

Final Term Project Report

Group Name: Team Q

Members: Purani Daivik Manishkumar

Link to Github repository:

<https://github.com/sfsu-csc-667-fall-2024-roberts/term-project-team-q>

Link to Github project board:

<https://github.com/orgs/sfsu-csc-667-fall-2024-roberts/projects/11/views/1>

A brief description of what we accomplished in the term project:

In this project, I developed a real-time, multiplayer Bingo game application with the following key accomplishments:

1. Authentication System:

- Implemented secure user registration and login with encrypted password storage using bcrypt.
- Integrated session management using `express-session` with PostgreSQL storage via `connect-pg-simple`.

2. Scalable Backend Architecture:

- Designed and implemented a backend using Node.js, TypeScript, and Express.
- Structured a normalized PostgreSQL database schema to manage users, games, players, bingo cards, and chats efficiently.
- Supported real-time gameplay and chat functionality using Socket.IO.

3. Dynamic Gameplay Management:

- Enabled users to host and join multiple games.
- Maintained player-specific game states, including their unique bingo cards and progress tracking.
- Ensured players who leave and rejoin retain their previous game state.

4. Real-Time Communication:

- Built a real-time chat system for players within games and in lobby
- Synced game state updates in real-time for all players, ensuring consistent experiences.

NOTE:

Due to a lack of cooperation from fellow teammates I have decided to remove them from this project report. Their names are

Lita Hernandez-Gonzalez, Jannelly Hernandez Umanzor, Andrew Guinto

I have completed the backend for authentication, games and chats along with placeholder frontend UI.