Power Play

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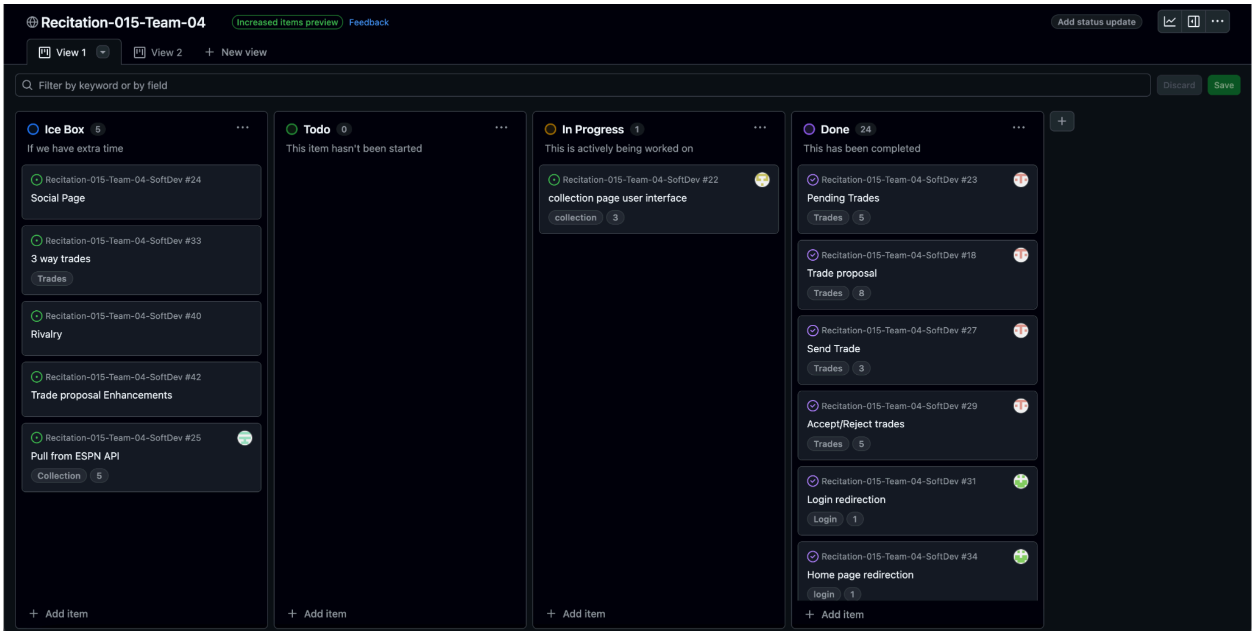
Power Play is a web-based sports trading card game that lets basketball fans collect, trade, and battle using digital cards based on real NBA and WNBA athletes. Each card includes player stats—like points, assists, and rebounds—sourced from actual league data, and these stats directly impact in-game mechanics such as attack, defense, and health. Players build custom decks of five cards and engage in round-based battles. Each round's outcome is influenced by both the strength of the player's deck and optional dice rolls, adding an element of strategy and randomness. This system encourages tactical decision-making while ensuring matches remain dynamic and engaging. The game features a built-in trading system that allows users to exchange cards with others, making it easy to improve decks and collect favorite players. A stat-based progression system also allows cards to grow stronger over time, giving players a sense of development and long-term engagement. With a simple, intuitive interface and competitive, skill-based gameplay, Power Play is designed for easy onboarding and continued play. Whether you're a casual fan or a hardcore strategist, the game blends sports stats with RPG-style mechanics to create a unique and accessible experience.

Repo: https://github.com/Bodhi-Rubinstein/Recitation-015-Team-04-SoftDev

Project board: https://github.com/users/Bodhi-Rubinstein/projects/3



Recitation-015-Team-04

Ice Box 5
If we have extra time

- Recitation-015-Team-04-SoftDev #24
  Social Page
- Recitation-015-Team-04-SoftDev #33
  3 way trades
  Trades
- Recitation-015-Team-04-SoftDev #40
  Rivalry
- Recitation-015-Team-04-SoftDev #42
  Trade proposal Enhancements
- Recitation-015-Team-04-SoftDev #25
  Pull from ESPN API
  Collection 5

Todo 0
This item hasn't been started

In Progress 1
This is actively being worked on

- Recitation-015-Team-04-SoftDev #22
  collection page user interface
  collection 3

Done 24
This has been completed

- Recitation-015-Team-04-SoftDev #23
  Pending Trades
  Trades 5
- Recitation-015-Team-04-SoftDev #18
  Trade proposal
  Trades 8
- Recitation-015-Team-04-SoftDev #27
  Send Trade
  Trades 3
- Recitation-015-Team-04-SoftDev #29
  Accept/Reject trades
  Trades 5
- Recitation-015-Team-04-SoftDev #31
  Login redirection
  Login 1
- Recitation-015-Team-04-SoftDev #34
  Home page redirection
  login 1

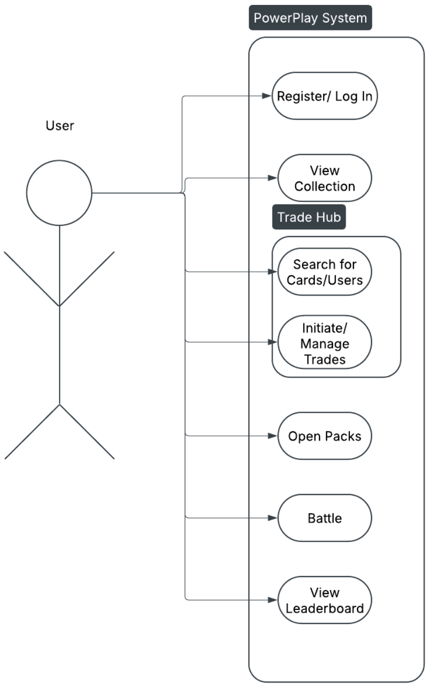
Demo Video:

5min_powerplay_demo.mp4

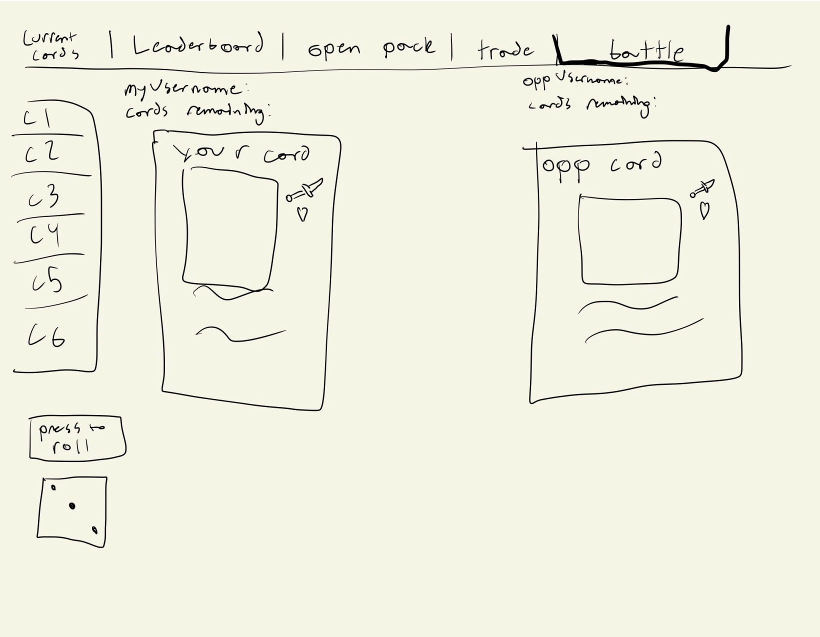
Contributions:

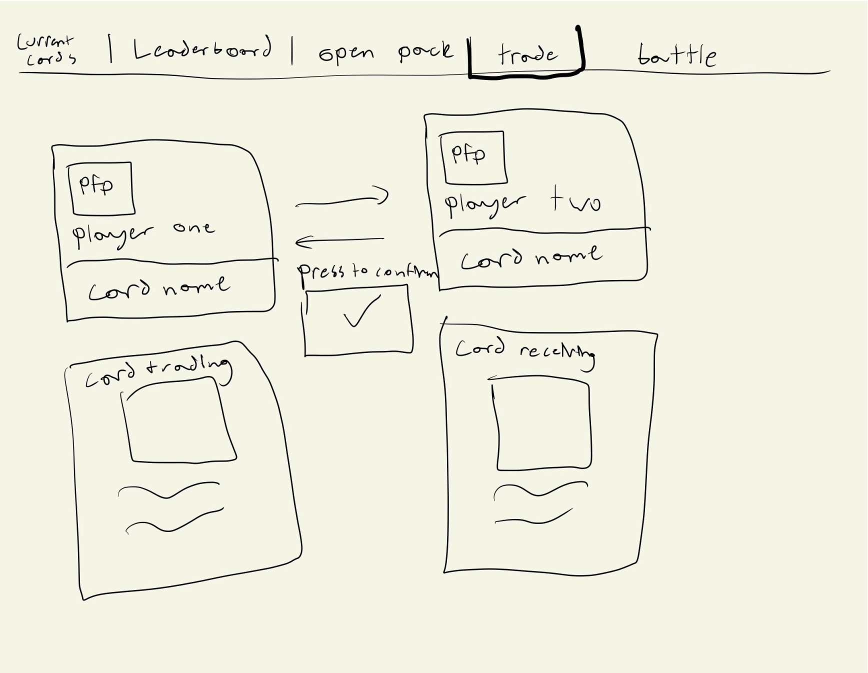
- Cam Mars: designed the front and back end of the register, login and home pages. Also designed the open pack page, deckbuilder page and worked on test cases for login. Helped work on the UI for collection, deckbuilder, trade and tutorial pages. Worked with HTML, CSS, HBS, JavaScript, NodeJS, Express
- Mati Abayneh : Designed the front end (HTML) of the trade page and most of the back end (Javascript) of the trade system that involved endpoints for offering, accepting, rejecting, and canceling trades. Also created the tutorial page using HTML and manually recorded and created all of the gifs using Ezgifs that accompanied the description of each feature.
- Victoria Davis : designed front and back end for leaderboard page, including dynamic loading, sorting, limiting, highlighting current user. Helped design original database schema. Modified small UI changes such as making error messages (on login/register and other features) red and tested features. Worked with HTML, CSS, HBS, JavaScript, NodeJS.
- Brendan Fisher: designed the back end and elements of the front end for the collection page, which included the interactive design of cards and the display of a card's real-life NBA or WNBA statistics. Helped improve quality of life features, such as buttons to transfer you from different pages and sort features for the collections page so that you can sort cards by their differences in game stats. Implemented more randomness to the battle to increase player engagement, which included the chance for a card to miss an attack as well as a chance to perform a critical strike. Worked with HTML, CSS, BHS, JavaScript
- Luca Chaia: Designed and implemented the core battle system, including API routes and the main battle loop logic. Created and integrated the re-roll feature to allow players to swap cards during battle. Developed the SQL tables needed to support the deckbuilding system, enabling users to customize which cards they bring into each match. Built the automated "bot" battle system and developed a beta version of a human-versus-human battle system using Socket.io for real-time interactions. Worked with PostgreSQL, JavaScript, Node.js, Express, HTML, CSS, Handlebars, and Socket.io.
- Bodhi Rubinstein: Designed and cleaned the 3rd party database from Kaggle, created the database population script to create all players and cards on service startup, including the calculation of their in game stats from their league stats. Developed trades page to transfer ownership and validate trades, as well as display incoming, outgoing, and accepted trades properly. Created all visual cards in photoshop from in game statistics, using a database of headshots and a card template. Added the visual cards to the collection, open pack, trades, battle, and deck builder pages with added animations and interactivity.

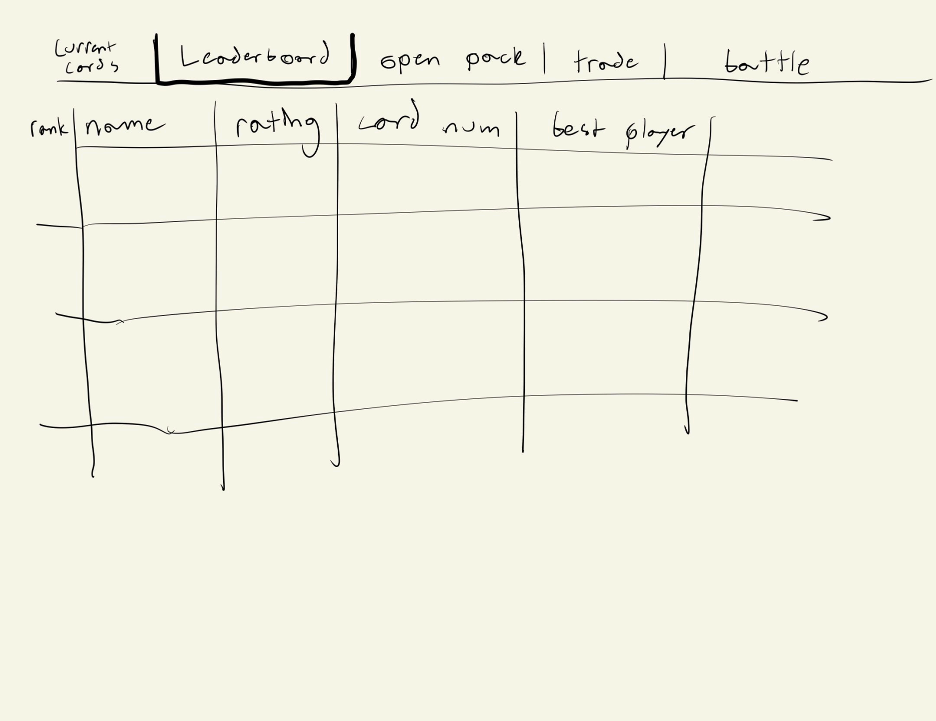
Use case diagram:


PowerPlay System
User
Register/ Log In
View Collection
Trade Hub
Search for Cards/Users
Initiate/ Manage Trades
Open Packs
Battle
View Leaderboard

Wireframes:

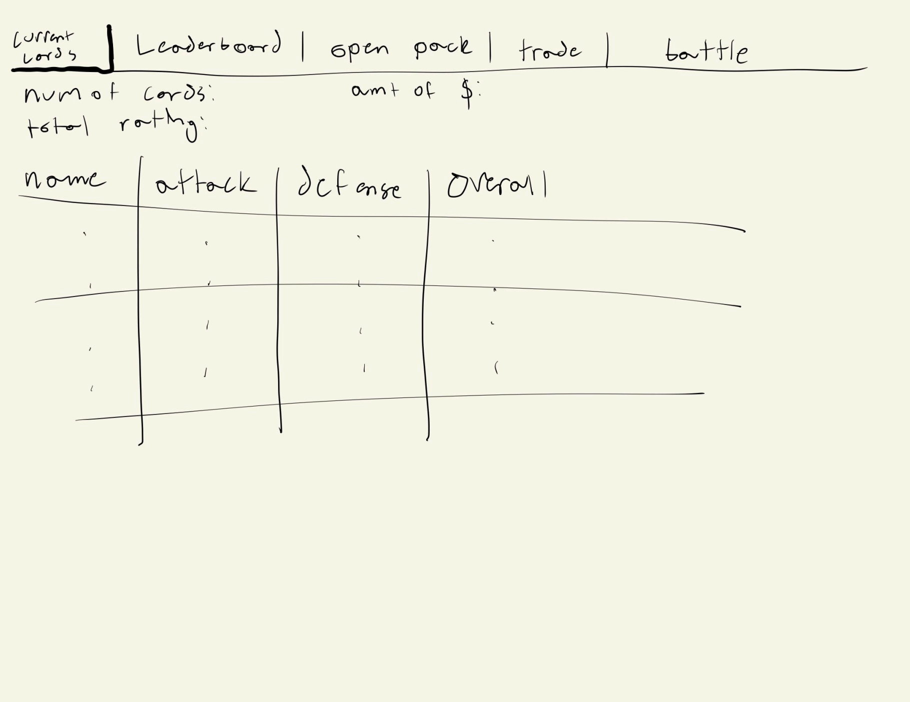

Current cards
Leaderboard
open pack
trade
battle
myUsername:
cards remaining:
oppUsername:
cards remaining:
c1
c2
c3
c4
c5
c6
your card
opp card
press to roll


Current cards
Leaderboard
open pack
trade
battle
pfp
player one
card name
pfp
player two
card name
press to confirm
card trading
card receiving



Current cards | Leaderboard | open pack | trade | battle

rank	name	rating	card num	best player

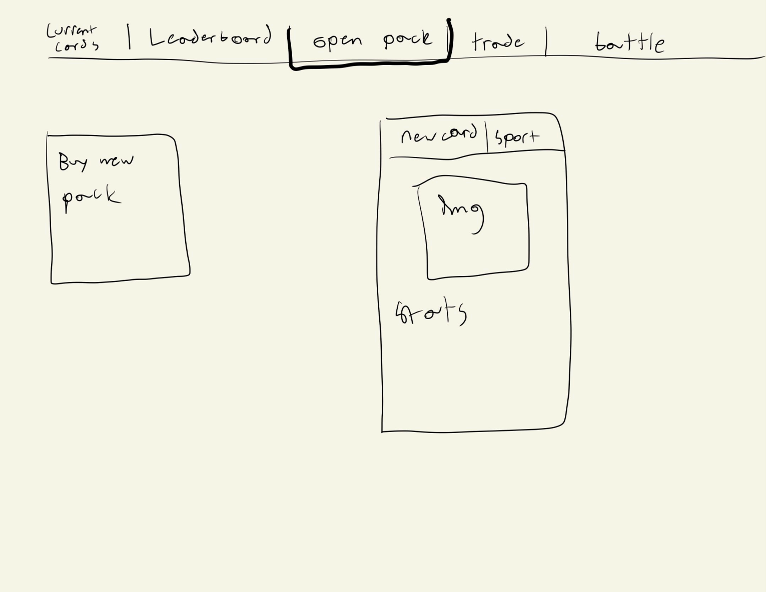


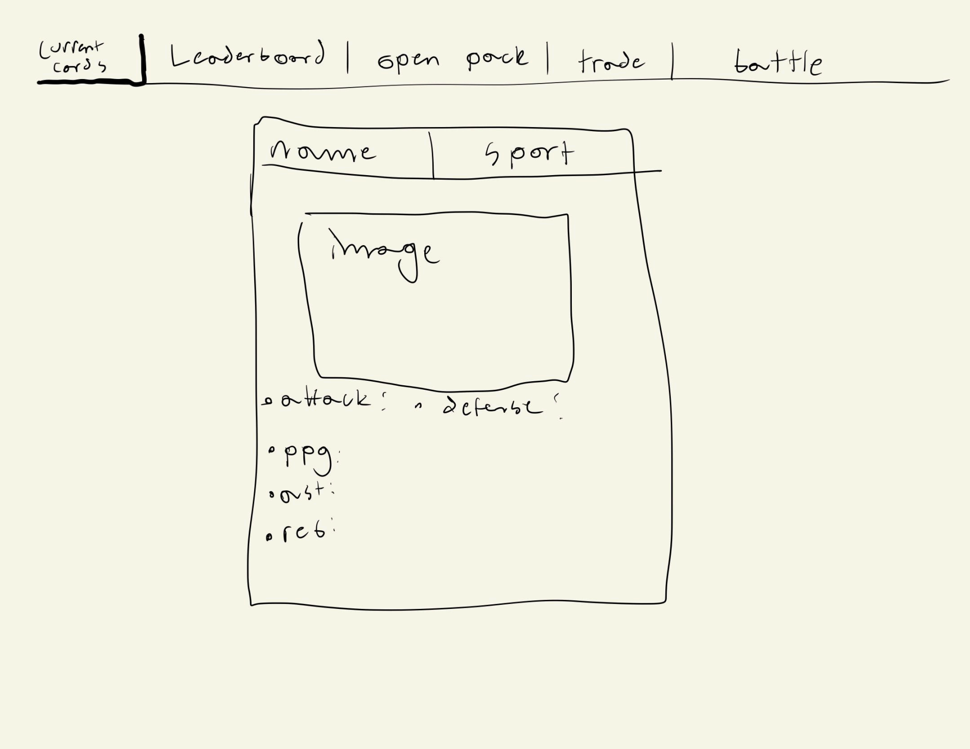
Current cards | Leaderboard | open pack | trade | battle

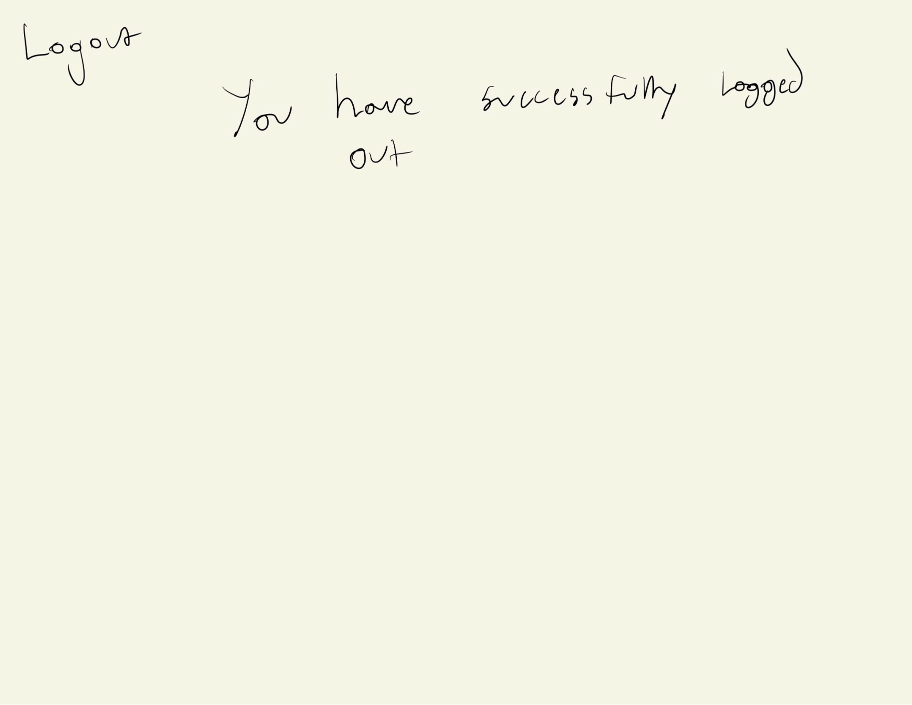
num of cards: amt of $:

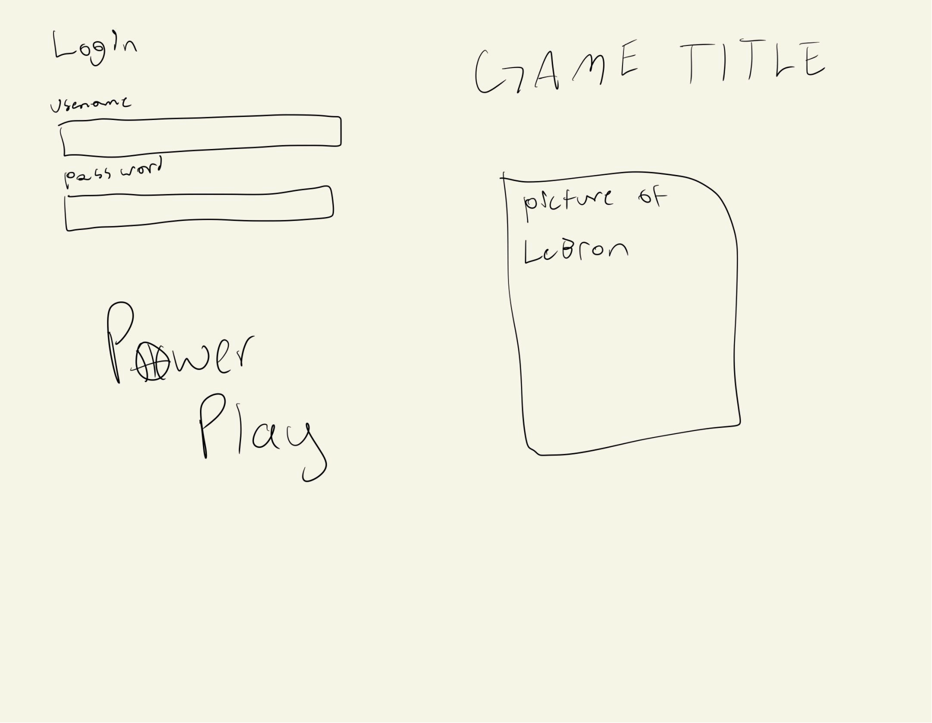
total rating:

name	attack	defense	Overall


Current cards
Leaderboard
open pack
trade
battle
Buy new pack
new card
sport
Img
Stats


Current cards
Leaderboard
open pack
trade
battle
name
sport
image
attack:
defense:
ppg:
ast:
reb:





Test Case Results:
Test 1: If a new username is entered, or the user clicks “Register here”, the user is redirected to the register page.

Result: At the opening website, the user clicked “Register here,” and didn’t try to use a new username in the “Login” page. They said this was because on other websites they had used before, they wouldn’t be allowed to log in with a new username without registering first. This is consistent with the use case, as clicking on “Register here” did indeed redirect the user as expected. There is no deviation from the expected action, but if there was (when the user enters a new username), they are redirected as expected. When testing originally, we did use this to change the color of the error message, as the password validation failure was originally green, which implied that the user did something correct.

Test 2: Upon successful login, the user is redirected to the home page.

Result: The users originally made rather short passwords with around four characters. Their reasoning was that they did not want to type out a long/more secure password. This is consistent with expectations, but deviates from many other websites. Although it is convenient to make a one character password, we used this input to add password validation which requires more standard “secure” passwords in order to create an account. This is overall consistent with our test, but the user input made us want to do more than just have a login that redirects to the home page.

Test 3: The user clicks the leaderboard tab.

Result: The users generally clicked through the tabs in the order they were displayed in the website header. They said they did this in order to explore the website and see what each page looked like and did before actually using the features. This was surprising to us, because we know the “flow” of the website well enough that we would have started in the open pack page rather than looking at them one by one. When they did open the leaderboard tab it did work as expected, but one of the users mentioned difficulty finding where they were on the leaderboard page. We used this feedback in two ways, we created a tutorial page that new users could start with to get familiar with the website, and also added a badge to the leaderboard page so the user could see where they were if they were on the leaderboard.

Test 4: The user wins a battle and navigates to the leaderboard page again.

Result: After winning a battle, the users that checked the leaderboard did see themselves at an updated ranking. Surprisingly to us, many clicked on the collection or deck builder page rather than the leaderboard page immediately after winning a battle. It seems like this was to see how they could do better than future battles. We did not use this to make changes to our application, as the leaderboard is intended to be checked on a less frequent basis than other pages.

Test 5: User clicks on the “Card 1” dropdown.

Result: When opening the deck builder page, most users started by naming their deck, typically “Deck #__”. Though this is not how we intended the feature, it did meet the users’ needs. They then would usually choose their first card. This displayed as expected, but the users wanted the card data (attack and defense) to be displayed in a more friendly way. We did change it to address this, but for the future scope of this project wanted to create a way to see the entire card if desired.

Test 6: User clicks the “Card 2” dropdown after selecting a “Card 1”

Result: Users did typically follow this flow, and when choosing their second card could not select a card that was used elsewhere in the deck. This is what we wanted, and although there were some users that wanted to create a deck with only their best card five times, they did agree that they did not expect to actually be able to. Therefore, we did not make changes to the application based on this.

Test 7: User clicks “Create Deck” button

Result: Most users actually did not try to create a deck without having assigned all of their cards first. It seems like this was a more intuitive feature of our website. We did test this ourselves, and found the expected behavior, that the website would not allow you to create a deck without choosing five cards first. When the dropdowns were cleared, there was a bit of confusion, so we updated the website to redirect the user to the collection page after creating a deck. In the future scope, we wanted to make it so that the user could actually look at their previously created decks in order to further develop this feature.

Deployment:

The App is deployed on Render.com and can be accessed via the link:

https://recitation-015-team-04-softdev.onrender.com/

Following this link, you will be taken to the login page for the website.