CampX Developer Program

Curriculum for 6 Weeks

Week 1: Introduction to Web Development Basics

- **Objective:** Understand the fundamentals of HTML, CSS, and JavaScript.
- **Topics:**
    - HTML: Tags, attributes, forms.
    - CSS: Basic properties, selectors.
    - JavaScript: Variables, data types, basic syntax, loops.
- **Quiz:** (10 marks)
  Quiz on HTML, CSS, and JavaScript basics.
- **Weekend - Project:** Build a simple static website using HTML and CSS.
    - *Problem Statement:* Create a webpage with a header, navigation bar, content section, and footer. Apply basic styling using CSS, including colours, fonts, and layout

Week 2: JavaScript and TypeScript

- **Objective:** Strengthen understanding of JavaScript and introduce TypeScript.
- **Topics:**
    - JavaScript: Functions, arrays, objects, DOM manipulation.
    - TypeScript: Syntax, type annotations, key differences from JavaScript.
- **Quiz:** (10 marks)
  Quiz on JavaScript and TypeScript concepts.
- **Weekend - Project:**
  TypeScript Integration: Enhance the static website with JavaScript functionalities.
    - *Problem Statement:* Implement interactive features such as form validation, dropdown menus, or image sliders using JavaScript. Ensure seamless integration with the existing HTML and CSS structure

Week 3: Frontend Development with ReactJS - Mui Basics

- **Objective:** Getting familiar with ReactJS and Mui for building dynamic user interfaces.
- **Topics:**
    - React Basics: Components, JSX, props, state.
    - React Hooks: useState, useEffect, custom hooks.
    - Mui basics
- **Quiz :** (20 marks)
  Test on React and Mui Basics.
- **Weekend - Project:**
  Convert the previously built static webpage into a React application and apply Mui styles

Week 4: Advanced ReactJS and Material-UI

- **Objective:** Explore advanced React concepts and integrate Material-UI for enhanced UI development.
- **Topics:**
    - Advanced React: Context API, React Router, React Query.
    - Material-UI: Components, theming, customizations.
- **Quiz:** (20 marks)
  React hooks and State management.
- **Weekend - Project:** Implementation of State management concepts in React application .

Week 5: RESTful APIs and Introduction to NestJS

- **Objective:** Understand RESTful APIs and backend development with NestJS.
- **Topics:**
    - RESTful Frameworks: Introduction, CRUD operations.
    - NestJS Core Concepts: Controllers, services, modules.
- **Project:** Implement REST API endpoints using NestJS.
- **Quiz:** (20 marks)
  Quiz on REST APIs and NestJS basics.
- **Weekend - Project:**
  Implement data fetching and display functionality using React Query.
    - fetch data from an external API and manage state with React Query.

Week 6: Final Project and Assessment and Documentation

- **Objective:** Apply all learned concepts in a comprehensive project and prepare for final assessment.
- **Activities:**
    - Final project development based on given problem statements.
    - Comprehensive test covering all topics taught in the program.
- **Quiz:** (20 marks)
  Comprehensive project Quiz.
- **Assessment:**
  Documenting the comprehensive project developed during the program.