

## **Real-Time Multiplayer Quiz Game**

This is a multiplayer Java quiz game where multiple users connect to a server, answer timed multiple-choice questions, and view rankings on a live leaderboard.

### **How to Run the Project**

1. Open 3 terminal windows (or tabs)

Each terminal will run a different role:

- Terminal 1: Server
- Terminal 2: Client GUI (3 instances)
- Terminal 3: Admin

2. In each terminal, navigate to the root folder of the project (only use below command if folder is in Downloads folder of you Mac):

**cd Downloads/QuizGame**

3. Give execute permission to the scripts:

**chmod +x server.sh admin.sh client.sh**

4. In Terminal 1, start the server:

**bash server.sh**

5. In Terminal 2, run the client script to launch 3 quiz player GUIs:

**bash client.sh**

6. In Terminal 3, run the admin console:

**bash admin.sh**

7. In the admin console, type:

**start**

This will begin the quiz once all 3 players have joined.



## Quiz Flow

1. Each player GUI will be prompted to enter a name.
2. Each player receives one question at a time with 4 options.
3. Players must click their answer within 10 seconds.
4. The server collects responses and sends the next question.
5. After the quiz, each GUI shows a live leaderboard (only after all players have responded to all the 5 questions).
6. The leaderboard is sorted by score (descending).



## Database Usage

The quiz uses a file-based SQLite database: quiz.db

It contains 2 tables:

*questions*: stores quiz questions (pre-loaded via questions.sql)

*scores*: stores player scores and timestamps

To inspect saved scores after running the quiz:

```
sqlite3 quiz.db
```

```
sqlite> SELECT * FROM scores;
```

To reset all scores and questions before a new run:

```
sqlite3 quiz.db < sql/reset_db.sql
```

To populate new questions:

```
sqlite3 quiz.db < sql/questions.sql
```



## File Structure

```
QuizGame/
├── src/                                # Java source files
│   ├── client/
│   ├── server/
│   └── utilities/
├── lib/                                # SQLite JDBC driver
├── sql/
│   ├── schema.sql
│   ├── reset_db.sql
│   └── questions.sql
├── quiz.db                            # SQLite database (auto-created)
├── server.sh                          # Launches server
├── client.sh                          # Launches 3 clients
└── admin.sh                          # Launches admin console
```