Web Development Workshop Syllabus

This four-week workshop is designed to take attendees from the fundamentals of web development to deploying their own interactive web applications.

Week 1: Foundations of Web Development & Tailwind CSS

This week focuses on the basics of web development and introduces Tailwind CSS for rapid and responsive styling.

- **Topics Covered:**

    o   What is Web Development?

    o   The Stages of Web Development (Planning, Design, Development, Launch, Maintenance)

    o   Introduction to Tailwind CSS and its advantages over traditional CSS

    o   Using Tailwind CSS via a CDN

    o   Commonly used utility classes for styling (margin, padding, text, font, dimensions, Flexbox, and backgrounds)

- **Projects of the Week:**

    o   **Simple Web Page Structure:** Build a basic multi-section webpage with a fixed navigation bar to practice layout and styling.

    o   **Box Model Exercise:** A hands-on project to understand the CSS Box Model.

    o   **Flexbox Layout:** An exercise to learn how to use Flexbox for creating responsive layouts.

Week 2: JavaScript Fundamentals & DOM Manipulation

This week introduces the core concepts of JavaScript and how to make web pages interactive by manipulating the Document Object Model (DOM).

- **Topics Covered:**

    o   Variables (var, let, const)

    o   Console methods for debugging (console.log, console.warn, console.error)

    o   Conditional statements (if-else)

    o   DOM selectors (getElementById, querySelector)

    o   Loops (for, while, do-while)

    o   Functions (declarations, expressions, anonymous, and arrow functions)

- **Project of the Week:**

    o   **Simple ToDo App:** Create a functional ToDo List application. This project will teach you how to handle user input, dynamically create and delete elements, and respond to user events.

Week 3: Asynchronous JavaScript & APIs

This week covers more advanced JavaScript topics, focusing on asynchronous operations and fetching data from external APIs.

- **Topics Covered:**

  - Asynchronous JavaScript with async/await and Promises

  - DOM Manipulation for dynamically loading content

  - Error Handling with try...catch

  - API Integration and fetching data with the fetch API

- **Project of the Week:**

  - **Image Gallery:** Build a dynamic image gallery that fetches and displays images from the Picsum Photos API based on user input for page and limit.

Week 4: Version Control, Deployment & Collaboration

The final week focuses on professional development practices, including version control with Git and deploying your projects to the web.

- **Topics Covered:**
  - **Git & GitHub:**
    - Introduction to version control with Git.
    - Essential Git commands (git init, git add, git commit, git push, git pull, git clone).
    - Collaborating on GitHub: forking repositories, creating pull requests, and starring projects.
  - **Deployment:**
    - Deploying a static website to Vercel.
    - Connecting a custom domain name to your deployed project.

Resource:

All the code and materials for this workshop can be found on GitHub:

https://github.com/adithya-b-r/Web-Development-workshop