CMPSC 487W **Phase #1** **Brodie Baxter**
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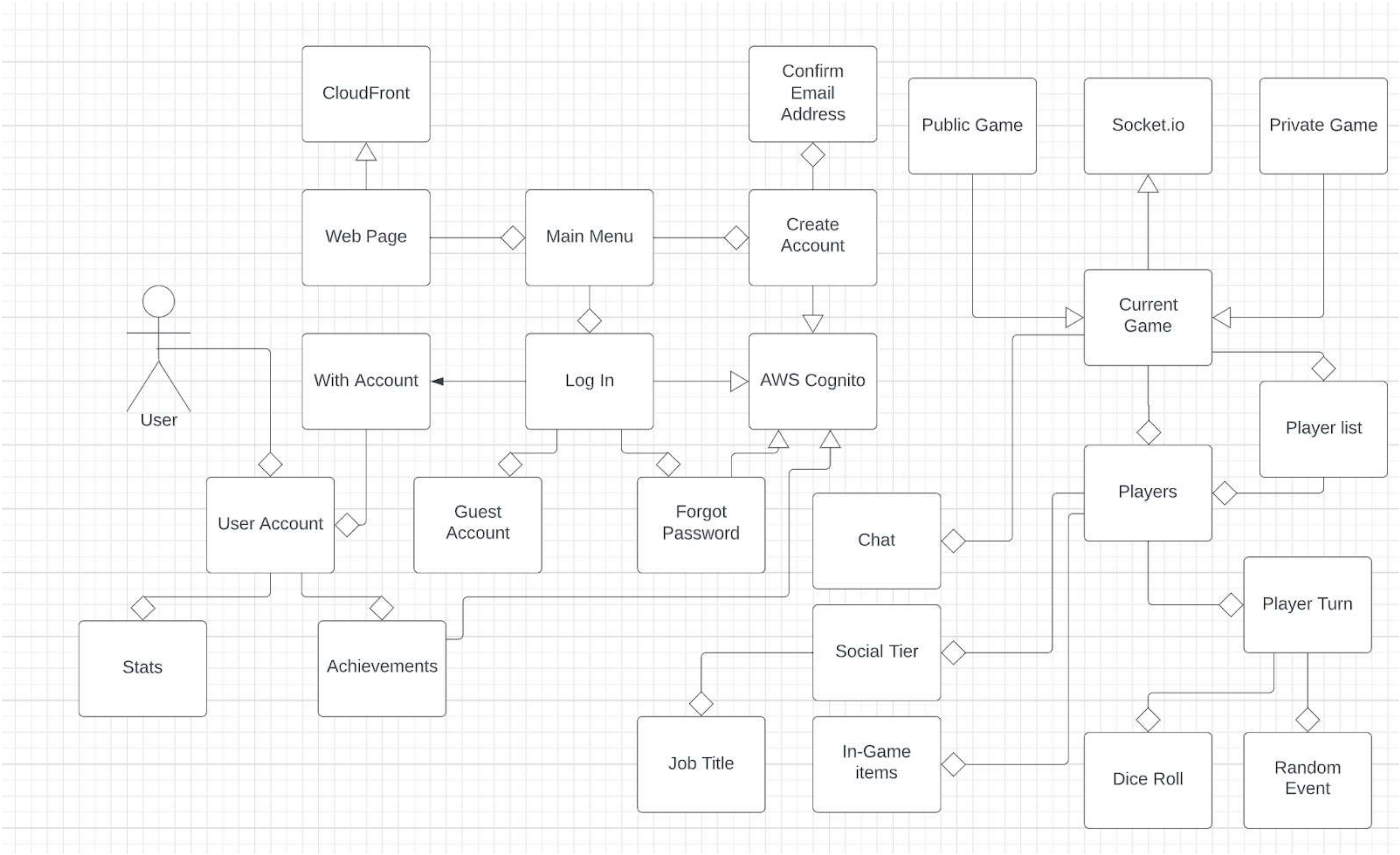
High Level Requirements:

- The User needs to create an account to be able to access the game.
- The system must protect user information such as password and must be encrypted and protected against potential threats.
- The system must store user information on a database such as MySQL or Microsoft SQL Server. This database must also be protected for the confidentiality and integrity of the user's information.
- The system must be able to track who is in a game at a given time and also be able to manage a large amount of users for a given time.
- The System must also be able to update the appropriate GUIs for a given action during the duration of a game in progress.
- The user must be able to access their account information at any time.
- The system must be able to communicate to the website hosting the game and vice verse. This will be done using AWS.
- The game will be hosted using an AWS EC2 instance.
- The game will be written in JavaScript using frameworks such as AJAX (to send and retrieve data from the server asynchronously without interfering with the display and behavior of the page), React (for interface design), NextJS (works alongside React to manage tooling and configuration), etc.
- A method of recording each game and asking every player if they want to save that game by downloading it to their computer.

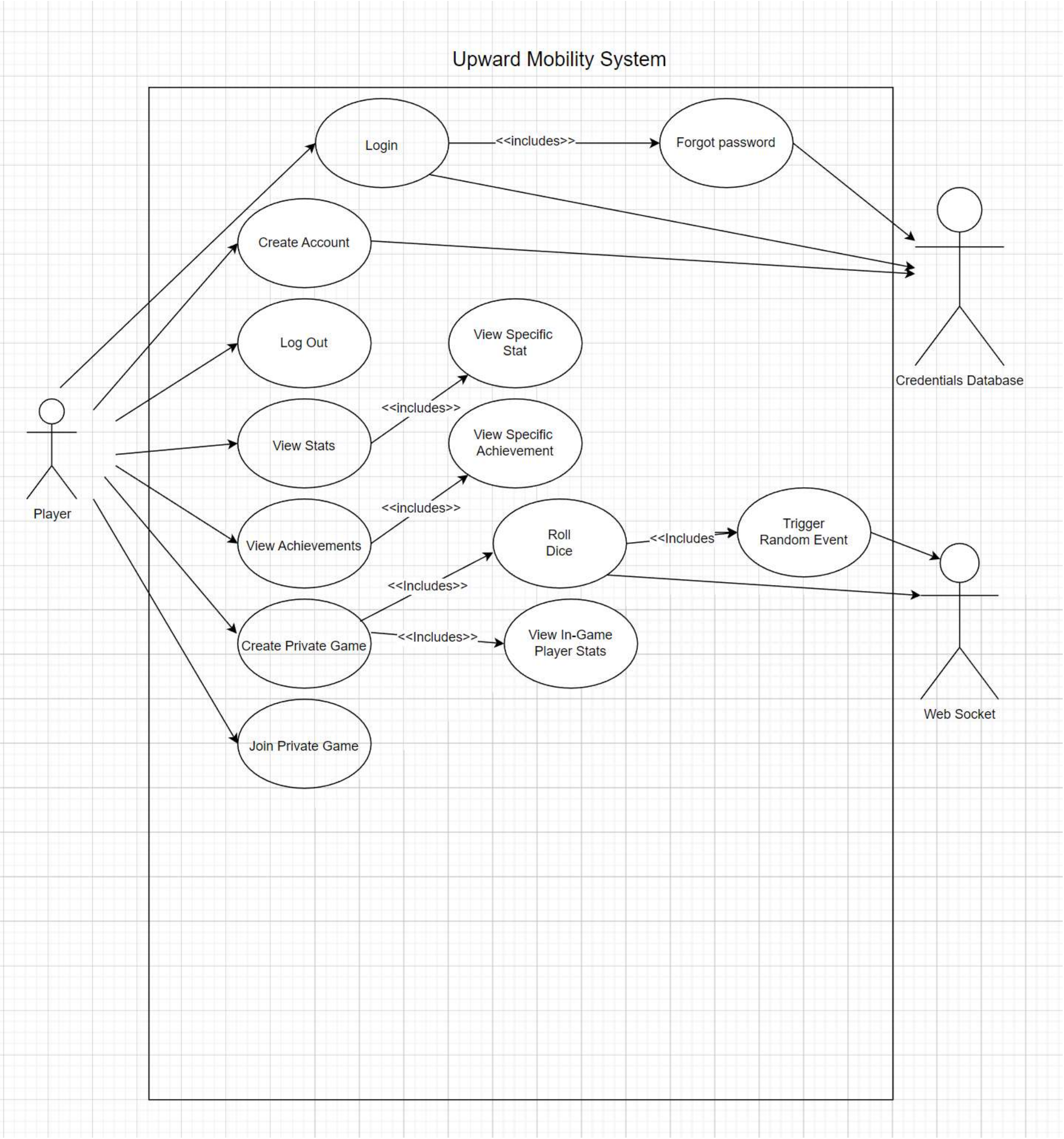
__Project Glossary__

AWS - Amazon Web Service
CloudFront - AWS Web hosting service
AWS Cognito - User data and game state service
EC2 - Virtual computer instance hosted on AWS
Containerized Hosting - A means of segregating computing power on a single instance into multiple smaller machines
VPC - Virtual Private Cloud, network in which infrastructure is built in
Public/Private Subnet - Range of IP addresses in the VPC
Web Socket - System of communicating and updating game state from user to server and vice versa
Socket.io - Web Socket framework
Social Tier - Measure of score/progress in the game
Job Title - For show only, measures progress of social tier

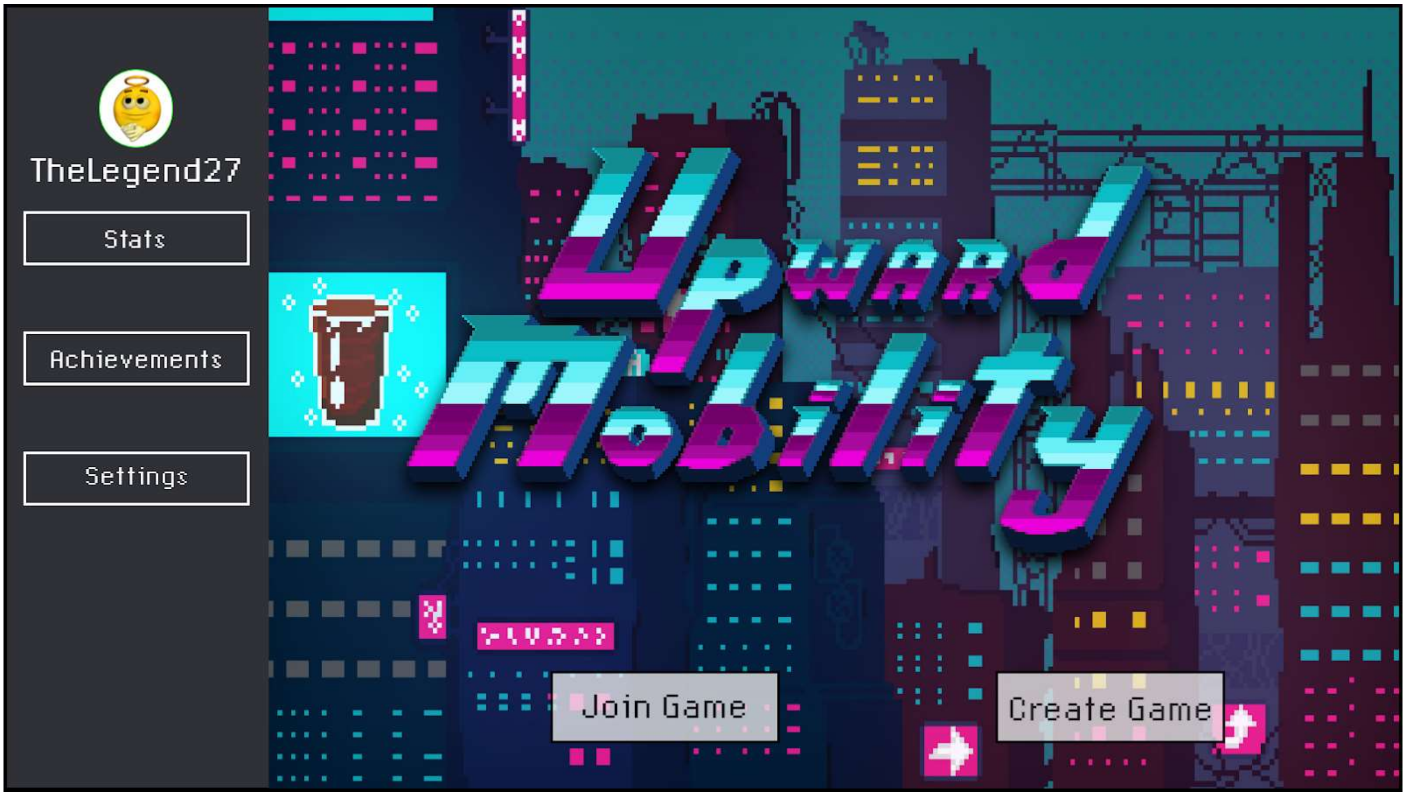
Domain Model

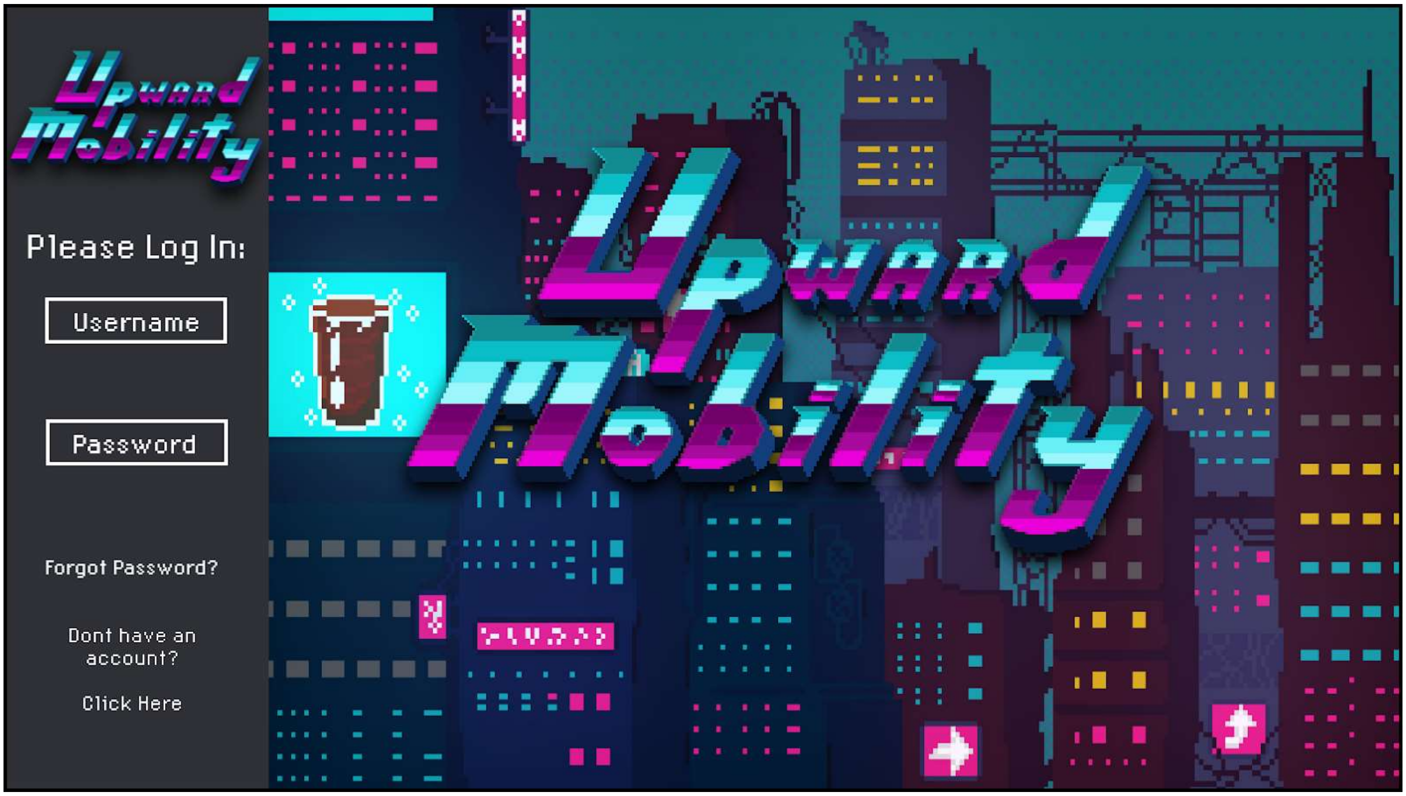


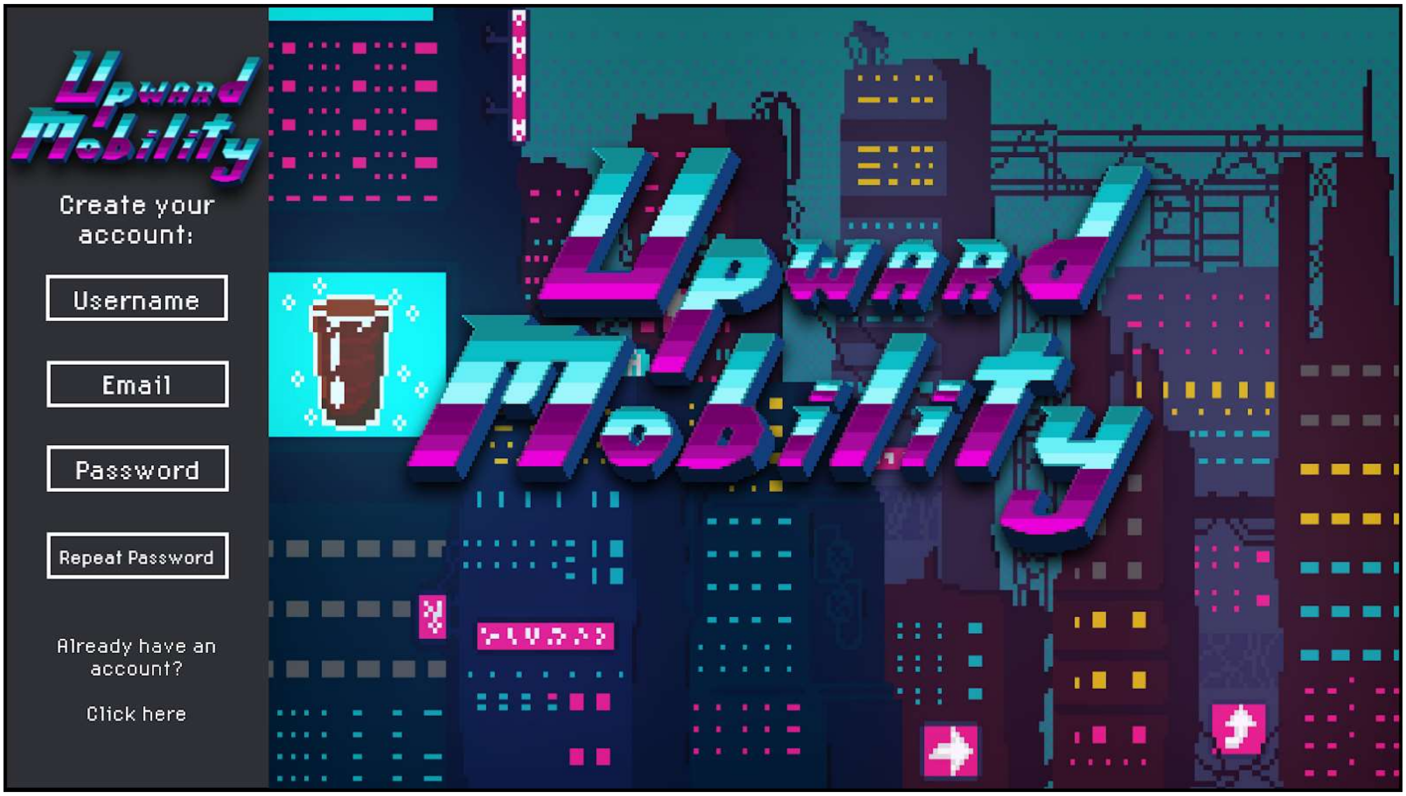
Use Case Diagram



GUI Prototypes



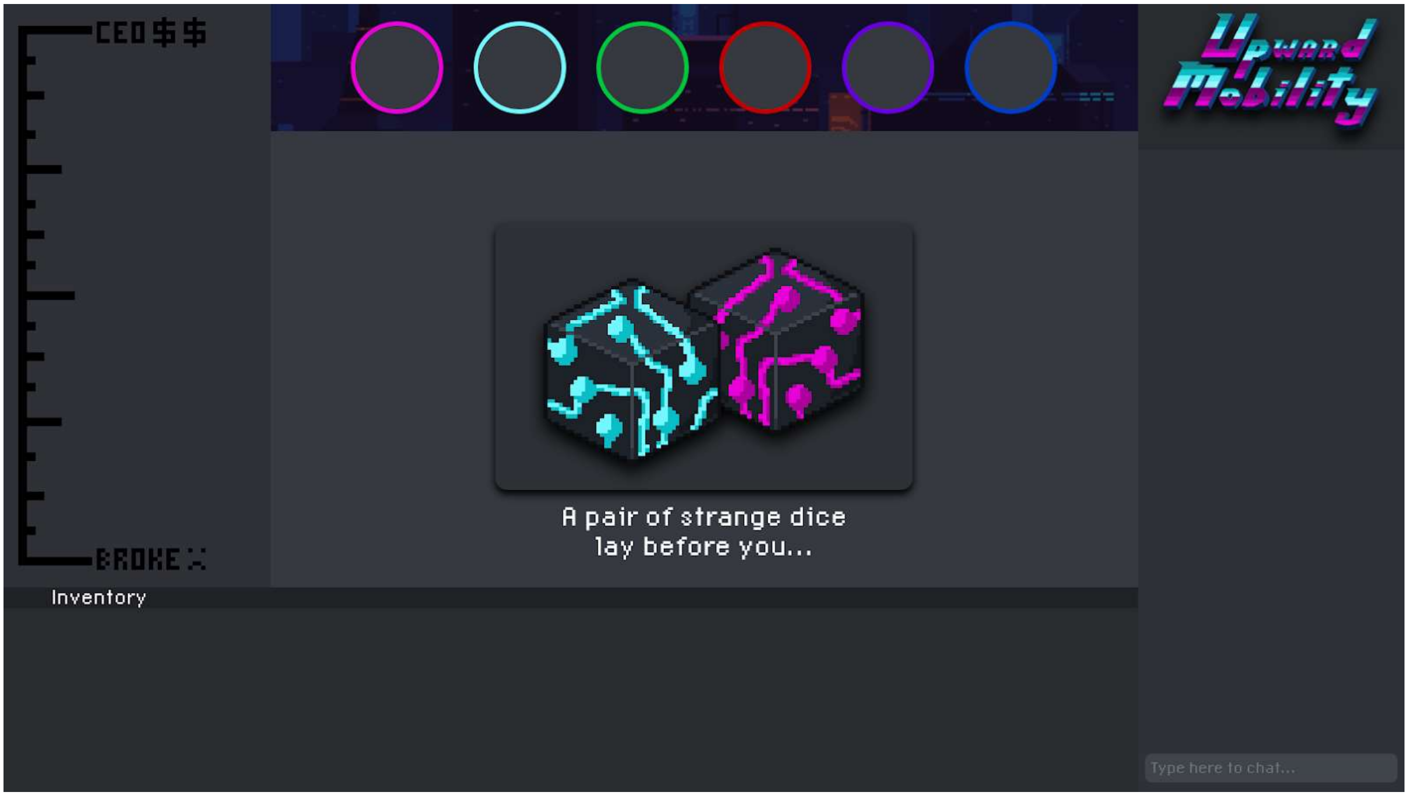




Create your account:

Already have an account?

Click here



A pair of strange dice lay before you...

Use Case: Create Account

BASIC COURSE:

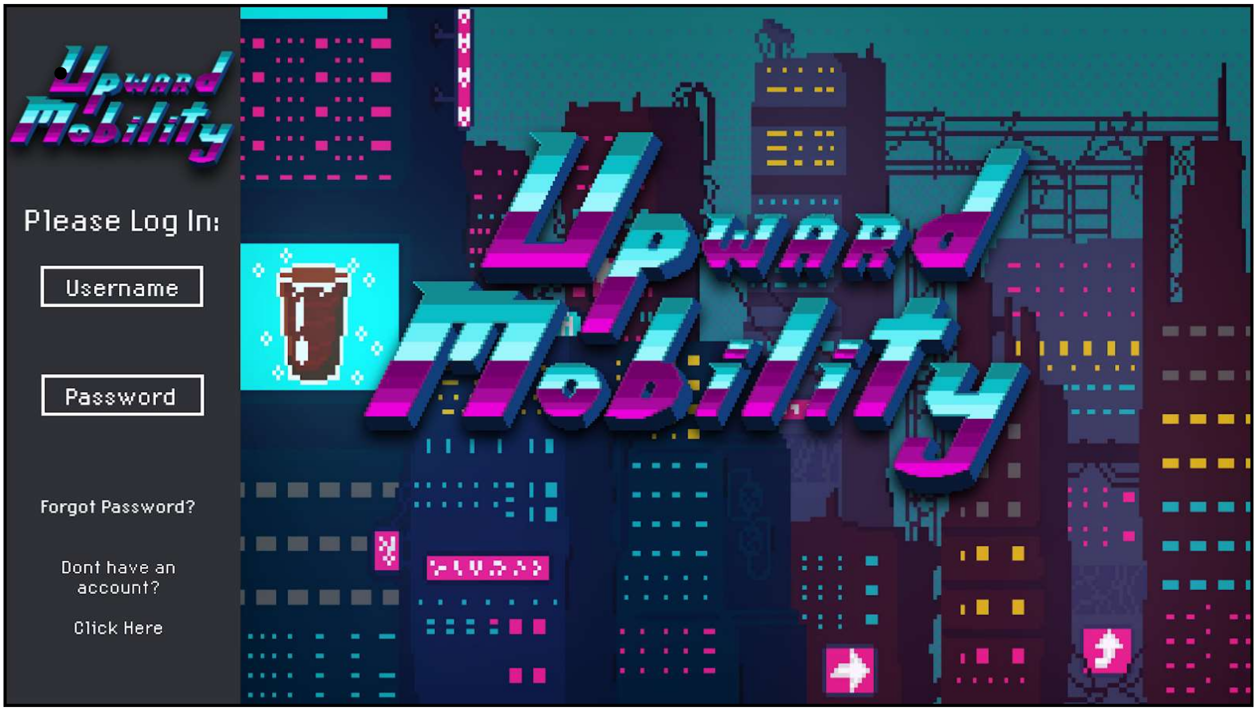
On the Login Page, the User clicks the Create Account Button and the system displays the Create Account Page. The user enters their username, password, email, and phone number into the fields and clicks the Create Account Button. The system checks this information in the database to see if it is valid. The system then displays the Home Page.

ALTERNATE COURSES:

Account existing error: The system shows a Create Account Error Message displaying the username, password, email, and/or phone number already exist for an account.

Network error: The system shows a Network Error Message and redirects the user to the Login Page.Home

Database connection error: The system shows a Database Connection Error Message and redirects the user to the Login Page.



Use Case: Create Private Lobby

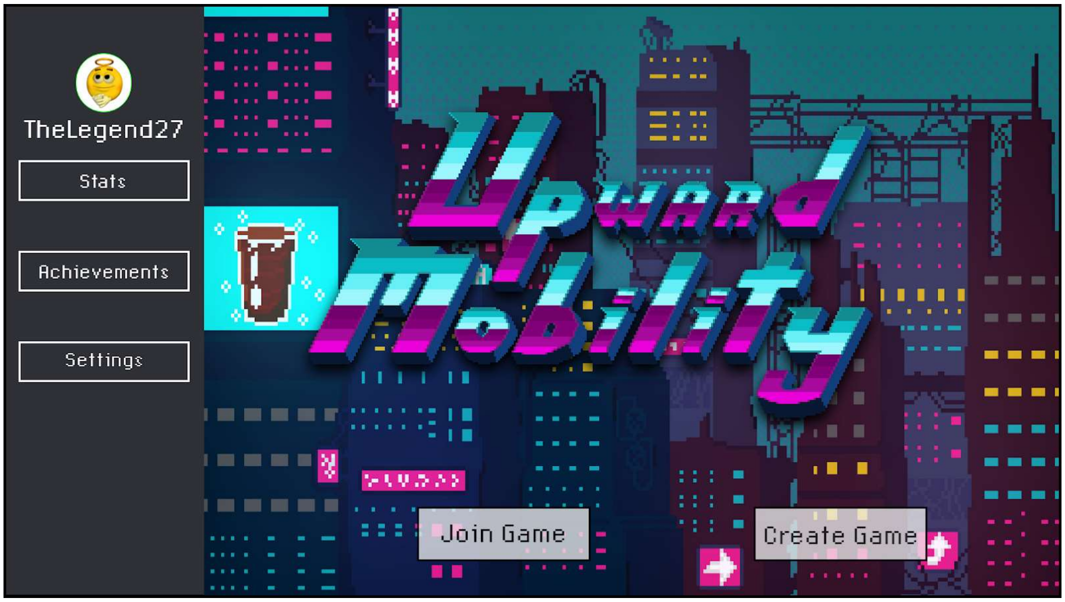
BASIC COURSE:

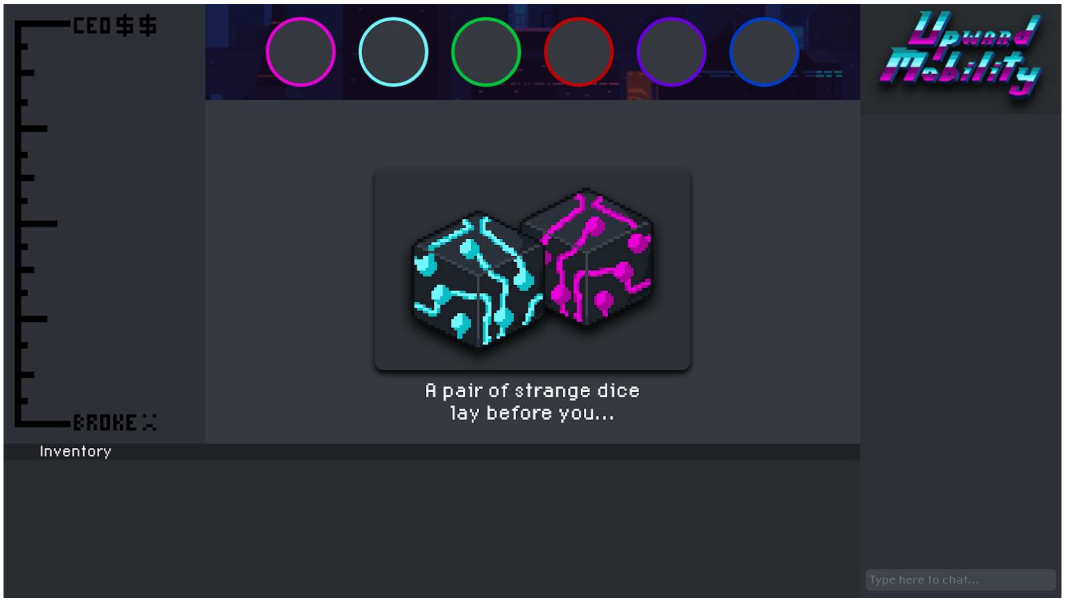
On the Home Page, the user clicks the Create Game Button, then the system displays the Create Lobby Page. The user enters the information for the game they are trying to create. The system then takes the user to the Game Page where the game is played.

ALTERNATE COURSES:

Network error: The system shows a Network Error Message and redirects the user to the Home Page.

Game Creation error: The system shows a Game Creation Error Message and redirects the user to the Home Page.





Use case: Joining a Game

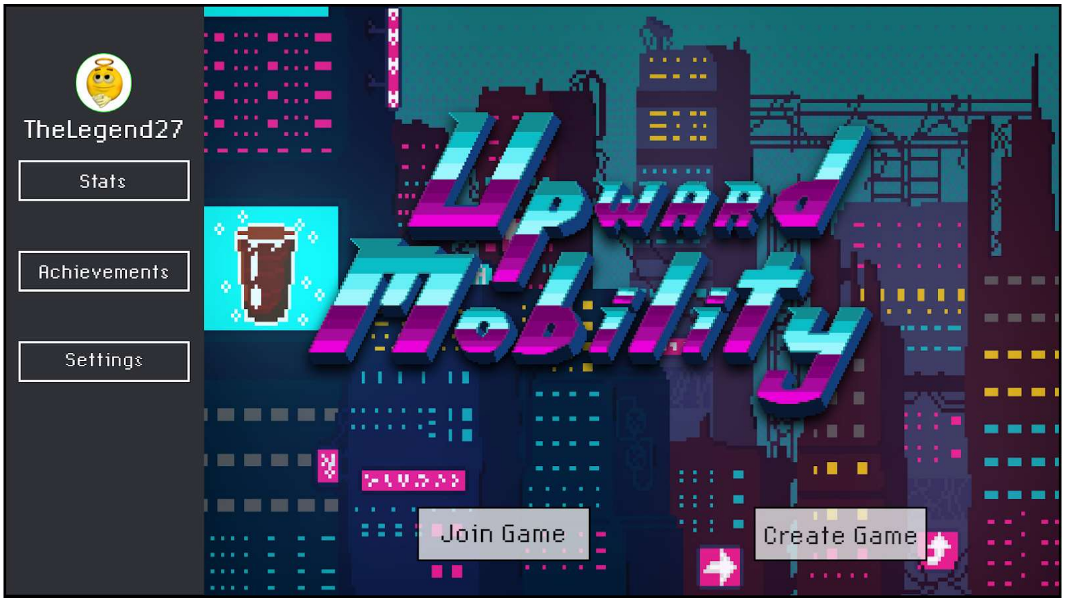
Joining a Game

Base Case: After this user has a successful authentication logging into their account, the user will have an option to join another player's existing game. Upon choosing to join a user's game, the user will need to provide a unique game ID. If the ID is correct, the system will then connect the user with all other players within the lobby enabling the user to chat and interact with other players.

Alternate Case:

Incorrect ID or Game does not exist: The game ID provided is incorrect or no longer exists. If the game ID is incorrect or does not exist, an error message will be provided stating that that the ID is incorrect or does not exist and will be taken back to their home page.

Network timeout: If the user attempting to join a game has a server timeout, the user will be provided an error message saying there was an error attempting to connect to the users lobby. They will then be taken back to their homepage where they can try to attempt the process again.



Use Case: View Stats/View Achievements

Viewing Stats/Achievements page

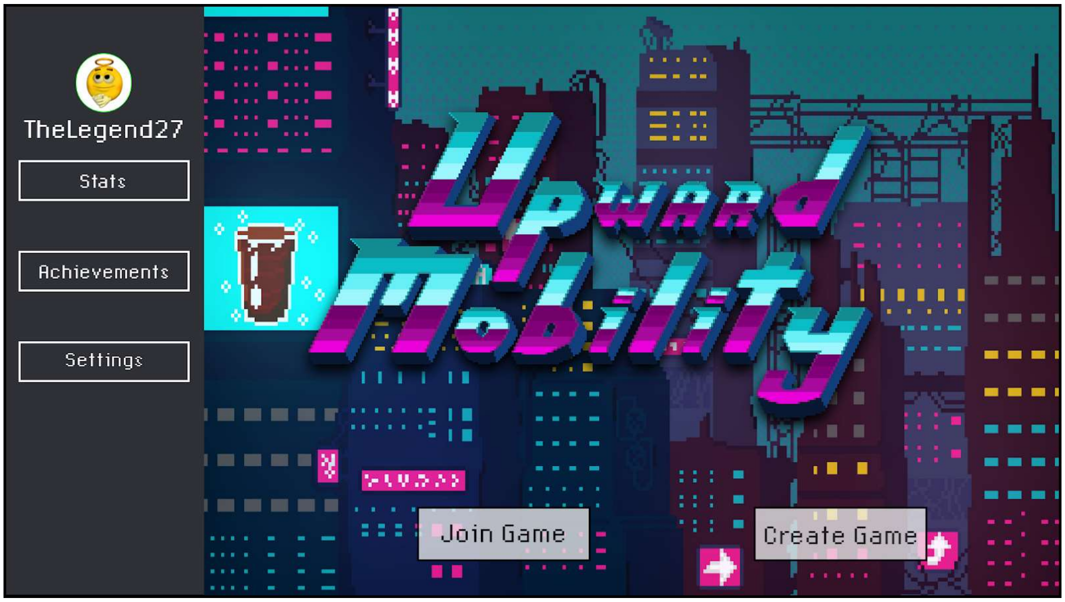
Base Case: Once the User has successfully logged in to their account they will be on the Home Page, which will have both the Achievements Button and the Stats Button. Once the User clicks the Achievements Button they are sent to the Achievements Page. If the User clicks the Stats Button they will be sent to the Stats Page. The system will gather the saved stats and achievements on the Users Account to display on the respective pages. Both pages will have a Return Button. When the User clicks these buttons, they will be returned to the Home Page.

ALTERNATE COURSES:

Guest Login Error: The system will display a Guest Login Message and return to the Home Page.

Network Error: The system shows a Network Error Message and redirects the user to the Home Page.

Database Connection Error: The system shows a Database Connection Error Message and redirects the user to the Home Page.


TheLegend27
Stats
Achievements
Settings
Upward Mobility
Join Game
Create Game