Advanced Web Programming

Activity 4: Real-Time Group Chat Application

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Objective

Create a real-time group chat application where multiple clients can connect to a WebSocket server, allowing them to join specific groups and ensuring that messages sent within a group are only broadcast to members of that group. This application will enable users to communicate in real-time within designated groups. The WebSocket server will manage client connections, track group memberships, and handle the routing of messages to the appropriate recipients. Clients will be able to join groups of their choice and exchange messages exclusively with other members of the same group, creating a seamless and efficient group chat experience.

Requirements

1. **WebSocket Server:**
   - Manages multiple clients and groups.
   - Allows clients to join specific groups.
   - Broadcasts messages to all members of a group.

2. **Client Application:**
   - Connects to the WebSocket server.
   - Allows users to join a group.
   - Sends and receives messages in real-time.

Submission Requirements

- server.js
- client.js
- index.html

Group Chat

Group 1 | Join Group
Enter a message | Send Message

Messages:

- [Group 1] Message 3 to Group 1

Group Chat

Group 2 | Join Group
Enter a message | Send Message

Messages:

- [Group 1] Message 1 to Group 1
- [Group 1] Message 2 to Group 1
- [Group 2] Message 1 to Group 2
- [Group 1] Message 3 to Group 1