PROJECT PROPOSAL

Real-Time Chat Application with WebSockets

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1 Introduction

RapidChat is a real-time chat application implemented in Go, leveraging WebSockets technology to provide instant messaging capabilities. This project aims to create a secure, efficient, and user-friendly solution for real-time communication, offering features such as authentication, join/leave notifications, and a sleek interface.

2 Objectives

1. Implement a WebSocket-based server in Go to facilitate real-time communication between clients.

2. Develop a web-based client interface using HTML, CSS, and JavaScript to enable users to interact with the chat application.

3. Implement user authentication to ensure secure access to the chatroom and prevent unauthorized access.

4. Design a responsive and intuitive user interface to enhance the user experience and make the chat application visually appealing.

5. Ensure scalability and efficiency by optimizing server-side code and handling concurrent connections effectively.

6. Implement error handling and logging mechanisms to troubleshoot issues and monitor the application's performance.

7. Document the project thoroughly, including installation instructions, usage guidelines, and code documentation, to facilitate easy deployment and maintenance.

3 Features

- Real-time Messaging

- Authentication

- User-Friendly Interface

- Scalability and Efficiency

4 Technical Stack

- Backend: Go programming language for server-side development

- Frontend: HTML, CSS, JavaScript for client-side development

- WebSockets: Real-time communication protocol for instant messaging

- Authentication: JWT (JSON Web Tokens) for user authentication and authorization

- WebSocket library: Gorilla WebSocket for implementing WebSocket server in Go

5 Deliverables

1. Source code of the RapidChat application, including server-side and client-side components.

2. Documentation covering installation instructions, usage guidelines, and code documentation.

6 Conclusion

RapidChat aims to provide a secure, efficient, and user-friendly solution for real-time communication, leveraging the power of Go and WebSockets technology. By implementing features such as authentication, and a sleek interface, RapidChat aims to meet the growing demand for real-time chat applications while ensuring scalability and performance.