

UQ25CA152A - Web Design

Unit 1: Fundamentals of web and Dreamweaver

Notes

The Importance of Web Design

- Good web design enhances user experience, engagement, and conversion.
- It provides better ROI (Return on Investment) by attracting more visitors and increasing business credibility.
- A professional-looking website improves trust and brand value.

Internet:

The **Internet** is a global network that connects millions of computers worldwide. It allows users to access information, communicate, and share resources across vast distances. Several key technologies and standards make this possible, including W3 standards, client-server architecture, and communication protocols like HTTP and FTP.

W3 Standards

The **World Wide Web Consortium (W3C)** is the main international standards organization for the Internet. It defines protocols and guidelines that ensure the long-term growth and usability of the web. W3C standards cover a wide range of web technologies such as HTML, CSS, XML, and the Document Object Model (DOM). These standards help developers create web pages and applications that are consistent across different browsers and devices, ensuring interoperability and accessibility. For example, HTML5 and CSS3 are W3C standards used for designing modern, responsive web pages.

Client and Server Technology

The Internet operates using a **client-server model**. In this architecture, the **client** is the device or application (such as a web browser) used by the end-user to send requests, while the **server** is a more powerful system that stores resources and responds to those requests. When a user enters a URL into a browser, the browser acts as the client, sending a request to the server that hosts the web page. The server processes the request and sends back the desired information, which is then displayed in the browser. This model enables efficient communication and resource sharing across the Internet.

HTTP and FTP

HTTP, or Hypertext Transfer Protocol, is the foundation of data communication on the World Wide Web. It is a protocol used for transferring hypertext documents such as HTML. HTTP follows a request-response model: the client (usually a web browser) sends an HTTP request to the server, and the server responds with the requested resource, such as a webpage or image. HTTP is stateless, meaning each request is independent and not stored by the server. Most websites today use **HTTPS**, a secure version of HTTP that encrypts data for safe transmission.

FTP, or File Transfer Protocol, is used to transfer files between computers over the Internet or a local network. It is especially useful for uploading files to web servers and downloading content from them. FTP requires a client and a server; the client connects to the FTP server using login credentials, and then files can be uploaded or downloaded. Tools like FileZilla or command-line utilities are commonly used to perform FTP operations. FTP supports both **active** and **passive** modes to handle different network configurations.

FTP supports different **file transfer modes** depending on the type of file being transferred.

1. **The ASCII** is the default file share format. Used for **text files** (e.g., .txt, .html, .xml).
2. **EBCDIC** (Extended Binary Coded Decimal Interchange Code) character encoding. Used for mainframe text file.

A **mainframe** is a **powerful, high-performance computer** used by large organizations (banks, government agencies, insurance companies) to process and manage **huge volumes of data and transactions**.

URL (Uniform Resource Locator)

A **URL (Uniform Resource Locator)** is the address used to access a resource on the Internet. It tells the browser exactly where to find a web page, file, or image hosted on a server. A URL typically consists of several parts: the **protocol** (http:// or https://), the **domain name** (like www.google.com), and the **path** to the specific resource (such as /images/logo.png). For example, in the URL https://www.example.com/about.html, https is the protocol, www.example.com is the domain name, and /about.html is the path to the web page.

Webpage

A **webpage** is a single document on the World Wide Web that can contain text, images, videos, links, and interactive elements. It is written using markup languages like **HTML (HyperText Markup Language)** and styled using **CSS (Cascading Style Sheets)**. Webpages are viewed through web browsers such as Chrome, Firefox, or Edge. A collection of related webpages hosted under the same domain forms a **website**. For example, https://en.wikipedia.org/wiki/HTML is a specific webpage within the Wikipedia website.

Domain Name

A **domain name** is a human-readable address used to access websites. It is a unique name that identifies a specific website on the Internet. Behind every domain name is an **IP address**, but since IP addresses are hard to remember, domain names provide a simple alternative.

For instance, the domain name www.amazon.in points to Amazon's server. Domain names are divided into parts: the **top-level domain (TLD)** like .com, .org, .in, and the **second-level domain** like google or wikipedia. Domain names are registered through domain registrars and must be unique.

Example:

1. visit www.amazon.in.
2. **DNS Server** for amazon.in returns the IP address (e.g., 13.227.3.112).
3. Browser uses IP to send a request to the **Amazon server**, and page loads.

Web Development Life Cycle: Book Store Website Development

Stage	Application
1. Planning	Goal: Promote the bookstore, sell books online, and share event updates. Identify target customers (local readers, students, book clubs).
2. Analysis	Book categories, author profiles, event calendar, online ordering system. Functionality: Search feature, shopping cart, secure payment gateway.
3. Design & Development	Create a clean, literary-themed design. Organize content into categories (Fiction, Non-fiction, Children's Books). Develop search and checkout features.

4. Testing

Check that book search works correctly, payment process is secure, and event pages display correctly on mobile and desktop.

5. Implementation & Maintenance

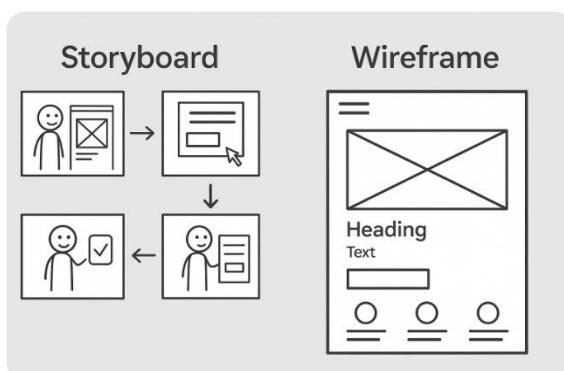
Launch the site on the hosting server. Update book listings, event dates, and promotional banners regularly.

Difference between storyboarding and Wireframing

- **Storyboarding** = “*What happens first, next, and after*” (flow & experience)
- **Wireframing** = “*What goes where on the page*” (structure & layout)

Key Difference Table

Aspect	Storyboarding	Wireframing
Goal	Show user flow & interaction sequence	Show page layout & element placement
Scope	Multiple screens/pages in sequence	Single screen/page
Detail Level	Low — focuses on flow and actions	Low to medium — focuses on layout and structure
Output Style	Comic strip style, scene-by-scene	Blueprint style with boxes and placeholders
Primary Use	UX journey planning	UI design planning



Planning Process

- **Wireframing:** Sketch layout ideas.
- **Storyboarding:** Visual sequence of navigation.
- **Information Architecture:** Organizing content logically.
- **UX Design:** Focuses on user behavior, accessibility, and ease of use.

Web Design Tools

- Tools like Figma, Adobe XD for layout; Dreamweaver and Visual Studio Code for coding.
- Help design, prototype, and develop responsive websites.

Mobile Design and Development

- Websites must be responsive and mobile-friendly.
- Use of media queries and flexible layouts ensures compatibility.

Workspace Features and Web Browsers

- Web browsers (Chrome, Firefox, Edge) display HTML/CSS.
- Workspaces like Dreamweaver provide panels, views, and editors for web development.

Text Editors

- Used for writing and editing HTML/CSS code.
- Examples: Notepad++, Visual Studio Code.

Text Formatting Tags

- ``, `<i>`, `<u>`, ``, `` are used to format text.
- Enhance readability and emphasize content.
-

Information Architecture (IA)

Definition:

Information Architecture is the process of **organizing, structuring, and labeling content** in a clear and logical way so that users can easily find the information they need on a website.

Purpose:

- Helps users navigate the site efficiently.
- Improves the overall user experience (UX).
- Supports better content flow and hierarchy.

Example:

Creating a navigation menu with sections like "Home", "About Us", "Services", and "Contact" to logically group related information.

Define UX in Web Design

UX (User Experience) in web design refers to the **overall experience** a user has while interacting with a website. It includes how easy, intuitive, and enjoyable the site is to use.

Good UX Design:

- Is user-centered
- Ensures fast loading and responsiveness
- Provides clear navigation
- Uses readable fonts and pleasing visuals
- Focuses on accessibility for all users

In short:

UX design aims to **satisfy users' needs** and **make their journey smooth and efficient** when they visit a website.

Introduction to HTML

HTML stands for Hyper Text Markup Language

- An HTML file is a text file containing small markup tags
- The markup tags tell the Web browser how to display the page
- An HTML file must have an htm or html file extension
- An HTML file can be created using a simple text editor

```
<html>
<head>
<title>Title of page</title>
</head>
<body>
This is my first homepage. <b>This text is bold</b>
</body>
</html>
```

HTML Elements

HTML documents are text files made up of HTML elements. HTML elements are defined using HTML tags.

HTML Tags

- HTML tags are used to mark-up HTML elements
- HTML tags are surrounded by the two characters < and >
- The surrounding characters are called angle brackets
- HTML tags normally come in pairs like ** and **

The first tag in a pair is the start tag, the second tag is the end tag

- The text between the start and end tags is the element content

- HTML tags are not case sensitive, **** and **** are same

Tag	Description
<html>	Defines an HTML document
<body>	Defines the document's body
<h1> to <h6>	Defines header 1 to header 6
<p>	Defines a paragraph
 	Inserts a single line break
<hr>	Defines a horizontal rule
<!-->	Defines a comment

This example demonstrates how the text inside paragraph elements is displayed in the browser.

```
<!DOCTYPE html>
<html>
<body>
<p>
    This is an example
    where extra spaces
</p>
</body>
</html>
```

Headings

Headings are defined with the **<h1>** to **<h6>** tags. **<h1>** defines the largest heading.

<h6> defines the smallest heading.

```
<!DOCTYPE html>
<html>
<body>
<h1>This is an H1 heading (largest)</h1>
<h2>This is an H2 heading</h2>
<h3>This is an H3 heading</h3>
<h4>This is an H4 heading</h4>
<h5>This is an H5 heading</h5>
<h6>This is an H6 heading (smallest)</h6>
</body>
</html>
```

The **br** tag is used when you want to break a line, but don't want to start a new paragraph. The **br** tag forces a line break wherever you place it.

We use a horizontal rule (tag), to separate the sections

```
<!DOCTYPE html>
<html>
<body>
<h1>Welcome to the Tutorial</h1>
<p>This is the introduction section.</p>

<hr> <!-- Horizontal line separates sections -->

<h2>HTML Basics</h2>
<p>Here you will learn about HTML structure and tags.</p>

<hr>

<h2>CSS Basics</h2>
<p>This section explains how to style your webpage.</p>
</body>
</html>
```

HTML Character Entities

Result	Description	Entity Name	Entity Number
	non-breaking space	&nbsp	
<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
"	quotation mark	"	"
'	apostrophe	' (does not work in IE)	'

Some Other Commonly Used Character Entities:

Result	Description	Entity Name	Entity Number
¢	cent	¢	¢
£	pound	£	£
¥	yen	¥	¥
€	euro	€	€
§	section	§	§
©	copyright	©	©
®	registered trademark	®	®
×	multiplication	×	×
÷	division	÷	÷