SOFTWARE REQUIREMENTS SPECIFICATION

for

Group : 5

ONLINE CODE EDITOR

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1 Introduction

1.1 Purpose

The purpose of an online code editor project is to provide a web-based platform for developers and programmers to write, edit, and collaborate on code. It allows users to write and test code online without the need for a local development environment. Online code editors also offer features such as syntax highlighting, code completion and debugging tools which can make the development process faster and more efficient.

1.2 Intended Audience

This SRS is for developers, project managers, users and testers. Further the discussion will provide all the internal, external, functional and also non-functional informations about "Code Editor".

Online code editors are particularly useful for remote teams working on the same project, as they can collaborate and share code in real-time. They are also beneficial for beginners who are learning to code, as they can access the platform from any device and do not need to install any software on their local machines.

1.3 Project Scope

The online code editor Project is a web based application which includes user interaction. Our project is going to be a Web portal. It is going to provide editing and compiling environment for users. Every user have their own profile and they can have access with given password to the system.

The scope of online code editors is rapidly expanding as more and more developers are opting for cloud-based development tools. Online code editors are web-based applications that allow developers to write and edit code without having to download or install software on their local machines.

One of the main advantages of online code editors is that they are accessible from any device with an internet connection. Developers can access their code from anywhere, making it easier to collaborate with team members in different locations.

Online code editors eliminate the need for developers to purchase and maintain expensive hardware or software. Developers can work on their code from any device with an internet connection, making the development process more cost-effective.

Online code editors can scale to meet the needs of different projects. They can handle multiple users and projects, making them ideal for larger teams or complex projects.

Online code editors support collaboration features that allow developers to work together on the same code in real-time. This makes it easier for teams to collaborate, share code, and review each other's work.

Online code editors provide enhanced security features, such as data encryption, secure authentication, and backup and recovery options. This ensures that the code and data stored in the online editor is secure and protected.

Online code editors support multiple programming languages and can be customized to meet the specific needs of the developer or project. They also offer features such as code completion, syntax highlighting, and debugging tools that improve the development process.

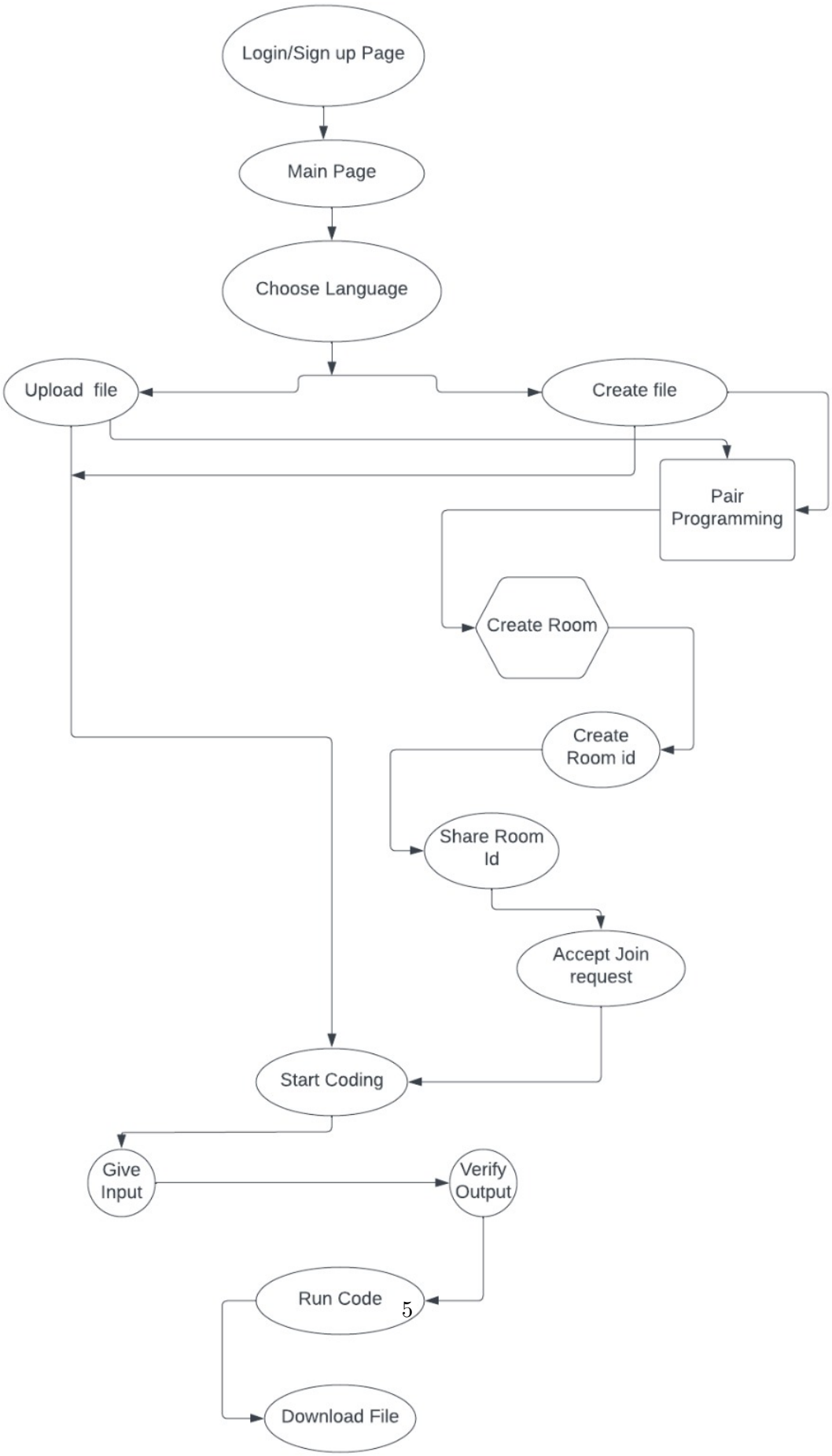

Figure 1.1: Entire work-flow

2 Overall Description

2.1 Product Function

An online code editor is a web-based application that allows users to write, edit, and run code directly within their web browser. It provides a platform for developers to create, test and share their code in a collaborative environment.

The project of developing an online code editor involves designing and implementing a user interface that allows users to interact with the application easily. The user interface should provide basic features such as syntax highlighting, code completion, error detection, and debugging.
The code editor supports multiple programming languages, including popular ones such as Java, Python, JavaScript, and C++. The user should be able to choose the programming language and the corresponding syntax highlighting should be applied automatically.

This project includes a feature to save and load code files. Users should be able to save their code files to the server and load them later. The server should be able to handle multiple user sessions and allow users to collaborate in realtime.

This project includes a console where users can view output and error messages. The console should be able to display the output of the code, and any errors that occur during the execution of the code.

2.2 User problem statement

Users need a reliable and efficient code editor that allows them to write, edit, and manage source code files effectively. They require a code editor that supports multiple programming languages, provides advanced features like syntax highlighting, autocompletion, error checking, to enhance coding productivity.

They also need the ability to collabrate with other developers in real-time, track changes made to the code for efficient code management. The code editor should be customizable to suit their preferences, with options for font size, color scheme, and indentation settings.

It should be fast, stable, and secure, with regular updates and patches to address se-

curity vulnerabilities. The code editor should have a user-friendly interface with clear documentation and be compatible with different operating systems and web browsers, allowing users to work seamlessly across different platforms.

2.3 User Objectives

The user objectives for the code editor project can be described as follows:
Before using the main function of the software result process like simultaneous programming, users have to be registered.

Accurate and efficient code editing: Users require a software tool that can help them in accurate and efficient code editing and provide a reliable analysis of features.

User-friendly interface: The code editor should have a simple and intuitive interface that allows users to quickly navigate, create, open, save, and close source code files without any steep learning curve. It should provide clear and easy-to-understand menus, buttons, and options for common tasks, making it easy for users to perform common actions such as editing, formatting, and searching for code.

Scalability and adaptability: Users require a software tool that is scalable and adaptable to different use cases and applications, and can handle large volumes of data.

Compliance with regulations and standards: Users require a system that ensures compliance with relevant regulations and standards, and protects the confidentiality and integrity of the data.

Time and cost-effectiveness: Users require a software tool that is time and costeffective, and reduces the need for specialized expertise and resources.

2.4 Operating Environment

Software operating enviroment
The website will be operate in any Operating Environment - Mac, Windows, Linux etc.
Browsers with vesions
Chrome version 16 and above
Edge version 12 and above
Safari version 7 and above
Firefox version 11 and above
Opera version 12.1 and above
Internet Explorer version 11 and above
Samsung Internet version 4 and above

3 System Features

"Online Code editor" is a code editing web software. So the main art of this product is to edit the code, compile and give the output.

3.1 Functional Requirements

• **Sign Up:** Users need to sign up to use the web site. The users should have a username and password. After filling their name, surname, email, age, job, phone and gender information, they register the system.

• **Sign In:** If a user is signed up, They can sign in the system by filling username and password boxes.

• **Sign Out:** A user may need to sign out the system. They can do it by clicking the sign out button which is placed in every page.

• **Languages:** It allows us to select almost 40 programming languages.

• **Compile:** It can compile code on a web app with standard input and output.

• **Input**: User can enter code in the input window. They'll either see success or failure for their code snippets. Everything is visible in the code output window.

• **Output:** Once the user is done writing their code, they can compile their code and see the output / results in the output window. They'll either see success or failure for their code snippets. Everything is visible in the code output window.

• **Input file:** User can take the input to code editor from his/her browser through this input file option.

• **Collaboration:** When the user clicks on the join meeting they create new meeting or join a meeting through a code-id provided. In multiple users can write the code at same time simultaneously. We will use socket.io to make all the developers write the code simultaneously. Other users can know that which users have left the meeting and joined the meeting. The work done by a user will be visible to other users. In the left sidebar of the collaboration editor, user can see the other online users who are working

on the same project.

• **Syntax highlighting:** syntax highlighting is a key feature in a code editor that displays different elements of the code with different colors or styles, making it easier to visually differentiate keywords, comments, strings, variables, and other code elements.

3.2 Nonfunctional Requirements

• **Performance:** IDEs must have fast response times and provide reliable service to handle the high volume of requests and provide a smooth user experience.

• **Convenient Access:** Our Online IDE can be accessed from anywhere with an internet connection, allowing users to write, test, and debug code from a web browser.

• **Maintainabilty:** Developers Will take care of maintainability by continuously adapting software to meet new customer requirements and address problems faced by customers. This includes fixing bugs, optimizing existing functionality and adjusting code to prevent future issues. The longevity of a product depends on a developer's ability to keep up with maintenance requirements.

• **Usability:** IDE should be user-friendly and easy to use having a beautiful UI.

• **Compatibility:** IDE should be compatible with various devices and operating systems to allow users to access the platform using their preferred devices.

3.3 Interface Requirements

• **Login/Registration Screen:** The application should have a login screen that allows users to log in using their email address or social media credentials. The registration screen should allow new users to create an account and provide their personal details.

• **Home Screen :** An online integrated development environment also known as a web IDE or cloud IDE, is a browser based integrated development environment. An online IDE can be accessed from a web browser, such as Firefox, Google Chrome or Microsoft Edge, enabling software development on low-powered devices that are normally unsuitable. An online IDE does not usually contain all of the same features as a traditional desktop IDE, only basic IDE features such as a source-code editor with syntax highlighting. In ide there will 3 text areas. one will be in the left side of our ide. This will be editor part of the ide, on left side there will have 2 text areas for input and output respectively. User can enter their customised input and the desired output will be displayed in output text area.

• **Collaboration:** When the user clicks on the join meeting they create new meeting or join a meeting through a link provided. In multiple users can write the code at same time simultaneously. We will use socket.io to make all the developers write the code simultaneously. Other users can know that which users have left the meeting and joined the meeting. The work done by a user will be visible to other users. In the left sidebar of the collaboration editor, user can see the other online users who are working on the same project.

• **Navbar:** On the top of our application there will have navbar for user who can navigate through different pages of website. Navbar will have different nav-links like home, about-us, contact-us, meeting,login, sign-up. If user clicks on any of the link, user will go to that page.

4 Wire Frames

4.1 Screenshots

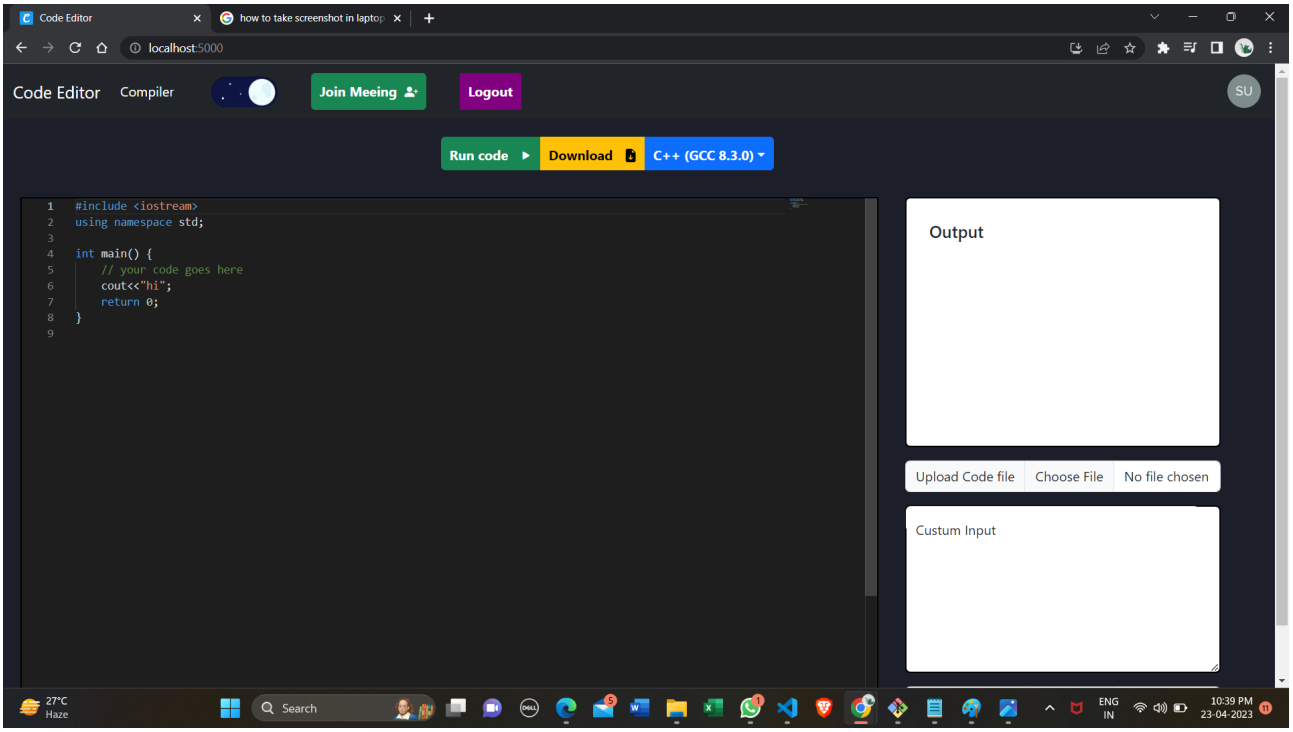

Figure 4.1: Landing page

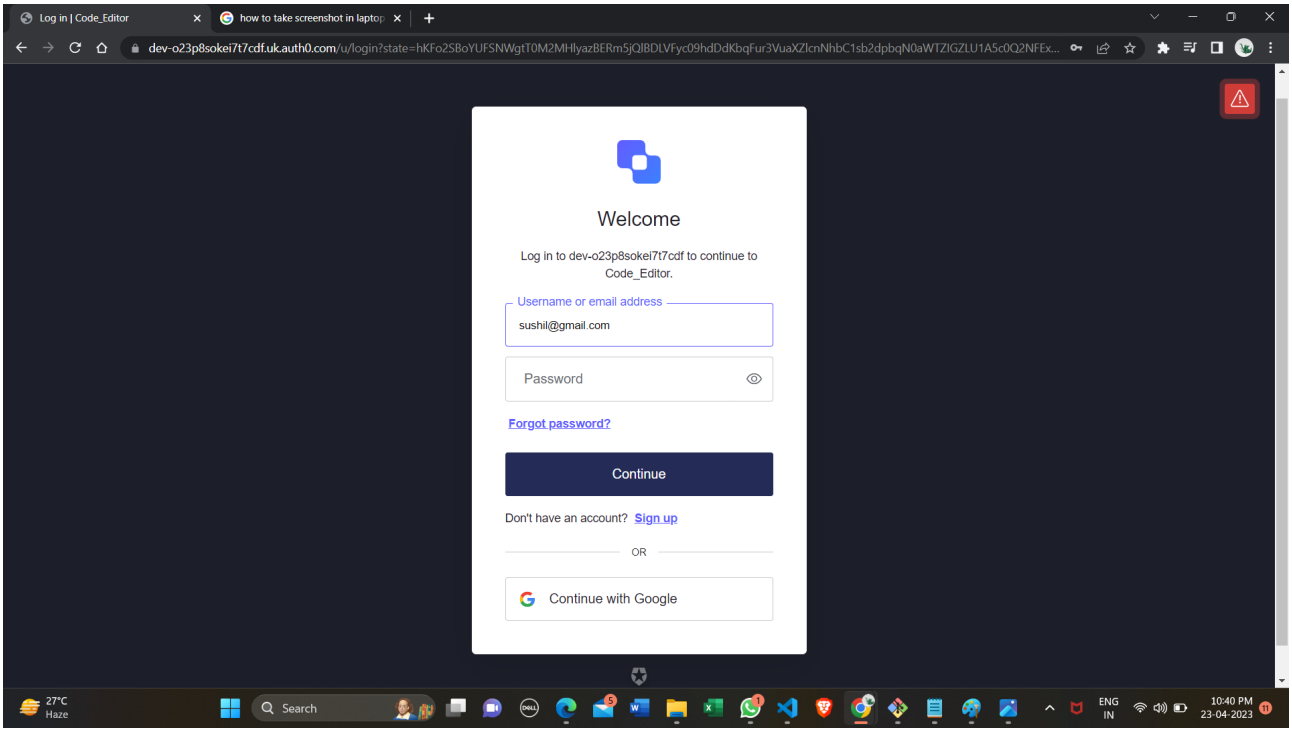

Figure 4.2: Login-Signup page

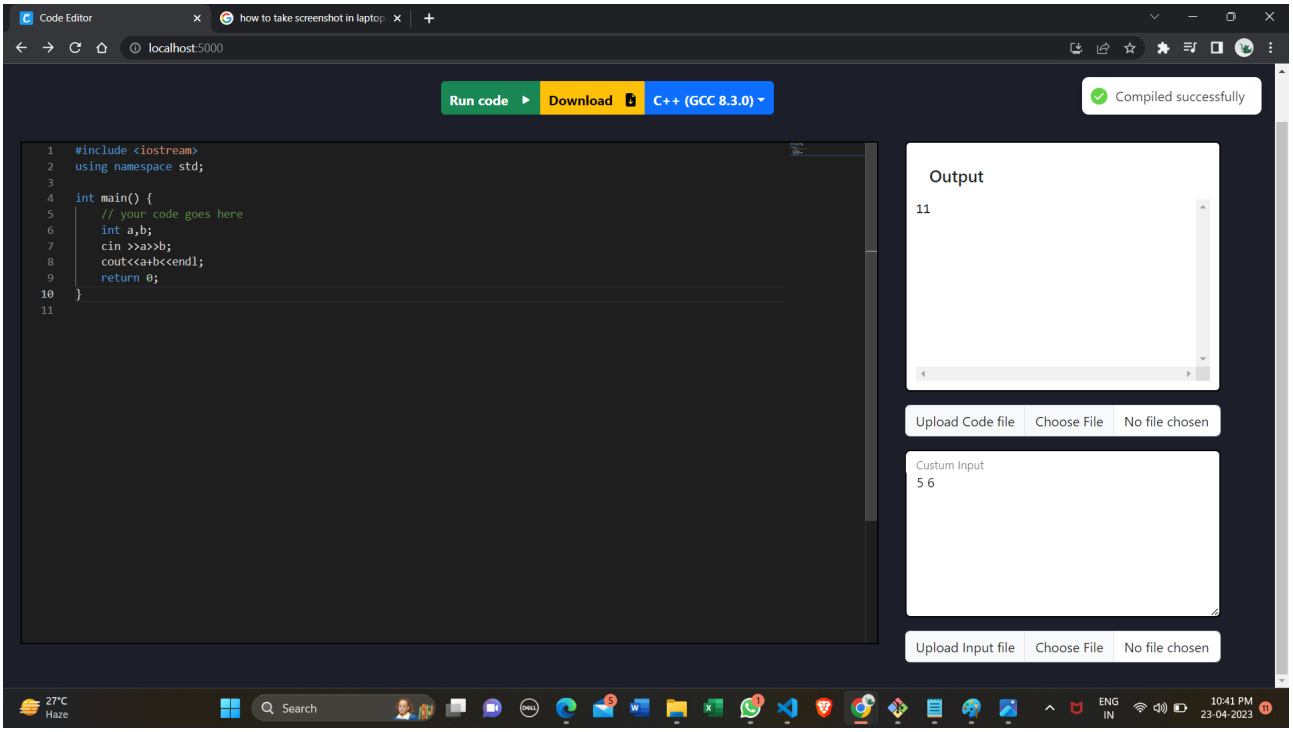

Figure 4.3: Code Compilation

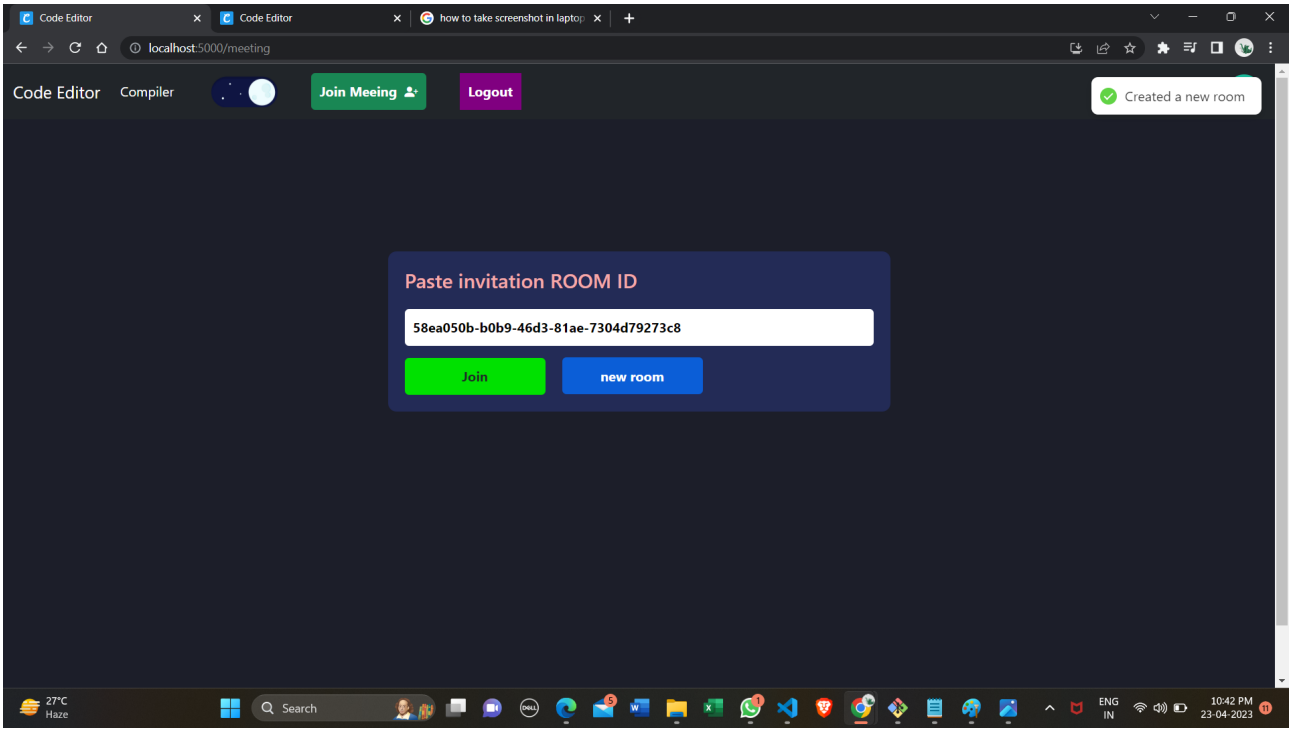

Figure 4.4: Join Room

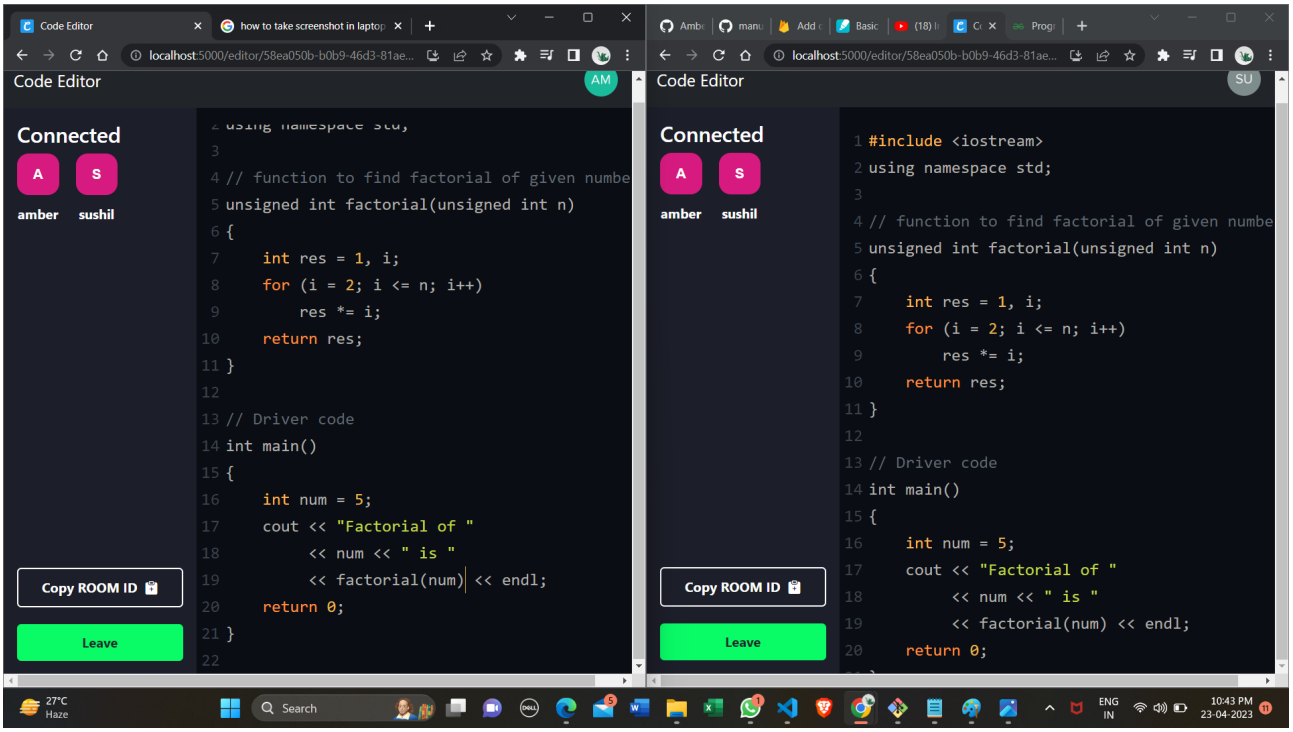

Figure 4.5: Collabration Coding