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B. Pharm
Semester-2

STUDY MATERIAL

Subject Name: computer application in pharmacy

Subject Code: BP204TP

Web technologies

CHAPTER 2 :

Contains

Introduction to HTML, XML, and Programming
languages, introduction to web servers and Server Products.
Introduction to databases, MS ACCESS, Pharmacy Drug database

INTRODUCTION TO HTML

• With HTML you can create your own Web site.

• HTML stands for Hyper Text Markup Language.

• HTML is derived from a language SGML (Standard Graphics Markup Language).

• The future of HTML is XML (eXtended Markup Language).

• HTML is not a programming language, it is a Markup Language.

• A markup language is a set of markup tags.

• HTML uses markup tags to describe web pages.

• HTML is not case sensitive language.

• HTML documents contain HTML tags and plain text. HTML Elements and Tags

• A tag is always enclosed in angle bracket <>like <HTML>

• HTML tags normally come in pairs like <HTML> and </HTML> i.e.

Start tag = <HTML>

End tag =</HTML>

• Start and end tags are also called opening tags and closing tags

HOW TO START

• Write html code in notepad.

• Save the file with (.Html)/(.Htm) extension.

• View the page in any web browser viz.

INTERNET EXPLORER, NETSCAPE NAVIGATOR etc.

• The purpose of a web browser (like internet explorer or firefox) is to read html documents and

display them as web pages.

Code With HTML
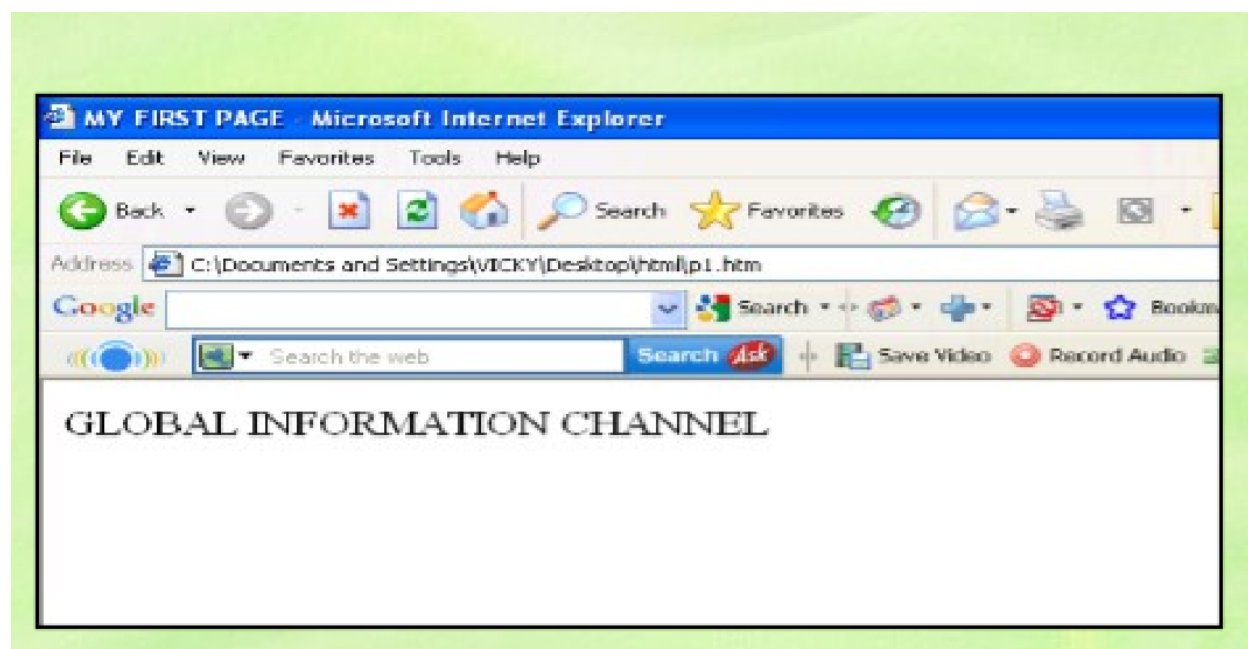
<HTML>

<HEAD>

<TITLE>

MY FIRST PAGE

</TITLE>

</HEAD>

<BODY>

GLOBAL INFORMATION CHANNEL

</BODY>

</HTML>

Explain these tags

• <HTML> - Describe HTML web page that is to be viewed by a web browser.

• <HEAD> - This defines the header section of the page.

• <TITLE> - This shows a caption in the title bar of the page.

• <BODY> - This tag show contents of the web page will be displayed.

Types of HTML Tags

There are two different types of tags:->

Container Element:->

Container Tags contains start tag & end tag i.e.

<HTML>… </HTML>

Empty Element:->

Empty Tags contains start tag i.e.

Text Formatting Tags

Heading Element:->

• There are six heading elements

(<H1>,<H2>,<H3>,<H4>, <H5>,<H6>).

• All the six heading elements are container

tag and requires a closing tag.

• <h1> will print the largest heading

• <h6> will print the smallest heading

Heading Tag Code
<html>

<head><title>heading</title></head>

<body>

<h1> GLOBAL INFO CHANNEL</h1>

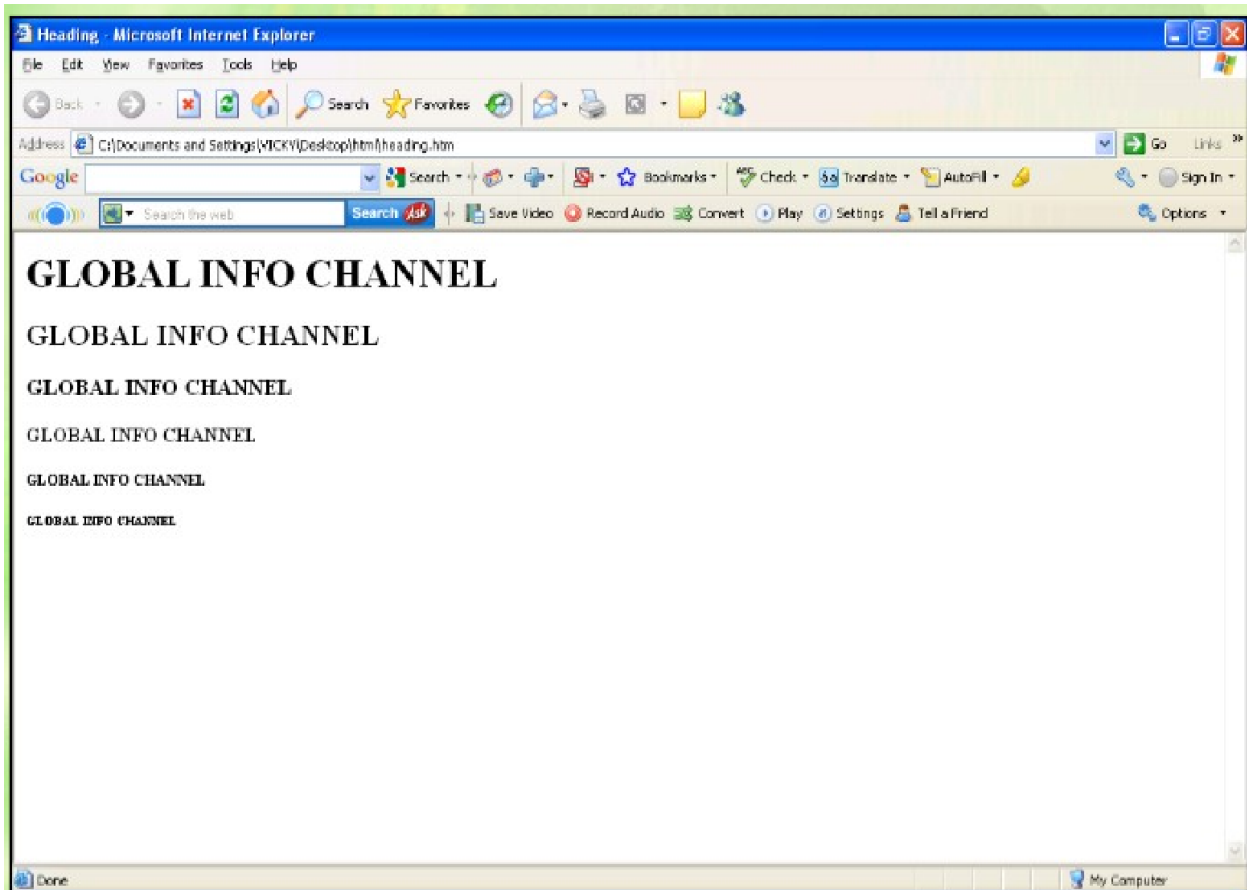<h2> GLOBAL INFO CHANNEL</h2>

<h3> GLOBAL INFO CHANNEL</h3>

<h4> GLOBAL INFO CHANNEL</h4>

<h5> GLOBAL INFO CHANNEL</h5>
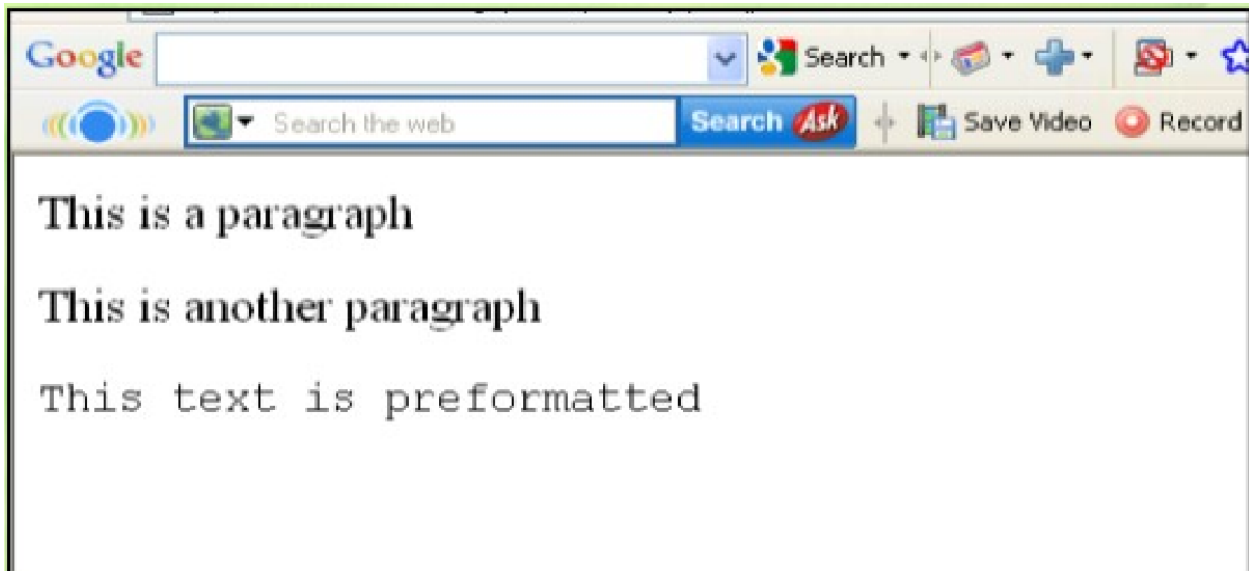
<h6> GLOBAL INFO CHANNEL</h6>

</body>

</html>

HTML Paragraph Tag

• HTML documents are divided into paragraphs.

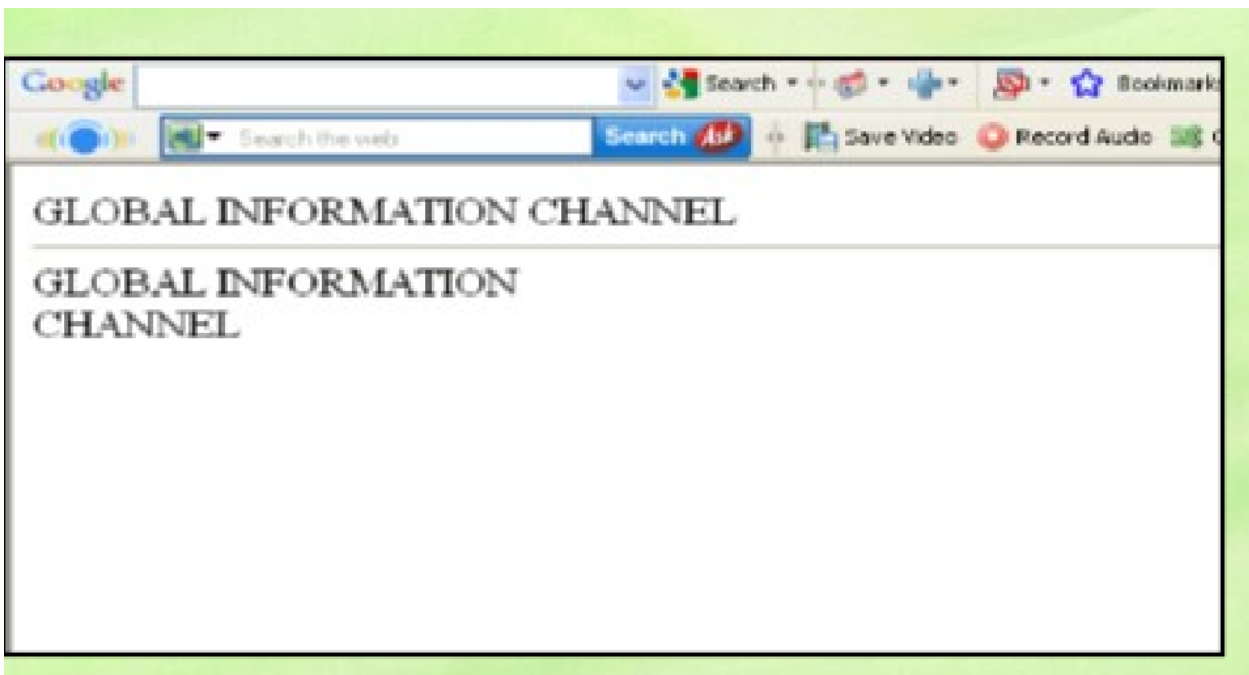• Paragraphs are defined with the <p> tag i.e. <p>This is a paragraph</p>

<p>This is another paragraph</p>

<pre>This text is preformatted</pre>

Line Break & Horizontal Line Tag

• if you want a line break or a new line without starting a new paragraph Use the <br> tag.

• Defines a horizontal line use <hr>tag.

•
 <hr> element are empty HTML element i.e. Global Information Channel<hr> Global Information
 Channel

Text Formatting Tags

 Defines bold text

<big> Defines big text

 Defines emphasized text

<i> Defines italic text

<small> Defines small text

 Defines strong text

<sub> Defines subscripted text

<super> Defines superscripted text

<ins> Defines inserted text

<del> Defines deleted text

<tt> Defines teletype text

<u> Defines underline text

<strike> Defines strike text

Text Formatting Code
<html>

<head></head>

<body>

This text is Bold

This text is Emphasized

<i>This text is Italic</i>

<small>This text is Small</small>

This is_{Subscript} and

^{Superscript}

This text is Strong

<big>This text is Big</big>

<u>This text is Underline</u>
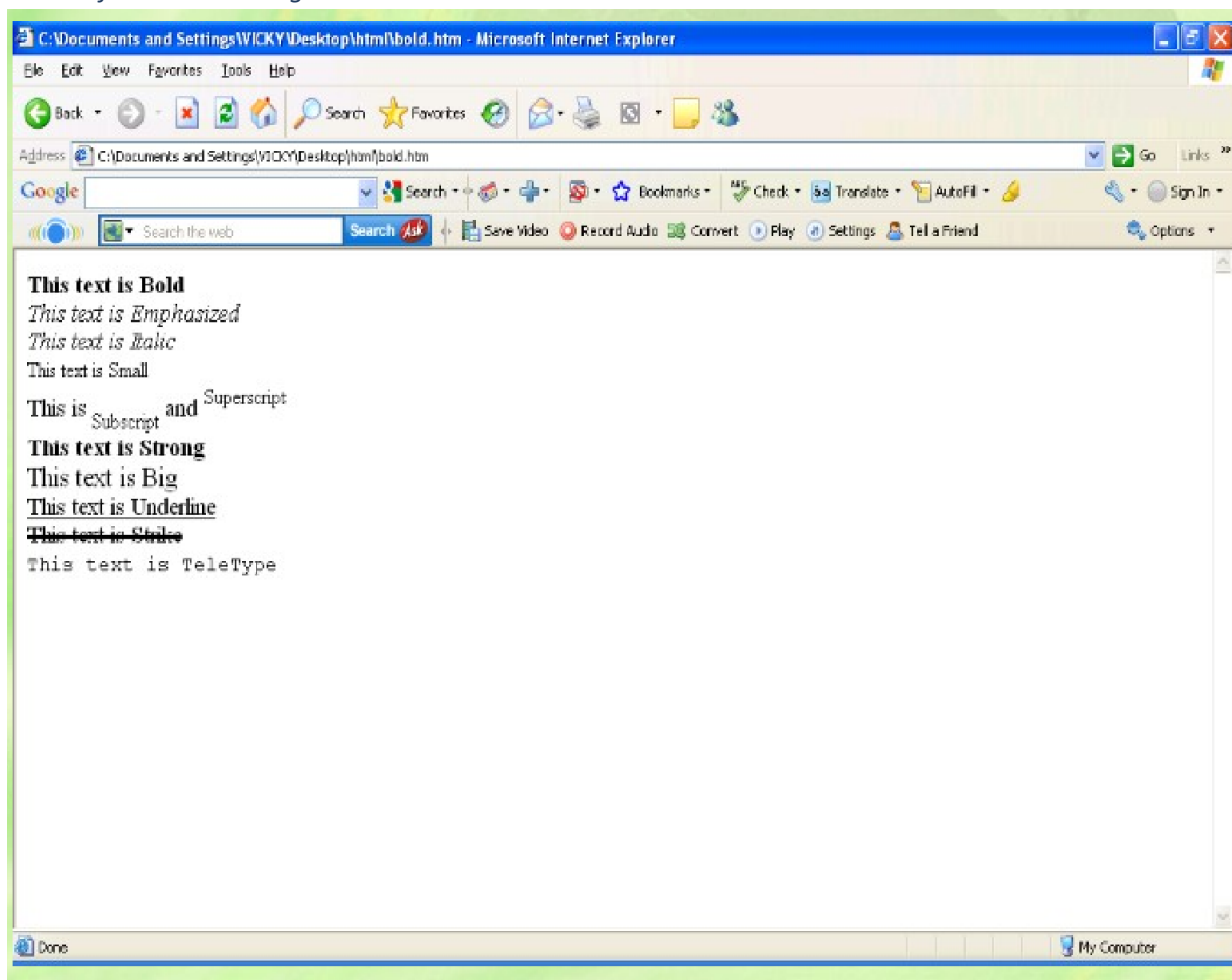

<strike>This text is Strike</strike>

<tt>This text is Teletype</tt>

</body>

</html>

Result of Text Formatting

Font Tag

• This element is used to format the size, typeface and color of the enclosed text.

• The commonly used fonts for web pages are Arial, Comic Sans MS , Lucida Sans Unicode, Arial Black, Courier New, Times New Roman, Arial Narrow, Impact, Verdana.

• The size attribute in font tag takes values from 1 to 7.

Font Tag Code

<html>

<head><title> fonts</title></head>

<body>

 GLOBAL

INFORMATION CHANNEL

GLOBAL INFORMATION CHANNEL

GLOBAL INFORMATION CHANNEL

 GLOBAL

INFORMATION CHANNEL

GLOBAL INFORMATION CHANNEL

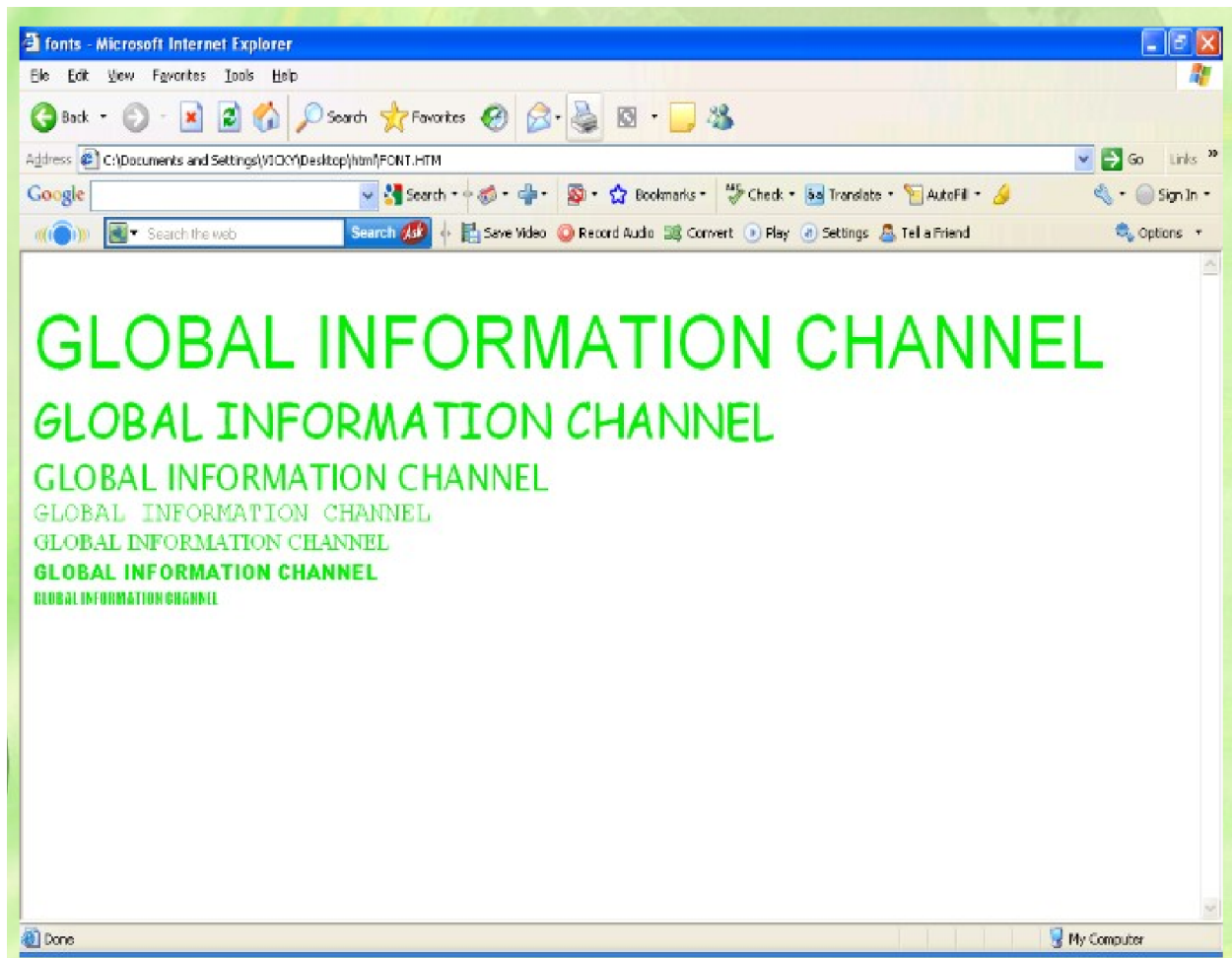
 GLOBAL

INFORMATION CHANNEL

 GLOBAL

INFORMATION CHANNEL

</body>

</html>

Result of Font Code

Image attributes - <img> tag

<img> <Src>	Defines an image display an image on a page,Src stands for "source".
<Alt>	Define "alternate text" for an image
<Width>	Defines the width of the image
<Height>	Defines the height of the image
<Border>	Defines border of the image
<Hspace>	Horizontal space of the image
<Vspace>	Vertical space of the image
<Align>	Align an image within the text
<background>	Add a background image to an HTML page

HTML Table Tag

Tag	Description
<table>	used to create table
<tr>	table is divided into rows
<td>	each row is divided into data cells
<th>	Headings in a table
<Caption>	caption to the table
<colgroup>	Defines groups of table columns
<col>	Defines the attribute values for one or more columns in a table
<thead>	Defines a table head
<tbody>	Defines a table body
<tfoot>	Defines a table footer
<Cellspacing>	amount of space between table cells.
<Cellpadding>	space around the edges of each cell
<Colspan>	No of column working with will span
<rowspan>	No of rows working with will span
<Border>	attribute takes a number

What is XML?

- XML stands for eXtensible Markup Language
- XML is a markup language much like HTML
- XML was designed to store and transport data
- XML was designed to be self-descriptive
- XML is a W3C Recommendation

XML Does Not DO Anything

Maybe it is a little hard to understand, but XML does not DO anything. This note is a note to Tove from Jani, stored as XML:

```
<note>
```

```
<to>Tove</to>
<from>Jani</from>
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
</note>
```

The XML above is quite self-descriptive:

- It has sender information.
- It has receiver information
- It has a heading
- It has a message body.

But still, the XML above does not DO anything. XML is just information wrapped in tags.

Someone must write a piece of software to send, receive, store, or display it:

Note

To: Tove

From: Jani

Reminder

Don't forget me this weekend! # The Difference Between XML and HTML

XML and HTML were designed with different goals:

- XML was designed to carry data - with focus on what data is
- HTML was designed to display data - with focus on how data looks
- XML tags are not predefined like HTML tags are

What is Web Server and how it works?

Web server is a program that uses HTTP to serve files that create web pages to users in response to their requests, which is sent by their computers HTTP connection.

Any server that delivers an XML document to another device can be a web server. A better definition might be that a web server is an Internet server that responds to HTTP requests to deliver content and services.

Let me explain you with a simple example, I can say if you are in front of your computer, browsing your web, and you get a message from a friend saying, "I had just read a great article at the following URL http://www.fastwebhost.in/blog

So you will type that URL into your browser and press enter.

And that's it, no matter on which web server the website is in the world, it dispalys the page on your computer screen.

Always a web server is connected to the internet. Every web server that connects to the Internet will be having an unique address which contains a series of four numbers between 0 and 255. A period (.) separates these numbers.

Also, web server enables the hosting providers to manage multiple domains(users) on a single server.

A web host is a company that leases out space on a cluster of servers to empower people to serve their own content & webpages.

Different types of web servers
In open market there are different types of web servers available. Let's discuss about the most popular web servers. Apache, IIS, Nginx and LiteSpeed are few of them.

Apache web server
One of the most popular web server in the world developed by the Apache Software Foundation. Apache is an open source software which supports almost all operating systems including Linux, Unix, Windows, FreeBSD, Mac OS X and more. About 60% of machines run on Apache Web Server.

Customization of apache web server is easy as it contains a modular structure. It is also an open source which means that you can add your own modules to the server when to require and make modifications that suit your requirements.
It is more stable than any other web servers and is easier to solve administrative issues. It can be install on multiple platforms successfully. Recent apache releases provide you the feasibility of handling more requests when you compare to its earlier versions.

IIS web server
IIS is a Microsoft product. This server has all the features just like apache. But it is not an open source and more over adding personal modules is not easy and modification becomes a little difficult job.

Microsoft developed this product and they maintains, thus it works with all the windows operating system platforms. Also, they provides good customer support if it had any issues.

Nginx web server

Another free open source web server is Nginx, it includes IMAP/POP3 proxy server. Nginx is known for its high performance, stability, simple configuration and low resource usage.

This web server doesn't use threads to handle requests rather a much more scalable event-driven architecture which uses small and predictable amounts of memory under load. It is getting popular in the recent times and it is hosting about 7.5% of all domains worldwide. Most of the web hosting companies are using this in recent times.

LightSpeed web server

LiteSpeed (LSWS) is a high-performance Apache drop-in replacement. LSWS is the 4th most popular web server on the internet and it is a commercial web server.

Upgrading your web server to LiteSpeed will improve performance and lower operating costs.

This is compatible with most common apache features, including mod_rewrite, .htaccess, and mod_security. LSWS can load apache configuration files directly and works as a drop-in replacement apache with most of the hosting control panels. It replaces apache in less than 15 minutes with zero downtime.

Unlike other front-end proxy solutions, LSWS replaces all Apache functions, simplifying use and making the transition from Apache smooth and easy. Most of the hosting companies were using LSWS in recent times.

web page
A document which can be displayed in a web browser such as Firefox, Google Chrome, Opera, Microsoft Internet Explorer or Edge, or Apple's Safari. These are also often called just "pages."

website
A collection of web pages which are grouped together and usually connected together in various ways. Often called a "web site" or a "site."

web server
A computer that hosts a website on the Internet.

search engine
A web service that helps you find other web pages, such as Google, Bing, Yahoo, or DuckDuckGo. Search engines are normally accessed through a web browser (e.g. you can perform search engine searches directly in the address bar of Firefox, Chrome, etc.) or through a web page
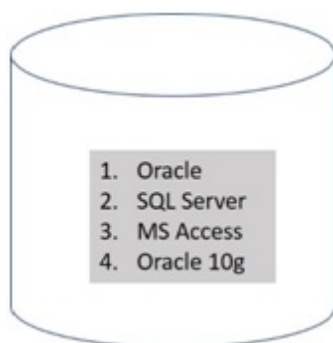
Introduction to Databases

A collected information which is in an organized form for easier access, management, and various updating is known as a database.

Before going into a further discussion of databases, we must have a prior knowledge of exactly what is a DATA? Data can be defined as a collection of facts and records on which we can apply reasoning or can-do discussion or some calculation. The data is always easily available and is in plenty. It can be used for processing some useful information from it. Also, it can be in redundant, can be irrelevant. Data can exist in form of graphics, reports, tables, text, etc. that represents every kind of information, that allows easy retrieval, updating, analysis, and output of data by systematically organized or structured repository of indexed information.

Containers having a huge amount of data are known as databases, for example, a public library stores books. Databases are computer structures that save, organize, protect, and deliver data.

Any system that manages databases is called a **database management system**, or DBM. The typical diagram representation for a database is a cylinder.

Inside a database, the data is recorded in a table which is a collection of rows, columns, and it is indexed so that to find relevant information becomes an easier task. As new information is added, data gets updated, expanded and deleted. The various processes of databases create and update themselves, querying the data they contain and running applications against it.

The are several different types of database models have been developed so far, for example, *flat, hierarchical, network* and *relational*. These models describe the operations that can be performed on them as well as the structure of the conforming databases. Normally there is a database schema which describes the exact model, entity types, and relationships among those entities.

Flat Databases have the following characteristics −

- simple
- long and dominant
- useful for very small scale and simple applications.

A **Relational Database** has the following characteristics −

- organizes data such that it appears to the user to be stored in a series of interrelated tables
- used for high-performance applications
- efficient
- ease of use
- ability to perform a variety of useful tasks

Pharmacy Drug Databases

Drug databases are sites where information about drugs and medications are stored, and one of the largest (and most commonly used) drug databases is compiled by the **Food & Drug Administration (FDA)**. The FDA is a federal agency that oversees and controls all medications in the U.S., which includes:

- Over-the-counter (OTC) medications
- Prescription medications
- Dietary supplements
- Vaccines

The FDA drug database includes most of the drugs they have approved in the U.S. since 1939. Best of all, this database is extremely easy to use. To search this database, you simply need to go to the FDA drug database's website. Once you get to this website, you are able to search the database by typing in the name of the drug or by typing in any active ingredient of a drug.

Additionally, the FDA drug database can be used to search drugs that are currently going through clinical trials and/or the approval process. The FDA must approve a drug before it is legally able to be sold and used in the United States. Therefore, drug companies must formally submit an application to the FDA for the drug to be approved. The drugs that have been submitted to the FDA but not yet approved can be found in this database.