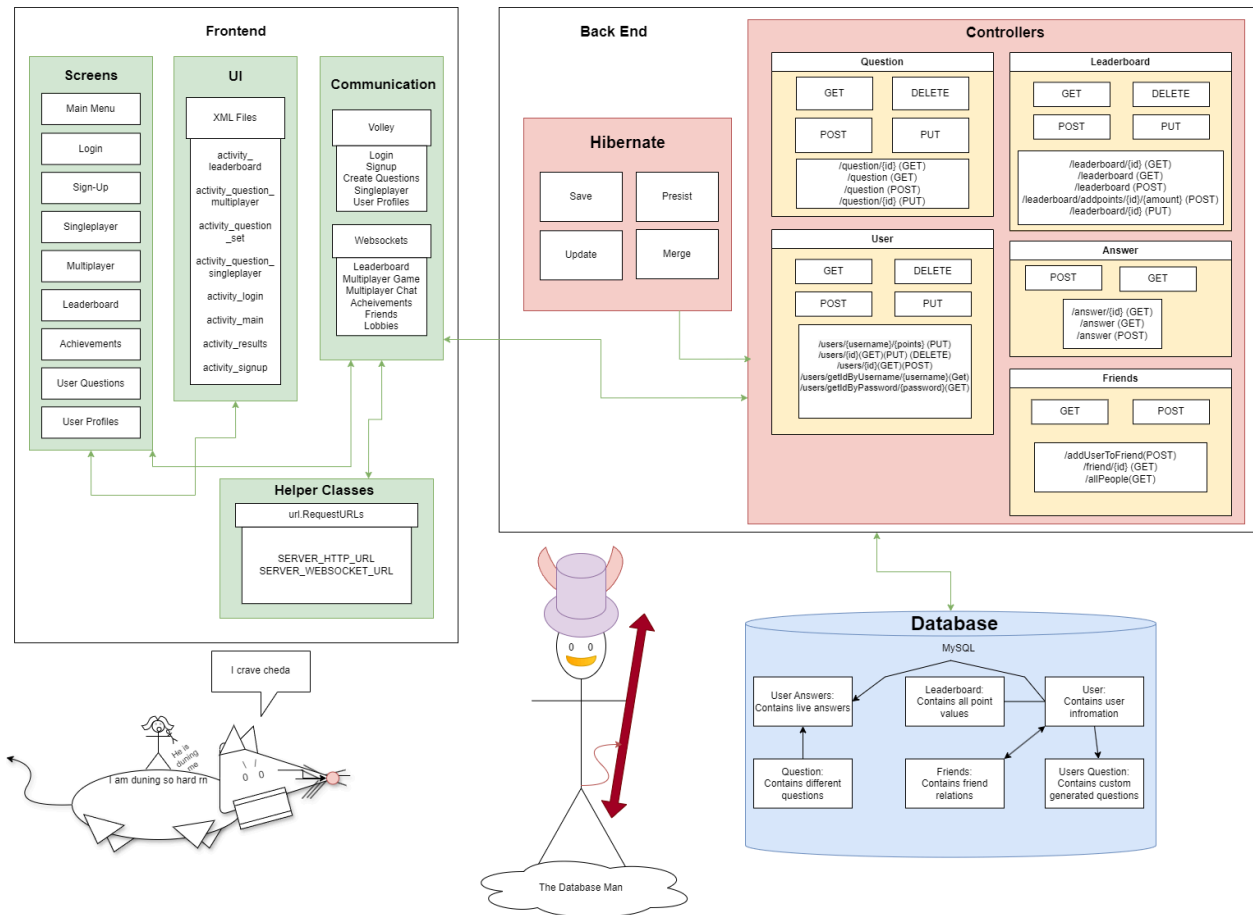# Design Document for <<JeoparCy>>

Group <MS3_2>

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PUT THE BLOCK DIAGRAM PICTURE ON THIS PAGE! (Create the picture using pencil or drawIO)

Frontend
- Main Menu
  - Generates a page with the following elements:
    - Buttons: Leads to Login, Signup, Singleplayer, Multiplayer, Leaderboard, and User Questions Screens respectively
- Login
  - Generates a page with the following elements:
    - EditText: Username
    - EditText: Password
    - Button: Login
    - Button: Signup
  - If the username and Password exist in the server, the user is logged in, and taken to the main menu.
- Signup
  - Generates a page with the following elements:
    - EditText: Email
    - EditText: Username
    - EditText: Password
    - EditText: Confirm Password
    - Button: Login
    - Button: Signup
  - If the username does not exist, and the email is a valid email, and the passwords match, the user is created in the server. Then, they are taken to the login screen.
- Singleplayer Question Game Mode
  - Generates a page with the following elements:
    - TextView: Time Left
    - TextView: Points
    - TextView: Question
    - EditText: Answer
    - Button: Submit
  - Gets questions and answers from the server, and displays them to the user. If the user answers correctly, points are added to the user table, and it goes onto the next question. After all questions are complete, user is taken to the results screen.
- Multiplayer Question Game Mode
  - Generates a page with the following elements:
    - TextView: Time Left
    - TextView: Question
    - TextView: Points
    - TextView: Answer History
    - EditText: Answer
    - Button: Submit
  - Puts users in a lobby with other users and shows them all the same question. If one user gets it correct, it moves to the next question. This moves onto the results screen when all questions are answered.

- Results Screen
  - Generates a page after a game with the results using the following elements:
    - TextView: Points obtained
    - Button: Play again
    - Button: Continue
  - Displays the results of a game.
- Leaderboard Screen
  - Generates a page with the following elements
    - TextView: Leaderboard title text
    - RecyclerView: List of users and their points
- User Question Screen
  - Generates a page with the following elements
    - TextView: Title text
    - RecyclerView: List of editable user questions
    - ImageButton: Add a new, blank question
- util.RequestURLs
  - A class that contains all of the URLs used to send and get data from the backend server

Backend
- Controllers
  - **User:** Used to create, store, and update user data such as points associated with the user profile.
  - **Question:** This sets the user to fetch questions and answers from pre-made questions.
  - **User Questions**: Similar to question but instead a way for users to be able to post their own questions.
  - **Leaderboard:** This contains all the point values related to users.
  - **Friends:** Table of all users which uses many-to-many relationships to show how users are related based on their friendship.
- Database Relations:
  - User-Leaderboard 1-1
  - User-UserQuestion 1-Many
  - User-Friends Many-Many
  - User-UserAnswers 1-Many
  - Question-UserAnswers 1-Many
- Database:
  - The database contains multiple different tables with each table explained in the controllers category. We utilize many different relations like 1-1, 1-Many, and Many-Many to work out different connections. For example: User has a 1-1 connection with Leaderboard to relate a User to a row of point values. User has a many-many relationship with friends because many users can have multiple friends and multiple friends can have multiple users User has a 1-Many relationship with UserAnswers because a user can answer multiple times.