexOf("l",5)+'<br>');
        document.write("index of l is "+x.lastIndexOf("l"));
</script>
```

Output: index of l is from 5th position 3 index of l is 9

5) Replace:

Purpose:

Syntax: <string>.replace(<string to replace> or [regular exp], <new string>);

o This method is used to replace the string from main string withnew string

Example:

```
<script language="JavaScript1.2">
        x = "This is main string to be
        replace"y =
        x.replace("string","text");
        document.write("new string is "+y);
 </script>
```

Output: new string is This is main text to be replace

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6) Search:

Syntax: <string>.search(<string to be search> or <regular expression>);

Purpose:

- This method is used to find the specified string position of main string.
- If string is match then it will return the position.
- If string is not match then it will return -1.

Example:

```
<script language="JavaScript1.2">
        x = "This is main string to be
        replace"y = x.search("string");
        document.write("the position is
        "+y);
</script>
```

Output: the position is 13

7) substr():

Syntax: <string>.substr([num1], [num2]);

Purpose:

- This method returns the string from position specified in num1 with noof character specified with num2.
- If num1 is not specified then it starts to count character from 0.
- If num1 is negative then num2 is optional and it starts

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to count fromlast character of string.

```
Exampl:
<script language="JavaScript1.1">
  x = "This is a test";
                    y = x.substr(5,10);
        document.write('the substring from position 5 to 10 is:'+y);
          </script>
Output: the substring from position 5 to 10 is: is a test
```

8) substring():

Syntax: <string>.substring([num1], [num2]);

Purpose:

- The substring() method returns the characters starting with the indexed position num1 and ending with the character before num2.
- The string's first character is in position 0.
- If you pass num1 as a negative number, it will be treated as 0.
- If you pass num2 as a value greater than the string.length property, it willbe treated as string.length.
- If num1 equals num2, an empty string is returned.
- It is also possible to pass a single index location to the method.

```
Example:<script language="JavaScript1.1">
 x = "This is a test";
          y = x.substring(5,10);
           document.write('the substring from position 5 to 10 is: '+y);
</script>
Output: the substring from position 5 to 10 is: is a
```

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9) toUpperCase():

Syntax: <string>.toUpperCase();

Purpose:

This method returns all the characters of string in to uppercase.

```
Example:
<script language="JavaScript1.1">
x = "This is a test";
y = x.toUpperCase();document.write(y);
</script>
Output: THIS IS A
TEST
```

10) toLowerCase():

Syntax: <string>.toLowerCase();

Purpose:

This method returns the all characters of string in lower case.

```
Example:
   <script language="JavaScript1.1">
   x = "THIS IS A TEST";
         y = x.tolowerCase();
        document.write(y);
   </script>
```

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- **MATHS**
- FOR 1 MARKS

abs (x) - Return the absolute value of x.
acos (x) - Return the arccosine (in radian) of x.
asin (x) - Return arcsine (in Radian) of x.
atan (x) - Returns the arctangent of x with numeric value b/w -PI/2 to +PI/2.
atan2 (y,x) - Returns the arctangent of quotient on dividing y and x.
ceil (x) - Rounds up x to the nearest bigger integer.
cos (x) - Return cosine value of x.
exp (x) - Returns the value of ex.
floor (x) - Rounds up x to the nearest smaller integer.
log (x) - Returns the natural logarithmic value of x.
max (x,y,z,.....n) - Returns the highest number from the given list.
min (x,y,z,.....n) - Returns the smallest number from the given list.
pow (x,y) - Returns the x to the power of y.
random () - Returns a Random number.
round (x) - Rounds up x to the nearest integer.
sin (x) - Return the sine value of x.
sqrt (x) - Returns the square root of x.
tan (x) - Returns the tangent value of x.

1) abs()

Syntax: Math.abs(num)

Purpose:

o The abs() method is used to calculate the absolute value of num.

Example:

```
<script
        language="JavaScript1.1"
        >x = Math.abs(-10);
        document.write(x);
</script>
```

Output:

10

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Note: for all math function user have to user Math object before all function.

2) Ceil():

Syntax: Math.ceil(num)

Purpose:

o The ceil() method calculates the smallest integer that is greaterthan or equal to the number passed in as a parameter

Example:

```
<script
language="JavaScript">
x= Math.ceil(2.1);
document.write(x);
</script>
```

Output: 3

3) floor():

Syntax: Math.floor(num)

Purpose:

- Get the largest integer number, which is equivalent to or less thanthe number passed as the parameter.

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```
Example:
        <script
        language="JavaScript">
        x= Math.floor(2.9);
        document.write(x);
</script>
 Output: 2
```

4) **pow():**

Syntax: Math.pow(num1, num2)

Purpose:

- The pow() method of the Math object is used to calculate an exponent power.

```
Example:
 <script
        language="JavaScript"
        >x= Math.pow(2, 3);
        document.write(x);
</script>
Output:        8
```

5) **random():**

Syntax: Math.random()

Purpose:

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- The random() method of the Math object is used to obtain arandom number between values 0 and 1.

```
Example:
<script
        language="JavaScript
        ">x= Math.random();
        document.write(x);
</script>
Output: 0.45678993
```

6) **round():**

Syntax: Math.round(num)

Purpose:

- The round() method rounds a number to its nearest integer value.
- If the fractional portion of the number is .5 or greater, the result is roundedto the next highest integer.
- If the fractional portion of number is less than .5, the result is rounded to thenext lowest integer.

```
Example:
        <script
                language="JavaScript
                ">x=
                Math.round(3.4);
                document.write(x);
        </scrip>
Output: 3
```

7) **max():**

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Syntax: Math.max(num1, num2, num3…numn)

Purpose:

- The max() method of the Math object gets the given number of the twoparameters passed to it.
- The larger value is returned as the result.

```
Example:
<script language="JavaScript">
        x= Math.max(3,4,1,2);
        document.write(x);
</script>
```

8) min():

Syntax: Math.min(num1, num2…numn)

Purpose:

- The min() method of the Math object gets the minimum number ofthe given parameters passed to it.
- The larger value is returned as the result.

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Example:

```
<script language="JavaScript">
x= Math.min(3,4,1,2);
  document.write(x);
    </script>
```

Output: 1

- **DATE:**

Name	Description
getDate()	The day of the month as an integer from 1 to 31
getDay()	The day of the week as an integer where 0 is Sunday and 1 is Monday
getHours()	The hour as an integer between 0 and 23
getMinutes()	The minutes as an integer between 0 and 59
getMonth()	The month as an integer between 0 and 11 where 0 is January and 11 is December
getSeconds()	The seconds as an integer between 0 and 59
getTime()	The current time in milliseconds where 0 is January 1, 1970, 00:00:00
getYear()	The year, but this format differs from browser to browser

1) Date()

Syntax: <variable name> = new Date()

Purpose:

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It is used to get the current system date and time.

```
Example:
  <script language="JavaScript">
    x= new Date();
      document.write(x);
        </script>
Output: Tue Apr 12 2011 09:04:37 GMT+0530 (India Standard Time)
```

2) getDate():

Syntax: <date object>.getDate();

Purpose:

- The getDate() method returns the day of the month expressed as an integer from1 to 31.
- To access this function user must have to create date object.
- Date object is created as follows.
- x = new Date (); here we create date object named x.

```
Example:
 <script language="JavaScript">
    x= new Date();
  document.write(x.getDate());
</script>
Output:  30
```

3) getDay():

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Syntax: <date object>.getDay();

Purpose:

- This method returns the current day of the week in integer form from 0 to6

```
Example:
<script language="JavaScript">x= new
        Date();
        document.write(x.getDay());
</script>
Output: 6
```

- Sunday is starting from 0 and onwards.

4) getMonth():

Syntax: <date object>.getMonth();

Purpose:

- The getMonth() method returns the month portion of the Date

```
Example:
<script language="JavaScript">
x= new Date();
        document.write(x.getMonth());
</script>
Output: 3
```

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object expressed as an integer from 0 (January) to 11 (December).

5) getYear():

Syntax: <date object>.getYear();

Purpose:

- The getYear() method returns the year portion of the Date object.

The year is represented as either a two-digit number or a four-digit number, depending on

Example:

```
<script language="JavaScript">
x= new Date();
        document.write(x.getYear());
</script>
```

Output: 11

1) getFullYear():

Syntax: <date object>.getFullyear();

Purpose:

This method returns the year portion of the date with four digitnumber.

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Example:

```
<script language="JavaScript">
        x= new Date();
        document.write(x.getFullYear());
</script>
```

Output: 20
11

2) getHours():

Syntax: <date object>.getHours();

Purpose:

o The getHours() method returns the hour portion of the date expressed as an integer from 0 (12:00 a.m. midnight) to 23 (11:00 p.m.).

Example:

```
<script language="JavaScript">
        x= new Date();
        document.write(x.getHours());
</script>
```

Output:
6

3) getMinutes():

Syntax: <date object>.getMinutes();

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Purpose:

This method returns the current minute of the date expressed as an integer from 0 to 59.

```
Example:
<script language="JavaScript">
        x= new Date();
        document.write(x.getMinutes());
</script>
Output:
19
```

6) getSeconds():

Syntax: <date object>.getSeconds();

Purpose:

The getSeconds() method returns the seconds portion of the Date object expressed as an integer from 0 to 59.

```
Example:
<script language="JavaScript">
x= new Date();
        document.write(x.getSeconds());
</script>
Output: 29
```

7) getMiliSeconds():

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Syntax: <date object>.getMilliSeconds();

Purpose:

o The getMilliseconds() method returns the millisecond portion of the dateexpressed as an integer from 0 to 999.

```
Example:
<script language="JavaScript">
        x= new Date();
        document.write(x.getMilliSeconds());
</script>
Output: 299
```

8) setDate():

Syntax: <date object>.setDate(Day);

Purpose:

- The setDate() method sets the day of the month in the Date object to the argument day, an integer from 1 to 31.
- The method returns an integer representing the number of milliseconds between midnight January 1, 1970 (GMT) to the date and time specified in the Date object after the day of the month has been adjusted.

```
Example:
<script language="JavaScript">
        x= new Date();
        document.write(x.setDate(17));
</script>
Output: 1303051102710
```

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9) setMonth():

Syntax: <date object>.setMonth(month);

Purpose:

- The setMonth() method sets the month in the Date object.
- The argument month is an integer from 0 (January) to 11 (December).
- The method returns an integer representing the number of milliseconds between midnight January 1, 1970 (GMT) to the new date.

Example:

```
<script
        language="JavaScript
        ">x= new Date();
        document.write(x.setMonth(6));
</script>
```

Output: 1309618547995

10) setYear():

Syntax: <date object>.setYear(Year);

Purpose:

- The setYear() method sets the year in the Date object to the

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argument year. The argument can be either a four-digit or two-digit integer.

- The method returns an integer representing the number of milliseconds between midnight January 1, 1970 (GMT) to the new date.

```
Example:
<script language="JavaScript">
        x= new Date();
        document.write(x.setYear(1987));
</script>
Output: 546793593059
```

11) setFullYear():

Syntax: <date object>.setFullYear(year);

Purpose:

- The setFullYear() method sets the year in the Date object to the argumentyear, a four-digit integer.
- The method returns an integer representing the number of milliseconds between midnight January 1, 1970 (GMT) to the new date after setting.

```
Example:
<script language="JavaScript">
x= new Date();
        document.write(x.setFullYear(1987));
</script>
Output: 546793593059
```

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12) setHours():

Syntax: <date object>.setHours(Hours);

Purpose:

- The setHours() method sets the hour in the Date object to the argument hours, an integer from 0 (12:00 a.m. midnight) to 23 (11:00 p.m.).
- The method returns an integer representing the number of milliseconds between midnight January 1, 1970 (GMT) to the new date.

Example:

```
<script language =
        "javascript">x = new
        Date(); x.setHours(4);
        document.write(x);
</script>
```

Output: Sat Apr 30 2011 04:50:07 GMT+0530 (India Standard Time)

13) setMinutes():

Syntax: <date object>.setMinutes(minutes);

Purpose:

- The setMinutes() method sets the minutes in the Date object to the argument minutes, an integer from 0 to 59.

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The method returns an integer representing the number of milliseconds between midnight January 1, 1970 (GMT) to the new date.

Example:

```
<script language =
        "javascript">x = new
        Date(); x.setMinutes(4);
        document.write(x);
</script>
```

Output: Sat Apr 30 2011 04:58:07 GMT+0530 (India Standard Time)

14) setSeconds():

Syntax: <date object>.setSeconds(seconds);

Purpose:

- The setSeconds() method sets the seconds in the Date object to theargument seconds, an integer from 0 to 59.

The method returns an integer representing the number of millisecondsbetween

Example:

```
<script language =
        "javascript">x = new
        Date();
        x.setSeconds(30);
        document.write(x);
</script>
```

Output: Sat Apr 30 2011 04:58:30 GMT+0530 (India Standard Time)

- **ARRAY**

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1) **join()**

Syntax: <array object>.join(string);

Purpose:

- The join () method converts all the elements to strings and then concatenates all the strings into a longer string.
- If an argument is provided in the parameter list, it is used to separate the elements in the string returned by the method.

```
Example:<script language = "javascript">
 fruit = new Array("A","B","C");
aString = fruit.join("-");
        document.write("The fruit array contains: ",aString);
</script>
Output: The fruit array contains: A-B-C
```

2) **reverse()**

Syntax: <array object>.reverse();

- The reverse () method reverses the order of the elements in the array according to the array index numbers.

```
Example:
<script language = "javascript">
        x = new Array ("A","B","C");
        x.reverse();
        document.write("x[0]=",x[0],"<br>");
         document.write("x[1]=",x[1],"<br>");
         document.write("x[2]=",x[2],"<br>");
</scrip>
Output:
x [0]=C
x [1]=B
x [2]=A
```

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3) pop():

Syntax: <array object>.pop();

Purpose:

- The pop () method deletes the last element of the array and sets the array'slength property to one less than its current value.
- This last element is returned from the method.

```
Example:
<script language = "javascript">
        x = new
        Array("a","b","c");y =
        x.pop();
        document.write(y," was removed from the pile.");
</script>
Output: c was removed from the pile.
```

4) push()

Syntax: <array object>.push(arg1, arg2…argn);

Purpose:

- The push () method "pushes" the elements to the end of the array in theorder they were listed.
- arg1,...argN are elements to be pushed to the end of the array
- It returns the last element added to the end of the array, which is also thelast argument in the parameter list.

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```
Example:
<script language =
        "javascript">x = new
        Array("A","B");
         y = x.push("C","D");
        document.write(x[2],"<BR>");
        document.write(x[3]);
</script>
Output: C D
```

5) **shift()**

Syntax: <array object>.shift ();

Purpose:

- The shift () method deletes and returns the first element of the array.
- Once deleted, all the remaining elements are shifted down one spot.
- The first position is filled by the element that was previously in the secondposition.

```
Example:
<script language = "javascript">
        x = new Array("A","B","C");
        document.write("before shift:
        ",x[0],"<br>");y = x.shift();
        document.write("after shif: ",x[0],"<br>");
</script>
        Output: before shift: A  after shift: B
```

6) **sort():**

Syntax: <array object>.sort([sort function]);

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Purpose:

- The sort () method rearranges the elements of the array based on a sorting order.
- If the method has no parameters, JavaScript attempts to convert all the elements of the array to strings and then sort them alphabetically.
- If array contains numeric value then following function is needed for sorting an array.

```
Function x (a, b)    // this is for ascending order
{
return a - b;
}
```

OR

```
Function x (a, b)    // this is for descending order
{
return b - a;
}
```

Example:

```
<script type="text/javascript">
        function x(a,b)
        {
                return a - b;
        }
        var n = ["10", "5", "40", "25", "100", "1"];
        document.write(n.sort(x));
</script>
```

Output: 1, 5, 10, 25, 40, 100

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➢ String

String Object Methods

Method	Description
charAt()	returns the character at the specified index
concat()	joins two or more strings, and returns a copy of the joined strings
indexOf()	returns the position of the first found occurence of a specified value in a string
lastIndexOf()	returns the position of the last found occurence of a specified value in a string
replace()	searches for a match between a substring (or regex) and a string, and replaces the matched substring with a new substring
search()	searches for a match between a regex and a string, and returns the position of the match
slice()	extracts a part of a string and returns a new string
split()	splits a string into an array of substrings
substr()	extracts the characters from a string, beginning at a specified start position, and through the specified number of character
substring()	extracts the characters from a string, between two specified indices
toLowerCase()	converts a string to lowercase letters
toUpperCase()	converts a string to uppercase letters
trim()	removes whitespace from both ends of a string
valueOf()	returns the primitive value of a String object
toString()	returns the value of a String object

Math Object Methods

Method	Description
abs(x)	returns the absolute value of x
round(x)	rounds x to the nearest integer
ceil(x)	returns x, upwards to the nearest integer
floor(x)	returns x, rounded downwards to the nearest integer
exp(x)	returns the value of E^x
log(x)	returns the narural logarithm (base E) of x
max(x, y, z, ...)	returns the number with the highest value
min(x, y, z, ...)	returns the number with the lowest value
pow(x, y)	returns the value of x to the power of y (x^y)
sqrt(x)	returns the square root of x
random()	returns a random number between 0 and 1
sin(x)	returns the sine of x (x in radians)
cos(x)	returns the cosine of x (x in radians)
tan(x)	returns the tangent of an x

Date Object Methods

Method	Meaning	Units
getFullYear()	4-digit year	2000, 2001, ...
getMonth()	month no.	0 - 11
getDate()	dat of month	0 - 31
getHours()	hour no.	0 - 23
getMinutes()	minute no.	0 - 59
getSeconds()	second no.	0 - 59

Array Object Methods

Method	Description
concat()	joins two or more arrays, and returns a copy of the joined array
indexOf()	search the array for an element and returns its position

Array Object Methods (cont)

join()	joins all elements of an array into a string
lastIndexOf()	search the array for an element, starting at the end, and returns its position
pop()	removes the last element of an array, and returns that element
push()	adds new elements to the end of an array, and returns the new length
reverse()	reverses the order of the elements in an array
shift()	removes the first element of an array, and returns that element
sort()	sorts the elements of an array
toString()	converts an array to a string, and returns the result
valueOf()	returns the primitive value of an array

Number Object Methods

Method	Description
toExponential(x)	converts a number into an exponential notation
toFixed(x)	formats a number with x numbers of digits after the decimal point
toPrecision(x)	formats a number to x length
toString()	converts a Number object to a string
valueOf()	returns the primitive value of a Number object

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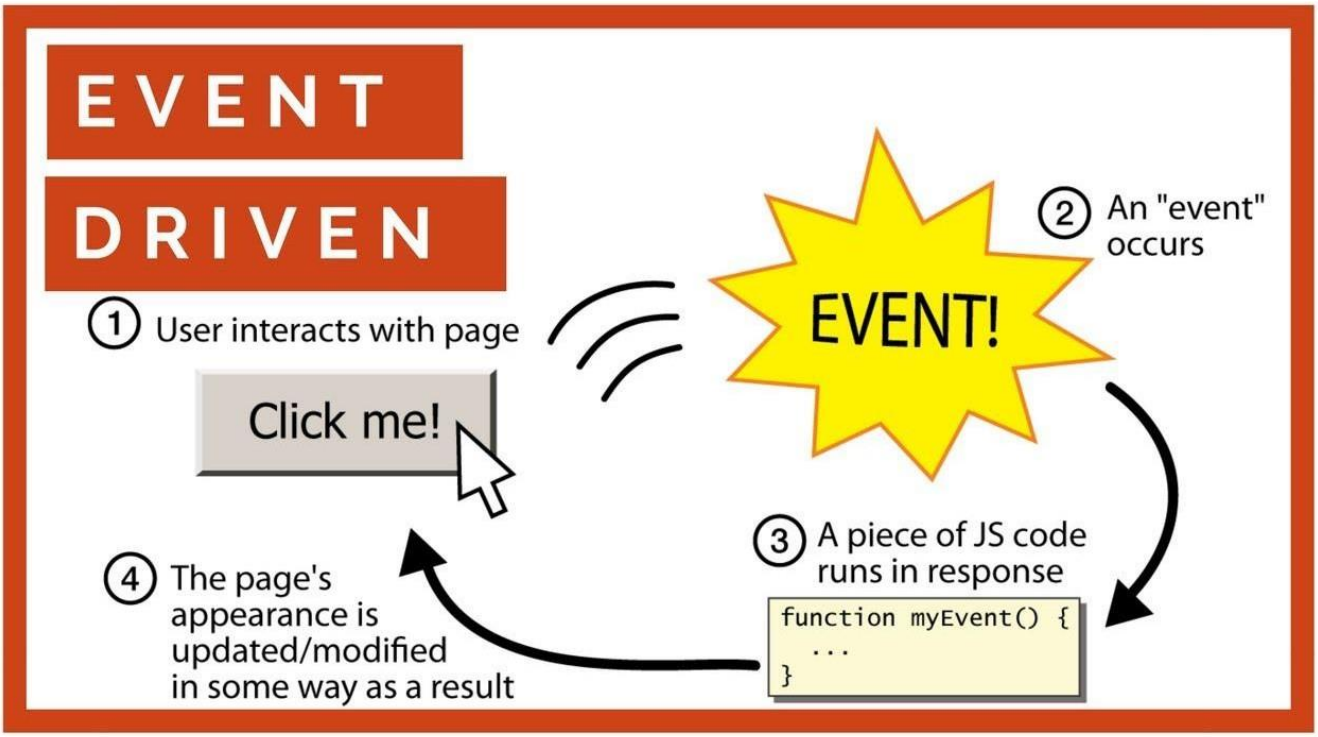
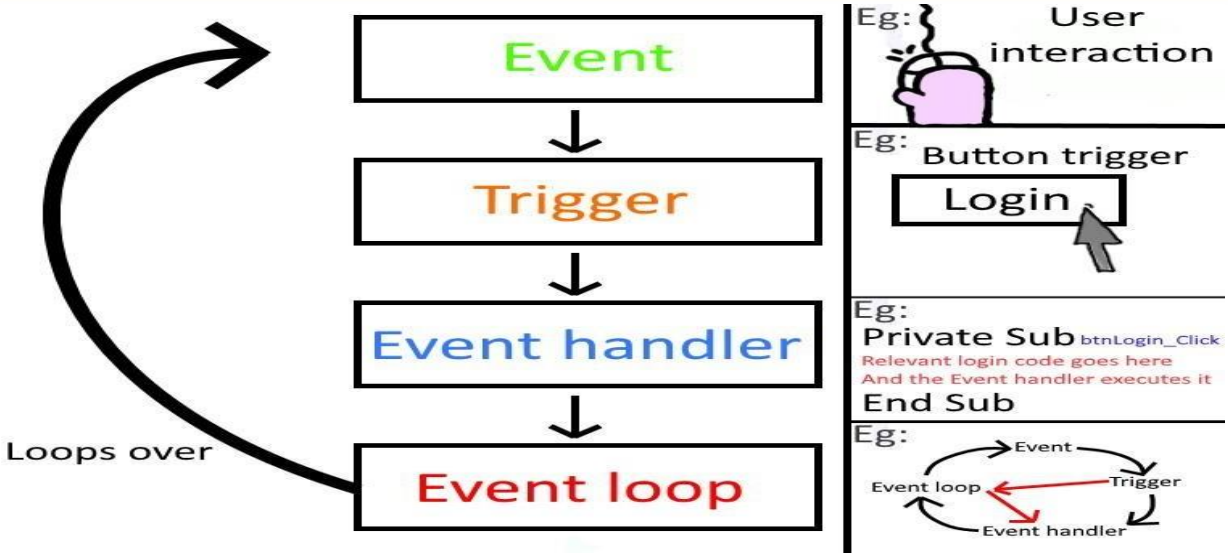
- **EXPLAIN EVENTS IN JAVA SCRIPT (5 MARKS)(IMP)(2 OR 3 MARKS EACH)**

HOW EVENTS WORKS





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FOR 1 MARKS

Event	Value	Description
onchange	script	Script runs when the element changes
onsubmit	script	Script runs when the form is submitted
onreset	script	Script runs when the form is reset
onselect	script	Script runs when the element is selected
onblur	script	Script runs when the element loses focus
onfocus	script	Script runs when the element gets focus
onkeydown	script	Script runs when key is pressed
onkeypress	script	Script runs when key is pressed and released
onkeyup	script	Script runs when key is released
onclick	script	Script runs when a mouse click
ondblclick	script	Script runs when a mouse double-click
onmousedown	script	Script runs when mouse button is pressed
onmousemove	script	Script runs when mouse pointer moves
onmouseout	script	Script runs when mouse pointer moves out of an element
onmouseover	script	Script runs when mouse pointer moves over an element
onmouseup	script	Script runs when mouse button is released

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1. onblur Event : When a user leaves an input field

```
<!DOCTYPE html>
<html>
<head>
<script>
function myFunction() {
  var x = document.getElementById("fname");
  x.value = x.value.toUpperCase();
}
</script>
</head>
<body>
Enter your name: <input type="text" id="fname" onblur="myFunction()">
<p>When you leave the input field, a function is triggered which transforms the input text to upper case.</p>
</body>
</html>
```

Note : When you leave the input field, a function is triggered which transforms the input text to upper case.

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2. onblur Event : When a user changes the content of an input field

```
<!DOCTYPE html>
<html>
    <head>
        <script>
 function myFunction()
 {
var x = document.getElementById("fname"); x.value =
x.value.toUpperCase();
}
</script>
        </head>
        <body>
            Enter your name: <input type="text"
                id="fname"onblur="myFunction()">
            <p>When you leave the input field, a function is
triggered whichtransforms the input text to upper case.</p>

        </body>
</html>
```

When you leave the input field, a function is triggered which transforms the input text to uppercase.

3. onchange Event : When a user selects a dropdown value

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```
<!DOCTYPE html>
<html>
    <head>
        <script>
function preferedBrowser()
{
prefer = document.forms[0].browsers.value;
alert("You prefer browsing internet with " +prefer);
  }
</script>
    </head>
    <body>
    <form>
Choose which browser you prefer:
<select id="browsers" onchange="preferedBrowser()">
<option value="Chrome">Chrome</option>
  <option value="InternetExplorer">InternetExplorer</option>
 <option value="Firefox">Firefox</option>
</select>
  </form>
    </body>
  </html>
```

4. onfocus Event : When an input text field gets focus

```
<!DOCTYPE html>
```

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```
<html>
    <head>
        <script>
            function  myFunction(x)
              {
            x.style.background = "yellow";
}
        </script>
    </head>
    <body>
Enter your name: <input type="text" onfocus="myFunction(this)">
        <p>When the input field gets focus, a function is triggered
        which changesthe background-color.</p>
    </body>
</html>
```

5. onsubmit Event : When a user clicks the submit button

```
<!DOCTYPE html>
<html>
    <head>
        <script>
            function confirmInput() {
              fname = document.forms[0].fname.value;
```

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```
                                alert("Hello " + fname + "! You will now be
                                    redirected towww.w3Schools.com");
}
</script>
                        </head>
                        <body>
<form onsubmit="confirmInput()" action="http://www.w3schools.com/">
Enter your name: <input id="fname" type="text" size="20">
    <input type="submit">
    </form>
                        </body>
                </html>
```

6. onreset Event : When a user clicks the reset button

```
                <!DOCTYPE html><html><head>
                                <script> function message() {
                                  alert("This alert box was triggered by the onreset
                        event handler");
                                  }
                        </script></head>
                        <body>
                                <form onreset="message()">
                                    Enter your name: <input type="text" size="20">
                                    <input type="reset">
                                </form>
```

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```
        </body>
    </html>
```

7. onkeypress Event : When a user is pressing / holding down a key

```
<!DOCTYPE html>
<html>
    <head>
        <script>
function myFunction() {
    alert("You pressed a key inside the input field");
}
</script>
    </head>
    <body>
        <p>A function is triggered when the user is pressing a key in the inputfield.</p>
        <input type="text" onkeypress="myFunction()">
    </body>
</html>
```

Note : A function is triggered when the user is pressing a key in the input field.

8. onkeyup Event : When the user releases the key

```
<!DOCTYPE html>
<html>
    <head>
```

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```
<script>
function myFunction() {
var x = document.getElementById("fname");
x.value = x.value.toUpperCase();
}
</script>
</head>
<body>
<p>A function is triggered when the user releases a key in the input field.
The function transforms the character to upper case.</p>
Enter your name: <input type="text" id="fname" onkeyup="myFunction()">
</body>
</html>
```

Note : A function is triggered when the user releases a key in the input field. The function transforms the character to upper case.

9. onclick Event : When button is clicked

```
<!DOCTYPE html>
<html>
<head>
<script>
function myFunction()
```

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3 – Vaishalinagar
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```
{ document.getElementById("demo").innerHTML="HelloWorld";
}
                </script></head>
                <body>
                    <p>Click the button to trigger a function.</p>
                    <button onclick="myFunction()">Click me</button>
                    <p id="demo"></p>
                </body>
            </html>
```

10. ondblclick Event : When a text is double clicked

```
            <!DOCTYPE html>
            <html>
                <head>
                    <script>
                        function myFunction() {
                          document.getElementById("demo").innerHTML
                          ="HelloWorld";
}
</script>
                </head>
                <body>
                    <p ondblclick="myFunction()">Doubleclick this paragraph
                to trigger afunction.</p>
```

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```
                <p id="demo"></p>
            </body>
        </html>
```

11. onload Event : When the page has been loaded

```
<!DOCTYPE    html>
<html>
    <head>
        <script>
        function myFunction()
        {
        alert("Page is loaded");
        }
</script>
    </head>
    <body onload="myFunction()">
        <h1>Hello World!</h1>
    </body>
</html>
```

12. onunload Event : When the browser closes the document

```
<!DOCTYPE html>
<html>
    <head>
        <script>
function myFunction() {
```

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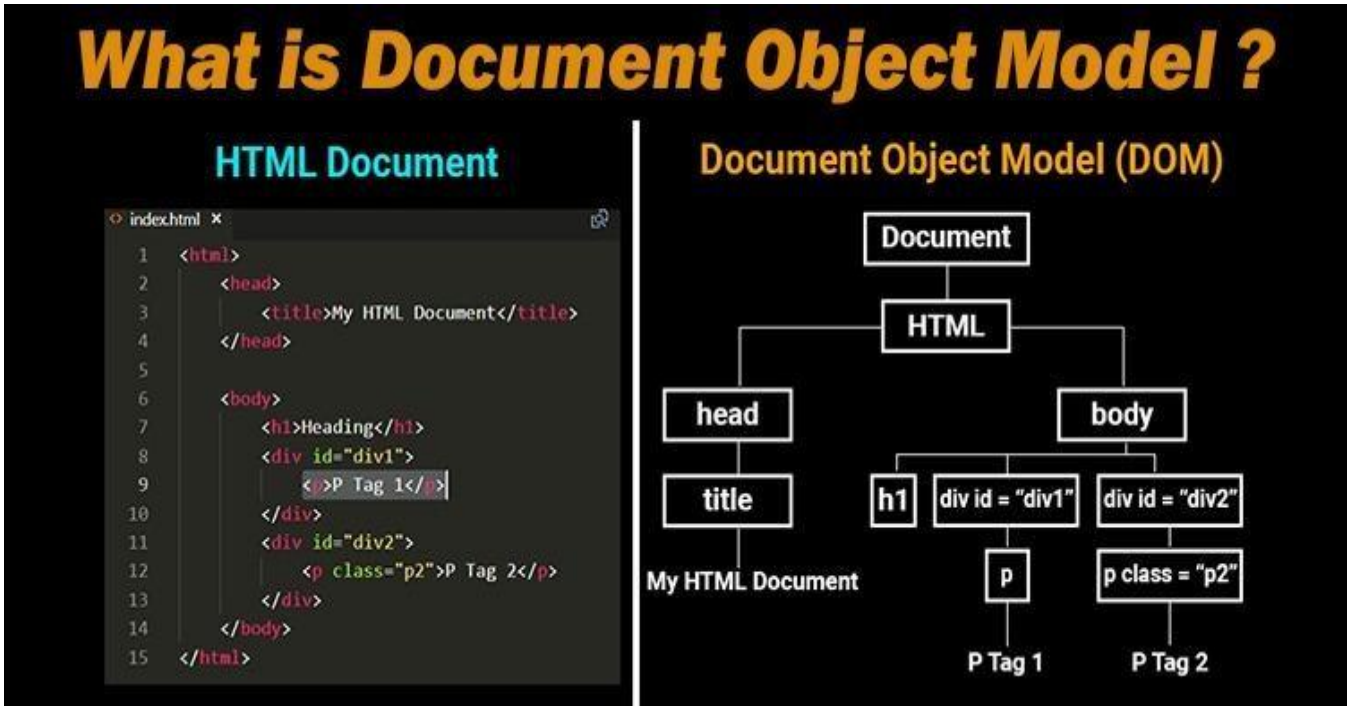
```
                alert("Thank you for visiting W3Schools!");
            }
        </script>
    </head>
    <body onunload="myFunction()">
        <h1>Welcome to my Home Page</h1>
        <p>Close this window or press F5 to reload the page.</p>
    </body></html>
```

- **EXPLAIN DOCUMENT OBJECT (2 OR 3 MARKS)(IMP)**



Every web page resides inside a browser window which can be considered as an object.

- A Document object represents the HTML document that is displayed in that window. The Document object has various properties that refer to other

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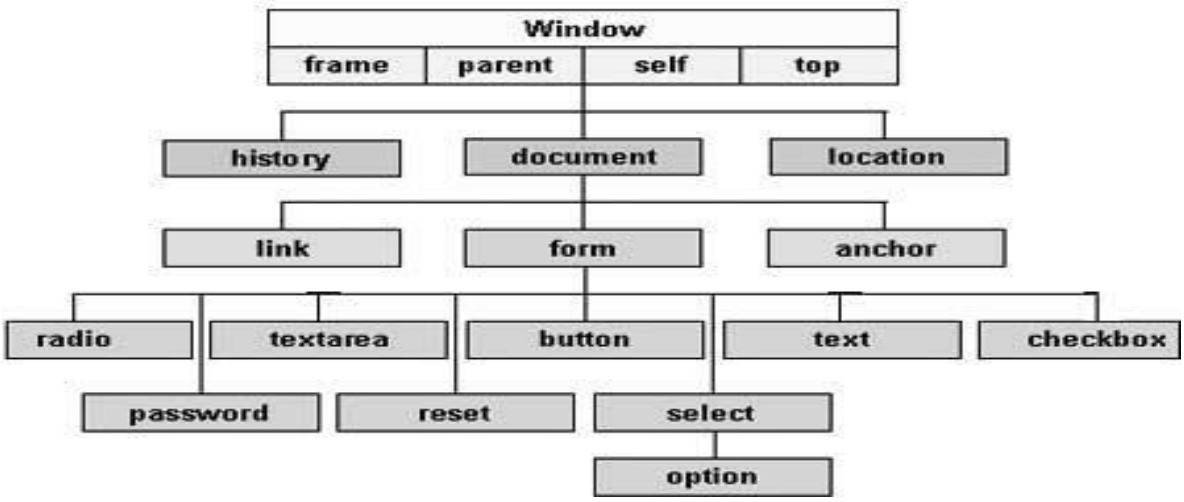
objects which allow access to and modification of document content.

- The way that document content is accessed and modified is called the **Document Object Model**, or **DOM**. The Objects are organized in a hierarchy. This hierarchical structure applies to the organization of objects in a Web document.
    - **Window object:** Top of the hierarchy. It is the outmost element of the object hierarchy.
    - **Document object:** Each HTML document that gets loaded into a window becomes a document object. The document contains the content of the page.
    - **Form object:** Everything enclosed in the <form>...</form> tags sets the form object.
    - **Form control elements:** The form object contains all the elements defined for that object such as text fields, buttons, radio buttons, and checkboxes.
- Here is a simple hierarchy of few important objects:



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1 Word Question – Answer

SR.NO.	QUESTION	ANSWER
1	FULL FORM OF DOM_____	DOCUMENT OBJECT MODEL
2	LIST OUT ALL OBJECTS OF DOM OBJECT	1. WINDOW 2. DOCUMENT 3. FORM 4. FORM CONTROL
3	WHAT IS THE USE OF DOM OBJECT?	A DOCUMENT OBJECT REPRESENTS THE HTML DOCUMENT THAT IS DISPLAYED IN THAT WINDOW

- **EXPLAIN HISTORY OBJECT(3 MARKS)(MIMP)**

HOW HISTORY OBJECT WORKS

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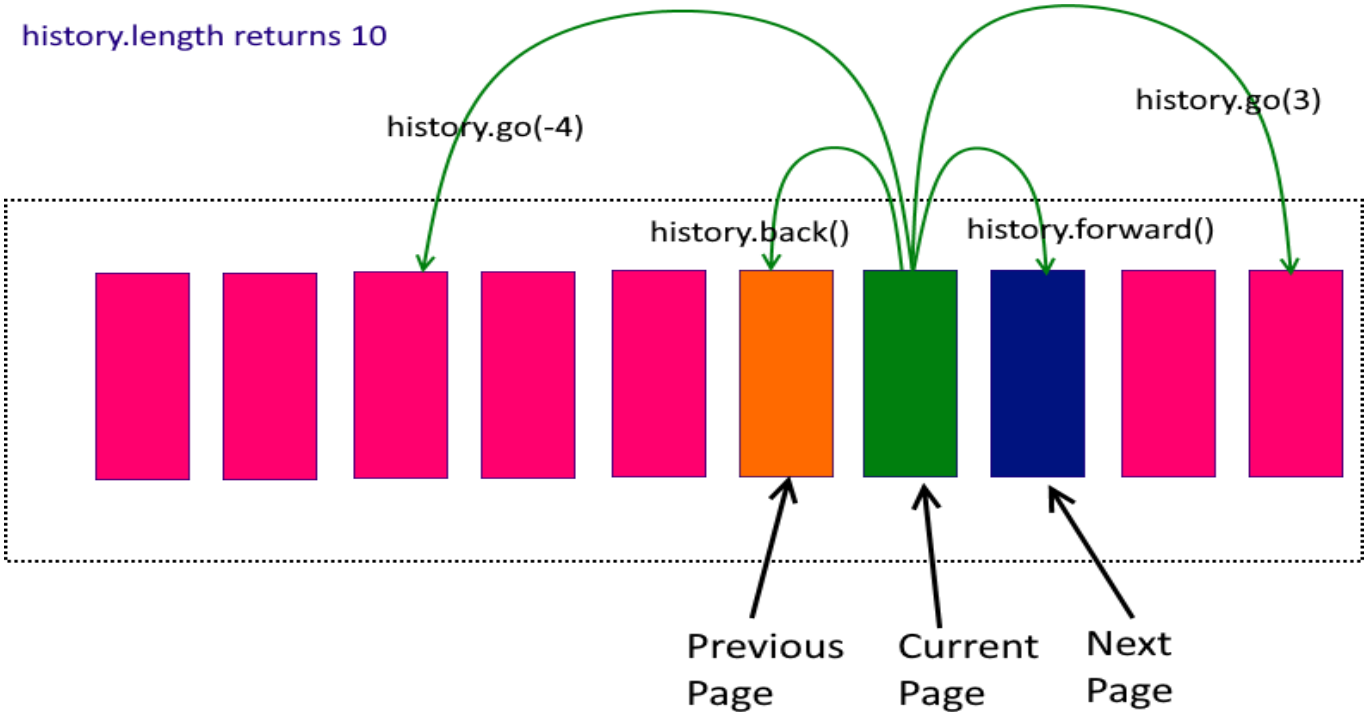

- The history property has the return value as history object, which is an array of history items having details of the URL's visited from within that window. Also, note that the History object is a JavaScript object and not an HTML DOM object.
- General syntax of history property of window object:
  - *window.history*
- The JavaScript runtime engine automatically creates this object.
- An introduction on the history object and the properties and methods associated with it was covered in an earlier section.

➢ **Property of History Object:**

1. **length:**

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- The length property of the history object returns the number of elements in thehistory list.
- General syntax of length property of history Object:
  - *history.length*
- An example to understand the length property of history object:

2. **current:**
   - This property contains the complete URL of the current History entry.
   - General syntax of current property of history Object:
     - *history.current*
3. **next:**
   - The next property of history object contains the complete URL of the next element inthe History list. This functionality or the URL visited is the same as pressing the forward button or menu.
   - General syntax of next property of history Object:
     - *history.next*
4. **previous:**
   - The previous property of history object contains the complete URL of the previous element in the History list. This functionality or the URL visited is the same aspressing the back button or menu.
   - General syntax of previous property of history Object:
     - *history.previous*

➢ **Methods of History Object:**

1. **back():**
   - There may be scenarios where the programmer wishes to load the

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previous URL present in the history list. In this case, the programmer can make use of the back() method of the history object.

The back() method of the history object takes the user to the previous page. The functionality results in the same as pressing the back button of the browser.

- General syntax of back method of history Object:

  history.back()

2. forward():

- The forward() method of the history object loads the next URL in the History list. The functionality results are the same as pressing the forward button of the browser.
- General syntax of forward method of history Object:
  - *history.forward()*

3. go():

- If the programmer wishes to load a specified URL from the History list, then the go method of history object can be used.
- General syntax of go method of history Object:
  - *history.go(number)*

    or
  - *history.go(URL)*
- The back method seen above is the same as history.go(-1) in terms of go method of history object. The forward method seen above is the same as history.go(1)

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1 MARKS Question – Answer

SR.NO.	QUESTION	ANSWER
1	WHAT IS HISTORY OBJECT?	HISTORY OBJECT USED TO WORK WITH BROWSER HISTORY
2	LIST OUT PROPERTY OF HISTORY OBJECT	1. LENGTH 2. CURRENT 3. NEXT 4. PREVIOUS
3	LIST OUT METHODS OF HISTORY OBJECT	1. BACK 2. FORWARD 3. GO

- **EXPLAIN NAVIGATOR OBJECT.(2 OR 3 MARKS)(IMP)**
  - The Navigator object of JavaScript returns useful information about the visitor'sbrowser and system.

Properties

Properties	Description
appCodeName	The code name of the browser.
appName	The name of the browser (ie: Microsoft Internet Explorer).
appVersion	Version information for the browser (ie: 5.0 (Windows)).
cookieEnabled	Boolean that indicates whether the browser has cookies enabled.

language	Returns the default language of the browser version (ie: en-US). **NS and Firefox only.**
mimeTypes[]	An array of all MIME types supported by the client. **NS and Firefox only.**
platform[]	The platform of the client's computer (ie: Win32).
plugins	An array of all plug-ins currently installed on the client. **NS and Firefox only.**
systemLanguage	Returns the default language of the operating system (ie: en-us). **IE only.**
userLanguage	Returns the preferred language setting of the user (ie: en-ca). **IE only.**

Q.13 <u>EXPLAIN EMAIL VALIDATION & FORM VALIDATION (5 MARKS WITH EXAMPLE OR 3 MARKS)</u>

EMAIL VALIDATION

- Validating email is a very important point while validating an HTML form. In this page we have discussed how to validate an email using JavaScript :
- An email is a string (subset of ASCII characters) separated into two parts by @ symbol. a "personal_info" and a domain, that is personal_info@domain. The length of the personal_info part may be up to 64 characters long and domain name may be up to 253 characters.
- The personal_info part contains the following ASCII characters.
  - Uppercase (A-Z) and lowercase (a-z) English letters.
  - Digits (0-9).
  - Characters ! # $ % & ' * + - / = ? ^ _ ` { | } ~
  - Character. (period, dot or fullstop) provided that it is not the first or last character

    and it will not come one after the other.
  - The domain name [for example com, org, net, in, us, info] part contains letters, digits, hyphens and dots.

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- **Example of valid email id**
  - mysite@ourearth.com
  - my.ownsite@ourearth.org
  - mysite@you.me.net
- **Example of invalid email id**
  - mysite.ourearth.com [@ is not present]
  - mysite@.com.my [tld (Top Level domain) can not start with dot "."]
  - @you.me.net [No character before @]
  - mysite123@gmail.b [".b" is not a valid tld]
  - mysite@.org.org [tld can not start with dot "."]
  - .mysite@mysite.org [an email should not be start with "."]
  - mysite()*@gmail.com [here the regular expression only allows character, digit, underscore and dash]mysite..1234@yahoo.com [double dots are not allowed]

JavaScript code to validate an email id

```
function ValidateEmail(mail)
{
if (/^\w+([\.-]?\w+)*@\w+([\.-]?\w+)*(\.\w{2,3})+$/.test(myForm.emailAddr.value))
{
```

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```
return (true)
}
alert("You have entered an invalid email address!")
return (false)
}
```

- To get a valid email id we use a regular expression /^\w+([\.-]?\w+)*@\w+([\.-]?\w+)*(\.\w{2,3})+$/.

- **Flowchart**

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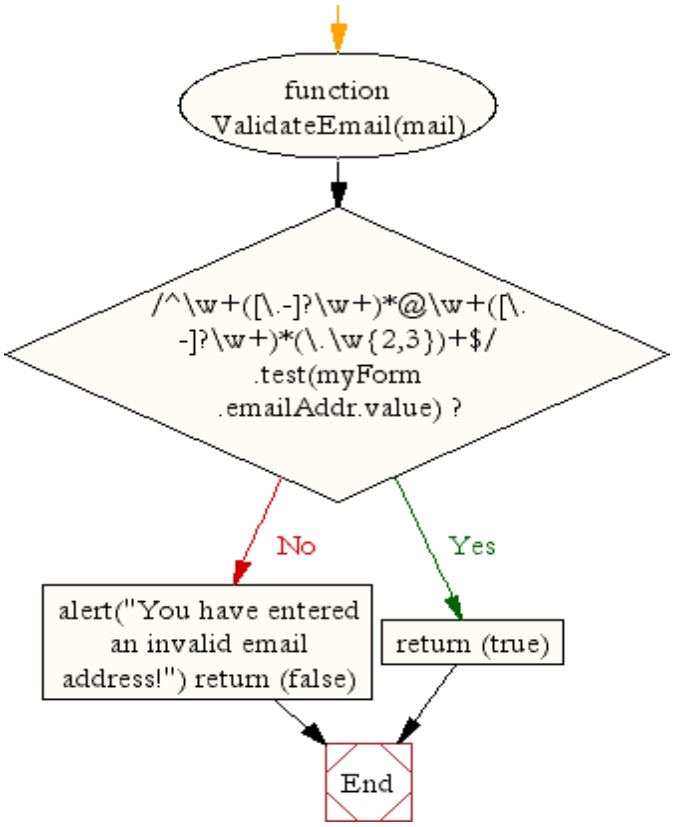

FORM VALIDATION

- It is important to validate the form submitted by the user because it can have inappropriate values. So validation is must.
- The JavaScript provides you the facility the validate the form on the client side so processing will be fast than server-side validation. So, most of the web developers prefer JavaScript form validation.
- Through JavaScript, we can validate name, password, email, date, mobile number etc fields.
- In this example, we are going to validate the name and password. The name can't be empty andpassword can't be less than 6 characters long.

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- Here, we are validating the form on form submit. The user will not be forwarded to the next page until given values are correct.

```
<script>
    function validateform()
    {
var name=document.myform.name.value;
    var password=document.myform.password.value;
            if (name==null || name=="")
            {
                alert("Name can't be
                blank");return false;
            }else if(password.length<6)
            {
        alert("Password must be at least 6 characters long.");
        return false;
                }
        }
        </script>
    <body>
        <form name="myform" method="post" action="abc.jsp"
        onsubmit="return validateform()" >
            Name: <input type="text" name="name"><br/>
            Password: <input type="password" name="password"><br/>
            <input type="submit" value="register">
</form>
```

- **JavaScript Number Validation**

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- Let's validate the textfield for numeric value only. Here, we are using isNaN() function.

```
<script>
function validate()
{
    var num=document.myform.num.value; if (isNaN(num))
    {
    if (isNaN(num))
    {
    document.getElementById("numloc").innerHTML="Enter Numeric value only";
    return false;
    }
    else
    {
    return true;
    }
  }
}
</script>
<form name="myform" onsubmit="return validate()" >
    Number: <input type="text" name="num"><span id="numloc"></span><br/>
    <input type="submit" value="submit">

</form>
```

- **JavaScript Retype Password Validation**

```
<script type="text/javascript">
function matchpass()
```

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```
{
    var firstpassword=document.f1.password.value;
    var secondpassword=document.f1.password2.value;
    if(firstpassword==secondpassword)
    {
        return true;
    }
    else
    {
        alert("password must be same!");
        return false;
    }
}
</script>
<form name="f1" action="register.jsp" onsubmit="return matchpass()">
Password:<input type="password" name="password" /><br/>
Re-enter Password:<input type="password" name="password2"/><br/>
<input type="submit">

</form>
```

Unit -5

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Bootstrap Framework

- Introduction to Bootstrap
- Bootstrap Layout (Container, Row, Columns, Responsive classes, Offset Column, Reordering Columns)
- Bootstrap Content (Typography, Tables, Images, Forms)
- Bootstrap Components (Navbar, Navs and tabs, Dropdowns, Buttons, Button Groups, Breadcrumb, Pagination, Labels, Alerts, Progress Bars, Accordion, Card, Modal)
- Bootstrap Utilities (Colors, Background, Borders, Display, Overflow, Position, Spacing, Text, Vertical align)

Q:1 Introduction to Bootstrap

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- Bootstrap is the most popular HTML, CSS and JavaScript framework for developing a responsive and mobile friendly website.
- It is absolutely free to download and use.
- It is a front-end framework used for easier and faster web development.
- It includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many others.
- It can also use JavaScript plug-ins.
- It facilitates you to create responsive designs.

➢ Why use Bootstrap

- It is very easy to use. Anybody having basic knowledge of HTML and CSS can use Bootstrap.
- It facilitates users to develop a responsive website.
- It is compatible on most of browsers like Chrome, Firefox, Internet Explorer, Safari and Opera etc.

➢ What Bootstrap package contains

- **Scaffolding:** Bootstrap provides a basic structure with Grid System, link styles, and background.
- **CSS:** Bootstrap comes with the feature of global CSS settings, fundamental HTML elements style and an advanced grid system.
- **Components:** Bootstrap contains a lot of reusable components built to provide iconography, dropdowns, navigation, alerts, pop-overs, and much more.
- **JavaScript Plugins:** Bootstrap also contains a lot of custom jQuery plugins. You can easily include them all, or one by one.

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- **Customize:** Bootstrap components are customizable and you can customize Bootstrap's components, LESS variables, and jQuery plugins to get your own style.

➢ What is Bootstrap 4?

Bootstrap is the newest and latest version of Bootstrap. It is the most popular HTML, CSS, JavaScript framework for developing responsive, mobile first websites.

Q.2 Bootstrap Layout (Container, Row, Columns, Responsive classes, Offset Column, Reordering Columns)

➢ Layouts in Bootstrap 4

In Bootstrap 4, there are container classes that are typically used to wrap the different contents in a page. There are basically two container classes that can be used for various different activities –

a. .container - this container class can be used to represent a fixed width container.

```
<div class = "container">
.....
</div>
```

b. .container-fluid - this container can be used to represent a full width container.

```
<div class = "container-fluid">
...
</div>
```

➢ See the basic layout of a container:

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```
<html>
 <body>
  <div class="container">
<div class="row">
   <div class="col-md-xx"></div>
      ...
   </div>
   <div class="row">
  <div class="col-md-xx"></div>
      ...
   </div>
  </div>
 </body>
</html>
```

- **Bootstrap container example**

```
<!DOCTYPE html>
<html lang="en">
  <head>
   <title>Job</title>
```

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```
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css"/>

  </head>

  <body>

<div class="container">

  <h1>Container</h1>

  <p>container content</p>

</div>

<div class="container-fluid">

  <h1>Container-fluid</h1>

  <p>container-fluid content</p>

</div>

  <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js"></script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js">

</script>

  </body>

</html>
```

➢ Bootstrap Grid

- The Bootstrap Grid System allows up to 12 columns across the page. You can use all 12 columns individually or you can groups the columns together to create wider columns.

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- Bootstrap Grid System is responsive and the columns are re-arranged automatically according to the screen size.
- Bootstrap's grid system uses a series of containers, rows, and columns to layout and align content. It's built with flexbox and is fully responsive. Below is an example and an in-depth explanation for how the grid system comes together.

	Extra small <768px	Small >=768px	Medium >=992px	Large >=1200px
Class prefix	`.col-xs-`	`.col-sm-`	`.col-md-`	`.col-lg-`
Suitable for	Phones	Tablets	Small Laptops	Laptops & Desktops
Grid behaviour	Horizontal at all times	Collapsed to start, horizontal above breakpoints	Collapsed to start, horizontal above breakpoints	Collapsed to start, horizontal above breakpoints
Container width	None (auto)	750px	970px	1170px
# of columns	12	12	12	12
Column width	Auto	~62px	~81px	~97px
Gutter width	30px (15px on each side of a column)	30px (15px on each side of a column)	30px (15px on each side of a column)	30px (15px on each side of a column)
Nestable	Yes	Yes	Yes	Yes
Offsets	Yes	Yes	Yes	Yes
Column ordering	Yes	Yes	Yes	Yes

Basic Structure of a Bootstrap Grid:

```
<div class="container">

 <div class="row">

  <div class="col">

   Column
```

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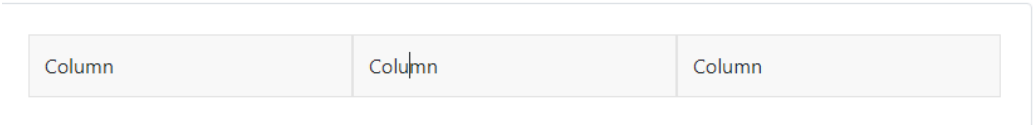
```
  </div>
  <div class="col">
    Column
  </div>
  <div class="col">
    Column
  </div>
 </div>
</div>
```

Output:



- **Bootstrap Grid Example**

```
<!DOCTYPE html>
<html lang="en">
    <head>
<title>Job</title>
        <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css"/>
      </head>
<body>
```

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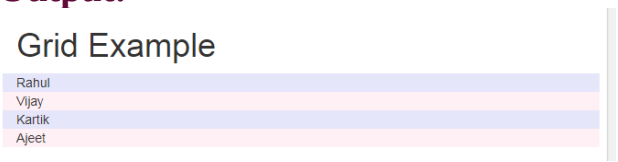
```
<div class="container">
            <h1>Grid Example</h1>

  <div class="row">
    <div class="col-md-3"style="background-color:lavender;">Rahul</div>
    <div class="col-md-3"style="background-color:lavenderblush;">Vijay</div>
    <div class="col-md-3"style="background-color:lavender;">Kartik</div>
    <div class="col-md-3"style="background-color:lavenderblush;">Ajeet</div>
  </div>

  </div>
   <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js"></script>

    </body>
  </html>
```

Output:



- **Responsive classes**

Bootstrap's grid includes five tiers of predefined classes for building complex responsive layouts. Customize the size of your columns on extra small, small, medium, large, or extra large devices however you see fit.

- **Bootstrap 4 Grid Classes**

There are 5 classes in Bootstrap 4 grid system.

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- **.col-** (extra small devices - screen width less than 576px)
- **.col-sm-** (small devices - screen width equal to or greater than 576px)
- **.col-md-** (medium devices - screen width equal to or greater than 768px)
- **.col-lg-** (large devices - screen width equal to or greater than 992px)
- **.col-xl-** (xlarge devices - screen width equal to or greater than 1200px)

You can also combine the above classes to create more dynamic and flexible layouts.

- **Offsetting Columns:**

Move columns to the right using .col-md-offset-* classes. These classes increase the left margin of a column by * columns:

Example:

```
<div class="row">
  <div class="col-sm-5 col-md-6">.col-sm-5 .col-md-6</div>
  <div class="col-sm-5 col-sm-offset-2 col-md-6 col-md-offset-0">
</div>
```

- **Reordering Columns:**

  Column ordering classes in Bootstrap helps to change the order of our grid system based on different screen sizes eg: desktop, mobile, tablet, smartwatches.

We can easily change the order of built-in grid columns with **push** and **pull** column classes.

The Push and Pull Classes: The push class will move columns to the right while the pull class will move columns to the left.

Syntax:

.col-md-pull-#

or

.col-md-push-#

Note: # is a number ranging from 1 to 12 (Grid system of bootstrap)

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Column Re-ordering: Create your content mobile-first (code written for the mobile screen) because it is easier to push and pull columns on larger devices. Therefore, you should focus on your mobile ordering first, and then on larger screens like tablets or desktops.

Step by step guide for the implementation:

- **Step 1:** Include Bootstrap CDN into the <head> tag before all other stylesheets to load our CSS.

  <link rel=”stylesheet” href=”https://maxcdn.bootstrapcdn.com/bootswatch/3.2.0/sandstone/bootstrap.min.css” >

- **Step 2:** Add tag in the HTML body with class row.
- **Step 3:** Add tag for different columns with .push , .pull classes and so on classes in the <body> tag.

Example:

```
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" href=
"https://maxcdn.bootstrapcdn.com/bootswatch/3.2.0/sandstone/bootstrap.min.css"/>
  </head>
  <body>
    <div class="row">
      <div class="well well-lg clearfix">
        <div class="col-xs-12 col-md-4 col-md-push-4">
          <div class="alert alert-success">2</div>
        </div>

        <div class="col-xs-6 col-md-4 col-md-pull-4">
          <div class="alert alert-info">1</div>
        </div>

        <div class="col-xs-6 col-md-4">
          <div class="alert alert-warning">3</div>
        </div>
```

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```
    </div>
  </div>
 </body>
</html>
```

Output:

Q.3 Bootstrap Content (Typography, Tables, Images, Forms)

- **Typography**

Typography provides some utilities to add additional styles to texts.

These utilities are:

- Text alignment
- Text transform
- Font weight and italics

Text Alignment

Text alignment is used to easily realign text to components with text alignment classes.

Align text left:

```
<p class="text-left">Left aligned text.</p>
```

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Align text center:

Center aligned text.

Align text right:

Right aligned text.

Align text justify:

Justified text.

Align text no-wrap:

No wrap text.

You can align text on viewports according to their size also.

Left aligned text on viewports sized SM (small) or wider.

Left aligned text on viewports sized SM (small) or wider.

Left aligned text on viewports sized MD (medium) or wider.

Left aligned text on viewports sized MD (medium) or wider.

Left aligned text on viewports sized LG (large) or wider.

Left aligned text on viewports sized LG (large) or wider.

Left aligned text on viewports sized XL (extra-large) or wider.

Left aligned text on viewports sized XL (extra-large) or wider.

Text transform

The text capitalization classes are used to transform text in components.

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For lowercase text:

Use "text-lowercase" class to make the text appear in lowercase.

Syntax:

```
<p class="text-lowercase">Lowercased text.</p>
```

Output:

lowercased text.

For uppercase text:

Use "text-uppercase" class to make the text appear in uppercase.

Syntax:

```
<p class="text-uppercase">Uppercased text.</p>
```

PPERCASED TEXT.

For capitalized text:

Use "text- capitalize" class to make the text's first letter appear in uppercase.

Syntax:

```
<p class="text-capitalize">CapiTaliZed text.</p>
```

Output:

CapiTaliZed Text.

Font weight and italics

It is used to quickly change the weight (boldness) of text or italicize text.

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For bold text:

Use "font-weight-bold" class to make the text weight bold.

```
PPERCASED TEXT.
```

For capitalized text:

Use "text- capitalize" class to make the text's first letter appear in uppercase.

Syntax:

CapiTaliZed text.

Output:

```
CapiTaliZed Text.
```

Font weight and italics

It is used to quickly change the weight (boldness) of text or italicize text.

For bold text:

Use "font-weight-bold" class to make the text weight bold.

Syntax:

Normal weight text.

Output:

```
Normal weight text.
```

For Italic text:

Use "font-italic" class to make the text italic.

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Syntax:

```
<p class="font-italic">Italic text.</p>
```

- **Tables:**

  The basic Bootstrap table has a light padding and only horizontal dividers. The **.table class** is used to add basic styling to a table.

  Example:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Job</title>
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css"/>
</head>
<body>

<div class="container">
<h1>Basic Table Example</h1>
<table class="table">
<tr><th>Id</th><th>Name</th><th>Age</th></tr>
<tr><td>101</td><td>Rahul</td><td>23</td></tr>
<tr><td>102</td><td>Umesh</td><td>22</td></tr>
<tr><td>103</td><td>Max</td><td>29</td></tr>
<tr><td>104</td><td>Ajeet</td><td>21</td></tr>
</table>
</div>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js">
```

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```
</script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js">
</script>
</body>
</html>
```

Bootstrap Striped Rows Table:

The **.table-striped class** is used to add zebra-stripes to a table:

Bootstrap Bordered table:

The **.table-bordered class** is used to add borders on all sides of the table and cells:

Bootstrap Hover rows Table:

The **.table-hover class** is used to enable a hover state on table rows:

Bootstrap Condensed table:

The **.table-condensed class** is used to make a table more compact by cutting cell padding in half:

Example:

```
<table class="table table-condensed">  </table>
```

Bootstrap Contextual classes:.

Contextual classes are used to color table rows (<tr>) or table cells (<td>):

Following are the different contextual classes:

Class	Description
.active	It is used to apply the hover color to the table row or table cell

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.success	It indicates a successful or positive action
.info	It indicates a neutral informative change or action
.warning	It specifies a warning that might need attention
.danger	It indicates a dangerous or potentially negative action

Responsive tables:

The .table-responsive class is used to create a responsive table. You can open the responsible table even on small devices (under 768px). Then the table will be scrolled horizontally. Displays larger than 768px wide, there is no difference.

Black/Dark Table

The .table-dark class is used to add a black background to the table:

Dark Striped Table

Combine the .table-dark class and .table-striped class to create a dark, striped table:

Hoverable Dark Table

The .table-hover class is used to add a hover effect (grey background color) on table rows:

Bootstrap 4 Contextual Table

Contextual classes can be used to color the whole table (<table>), the table rows (<tr>) or table cells (<td>).

The classes that can be used are:

.table-primary, .table-success, .table-info, .table-warning, .table-danger, .table-active, .table-secondary, .table-light and .table-dark:

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Table Head Colors

You can change the background color of the table header by using .thead-dark class to add a black background to table headers, and the .thead-light class to add a grey background to table headers.

Small Table

The .table-sm class is used to make the table smaller by cutting cell padding in half.

- **Images:**Bootstrap supports for images. There are three classes in Bootstrap that can be used to apply some simple style to the images.

  The following classes add style to the images:

Classes	Uses
.img-rounded	It adds border-radius:6px to give the image rounded corners.
.img-circle	It makes the entire image round by adding border-radius:500px.
.img-thumbnail	It adds a bit of padding and a gray border.

- **Bootstrap Image-rounded Example**

  The **class .img-rounded** is used to add rounded corners to an image (IE8 does not support rounded corners).

  Example:

```
<div class="container">
  <h2>Rounded Corners</h2>
```

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```
<img src="abc.jpg" class="img-rounded" alt="abc" width="300" height="250">

    </div>
```

- **Bootstrap Image-circle Example**

  The class .img-circle is used to shape the image to a circle (IE8 does not support rounded corners).

  Example:

```
<div class="container">
  <h2>Circle</h2>
  <img src="abc.jpg" class="img-circle" alt="abc"  width="300" height="250">
</div>
```

Bootstrap Thumbnail Image Example

The **class .img-thumbnail** is used to shape an image to a thumbnail.

Example:

```
<div class="container">
  <h2>Thumbnail</h2>
  <img src="abc.jpg" class="img-thumbnail" alt="abc" width="300" height="250">
</div>
```

Bootstrap Responsive images

The responsive images can adjust themselves automatically to fit the size of screen. You can create responsive images by adding an **.img-responsive class** to the <img> tag. The image will then scale nicely to the parent element.

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The **.img-responsive class** applies display: block; and max-width: 100%; and height: auto; to the image.

Example:

```
<div class="container">
  <h2>Responsive Image</h2>
  <img class="img-responsive" src="abc.jpg" alt="abc" width="460" height="345">
</div>
```

- **Forms:**

In Bootstrap, there are three types of form layouts:

- Vertical form (this is default)
- Horizontal form
- Inline form

Bootstrap Form Rules

There are three standard rules for these 3 form layouts:

- Always use <form role="form"> (helps improve accessibility for people using screen readers)
- Wrap labels and form controls in (needed for optimum spacing)
- Add class .form-control to all textual <input>, <textarea>, and <select> elements

1) Bootstrap Vertical Form (Default):

```
<!DOCTYPE html>
```

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```
<html lang="en">
  <head>
    <title>Bootstrap example</title>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/boo
tstrap.min.css"/>
  </head>
  <body>

<div class="container">
  <h1>Vertical Form Example</h1>

<form style="width:300px">
  <div class="form-group">
    <label for="exampleInputEmail1">Email address</label>
    <input type="email" class="form-
control" id="exampleInputEmail1" placeholder="Email">
  </div>
  <div class="form-group">
    <label for="exampleInputPassword1">Password</label>
    <input type="password" class="form-
control" id="exampleInputPassword1" placeholder="Password">
  </div>

  <button type="submit" class="btn btn-default">Login</button>
</form>

</div>

<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js"></script>

  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.5/js/bootstrap.min.js">
```

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```
</script>
  </body>
</html>
```

2). Bootstrap Inline Form

In Bootstrap Inline forms, all elements are inline, left-aligned, and the labels are alongside.

This example is only applied to forms within viewports that are at least 768px wide!

Example:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Bootstrap Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bo
otstrap.min.css">
</head>
<body>

<div class="container">
  <h2>Inline form Example</h2>
  <form class="form-inline" role="form">
    <form style="width:300px">
  <div class="form-group">
    <label for="exampleInputEmail1">Email address</label>
<input type="email" class="form-control" id="exampleInputEmail1" placeholder="Email">
  </div>
```

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3 – Vaishalinagar
Nr. Amrapali Under Bridge
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```
<div class="form-group">
<label for="exampleInputPassword1">Password</label>
        <input type="password" class="form-
        control" id="exampleInputPassword1" placeholder="Password">
         </div>

<button type="submit" class="btn btn-default">Login</button>
        </form>

        </div>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.0/jquery.min.js"></script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js">
        </script>
        </body>
        </html>
```

3).Bootstrap Horizontal Form

You have to add some additional rules if you want to create a horizontal form.

Additional rules for a horizontal form:

- Add class .form-horizontal to the <form> element
- Add class .control-label to all <label> elements

Example:

```
        <!DOCTYPE html>
        <html lang="en">
        <head>
 <title>Bootstrap Example</title>
          <meta charset="utf-8">
```

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3 – Vaishalinagar
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Raiya Road
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```
 <meta name="viewport" content="width=device-width, initial-scale=1">
         <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/boo
        tstrap.min.css">
</head>
        <body>

        <div class="container">
 <h2>Horizontal form Example</h2>
  <form class="form-horizontal" role="form">
  <form style="width:300px">
 <div class="form-group">
  <label class="control-label col-sm-2" for="email">Email:</label>
  <div class="col-sm-10">
    <input type="email" class="form-control" id="email" placeholder="Enter email">
  </div>
</div>
<div class="form-group">
  <label class="control-label col-sm-2" for="pwd">Password:</label>
  <div class="col-sm-10">
    <input type="password" class="form-control" id="pwd" placeholder="Enter password">
  </div>
</div>

<div class="form-group">
  <div class="col-sm-offset-2 col-sm-10">
    <button type="submit" class="btn btn-default">Submit</button>
  </div>
</div>
</form>
        </div>
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.0/jquery.min.js"></script>
```

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```
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js">
</script>

</body>
</html>
```

Q.4 **Bootstrap Components (Navbar, Navs and tabs, Dropdowns, Buttons, Button Groups, Breadcrumb, Pagination, Labels, Alerts, Progress Bars, Accordion, Card, Modal)**

- **Navbar**

  A navigation bar is a navigation header that is placed at the top of the page:

  A standard navigation bar is created with <nav class="navbar navbar-default">.

Example:

```
<nav class="navbar                                          navbar-default">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav                                            navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page                                        1</a></li>
      <li><a href="#">Page                                        2</a></li>
      <li><a href="#">Page                                        3</a></li>
    </ul>
  </div>
</nav>
```

Inverted Navigation Bar

If you don't like the style of the default navigation bar, Bootstrap provides an alternative, black navbar:

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Just change the **.navbar-default** class into **.navbar-inverse**:

Navigation Bar With Dropdown

Navigation bars can also hold dropdown menus.

Example:

```
<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li class="dropdown">
        <a class="dropdown-toggle" data-toggle="dropdown" href="#">Page 1
        <span class="caret"></span></a>
        <ul class="dropdown-menu">
          <li><a href="#">Page 1-1</a></li>
          <li><a href="#">Page 1-2</a></li>
          <li><a href="#">Page 1-3</a></li>
        </ul>
      </li>
      <li><a href="#">Page 2</a></li>
      <li><a href="#">Page 3</a></li>
    </ul>
  </div>
</nav>
```

Right-Aligned Navigation Bar

The **.navbar-right** class is used to right-align navigation bar buttons.

Navbar Buttons

To add buttons inside the navbar, add the **.navbar-btn** class on a Bootstrap button:

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Navbar Forms

To add form elements inside the navbar, add the **.navbar-form** class to a form element and add an input(s). Note that we have added a **.form-group** class to the div container holding the input. This adds proper padding if you have more than one inputs (you will learn more about this in the Forms chapter).

Fixed Navigation Bar

The navigation bar can also be fixed at the top or at the bottom of the page.

A fixed navigation bar stays visible in a fixed position (top or bottom) independent of the page scroll.

The **.navbar-fixed-top** class makes the navigation bar fixed at the top:

The **.navbar-fixed-bottom** class makes the navigation bar stay at the bottom:

- **Dropdowns:**

  A dropdown menu is a toggleable menu that allows the user to choose one value from a predefined list:

  Example:

```
<div class="dropdown">
  <button class="btn btn-primary dropdown-toggle" type="button" data-toggle="dropdown">Dropdown Example
  <span class="caret"></span></button>
  <ul class="dropdown-menu">
    <li><a href="#">HTML</a></li>
    <li><a href="#">CSS</a></li>
    <li><a href="#">JavaScript</a></li>
```

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```
  </ul>
</div>
```

Dropdown Divider

The **.divider** class is used to separate links inside the dropdown menu with a thin horizontal border:

Example:<li class="divider">

Dropdown Header

The **.dropdown-header** class is used to add headers inside the dropdown menu:

Example:<li class="dropdown-header">Dropdown header 1

Disable and Active items

Highlight a specific dropdown item with the .active class (adds a blue background color).

To disable an item in the dropdown menu, use the **.disabled** class (gets a light-grey text color and a "no-parking-sign" icon on hover):

Example:

```
<li class="disabled"><a href="#">CSS</a></li>
<li class="active"><a href="#">HTML</a></li>
```

Dropdown Position

To right-align the dropdown, add the **.dropdown-menu-right** class to the element with .dropdown-menu:

Example:

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<ul class="dropdown-menu dropdown-menu-right">

Dropup

If you want the dropdown menu to expand upwards instead of downwards, change the element with class="dropdown" to **"dropup":**

Example:

- **Buttons:**

Button Styles

Bootstrap provides different styles of buttons:

To achieve the button styles above, Bootstrap has the following classes:

- `.btn`
- `.btn-default`
- `.btn-primary`
- `.btn-success`
- `.btn-info`
- `.btn-warning`
- `.btn-danger`
- `.btn-link`

Example:

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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
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```
<button type="button" class="btn">Basic</button>
<button type="button" class="btn btn-default">Default</button>
<button type="button" class="btn btn-primary">Primary</button>
<button type="button" class="btn btn-success">Success</button>
<button type="button" class="btn btn-info">Info</button>
<button type="button" class="btn btn-warning">Warning</button>
<button type="button" class="btn btn-danger">Danger</button>
<button type="button" class="btn btn-link">Link</button>
```

Button Sizes

Bootstrap provides four button sizes:

Large Normal Small XSmall

The classes that define the different sizes are:

- .btn-lg
- .btn-sm
- .btn-xs

Example:

```
<button type="button" class="btn btn-primary btn-lg">Large</button>
<button type="button" class="btn btn-primary">Normal</button>
<button type="button" class="btn btn-primary btn-sm">Small</button>
<button type="button" class="btn btn-primary btn-xs">XSmall</button>
```

Block Level Buttons

A block level button spans the entire width of the parent element

Add class **.btn-block** to create a block level button

Example:

```
<button type="button" class="btn btn-primary btn-block">Button 1</button>
```

2 – Vaishalinagar
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Active/Disabled Buttons

A button can be set to an active (appear pressed) or a disabled (unclickable) state:

The class **.active** makes a button appear pressed, and the class **.disabled** makes a button unclickable:

- **Button Groups:**

  Bootstrap allows you to group a series of buttons together (on a single line) in a button group:

  Use a element with class **.btn-group** to create a button group:

  Example:

```
<div class="btn-group">
  <button type="button" class="btn                btn-primary">Apple</button>
  <button type="button" class="btn              btn-primary">Samsung</button>
  <button type="button" class="btn                btn-primary">Sony</button>
</div>
```

Output:

Instead of applying button sizes to every button in a group, use class **.btn-group-lg|sm|xs** to size all buttons in the group:

Vertical Button Groups

Use the class **.btn-group-vertical** to create a vertical button group:

Example:

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3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

```
<div class="btn-group-vertical">
  <button type="button" class="btn                btn-primary">Apple</button>
  <button type="button" class="btn                btn-primary">Samsung</button>
  <button type="button" class="btn                btn-primary">Sony</button>
</div>
```

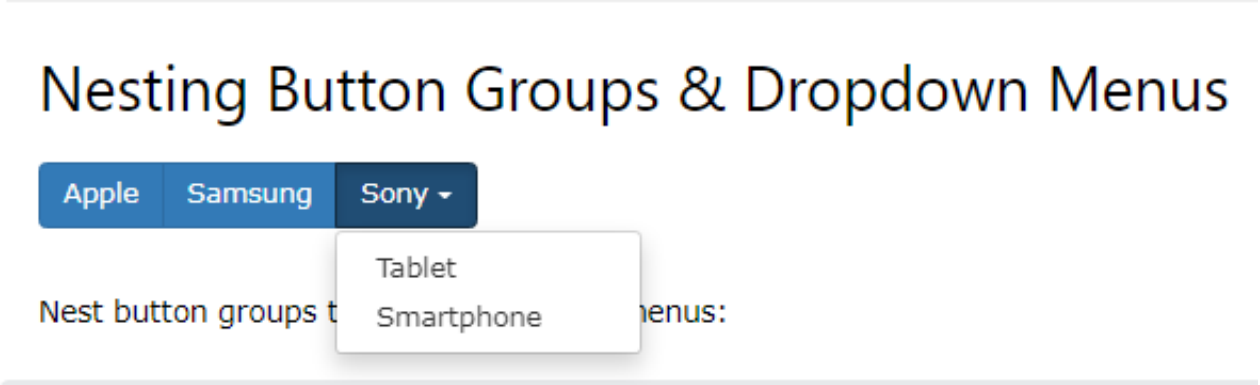
Output:

Justified Button Groups

To span the entire width of the screen, use the **.btn-group-justified** class:

Nesting Button Groups & Dropdown Menus

Nest button groups to create dropdown menus:



- **Breadcrumb:**

2 – Vaishalinagar
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Ph.No–(0281)2440478,2472590

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Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

A breadcrumb navigation provide links back to each previous page the user navigated through, and shows the user's current location in a website.

Home / Pictures / Summer 15 / Italy

Example:

Step 1) Add HTML:

```
<ul class="breadcrumb">
  <li><a href="#">Home</a></li>
  <li><a href="#">Pictures</a></li>
  <li><a href="#">Summer 15</a></li>
  <li>Italy</li>
</ul>
```

Step 2) Add CSS:

Example:

```
ul.breadcrumb {
    padding: 10px 16px;
    list-style: none;
    background-color: #eee;
}
```

Pagination:

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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

Step 1) Add HTML:

```
<div class="pagination">
  <a href="#">&laquo;</a>
  <a href="#">1</a>
  <a class="active" href="#">2</a>
  <a href="#">3</a>
  <a href="#">4</a>
  <a href="#">5</a>
  <a href="#">6</a>
  <a href="#">&raquo;</a>
</div>
```

Step 2) Add CSS:

```
/* Pagination links */
.pagination a {
  color: black;
  float: left;
  padding: 8px 16px;
  text-decoration: none;
  transition: background-color .3s;
}

/* Style the active/current link */
.pagination a.active {
  background-color: dodgerblue;
  color: white;
}
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

```
/* Add a grey background color on mouse-over */
.pagination a:hover:not(.active) {background-color: #ddd;}
```

Labels:

Labels are used to provide additional information about something:

Use the **.label** class, followed by one of the six contextual classes **.label-default, .label-primary, .label-success, .label-info, .label-warning** or **.label-danger**, within a element to create a label:

Example:

```
<span class="label label-default">Default Label</span>
<span class="label label-primary">Primary Label</span>
<span class="label label-success">Success Label</span>
<span class="label label-info">Info Label</span>
<span class="label label-warning">Warning Label</span>
<span class="label label-danger">Danger Label</span>
```

Default Label Primary Label Success Label Info Label Warning Label Danger Label

- **Alerts**

  Bootstrap provides an easy way to create predefined alert messages:

  Alerts are created with the **.alert** class, followed by one of the four contextual classes **.alert-success, .alert-info, .alert-warning or .alert-danger:**

  Example:

```
<div class="alert alert-success">
  <strong>Success!</strong> Indicates a successful or positive action.
</div>

<div class="alert alert-info">
  <strong>Info!</strong> Indicates a neutral informative change or action.
```

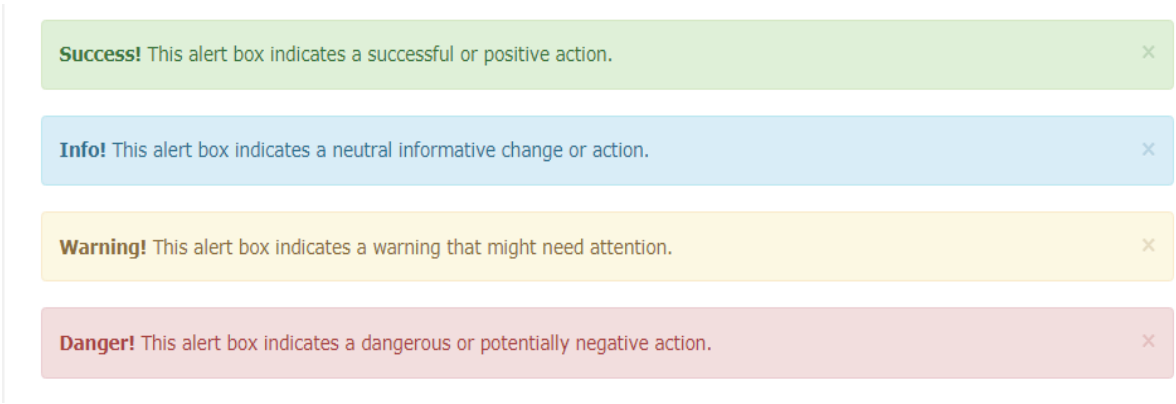
2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

```
</div>

<div class="alert alert-warning">
  <strong>Warning!</strong> Indicates a warning that might need attention.
</div>

<div class="alert alert-danger">
  <strong>Danger!</strong> Indicates a dangerous or potentially negative action.
</div>
```



- **Progress Bars:**

progress bar can be used to show a user how far along he/she is in a process.

Bootstrap provides several types of progress bars.

A default progress bar in Bootstrap looks like this:

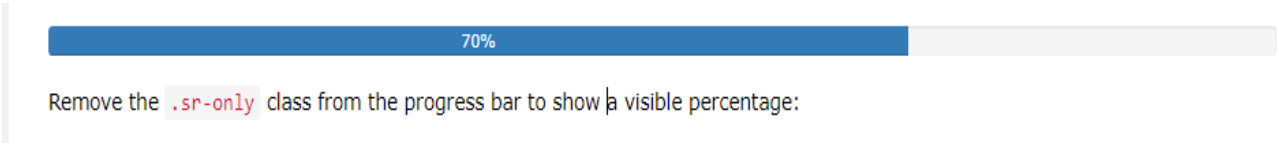
Example:

```
<div class="progress">
  <div class="progress-bar" role="progressbar" aria-valuenow="70"
                                aria-valuemin="0" aria-valuemax="100" style="width:70%">
    <span class="sr-only">70% Complete</span>
  </div>
</div>
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

A progress bar with a label looks like this:



Colored Progress Bars

Contextual classes are used to provide "meaning through colors".

The contextual classes that can be used with progress bars are:

- .progress-bar-success
- .progress-bar-info
- .progress-bar-warning
- .progress-bar-danger

Striped Progress Bars

Progress bars can also be striped:

Add class **.progress-bar-striped** to add stripes to the progress bars:

Animated Progress Bar

Add class **.active** to animate the progress bar:

Example:

```
<div class="progress">
  <div class="progress-bar progress-bar-striped active" role="progressbar"
       aria-valuenow="40" aria-valuemin="0" aria-valuemax="100" style="width:40%">
    40%
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

```
  </div>
</div>
```

Stacked Progress Bars

```
<div class="progress">
  <div class="progress-bar      progress-bar-success" role="progressbar" style="width:40%">
                                        Free                                          Space
  </div>
  <div class="progress-bar      progress-bar-warning" role="progressbar" style="width:10%">
                                                                                  Warning
  </div>
  <div class="progress-bar      progress-bar-danger" role="progressbar" style="width:20%">
                                                                                  Danger
  </div>
</div>
```

Create a stacked progress bar by placing multiple bars into the same `<div class="progress">`:

- **Accordion:**

  Accordions are useful when you want to toggle between hiding and showing large amount of content:

2 – Vaishalinagar
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Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

Create An Accordion

Step 1) Add HTML:

```
<button class="accordion">Section 1</button>
<div class="panel">
  <p>Lorem ipsum...</p>
</div>

<button class="accordion">Section 2</button>
<div class="panel">
  <p>Lorem ipsum...</p>
</div>

<button class="accordion">Section 3</button>
<div class="panel">
  <p>Lorem ipsum...</p>
</div>
```

Step 2) Add CSS:

Style the accordion:

```
/* Style the buttons that are used to open and close the accordion panel */
.accordion {
  background-color: #eee;
  color: #444;
                                                    cursor: pointer;
                                                    padding: 18px;
                                                      width: 100%;
                                                    text-align: left;
  border: none;
  outline: none;
                                                   transition: 0.4s;
}

/* Add a background color to the button if it is clicked on (add the .active class with JS), and
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
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```
when you move the mouse over it (hover) */
.active, .accordion:hover {
  background-color: #ccc;
}

/* Style the accordion panel. Note: hidden by default */
.panel {
  padding: 0 18px;
  background-color: white;
  display: none;
  overflow: hidden;
}
```

Animated Accordion (Slide Down)

To make an animated accordion, add **max-height: 0, overflow: hidden** and **a transition** for the max-height property, to the **panel c**lass.

Then, use JavaScript to slide down the content by setting a calculated **max-height,** depending on the panel's height on different screen sizes:

- **Card:**
  A card in Bootstrap 4 is a bordered box with some padding around its content. It includes options for headers, footers, content, colors, etc.

Basic Card

A basic card is created with the **.card** class, and content inside the card has a .card-body class:

Example:

```
<div class="card">
  <div class="card-body">Basic card</div>
</div>
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

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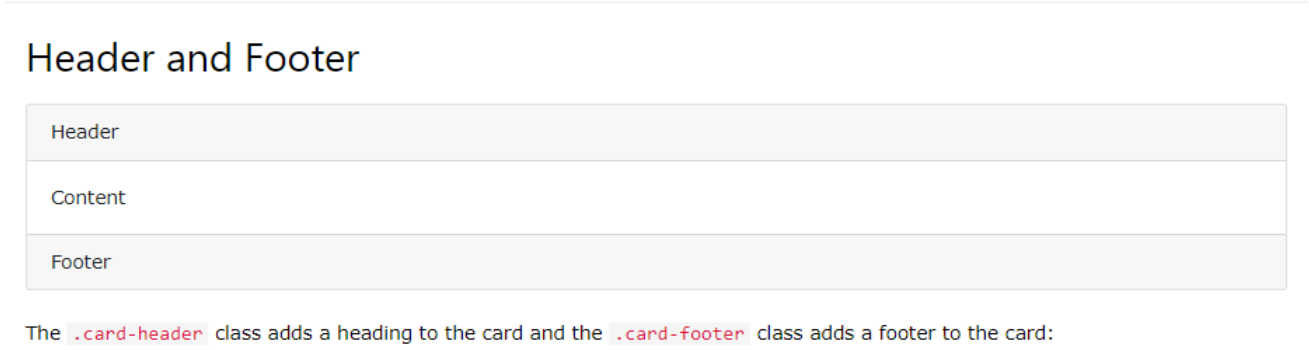

Contextual Cards

To add a background color the card, use contextual classes **(.bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg-dark** and **.bg-light.**

Card Images

Add **.card-img-top** or **.card-img-bottom** to an **<img>** to place the image at the top or at the bottom inside the card. Note that we have added the image outside of the **.card-body** to span the entire width:

Stretched Link

Add the **.stretched-link** class to a link inside the card, and it will make the whole card clickable and hoverable (the card will act as a link):
Ex: See Profile

- **Modal:**
  The Modal component is a dialog box/popup window that is displayed on top of the current page:

How To Create a Modal

Example:

<!-- Button to Open the Modal -->
<button type="button" class="btn btn-primary" data-toggle="modal" data-target="#myModal">
Open modal

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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
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Rajkot - 360001
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```
</button>

<!--                    The                    Modal                    -->
<div class="modal" id="myModal">
  <div class="modal-dialog">
    <div class="modal-content">

      <!--                    Modal                    Header                    -->
      <div class="modal-header">
        <h4 class="modal-title">Modal                                    Heading</h4>
        <button type="button" class="close" data-dismiss="modal">&times;</button>
      </div>

      <!--                    Modal                    body                    -->
      <div class="modal-body">
                                    Modal                                    body..
      </div>

      <!--                    Modal                    footer                    -->
      <div class="modal-footer">
        <button type="button" class="btn    btn-danger" data-dismiss="modal">Close</button>
      </div>

    </div>
  </div>
</div>
```

Add animation

Use the **.fade** class to add a fading effect when opening and closing the modal:

Example:

```
<!--                    Fading                    modal                    -->
<div class="modal                                                    fade"></div>
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
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Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
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Ph.No–(0281)2471645

<!-- Modal without animation -->

Modal Size

Change the size of the modal by adding the **.modal-sm** class for small modals**, .modal-lg** class for large modals, or **.modal-xl** for extra large modals.

Add the size class to the ** ** element with class **.modal-dialog:**

Example:

```
<div class="modal-dialog modal-sm">

<div class="modal-dialog modal-lg">

<div class="modal-dialog modal-xl">
```

Centered Modal:

Center the modal vertically and horizontally within the page, with the **.modal-dialog-centered** class:

Example:

```
<div class="modal-dialog modal-dialog-centered">
```

Scrolling Modal

However, it is possible to only scroll inside the modal, instead of the page itself, by adding **.modal-dialog-scrollable** to **.modal-dialog:**

Example:

```
<div class="modal-dialog modal-dialog-scrollable">
```

Q.5 Bootstrap Utilities (Colors, Background, Borders, Display, Overflow, Position, Spacing, Text, Vertical align)

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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
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Rajkot - 360001
Ph.No–(0281)2471645

Bootstrap 4 has a lot of utility/helper classes to quickly style elements without using any CSS code.

- **Colors:**

  As described in the Colors chapter, here is a list of all text and background color classes:

  The classes for text colors are: **.text-muted, .text-primary, .text-success, .text-info, .text-warning, .text-danger, .text-secondary, .text-white, .text-dark, .text-body (default body color/often black) and .text-light:**

  You can also add 50% opacity for black or white text with the **.text-black-50** or **.text-white-50** classes:

  Example:

```
<div class="container">
  <h2>Contextual Colors</h2>
  <p>Use the contextual classes to provide "meaning through colors":</p>
  <p class="text-muted">This text is muted.</p>
  <p class="text-primary">This text is important.</p>
  <p class="text-success">This text indicates success.</p>
  <p class="text-info">This text represents some information.</p>
  <p class="text-warning">This text represents a warning.</p>
  <p class="text-danger">This text represents danger.</p>
  <p class="text-secondary">Secondary text.</p>
  <p class="text-dark">This text is dark grey.</p>
  <p class="text-body">Default body color (often black).</p>
  <p class="text-light">This text is light grey (on white background).</p>
  <p class="text-white">This text is white (on white background).</p>
</div>
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
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This text is muted.

This text is important.

This text indicates success.

This text represents some information.

This text represents a warning.

This text represents danger.

Secondary text.

Dark grey text.

Body text.

- **Background:**

he classes for background colors are**: .bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg-dark** and **.bg-light.**

Note that background colors do not set the text color, so in some cases you'll want to use them together with a **.text-*** class.

Example:

```
  <h2>Contextual Backgrounds</h2>
  <p>Use the contextual background classes to provide "meaning through colors".</p>
  <p>Note that you can also add a .text-* class if you want a different text color:</p>
  <p class="bg-primary text-white">This text is important.</p>
  <p class="bg-success text-white">This text indicates success.</p>
  <p class="bg-info text-white">This text represents some information.</p>
  <p class="bg-warning text-white">This text represents a warning.</p>
  <p class="bg-danger text-white">This text represents danger.</p>
  <p class="bg-secondary text-white">Secondary background color.</p>
  <p class="bg-dark text-white">Dark grey background color.</p>
  <p class="bg-light text-dark">Light grey background color.</p>
</div>
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
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Ph.No–(0281)2440478,2472590

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Rajkot - 360001
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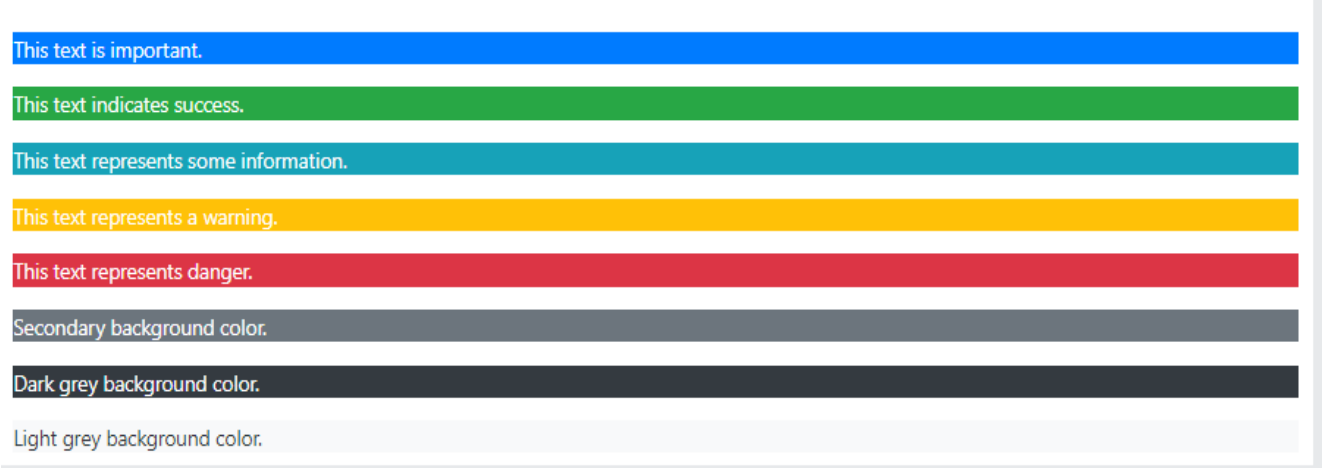
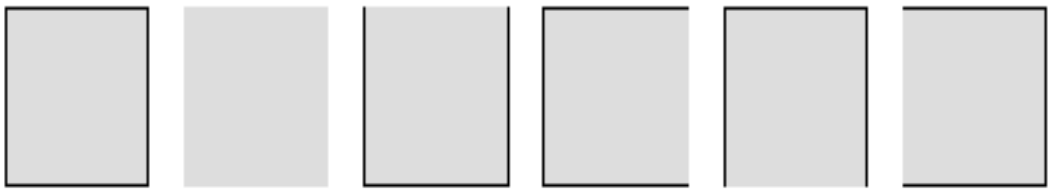


- **Borders:**

  Use the **border** classes to add or remove borders from an element:

  Example:

```
<span class="border"></span>
<span class="border                                    border-0"></span>
<span class="border                                    border-top-0"></span>
<span class="border                                    border-right-0"></span>
<span class="border                                    border-bottom-0"></span>
<span class="border border-left-0"></span>
```



Border Color:

Add a color to the border with any of the contextual border color classes:

Example:

```
<span class="border                                    border-primary"></span>
<span class="border                                    border-secondary"></span>
<span class="border                                    border-success"></span>
<span class="border                                    border-danger"></span>
<span class="border                                    border-warning"></span>
<span class="border                                    border-info"></span>
```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

```
<span class="border                                    border-light"></span>
<span class="border                                    border-dark"></span>
<span class="border border-white"></span>
```

Border Radius:

Add rounded corners to an element with the **rounded** classes:

Example:

```
<span class="rounded-sm"></span>
<span class="rounded"></span>
<span class="rounded-lg"></span>
<span class="rounded-top"></span>
<span class="rounded-right"></span>
<span class="rounded-bottom"></span>
<span class="rounded-left"></span>
<span class="rounded-circle"></span>
<span class="rounded-0"></span>
```

- **Position:**

  Use the **.fixed-top** class to make any element fixed/stay at the **top** of the page:

  Example:

  ```
  <nav class="navbar navbar-expand-sm bg-dark navbar-dark fixed-top">
                                                                    ...
  </nav>
  ```

  Use the **.fixed-bottom** class to make any element fixed/stay at the **bottom** of the page:

  ```
  <nav class="navbar navbar-expand-sm bg-dark navbar-dark fixed-bottom">
        ...
  </nav>
  ```

  Use the **.sticky-top** class to make any element fixed/stay at the **top** of the page when you scroll past it. **Note:** This class does not work in IE11 and earlier (will treat it as **position:relative**).

  ```
  <nav class="navbar navbar-expand-sm bg-dark navbar-dark sticky-top">
                                                                    ...
  </nav>
  ```

2 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot – 360001
Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
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- **Spacing:**

Bootstrap 4 has a wide range of responsive margin and padding utility classes. They work for all breakpoints: xs (<=576px), sm (>=576px), md (>=768px), lg (>=992px) or xl (>=1200px)):

The classes are used in the format: {property}{sides}-{size} for xs and {property}{sides}-{breakpoint}-{size} for sm, md, lg, and xl.

Where *property* is one of:

- m - sets margin
- p - sets padding

Where *sides* is one of:

- t - sets margin-top or padding-top
- b - sets margin-bottom or padding-bottom
- l - sets margin-left or padding-left
- r - sets margin-right or padding-right
- x - sets both padding-left and padding-right or margin-left and margin-right
- y - sets both padding-top and padding-bottom or margin-top and margin-bottom
- blank - sets a margin or padding on all 4 sides of the element

Where *size* is one of:

- 0 - sets margin or padding to 0
- 1 - sets margin or padding to .25rem (4px if font-size is 16px)
- 2 - sets margin or padding to .5rem (8px if font-size is 16px)
- 3 - sets margin or padding to 1rem (16px if font-size is 16px)
- 4 - sets margin or padding to 1.5rem (24px if font-size is 16px)
- 5 - sets margin or padding to 3rem (48px if font-size is 16px)
- auto - sets margin to auto

Note: margins can also be negative, by adding an "n" in front of *size*:

- n1 - sets margin to -.25rem (-4px if font-size is 16px)

2 – Vaishalinagar
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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
Rajkot - 360001
Ph.No–(0281)2471645

- n2 - sets margin to -.5rem (-8px if font-size is 16px)
- n3 - sets margin to -1rem (-16px if font-size is 16px)
- n4 - sets margin to -1.5rem (-24px if font-size is 16px)
- n5 - sets margin to -3rem (-48px if font-size is 16px)

Example:

```
<div class="pt-4 bg-warning">I only have a top padding (1.5rem = 24px)</div>
<div class="p-5 bg-success">I have a padding on all sides (3rem = 48px)</div>
<div class="m-5 pb-5 bg-info">I have a margin on all sides (3rem = 48px) and a bottom padding (3rem = 48px)</div>
```

➢ **Text:**

As described in the Typography chapter, here is a list of all typography/text classes:

2 – Vaishalinagar
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Rajkot - 360001
Ph.No–(0281)2471645

Class	Description
`.display-*`	Display headings are used to stand out more than normal headings (larger font-size and lighter font-weight), and there are four classes to choose from: `.display-1`, `.display-2`, `.display-3`, `.display-4`
`.font-weight-bold`	Bold text
`.font-weight-bolder`	Bolder bold text
`.font-weight-normal`	Normal text
`.font-weight-light`	Light weight text
`.font-weight-lighter`	Lighter weight text
`.font-italic`	Italic text
`.lead`	Makes a paragraph stand out
`.small`	Indicates smaller text (set to 85% of the size of the parent)
`.text-break`	Prevents long text from breaking layout
`.text-center`	Indicates center-aligned text
`.text-decoration-none`	Removes the underline from a link
`.text-left`	Indicates left-aligned text
`.text-justify`	Indicates justified text
`.text-monospace`	Monospaced text
`.text-nowrap`	Indicates no wrap text

2 – Vaishalinagar
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Ph.No–(0281)2440478,2472590

3 – Vaishalinagar
Nr. Amrapali Under Bridge
Raiya Road
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Ph.No–(0281)2471645

`.text-lowercase`	Indicates lowercased text
`.text-reset`	Resets the color of a text or a link (inherits the color from its parent)
`.text-right`	Indicates right-aligned text
`.text-uppercase`	Indicates uppercased text
`.text-capitalize`	Indicates capitalized text
`.initialism`	Displays the text inside an `<abbr>` element in a slightly smaller font size
`.list-unstyled`	Removes the default list-style and left margin on list items (works on both `<ul>` and `<ol>`). This class only applies to immediate children list items (to remove the default list-style from any nested lists, apply this class to any nested lists as well)
`.list-inline`	Places all list items on a single line (used together with `.list-inline-item` on each elements)
`.pre-scrollable`	Makes a `<pre>` element scrollable

- **Vertical align:**

Use the **align-** classes to change the alignment of elements (only works on inline, inline-block, inline-table and table cell elements):

Example:

```
<span class="align-baseline">baseline</span>
<span class="align-top">top</span>
<span class="align-middle">middle</span>
<span class="align-bottom">bottom</span>
<span class="align-text-top">text-top</span>
<span class="align-text-bottom">text-bottom</span>
```

baseline top middle bottom text-top text-bottom

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