

Lecture 1 & 2

Course: Web Development

Duration : 4 Months

Trainer: Ms. Hafiza Alia
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Objective of Course

Course provides participants an opportunity to build a Great Career in web application development world, a best web development program to learn web development all in one, course start from basic level and moved toward advanced tools and techniques of web development. Program is covering HTML5, CSS, JS, JQ, PHP, MySQL, AJAX and Website Design Concepts and common tasks need for deployment and administration of a website

Course Description

- ▶ The major topics include the way web works, an introduction to web engineering, requirements of web applications, modelling for web applications, client-side HTML, cascading stylesheets, java script basics, introduction to server-side technologies, PHP basics, PHP arrays, functions, forms and event handling, database connectivity using PHP and MySQL

Learning Outcome of the Course

- ▶ Knowledge to build REAL world creative and modern website from very scratch using modern web technologies
- ▶ Knowledge to new ways of coding, tips & tricks and modern best practices to build a professional website.
- ▶ Knowledge of wire-framing, HTML5, CSS3, JQuery and Bootstrap
- ▶ Knowledge to build a fully responsive website which will look perfect on all the small & wide screens.
- ▶ Knowledge of PHP, OOP, AJAX, MySql

Skills Proficiency Details

- ▶ Students of web development.
- ▶ Anyone who wants to learn how to build websites using PHP.
- ▶ Anyone interested in a proper certification in PHP course.
- ▶ People already working as web developers who want to learn the latest techniques and tricks in PHP based web development.
- ▶ Employees of web development companies and software houses who want to polish their skills further in Web Development especially with focus on PHP.
- ▶ Business owners who want to build and run their own websites themselves.

Companies Offering Jobs in the respective trade

1. Upwork
2. Freelancing
3. Fiverr
4. Government Institutes
5. Software Houses
6. All Private Institutes who are managing software

Job Opportunities

- ▶ All over the world there is a high demand in the Information Technology industry for developers in various field such as mobile application developer, web developer and graphic designer.
- ▶ Web Engineers
- ▶ DBAs
- ▶ Web Developers
- ▶ Web designers
- ▶ IT Support Officer

Instructional Resources

- ▶ <https://www.php.net/>
- ▶ <https://www.w3schools.com/>
- ▶ <https://www.tutorialspoint.com/>

Grading Criteria

90 % and above	A+
80% to 89 %	A
70% to 79%	B
60% to 69%	C
50% to 59%	D

GRADING POLICY

- ▶ Quizzes - 5%
- ▶ Lab Task/Assignments - 15%
- ▶ Monthly 1- 5 %
- ▶ Monthly 2- 5 %
- ▶ Monthly 4 (Grand Exam)- 30%
- ▶ Project - 30 %
- ▶ Attendance - 5 %
- ▶ Participation 5 %

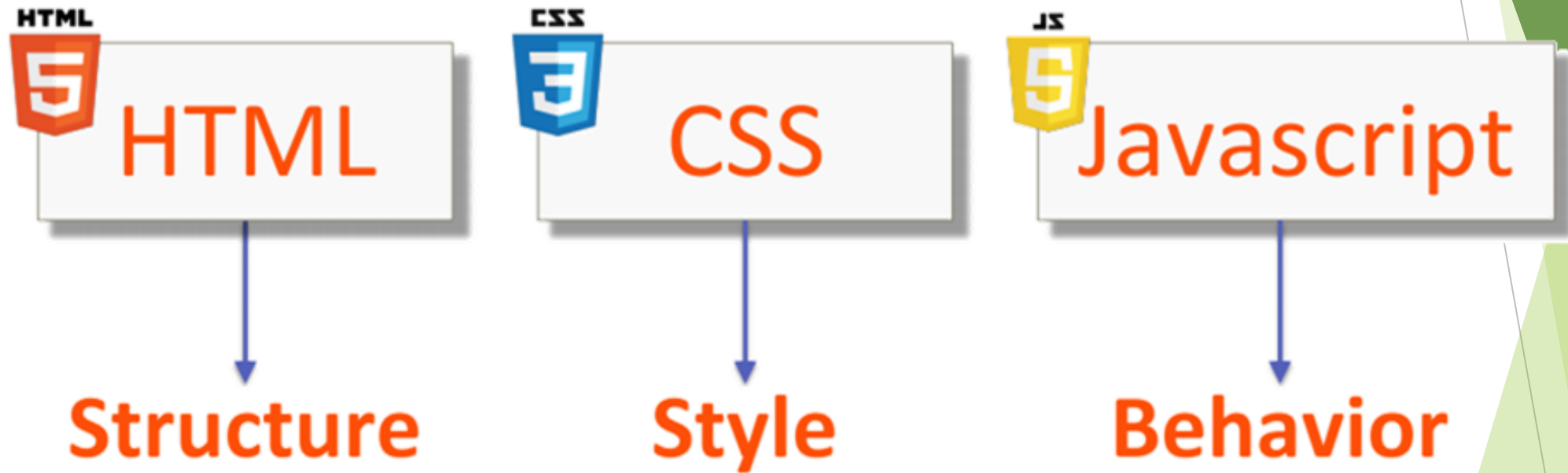
CODE OF CONDUCT (VERY IMPORTANT)

- ▶ **Number of Absences allowed: 0 per month**
- ▶ **2 Late arrivals are equal to 1 absent.**
- ▶ Violation of Discipline will lead to suspension.
- ▶ Submission of Project on time is compulsory to pass the exam.
- ▶ 90% Attendance is compulsory to appear in final exam.
- ▶ **More than 5 absences will lead to an 'F' grade. You don't want that! 😊**

Course flow/The Web Programmer's Toolbox



Technologies That Drive The Web

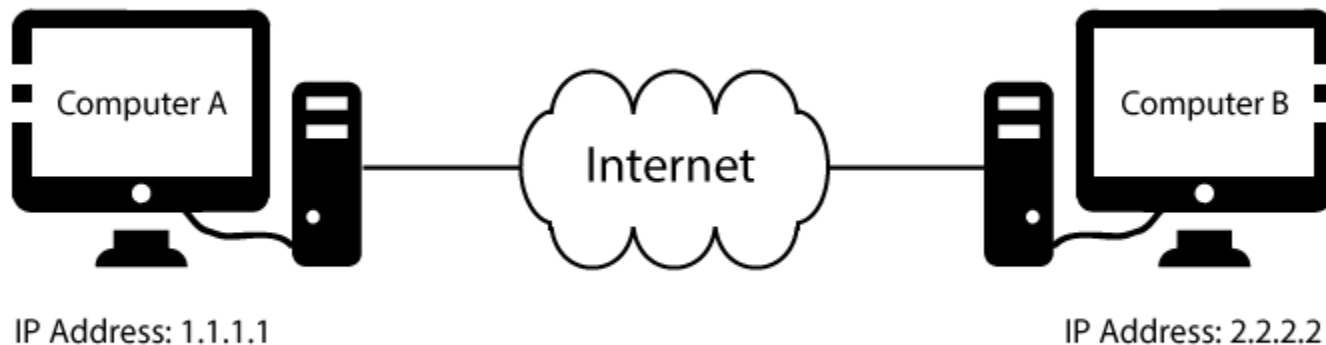


Basic concepts

- ▶ What is internet?
- ▶ What is a Website?
- ▶ What is WWW?
- ▶ What is IP?
- ▶ What is HTTP?
- ▶ What is URL?
- ▶ What is Web Server?
- ▶ What is Web Browser?
- ▶ What is SMTP Server?
- ▶ What is ISP?
- ▶ What is HTML?
- ▶ What are Hyperlinks?
- ▶ What is DNS?

What is internet?

- The Internet is a huge collection of computers connected in a communications network. These computers are of every imaginable size, configuration, and manufacturer. In fact, some of the devices connected to the Internet—such as plotters and printers—are not computers at all



► What is WWW?

- WWW stands for World Wide Web. A technical definition of the World Wide Web is – All the resources and users on the Internet that are using the Hypertext Transfer Protocol (HTTP).
- The World Wide Web is a way of exchanging information between computers on the Internet

► What is HTTP?

- HTTP stands for Hypertext Transfer Protocol. This is the protocol being used to transfer hypertext documents that makes the World Wide Web possible

► What is URL?

- URL stands for Uniform Resource Locator

► What is ISP?

- ISP stands for Internet Service Provider. They are the companies who provide you service in terms of internet connection to connect to the internet

► What is HTML?

- HTML stands for Hyper Text Markup Language. This is the language in which we write web pages for any Website.

► What are hyperlinks?



What is Web Browser?

- ▶ Web Browsers are software installed on your PC. To access the Web you need a web browsers, such as Netscape Navigator, Microsoft Internet Explorer or Mozilla Firefox.
- ▶ A web browser is a program on your computer that allows you to access websites on the internet.
- ▶ The purpose of a web browser (Chrome, IE, Firefox, Safari) is to read HTML documents and display them.
- ▶ The browser does not display the HTML tags, but uses them to determine how to display the document:

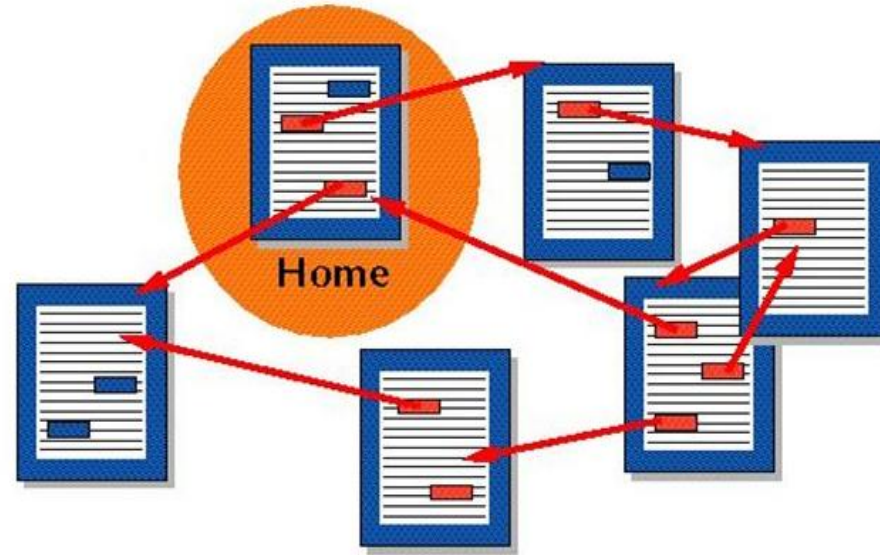
Types of web browsers

- ▶ Internet Explorer
- ▶ Google Chrome
- ▶ Mozilla Firefox
- ▶ Opera
- ▶ Safari

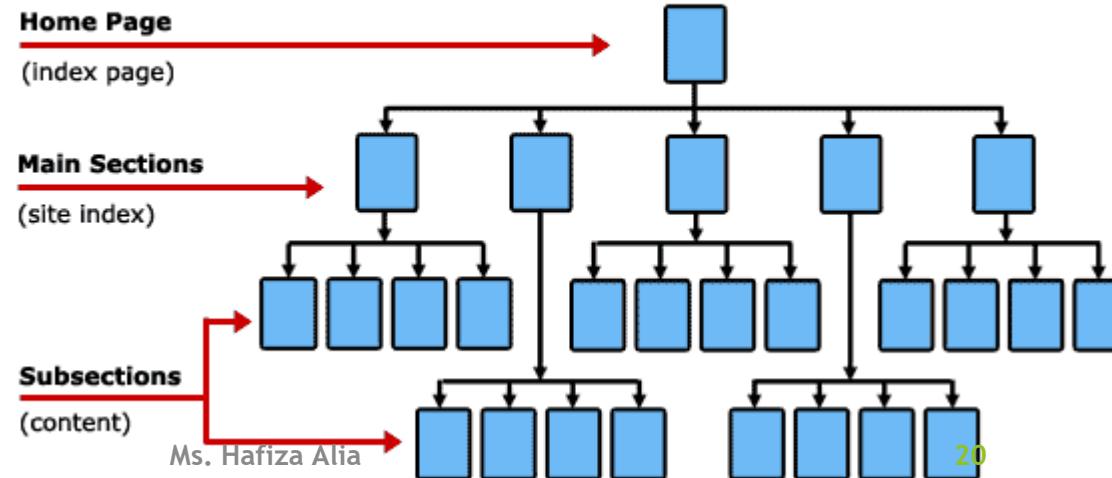


Website

- A set of **interlinked** and **well-structure** web pages located under a same domain.



Basic Website Layout



What is Web Server?

- ▶ Every Website sits on a computer known as a Web server. This server is always connected to the internet.
- ▶ Every Web server that is connected to the Internet is given a unique address made up of a series of four numbers between 0 and 256 separated by periods. For example, 68.178.157.132 or 68.122.35.127.

► What is IP?

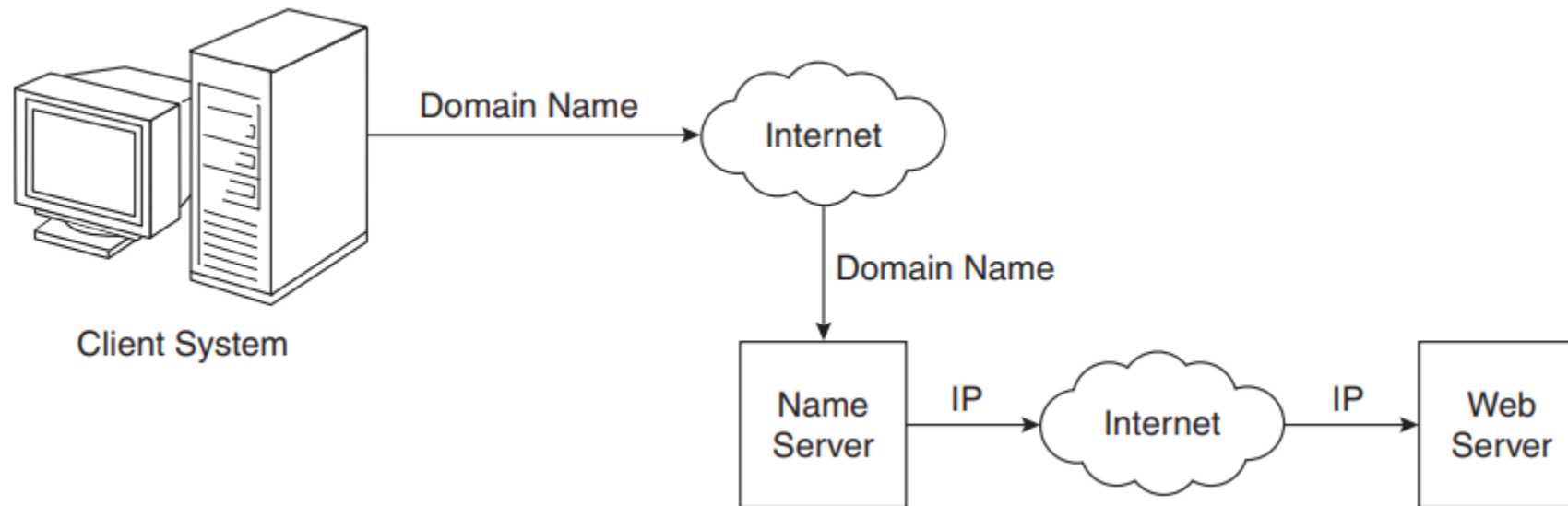
- For people, Internet nodes are identified by names; for computers, they are identified by numeric addresses.

► What is DNS/Domain Name?

- Because people have difficulty dealing with and remembering numbers, machines on the Internet also have textual names.
- DNS stands for **Domain Name System**. When someone types in your domain name, `www.example.com`, your browser will ask the Domain Name System to find the IP that hosts your site.

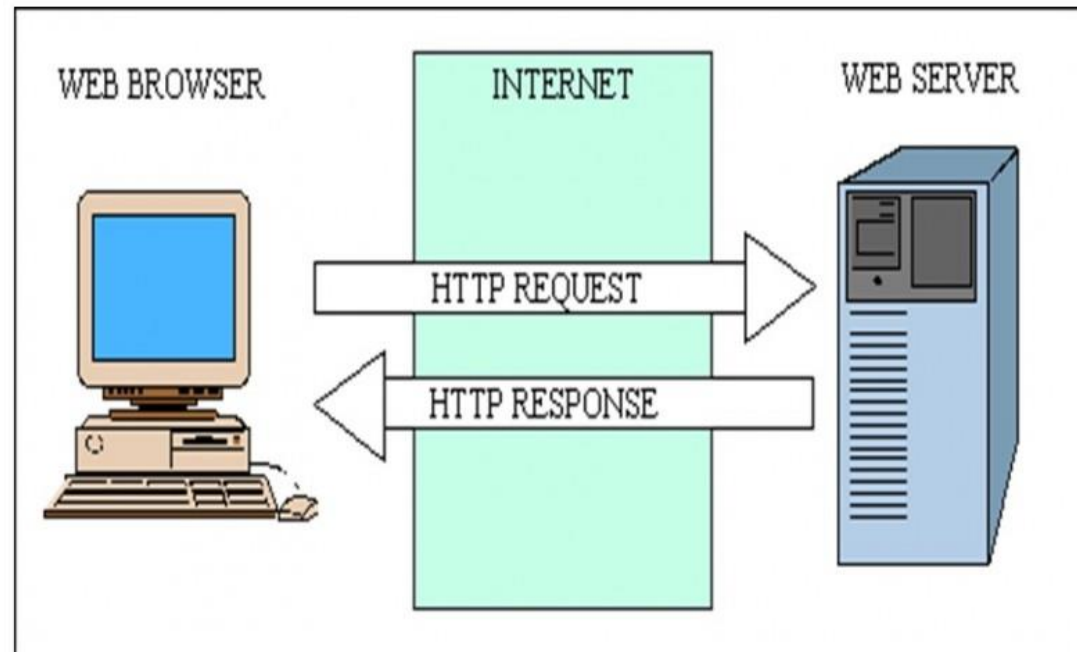
Domain name conversion

- Figure shows how fully qualified domain names requested by a browser are translated into IPs before they are routed to the appropriate Web server.



Web server

- ▶ A **Web server** is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form **Web** pages to users, in response to their requests, which are forwarded by their computers' HTTP clients.



Web servers

- ▶ 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.facebook.com/index.html` in your browser, this sends a request to the Web server whose domain name is `facebook.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.

► What is SMTP Server?

- SMTP stands for **Simple Mail Transfer Protocol Server**. This server takes care of delivering emails from one server to another server. When you send an email to an email address, it is delivered to its recipient by a SMTP Server.

► web hosting

► the activity or business of providing storage space and access for websites.

▶ the Web physically consists of the following components

- ▶ **Your personal computer** – This is the PC at which you sit to see the web.
- ▶ **A Web browser** – A software installed on your PC which helps you to browse the Web.
- ▶ **An internet connection** – This is provided by an ISP and connects you to the internet to reach to any Website.
- ▶ **A Web server** – This is the computer on which a website is hosted. The Web is known as a ***client-server system***. Your computer is **the client** and the remote computers that store electronic files are **the servers**.

Web pages

- ▶ Single document written using hypertext markup language (HTML)
- ▶ Hypertext is a text that contains hyperlinks that lead to other documents.
- ▶ Hyperlinks can be text, word, sentence, button, icon and sometimes even a picture by clicking you will be directed to another page.
- ▶ We access a web page by entering URL (uniform resource locator) address using a web browser.
 - ▶ URL example www.example.com/abc.html
- ▶ A web page may contain text, graphics, hyperlinks and many other resources.

Web applications

- ▶ A web application or "web app" is a software program that runs on a web server. Unlike traditional desktop applications, which are launched by your operating system, web apps must be accessed through a web browser.

Example of Web applications

- ▶ **Google Docs**. Google's office suite is one of the best web applications in the world.
- ▶ **Pixlr.com**. Pixlr is one of the best web applications for photo editing.
- ▶ **Codepen.io**. This is the perfect tool for those starting out in the web app development industry. ..
- ▶ Common web application **Microsoft office live**, **one drive**, **YouTube**, **G+** and **Facebook**.

Types of Websites

- ▶ Static
 - ▶ Websites that contains only static webpages
- ▶ Dynamic
 - ▶ A dynamic web page is a web page that displays different content each time it's viewed
 - ▶ Example [www.Facebook.com](https://www.facebook.com)



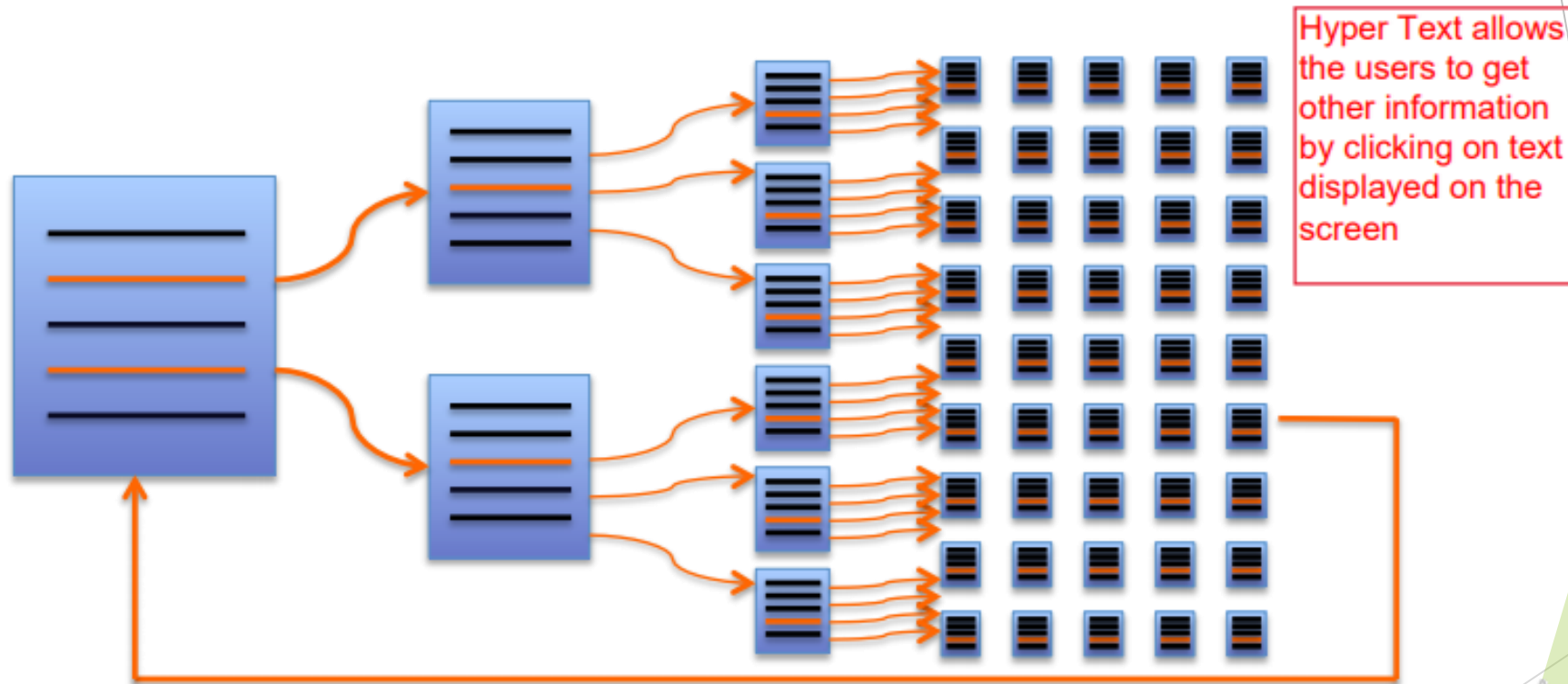
What Does HTML Stand For?

H T M L



Hyper**T**ext **M**arkup **L**anguage

Hypertext Markup Language



Hypertext Markup Language

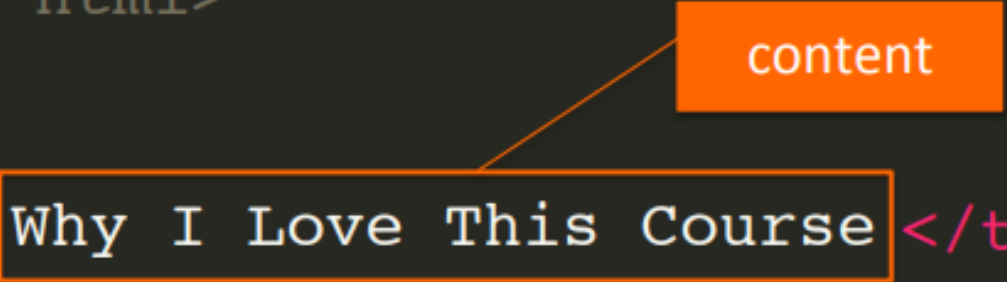
Hypermedia



Ac

Hypertext Markup Language

```
<!doctype html>
<html>
<head>
  <title>Why I Love This Course</title>
</head>
<body> [...]
</body>
</html>
```



The diagram illustrates the structure of an HTML document. An orange box labeled "content" is connected by a line to an orange box containing the text "Why I Love This Course". This text is enclosed within the `<title>` and `</title>` tags in the provided HTML code snippet.

Hypertext Markup Language

```
<h1>  
  <div>Hello World!</h1>  
</div>
```



```
<h1>  
  <div>Hello World!</div>  
</h1>
```



HTML Introduction

- ▶ It is important to realize that HTML is not a programming language.(it cannot be used to describe computations.)
- ▶ Its purpose is to describe the general form and layout of documents to be displayed by a browser
- ▶ HTML is the standard markup language for creating Web pages.
- ▶ HTML stands for Hyper Text Markup Language
- ▶ HTML describes the structure of Web pages using markup
- ▶ HTML elements are the building blocks of HTML pages

HTML Introduction

- ▶ HTML elements are represented by tags
- ▶ HTML tags label pieces of content such as "heading", "paragraph", "table", and so on.
- ▶ Browsers do not display the HTML tags, but use them to render the content of the page

Example

HTML Page Structure

► `<!DOCTYPE html>`
`<html>`
`<head>`
`<title>Page Title</title>`
`</head>`
`<body>`

All visible part will go here

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

Explanation

- ▶ The `<!DOCTYPE html>` declaration defines this document to be HTML5
- ▶ The `<html>` element is the root element of an HTML page
- ▶ The `<head>` element contains meta information about the document
- ▶ The `<title>` element specifies a title for the document
- ▶ The `<body>` element contains the visible page content
- ▶ The `<h1>` element defines a large heading
- ▶ The `<p>` element defines a paragraph

The <!DOCTYPE> Declaration

- ▶ The <!DOCTYPE> declaration represents the document type, and helps browsers to display web pages correctly.
- ▶ It must only appear once, at the top of the page (before any HTML tags).

HTML Tags/Elements

- ▶ HTML tags are element names surrounded by angle brackets:
- ▶ `<tagname>content goes here...</tagname>`
- ▶ HTML tags normally come in **pairs** like `<p>` and `</p>`
- ▶ The first tag in a pair is the **start tag**, the second tag is the **end tag**
- ▶ The end tag is written like the start tag, but with a **forward slash** inserted before the tag name

Nested HTML Elements

- ▶ HTML elements can be nested (elements can contain elements).

- ▶ Example

- ▶ `<html>`
`<body>`

- `<p>This is a paragraph`

- `<p>This is a paragraph`

- `</body>`

- `</html>`

Empty HTML Elements

- ▶ HTML elements with no content are called empty elements.
- ▶ `
` is an empty element without a closing tag (the `
` tag defines a line break).
- ▶ Empty elements can be "closed" in the opening tag like this: `
`.

HTML Attributes

- ▶ Attributes provide additional information about HTML elements.
- ▶ All HTML elements can have **attributes**
- ▶ Attributes provide **additional information** about an element
- ▶ Attributes are always specified in **the start tag**
- ▶ Attributes usually come in name/value pairs like: **name="value"**

Attribute Examples

- ▶ The href Attribute
- ▶ The src Attribute
- ▶ The width and height Attributes
- ▶ The alt Attribute
- ▶ The style Attribute
 - ▶ `<p style="color:red">I am a paragraph</p>`
- ▶ The title Attribute
 - ▶ `<p title="I'm a tooltip">`
This is a paragraph.
`</p>`

Note

- ▶ we always use **lowercase** attribute names
- ▶ we always **quote** attribute values with double quotes

Headings

- ▶ Headings are defined with the `<h1>` to `<h6>` tags.
- ▶ `<h1>Heading 1</h1>`
`<h2>Heading 2</h2>`
`<h3>Heading 3</h3>`
`<h4>Heading 4</h4>`
`<h5>Heading 5</h5>`
`<h6>Heading 6</h6>`

Headings Are Important

- ▶ Search engines use the headings to index the structure and content of your web pages.
- ▶ Users skim your pages by its headings. It is important to use headings to show the document structure.
- ▶ <h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on.

Bigger Headings

- ▶ Each HTML heading has a default size. However, you can specify the size for any heading with the style attribute, using the CSS font-size property:
 - ▶ `<h1 style="font-size:60px;">Heading 1</h1>`

HTML Horizontal Rules

- The `<hr>` tag defines a thematic break in an HTML page and is most often displayed as a horizontal rule.

The HTML <head> Element

- ▶ The <head> element is a container for metadata.
- ▶ HTML metadata is data about the HTML document. Metadata is not displayed.
- ▶ The <head> element is placed between the <html> tag and the <body> tag:

How to view HTML code of any Website

- ▶ View HTML Source Code:
 - ▶ Right-click in an HTML page and select "View Page Source" (in Chrome) or "View Source" (in IE), or similar in other browsers. This will open a window containing the HTML source code of the page.
- ▶ Inspect an HTML Element:
 - ▶ Right-click on an element (or a blank area), and choose "Inspect" or "Inspect Element" to see what elements are made up of (you will see both the HTML and the CSS). You can also edit the HTML or CSS on-the-fly in the Elements or Styles panel that opens.

HTML Paragraphs

- ▶ The HTML `<p>` element defines a paragraph:
- ▶ HTML Display
 - ▶ You cannot be sure how HTML will be displayed.
 - ▶ Large or small screens, and resized windows will create different results.
 - ▶ With HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code.
 - ▶ The browser will remove any extra spaces and extra lines when the page is displayed

Example

► `<p>`
This paragraph
contains a lot of lines
in the source code,
but the browser
ignores it.
`</p>`

`<p>`
This paragraph
contains a lot of spaces
in the source code,
but the browser
ignores it.
`</p>`

► HTML Line Breaks

- The HTML `
` element defines a line break.

► The Poem Problem

- This poem will display on a single line:

- `<p>`

My Bonnie lies over the ocean.

My Bonnie lies over the sea.

My Bonnie lies over the ocean.

Oh, bring back my Bonnie to me.

`</p>`

► Solution

- Html Pre-Tag

The Style Attribute

- ▶ I am Red
- ▶ I am Blue
- ▶ I am Big

The HTML Style Attribute

- ▶ Setting the style of an HTML element, can be done with the style attribute.
- ▶ The HTML style attribute has the following syntax:
 - ▶ `<tagname style="property:value;">`
- ▶ Note:
 - ▶ The *property* is a CSS property. The *value* is a CSS value.

HTML Background Color

- ▶ The background-color property defines the background color for an HTML element.

- ▶ `<body style="background-color:powderblue;">`

```
<h1>This is a heading</h1>
```

```
<p>This is a paragraph.</p>
```

```
</body>
```

Styles

▶ HTML Text Color

- ▶ The color property defines the text color for an HTML element:

▶ HTML Fonts

- ▶ The font-family property defines the font to be used for an HTML element:

▶ HTML Text Size

- ▶ The font-size property defines the text size for an HTML element:

▶ HTML Text Alignment

- ▶ The text-align property defines the horizontal text alignment for an HTML element:

HTML Formatting Elements

- ▶ HTML also defines special elements for defining text with a special meaning.
 - ▶ `` - Bold text
 - ▶ `` - Important text
 - ▶ **`<i>` - Italic text**
 - ▶ `` - Emphasized text
 - ▶ `<mark>` - Marked text
 - ▶ `<small>` - Small text
 - ▶ `` - Deleted text
 - ▶ `<ins>` - Inserted text
 - ▶ `<sub>` - Subscript text
 - ▶ `<sup>` - Superscript text

▶ HTML and Elements

- ▶ The HTML element defines bold text, without any extra importance.
- ▶ The HTML element defines strong text, with added semantic "strong" importance.

▶ HTML <i> and Elements

- ▶ The HTML <i> element defines italic text, without any extra importance.
- ▶ The HTML element defines emphasized text, with added semantic importance.

HTML Quotation and Citation

- ▶ HTML `<q>` for Short Quotations
 - ▶ `<p>WWF's goal is to: <q>Build a future where people live in harmony with nature.</q></p>`

HTML blockquote

HTML <blockquote> for Quotations

<p>Browsers usually indent blockquote elements.</p>

<blockquote cite="http://www.worldwildlife.org/who/index.html">

For 50 years, WWF has been protecting the future of nature.

The world's leading conservation organization,

WWF works in 100 countries and is supported by

1.2 million members in the United States and

close to 5 million globally.

</blockquote>

HTML <abbr> for Abbreviations

- ▶ The HTML <abbr> element defines an abbreviation or an acronym.
 - ▶ `<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>`

HTML <address> for Contact Information

- ▶ The HTML <address> element defines contact information (author/owner) of a document or an article.
 - ▶ `<address>`
Written by John Doe.`
`
Visit us at:`
`
Example.com`
`
Box 564, Disneyland`
`
USA
`</address>`

HTML Comments

► `<!-- Write your comments here -->`

End Of Lecture 1 & 2