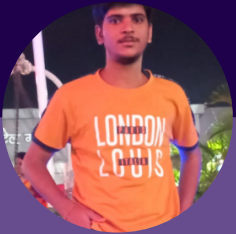# SyncIDE: Real-Time Collaborative Code Editor

TEAM: OVERFLOW.EXE

Real-Time Collaboration & Communication (Socket.io)

Samadhan Erande

Frontend Development (React, Monaco Editor, Tailwind CSS)

Sakshi

Backend Development (Node.js, Express, MongoDB)

Gungun Agarwal

Backend and Offline Support (IndexedDB, Conflict Resolution)

Kartik Rathod

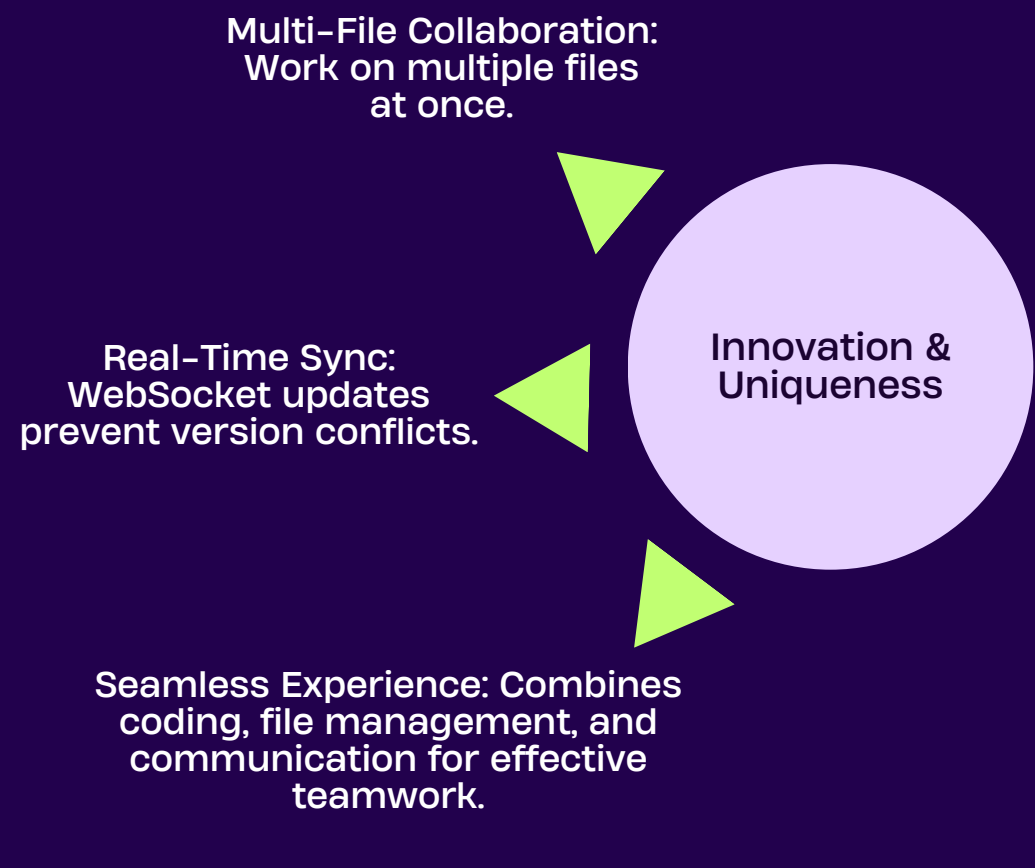Additional Features (Integrated Chat, Voice Chat, User Management)

Atharva Patil

Team Members

Problem statement

In collaborative coding environments, users often face challenges such as inefficient communication, difficulty managing multiple files and lack of real-time updates. Traditional coding platforms do not support seamless collaboration on multiple files simultaneously, leading to confusion and delays in project completion.

Multi-File Collaboration: Work on multiple files at once.

Real-Time Sync: WebSocket updates prevent version conflicts.

Innovation & Uniqueness

Seamless Experience: Combines coding, file management, and communication for effective teamwork.

SyncIDE

⬆ Upload

⬇ Download

📄 09_BinarySearchTree.cpp
📄 202351014-1.c

Language: C++

```
1   // Name: Atharva Shrikant Patil
2   // Roll: 202351014
3   // Assignment 2
4
5   #include <stdio.h>
6   #include <math.h>
7   #define tolerance 1e-6
8   #define dx 0.1
9   #define maxItrns 100
10  int functionNumber = 1; //global variable to track which function to use
11
12  double f(double x){
13      switch(functionNumber){
14          case 1: return pow(x,4) + 2*pow(x,3) + 3*pow(x,2) + (4*x) - 5;
15          case 2: return 2*x + 9*cos(x);
16          case 3: return pow((x+1),(7.0/2)) + exp(-x) - exp(x) - 5;
17          case 4: return 1.0/2 + cos(6*x) + pow(x/2,2) - pow(x/5,4);
18          default: return 0;
19      }
20  }
21
22  //calculating root using Bisection & regula-falsi
23  double calcRoot(double a, double b){
24      double c,fc,fa,fb;
25      int iterations = 0; //iteration count
```

🔑 **Room ID:** 9547555a-7bc1-400b-88be-8a561e8b8f78

Collaborators
🔵 atharvapatil2005
🔵 erandesamadhan2003

Output:

Run Code

Inorder traversal of the BST: 20 30 40 50 60 70 80

💬 ChatBox

atharvapatil2005: Hii
atharvapatil2005: change the 49th line
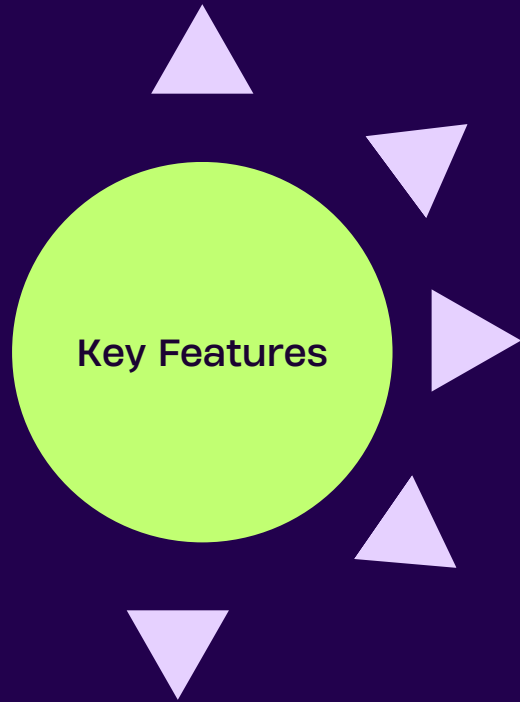erandesamadhan2003: Done

okayy   Send

Multi-File Editing | Live Collaboration | Chat Integration | Real Time Execution

Voice Chat Integration: To allow users to communicate verbally while coding

Multiple File Uploads: Users can manage multiple files in one session.

Key Features

Integrated Chat: Built-in messaging for seamless collaboration.

User-Friendly Interface: Easy navigation and efficient teamwork.

Real-Time Code Updates: Changes sync instantly across all users.

TECHNOLOGIES

Frontend: React.js, Tailwind CSS, React router, Socket.io
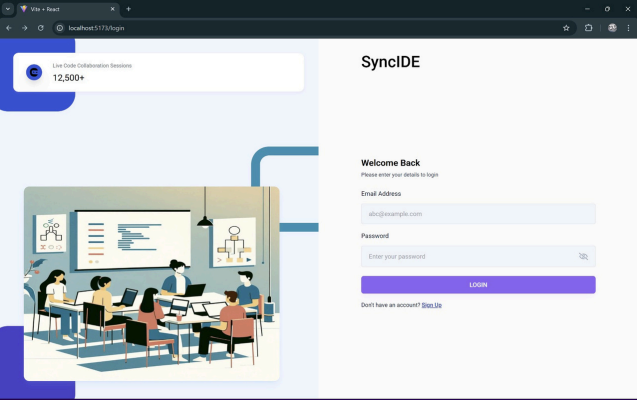
Real-time Communication: Socket.io

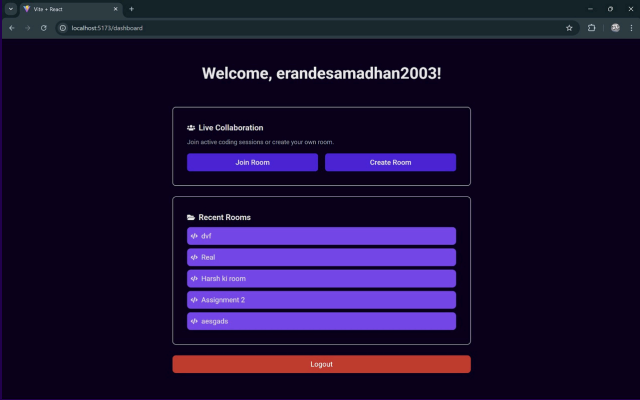**Editor**: Monaco Editor

Backend: Node.js, Express.js, MongoDB, Mongoose
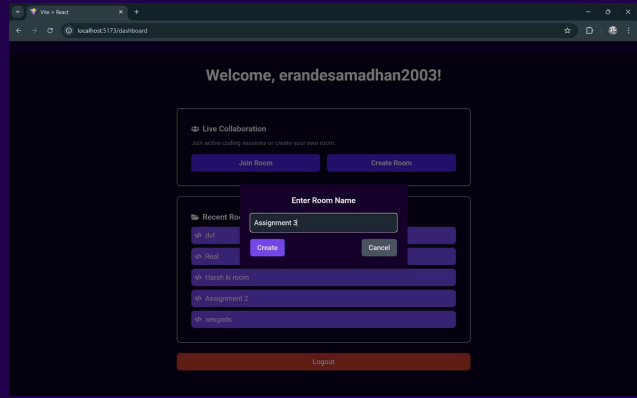
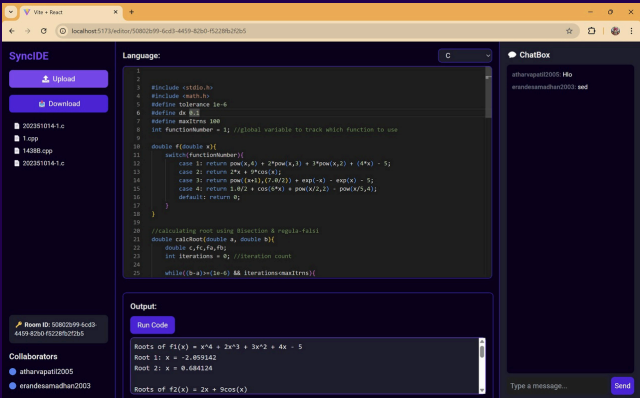**Additional**: JWT, Framer Motion

Offline Support: Indexdb

Demo

Login/Signup page

Home page

Create Room

Editor workspace in room

Workflow

Future Scope Enhancements for SyncIDE

Voice Chat Integration: Enable verbal communication during coding sessions.

Code Review System: Facilitate peer feedback on code.

Integrated Debugging Tools: Help users identify and fix code issues

Future Scope

User Profiles: Allow customization of settings and preferences.

. AI-Powered Suggestions: Provide context-aware code suggestions.