

CodeCollab: A Collaborative Code Editor

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Abstract: *The increasing reliance on remote work and distributed teams has highlighted the need for seamless collaborative tools in software development. Traditional development environments often lack integrated real-time collaboration, requiring developers to rely on multiple external tools for communication and version control, leading to inefficiencies and delays. This project aims to develop a web-based Integrated Development Environment (IDE with real-time collaboration capabilities). The platform allows multiple users to join a virtual room and collaboratively code in a shared editor, with live updates visible to all participants. Key features include a real-time code editor, built-in chat functionality for seamless communication, cloud-based project storage, and basic version control. Designed to cater to remote development teams, educational institutions, and coding boot camps, the platform simplifies collaborative coding by consolidating essential tools in one interface. This approach not only improves productivity but also enhances the learning experience in educational settings by enabling instructors and students to collaborate on coding projects in real time.*

Keywords: Code Editor, Real-time, WebSockets, Collaborative Programming, IDE