CSCI 3308-200: Software Dev Methods and Tools
Project Milestone 4
10/30/2020

Team Number: 205-2
Team Name: Phat Data Squad
Team Members: Aidan Aarts, Alexandra Charland, Connor Duff, Jess Hamlin, Ryan William Coe

Revised List of Features:

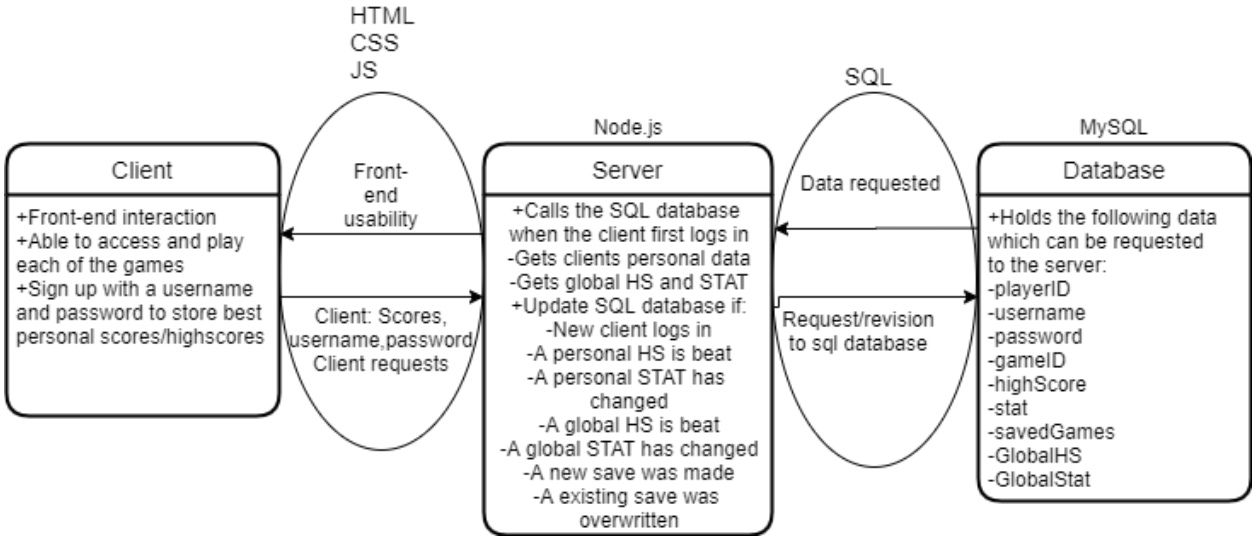
- Main Menu (Home Page)
    - The selection screen from where the user can select from multiple options of games or settings. This will include sorting games in different ways and altering the games for accessibility in some way. The option to quit out of the application will also be available on the screen.
- Game selection and launching
    - Users will be able to select one of five games and play them. These games will include:
    - Snake game
        - Typical snake game where the player must move around the play area while collecting pellets to increase their length. They must avoid the edges as well as running into themselves. May add in bonus power ups that can affect the way of play. Also plan on adding a high-score menu for players to log their beset scores.
    - Helicopter game
        - The player must maneuver a flying object (a helicopter, plane, etc.) to dodge an infinite scroll of walls and obstacles using mouse pressure to go up and gravity to go down.
    - Black Jack
        - Playing blackjack against the computer, the player is dealt a card as well as the computer using a random number generator from 1 to 13. Player gets the choice of whether to hit or stand, assuming the player doesn't bust the dealer then hits if he is below 17 and stands if he is greater than or equal to 17. Could incorporate a chip component.
    - Walking Simulator 3000
        - A three dimensional walking focused game in which a player will navigate a procedurally generated environment.
    - Pong Without Friends
        - A single player game that keeps the player engaged with an ever changing array of different gameplay every time. Each player's high

score is kept. And there are also plans to make the gameplay even more unique if time allows.

- Sign In and Out (Form)
    - Users will be able to create accounts and sign into them. Once signed in, they will have access to game saving and loading and statistics viewing.
- Saving and Loading (Login and Database)
    - Where applicable, some games will allow users to save their progress and return to them later from a similar position and game state. This will only be available to signed in users.
- Statistics Viewing (Leaderboard)
    - On both a local and global scale, users will be able to view various statistics regarding the provided games like high scores and milestones. Being included in global statistics will require users to be signed in.

Since most of the games have been completed, we will focus on integrating the games into the html pages of the website and connecting the database to the website to record a user's scores after they login.

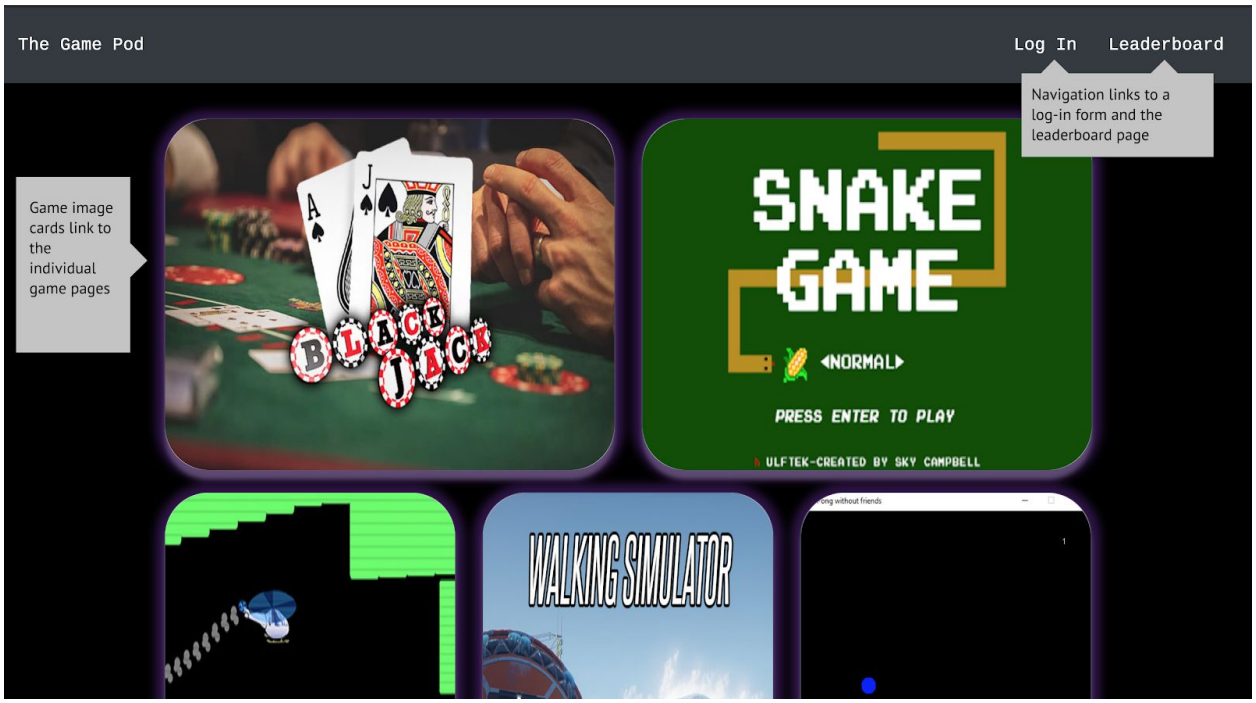
Architecture Diagram:

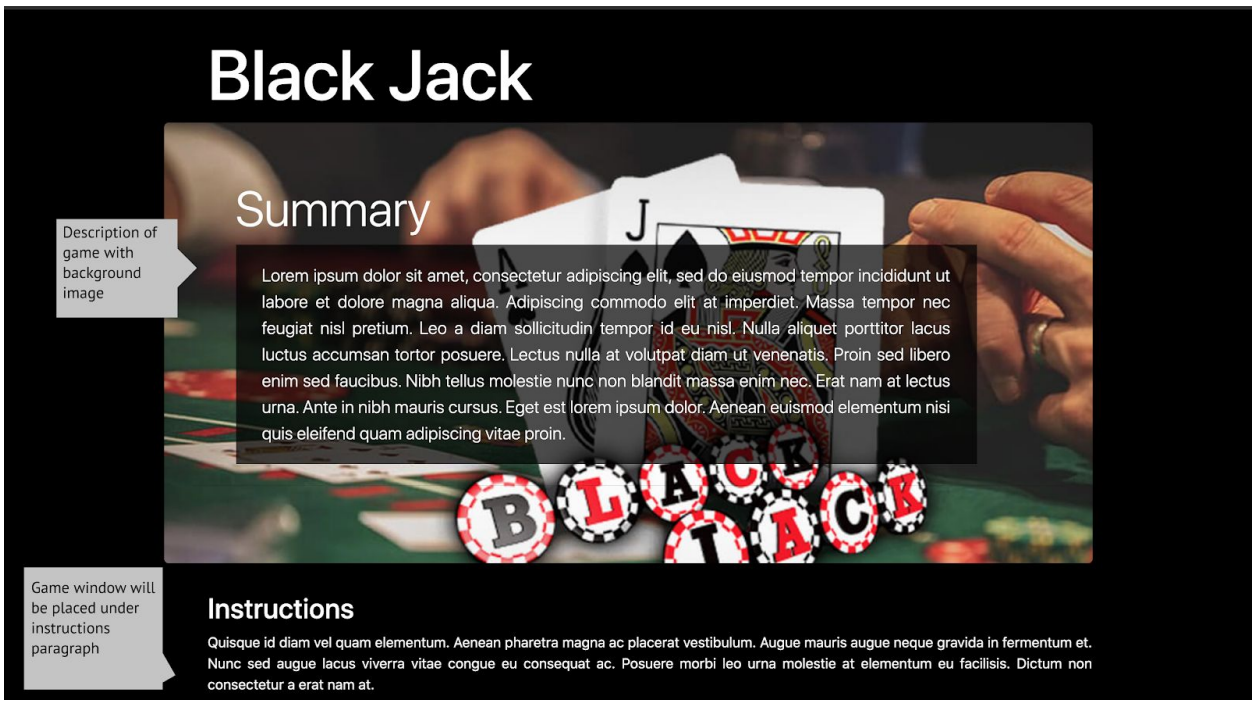


Front End Design:

Our project will be hosted on a website with games incorporated into the html using javascript. The four types of pages the user can expect to see are a homepage with a collection of links to different games, a game page for each individual game where the user can play the game, a leaderboard page that will display the top 10 scores out of all

the users, and a login page where the user can input their account information in order to save their game data.





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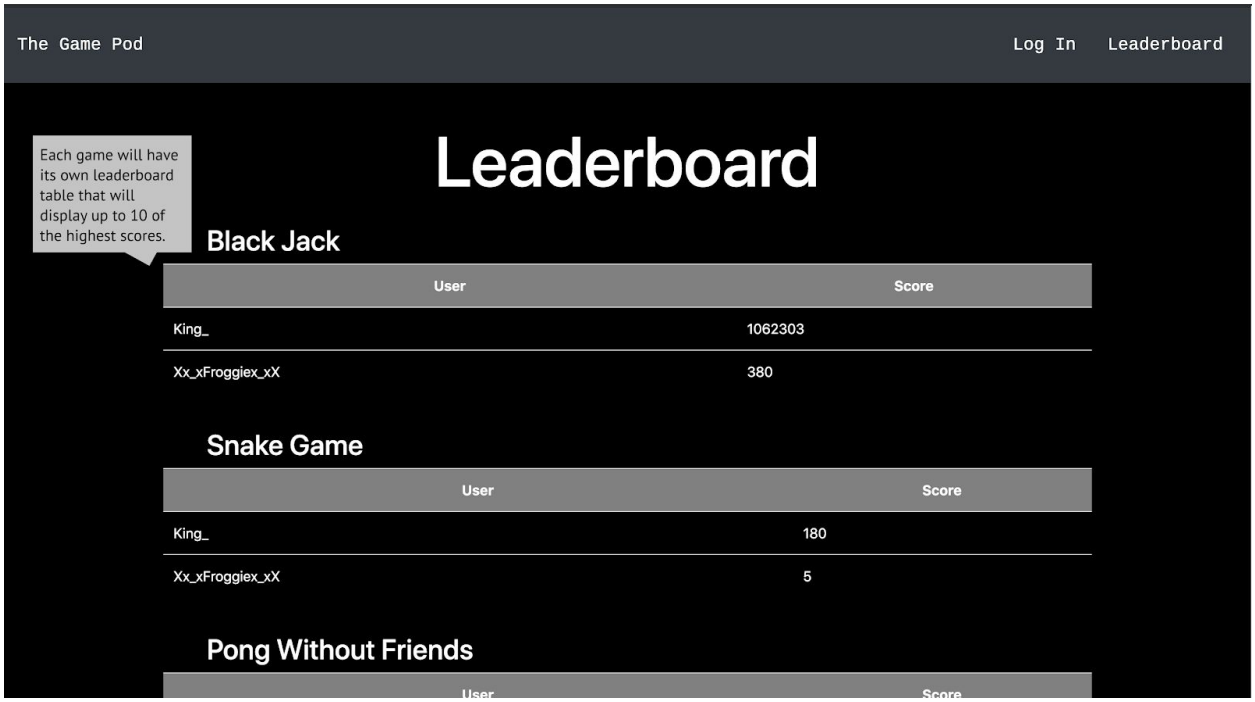
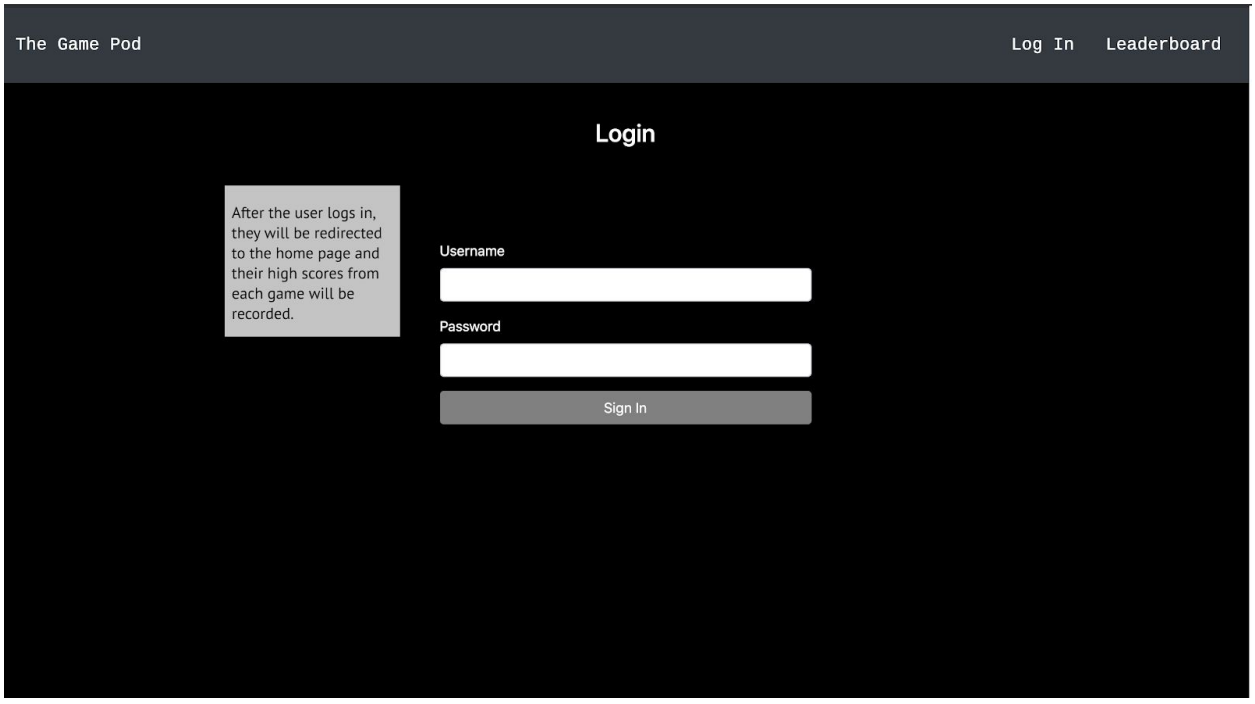
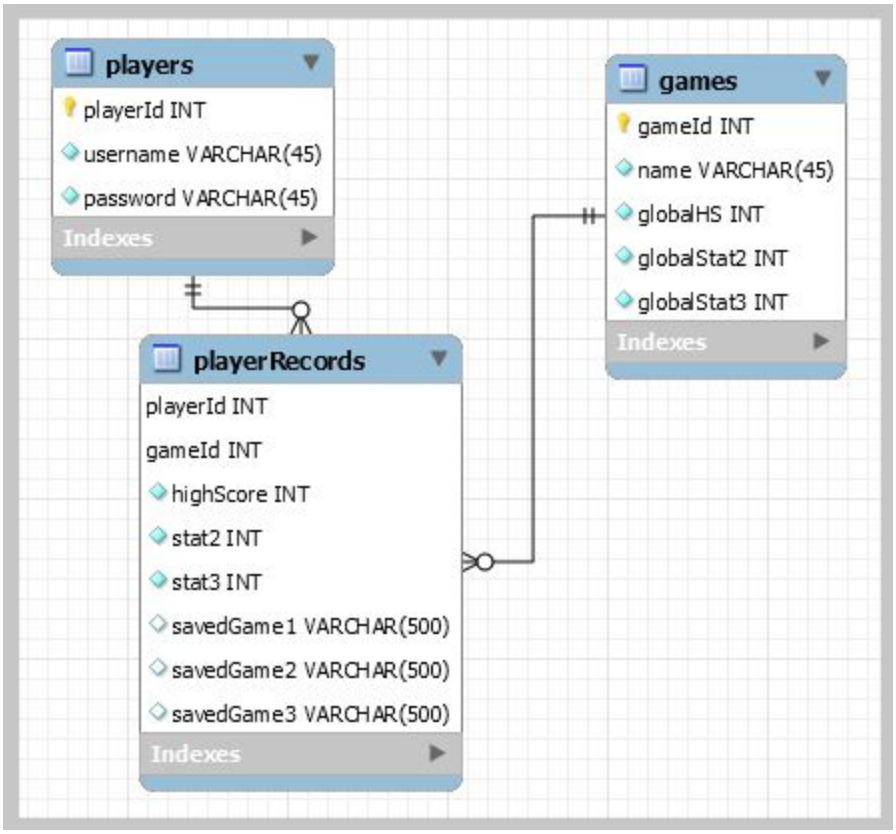




Database Design:

A MySQL database will be used for this application. Below is an entity relationship diagram for the database that will be used. It will keep track of entities such

as usernames and passwords, global statistics, and personal scores. Statistics 2 and 3 will be recording different things for each game, so their names are not specific.



Individual Contributions:

- Aidan Aarts: Finished the java blackjack game and have matched it with the overall css of the website. Latest commit
- Alexandra Charland: Added a leaderboard page to the website. Still working on the helicopter game. Latest commit
- Connor Duff: Finished basics of Snake Game. Latest commit
- Jess Hamlin: Researched database implementations and made an entity relationship diagram of the planned database. Working on walking simulator as well.
- Ryan Coe: Finished java game and started to implement his java game into the website.

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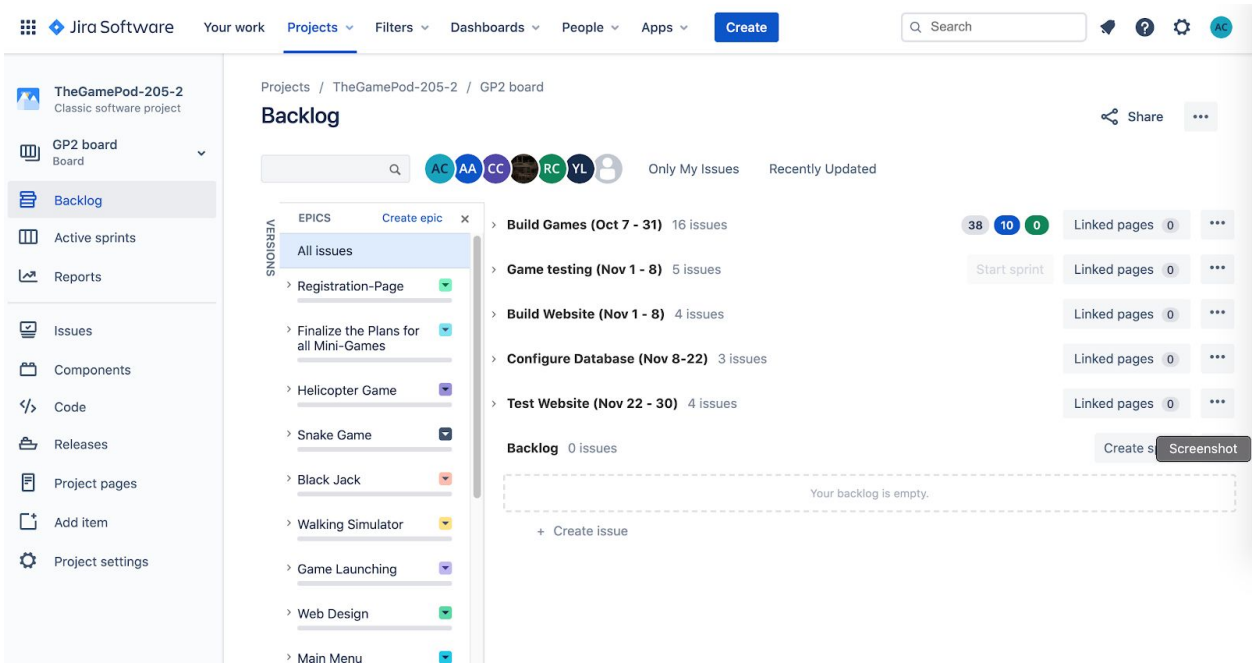
Jira Board



<u>Challenges:</u>

One challenge we still have to overcome is implementing the java games into our website. We have completed java games as well as designed an html website, however we have not implemented a game into the website yet. At the moment a few of our group members are working on this challenge and we are confident that we can achieve this goal within the next couple of weeks. If we cannot meet this challenge, we can always decrease the complexity of the games to focus on getting them working on the website. A second challenge we face is recording three statistics about each game. As these games do not involve a lot of mechanics, it is hard to find meaningful things to keep track of in every game. If this challenge is not resolved, we may have to resort to keeping track of statistics that are not very meaningful such as the number of steps taken. A third and final challenge we are facing in this project is creating a save system. Most of the games will need to be able to record and load game states to or from a string in our database, and as the games are still being created we still need to come up with a standardized system for this. If we cannot overcome this challenge we may have to change the database to accommodate different types of saving and loading for each game.