Project Title	Chat Application
Technologies	HTML, CSS, JavaScript
Project Difficulties level	Hard

Project Description:

In this assignment, you will develop a real-time chat application. The goal is to create a web-based chat platform where users can join chat rooms, exchange messages in real-time, and have a smooth and interactive chat experience. You will be using HTML, CSS, and JavaScript for this project.

Project Requirements:

User Interface:

- Create an intuitive and visually appealing user interface for the chat application using HTML and CSS.

- Design a chat room interface with a list of available rooms, a message display area, and an input field for sending messages.

- Ensure responsive design to accommodate different screen sizes.

Real-Time Communication:

- Implement real-time communication between users using JavaScript and WebSockets.

- Users should be able to select a chat room to join and exchange messages with other users in that room.

- Messages should appear in real-time without the need to refresh the page.

User Authentication:

- Implement user authentication to allow users to choose a username before joining a chat room.

- Users should not be able to impersonate others or use the same username simultaneously.

Chat Features:

- Allow users to send text messages in chat rooms.

- Provide a way to see who sent each message, and timestamp each message.

- Implement basic text formatting (e.g., bold, italics, links) in chat messages.

Room Management:

- Allow users to create new chat rooms and join existing ones.

- Display the list of available chat rooms, and users should be able to select a room to join.

User Experience:

- Ensure a smooth and user-friendly experience with features like message scrolling and notifications for new messages.

- Handle edge cases, such as empty messages and room selection.

Additional Considerations:

- Pay attention to security, especially regarding user authentication and data validation.

- Think about how to handle situations where users disconnect or join the chat.

- You are free to use external libraries or frameworks if you prefer, but the core functionality should be implemented in HTML, CSS, and JavaScript.

Submission Guidelines:

- Submit your project as a compressed folder containing all the necessary HTML, CSS, and JavaScript files.

- Include a README file that provides instructions on how to run your chat application.

Grading Criteria:

You will be evaluated based on the functionality, design, user experience, and code quality of your chat application. Be sure to test your project thoroughly before submission.