

Project Report: Online Code Editor with Live Preview

Introduction

In the modern web development workflow, code editors that provide real-time feedback are essential for learning, experimentation, and prototyping. This project is aimed at building a browser-based code editor that supports HTML, CSS, and JavaScript - with a live preview pane to render the output in real time. It replicates core IDE functionality directly in the browser using web technologies.

Abstract

The Online Code Editor is a lightweight web application built using React, Monaco Editor, and Tailwind CSS. It enables users to write HTML, CSS, and JavaScript code in an editor interface and instantly view the rendered result using an iframe. This tool serves educational purposes, offers rapid prototyping, and enhances the coding experience by providing immediate visual feedback.

Tools Used

- React (Vite) - For building the frontend application efficiently.
- Monaco Editor - A powerful code editor component (used in VS Code).
- Tailwind CSS - For responsive and utility-first styling.
- iframe - To render and preview the combined HTML/CSS/JS output.

Steps Involved in Building the Project

1. Project Setup:

- Initialized using Vite and configured React.
- Installed Tailwind CSS, Monaco Editor, and supporting packages.

2. Tailwind CSS Configuration:

- Added Tailwind directives to index.css.
- Configured tailwind.config.js to scan project files.

3. Monaco Editor Integration:

- Created an Editor.jsx component for HTML, CSS, and JS inputs.
- Configured each editor with syntax highlighting and theme.

4. Live Preview with iframe:

- Created a Preview.jsx component to render the combined code.
- Used srcDoc to dynamically inject HTML, CSS, and JS into the iframe.

5. Layout Design:

- Used Flexbox (flex, w-1/2, h-screen) for a side-by-side layout.
- Added responsive behavior using Tailwind's utility classes.

Conclusion

This project successfully demonstrates how web technologies can be used to simulate an integrated development environment in the browser. It offers a responsive, fast, and clean interface suitable for both beginners and experienced developers. Future enhancements may include saving code snippets to the cloud, sharing via URL, and support for multiple layout modes.