



Key Concepts around Designing Web Pages Session 2

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Web Hosting

- Websites are hosted, or stored, on special computers called servers.
- A web hosting service or web host is a type of internet hosting service that allows individuals and organisations to make their website accessible via the World Wide Web.
- A web host provides the technologies and services required for the website or web page to be viewed in the internet.
- A web hosting service provides space on a server which can be owned or leased by the clients.
- GoDaddy, Hostwinds, HostGator, DreamHost, Domain.com, Inmotion hosting are also examples of popular web hosting service providers.

Web Hosting Classification

Web hosting services are classified as smaller hosting services and larger hosting services.

Smaller Hosting services

For smaller hosting services, files can be uploaded via File Transfer Protocol or a web interface. The files are usually delivered to the Web "as is" or with minimal processing.

Many Internet service providers offer this service free to subscribers.

Larger Hosting Services

Large companies that are not internet service providers need to be permanently connected to the web to send email, files, etc., to other sites.

They may use the computer as a website host to provide details of their goods, services, and facilities for online orders.

Types of Hosting Services

Shared Web Hosting Service

Entry-level website hosting

Stored on the same server as multiple other websites

Domains share the same server resources, such as Random Access Memory and Central Processing Unit

Dedicated Hosting Service

Control over that server where their website is stored

Rented by you, and your website is the only one stored on it

Full root and admin access - control everything from security to your operating system

Yahoo and Google - dedicated hosting services

Virtual Private Server

Need more control, but do not necessarily need a dedicated server

Own space on the server, though it still shares a physical server with other users

Cloud Hosting Service

Multiple computers and applications to work together using combined computing resources

Companies to consume the computing resource like a utility

Managed Hosting Service

Provide technical services such as hardware and software setup and configuration, maintenance, hardware replacement, technical support, patching, updating and monitoring

Colocation Hosting Service

Private data centre, you may choose to "co-locate" your equipment by renting space in a colocation centre

Activity

1. Name the 2 categories in which web hosting services are categorised.
2. Which web hosting service is perfect for entry level web hosting?
3. Which web hosting service allows multiple computers and applications to work together using

combined computing resources?

Types of Web Servers

The leading brands of web servers available in the market are:

1. Apache HTTP Server
2. Microsoft Internet Information Service
3. Lighttpd
4. Nginx Web Server
5. Apache Tomcat

Different categories of web servers are:

Static

Dynamic

Application

Database

Static and Dynamic Web Server

A static web server consists of a computer which is the hardware, and an HTTP server which is the software. It is called a static server as it sends its hosted files as is to your browser.

A dynamic web server consists of a static web server with an extra server, mostly an application server and a database. Application server updates the hosted files before sending content to your browser via the HTTP server.

Application Server

An application server is specifically designed to run applications.

Examples:

- Web Servers: Apache HTTP, Microsoft IIS, Lighttpd.
- Application Servers: Weblogic, Glassfish, JBoss.

Database Server

- Used to store and manage databases stored on the server
- Keeps the data in a central location that can be regularly backed up
- Allows users and applications to centrally access the data across the network

Activity

1. Which server is specifically designed to run applications?
2. Which server is useful for organisations that have a lot of data to deal with?
3. Which web server consists of a static web server with an extra server; mostly an application server and a database?

Creating an HTML Document

- That's correct! Web pages can be created and modified by using professional HTML editors. For beginners, we recommend using a simple text editor like notepad (PC) or textedit (Mac).
- Before writing a code to create a web page, first, we need to plan the appearance of a web page.
- An HTML document has two elements – document content and tags.

- Document content is textual or graphical information on a web page that the user will see.
- Tags are the HTML codes that control how the document content will appear. For example, tags can determine the style, colour and font type of the text.
- All HTML documents must start with a document type declaration `<!DOCTYPE html>`.
- The HTML document itself begins with `<html>` and ends with `</html>`.
- The visible part of the HTML document is between `<body>` and `</body>`.

Different HTML Tags

- The `<html>` element is the root element and it defines the whole HTML document. It has a start tag `<html>` and an end tag `</html>`.
- Inside the `<html>` element there is a `<body>` element. The `<body>` element defines the document's body. It has a start tag `<body>` and an end tag `</body>`.
- Inside the `<body>` element there are two other elements: `<h1>` and `<p>`.
- The `<h1>` element defines a heading. It has a start tag `<h1>` and an end tag `</h1>`.
- The `<p>` element defines a paragraph. It has a start tag `<p>` and an end tag `</p>`.

Meta Tag

Metadata is about an HTML document. `<head>` element and are typically used to specify a character set, page description, keywords, author of the document, and viewport settings.

<link> Tag

- The href attribute specifies the location (URL) of the external resource (most often a style sheet file). The URL of the linked resource/document.
- The hreflang attribute specifies the language of the text in the linked document. This attribute is only used if the href attribute is set.
- The media attribute specifies what media/device the target resource is optimised.
- The referrerpolicy attribute specifies which referrer information to send when fetching an iframe.

Activity

1. What does the <body> element define?
2. Which attribute specifies the location of the external source?
3. Which attribute is used with CSS style sheets to specify different styles for different media types?

**
 and <hr>tags**

- The
 tag inserts a single line break, is useful for writing addresses or poems. A
 tag is an empty tag, which means that it has no end tag.
- The <hr> tag defines a thematic break in an HTML page. It is displayed as a horizontal rule which is used to separate content (or define a change) in an HTML page HTML, DHTML, XML, and XHTML are the 4 main types of mark-up languages.

Other HTML Tags

1. The HTML `` element defines bold text, without any extra importance. The HTML `` element defines text with strong importance. The content inside is displayed in bold.
 2. The HTML `<i>` element defines a part of a text in an alternate voice or mood. The content inside is typically displayed in italic. The HTML `` element defines emphasised text. The content inside is typically displayed in italic.
 3. The HTML `` element defines text that has been deleted from a document. Browsers will usually strike a line through the deleted text.
 4. The HTML `<ins>` element defines a text that has been inserted into a document. Browsers will usually underline inserted text.
 5. The HTML `<sub>` element defines subscript text. Subscript text appears half a character below the normal line and is sometimes rendered in a smaller font. Subscript text can be used for chemical formulas, like H_2O .
 6. The HTML `<sup>` element defines superscript text. Superscript text appears half a character above the normal line and is sometimes rendered in a smaller font. Superscript text can be used for footnotes, like WWW^1 .
 7. HTML links are defined with the `<a>` tag called as anchor tag. HTML images are defined with the `` tag.
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HTML Attributes

The Width, Height, and Alt Attributes

The required alt attribute for the `` tag specifies an alternate text for an image if the image for some reason cannot be displayed. It can be due to slow connection, or an error in the src attribute, or if the user uses a screen reader.

The Lang Attribute

The lang attribute inside the `<html>` tag declares the language of the web page.

The Title Attribute

The title attribute defines some extra information about an element.

Using HTML Attributes

Just like every application or language, HTML also has some rules which the users need to follow.

Always use lowercase attributes. The HTML standard does not require lowercase attribute names.

The title attribute (and all other attributes) can be written with uppercase or lowercase like title or TITLE.

However, W3C recommends lowercase attributes in HTML and demands lowercase attributes for stricter document types like XHTML.

Always quote attribute values. The HTML standard does not require quotes around attribute values. However, W3C recommends quotes in HTML and demands quotes for stricter document types like XHTML.

A very important point you need to remember is that never skip the end tag. Some HTML elements will display correctly, even if you forget the end tag. However, never rely on this! Unexpected results and errors may occur if you forget the end tag!

Activity

1. Which tag defines a thematic break in an HTML page?
2. Which attribute inside the <html> tag declares the language of the web page?
3. What does the HTML <sup> element define?
