Project Report

Online HTML, CSS & JavaScript Code Editor

# Project Overview:

This project is a web-based online code editor developed using React.js, designed to let users write and preview HTML, CSS, and JavaScript code live in the browser. It aims to provide a simplified coding environment that mimics the behavior of integrated development environments (IDEs) like Visual Studio Code but in a much lighter form.

# Objectives:

- To build a browser-based platform where users can write and preview frontend code instantly.  
- To provide a minimal and distraction-free interface for learning and experimentation.  
- To dynamically update the live output as the user types in any of the three coding languages.  
- To allow real-time editing and seamless switching between HTML, CSS, and JavaScript editors.

# Tools & Technologies:

React JS – UI rendering and state management  
Monaco Editor – Rich code editor with syntax highlighting  
HTML/CSS/JS – Core languages for web development  
iframe – For rendering the combined code preview  
Custom CSS – Layout styling and component responsiveness

# Folder & Component Structure:

App.js – Main application component; handles button logic, layout, and state.  
CodeEditor.js – Encapsulates the Monaco Editor and dynamically sets language and content.  
Preview.js – Uses an iframe to show real-time results of the HTML, CSS, and JavaScript.  
code.css – Styling for layout, buttons, and visual enhancements.

# Features in Detail:

**1. Three Language Editors:**  
 - HTML, CSS, and JS editors are provided using Monaco Editor with syntax highlighting, formatting, and suggestions.  
**2. Language Selection Buttons:** - Users can select a language and view both the editor and live preview simultaneously.  
**3. Live Preview:** - Uses an iframe for rendering. Updates happen in real-time.  
**4. Back Navigation:**  
 - Back button returns to language selection without losing code.  
**5. Responsive Design:**  
 - Works across screen sizes, stacking on smaller devices.  
**6. Preview Resizing**:  
 - Automatically adjusts preview height based on content.

# Benefits:

- Great for beginners learning web development.  
- Useful for quick testing of code snippets.  
- Helps understand the interaction between HTML, CSS, and JS.  
- No need to install any software.

# Future Improvements:

- Support for saving/loading code snippets.  
- multi-tabbed editor interface.  
- Download/export HTML/CSS/JS files.  
- Integration with external libraries.  
- Dark/light theme support.

# Conclusion:

The Online Code Editor project offers a clean and interactive way to experiment with web development. Its simplicity, modularity, and user-friendliness make it a great tool for beginners and a strong base for further enhancements.