Web Development

Introduction to Website Development

Presented by Muhammad Munim

What is a Website?

- A website is a collection of web pages that are accessible through the internet or a private network.
- **Types of websites:** Static vs. Dynamic
- **Real-life examples:** Portfolio, E-commerce, Blog, SaaS, Social Network

Difference Between Web Design and Web Development

- **Web Design:** Focuses on layout, UI/UX, colors, typography
- **Web Development:** Focuses on functionality, coding, server integration
- How both work together in building a website

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How Websites Work (Behind the Scenes)

1. User Enters a URL (e.g., www.example.com)

- The browser takes the address and begins finding the matching server on the internet.
- It first checks the cache, then asks the DNS (Domain Name System).

2. DNS Resolution

- The DNS converts the domain name into an IP address.
- Think of DNS as a phone book — you type the name, it returns the number (IP).
- For example: www.example.com → 192.168.1.2

3. Browser Sends an HTTP Request

- Once the IP address is known, the browser sends a request to the server via HTTP or HTTPS.
- The request asks for the website's files: HTML, CSS, JS, images, etc.
- It’s like saying: “Hey server, please give me the homepage of this website!”

4. Server Receives the Request

- The server (e.g., using Node.js + Express in MERN) processes the request.
- If the page is dynamic, it may:
- Fetch data from a database (e.g., MongoDB)
- Apply logic or render templates
- The server prepares a response — often in the form of HTML or JSON.

5. Response Sent Back to the Browser

The server sends a response with:

- HTML (structure)
- CSS (styling)
- JS (behavior)
- Media assets (images, fonts, etc.)
- Status codes like 200 (OK) or 404 (Not Found) indicate success or error

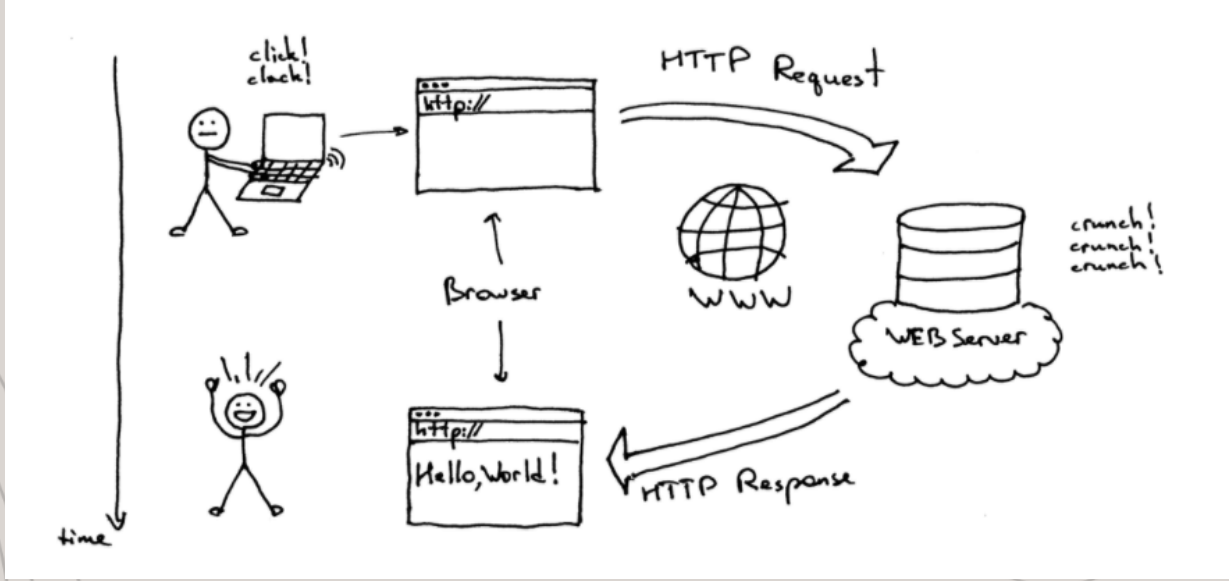
6. Browser Renders the Page

The browser:

- Parses the HTML to build the DOM (Document Object Model)
- Loads and applies CSS to style elements
- Executes JavaScript for interactivity
- Continues fetching any additional assets

7. User Interacts with the Page

- Clicking buttons, submitting forms, or navigating — these are handled by JavaScript.
- In modern web apps (like those built with React), data may be fetched without reloading the page via AJAX or Fetch API.



Web Development Categories

- **Front-end Development:**
- Languages: HTML, CSS, JavaScript
- Frameworks: React, Angular, Vue
- **Back-end Development:**
- Languages: Node.js, Express.js, PHP, Python
- Databases: MongoDB, MySQL
- **Full Stack Development:**
- Combining both front-end and back-end

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Technology Stack Overview (MERN Stack)

- MongoDB – NoSQL database
- Express.js – Web framework for Node.js
- React – Front-end library
- Node.js – Server environment
- Why MERN is popular and powerful ?

Tools You'll Use

- Code Editor: VS Code -> https://code.visualstudio.com/download
- Browser: Chrome/Firefox (with DevTools)
- Version Control: Git & GitHub
- Terminal/Command Line(React JS)
- Postman (for API testing)(Backend)
- Hosting Platforms: Vercel, Netlify, Render

Importance of Learning Web Development

- High-demand skill
- Freelancing opportunities
- Start your own product or business
- Work remotely or for global companies

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Task 1: List 5 types of websites and give real-world examples.
Task 2: Identify 3 differences between web design and web development.
Task 3: Research and explain how DNS works.
Task 4: Install VS Code and create your first HTML file.
Task 5: Write an article/blog on “Why I Want to Learn Web Development”
Task 6: Watch a video on how web servers work and write a 5-line summary.

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Submission Notes

Capture Evidence:

- Take screenshots or record a short video for each task.
- Ensure your evidence clearly shows the completed task.

Upload Tasks:

- Upload each task as a separate folder or file in your GitHub repository.

LinkedIn Post:

- Create a short post summarizing what you learned and how you completed the tasks.
- Highlight your key takeaways.
- Mention the following account in your post:
- **@Muhammad Munim**

Thank You

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