7th Level Putt Putt - Requirements

1. Introduction & Context

A company has come to Cache Valley looking to start an interactive mini golf tournament experience. This project aims to build a system that allows a Sponsor to initiate a tournament and for Golfers to sign up, track their score, and order drinks from a Bartender.

A Manager will oversee the tournament, approving Sponsors and Bartenders, and deciding when the tournament is finished. When complete, the Golfers will see a final leaderboard ranking.

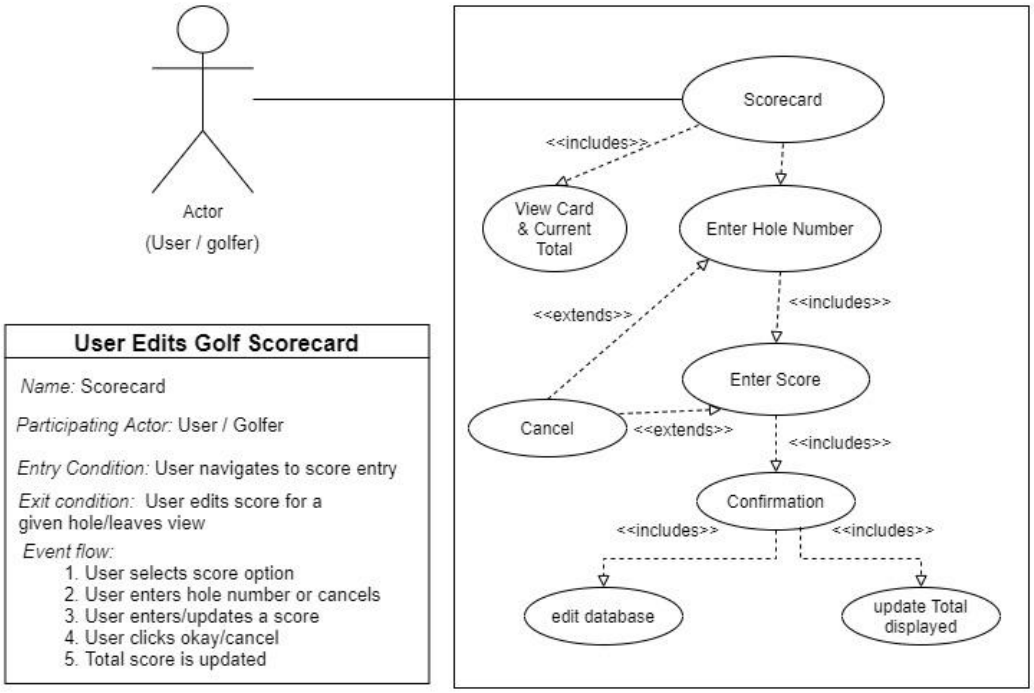
The Golfers can update their score on a hole-by-hole basis, allowing them to update existing scores. They can also order drinks from a menu curated by the Manager. The Bartender will receive an updated drink queue with each order, including the Golfer's name, current hole, and drinks. The Bartender will be able to update the drink status and fulfill these orders.

By offering an interactive mini golfing experience, the system will make the tournament more enjoyable and provide the Golfers with more insight and convenience during their game.

2. Users and their Goals

The following UML use case diagrams will describe the system's actors and the actors' goals.

Figure 1 - User Edits Golf Scorecard



User Edits Golf Scorecard

Name: Scorecard

Participating Actor: User / Golfer

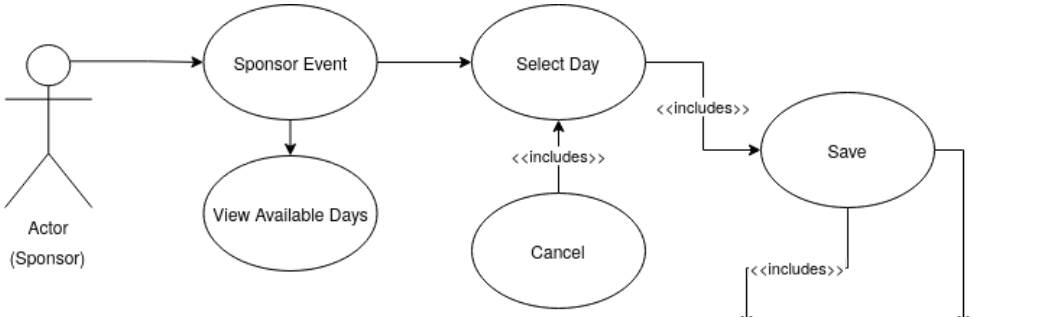
Entry Condition: User navigates to score entry

Exit condition: User edits score for a given hole/leaves view

Event flow:

1. User selects score option
2. User enters hole number or cancels
3. User enters/updates a score
4. User clicks okay/cancel
5. Total score is updated

Figure 2 - Company apply to sponsor



Company Sponsors Event Day

Name: Sponsor Event

Participant: Sponsor

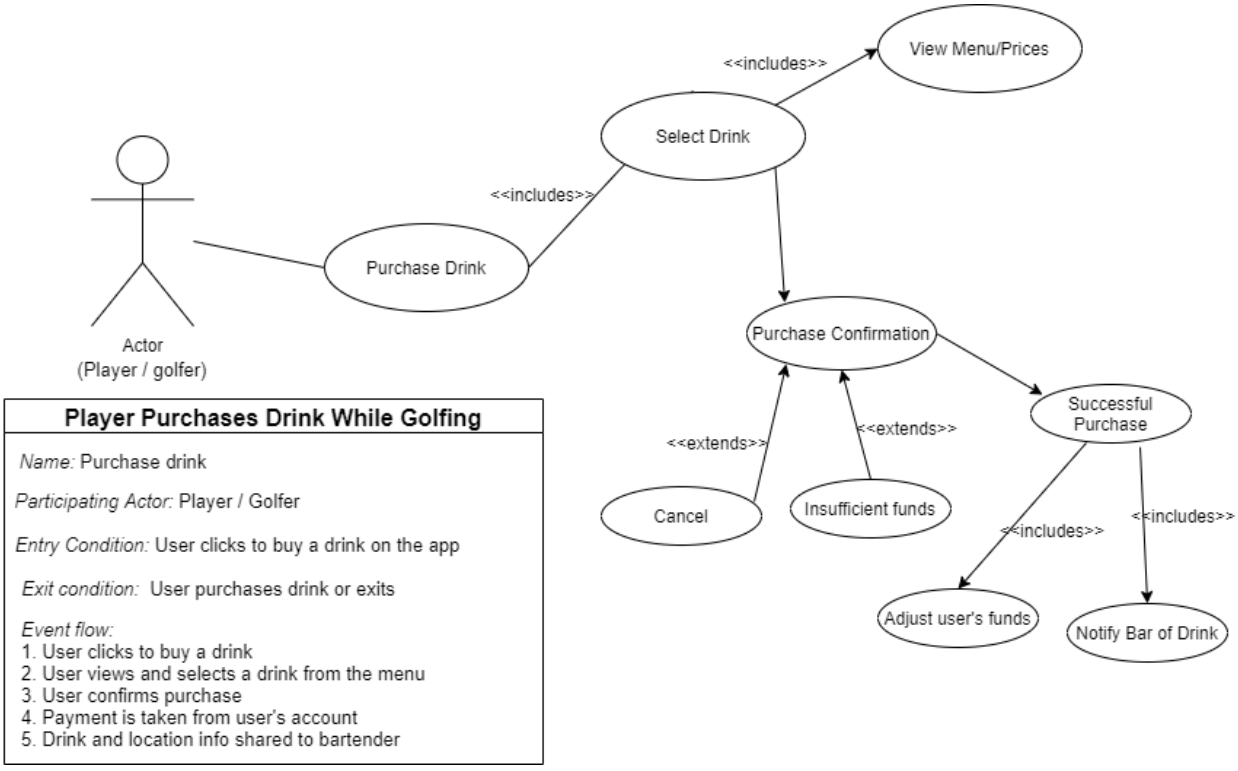
Entry Condition: Sponsor logs in

Exit Condition: User saves sponsorship for a specific day, or exits

Event Flow:

1. User Selects Reserve Day
2. User Selects an available day from list
3. User confirms selected day
4. Reservation database is updated and user is navigated back to dashboard

Figure 3 - User buys a drink



Player Purchases Drink While Golfing

Name: Purchase drink

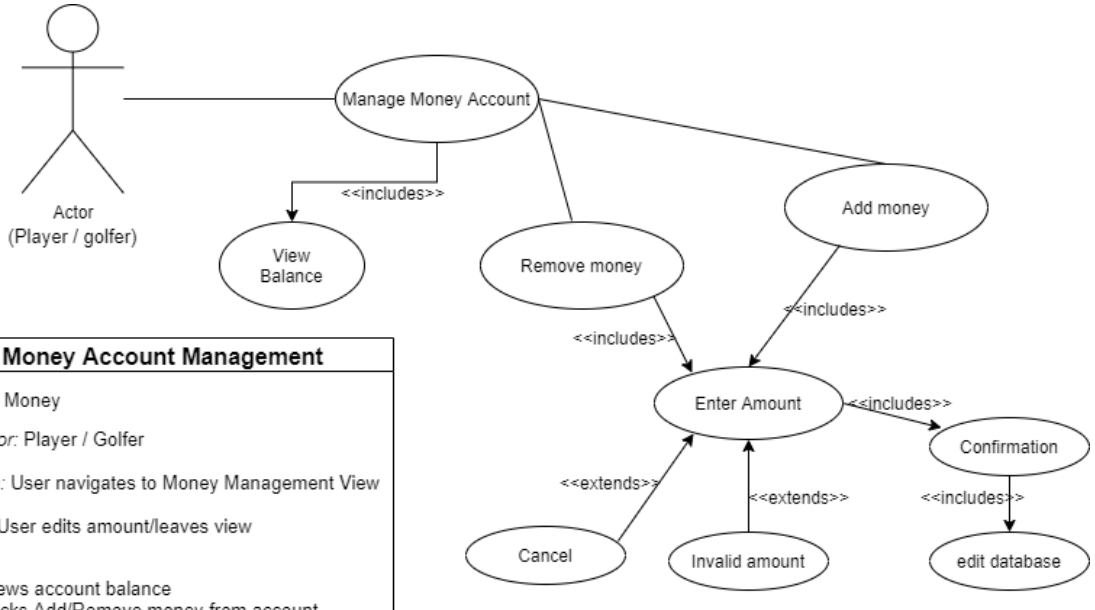
Participating Actor: Player / Golfer

Entry Condition: User clicks to buy a drink on the app

Exit condition: User purchases drink or exits

Event flow:
1. User clicks to buy a drink
2. User views and selects a drink from the menu
3. User confirms purchase
4. Payment is taken from user's account
5. Drink and location info shared to bartender

Figure 4 - User adds funds to account



Player Money Account Management

Name: Manage Money

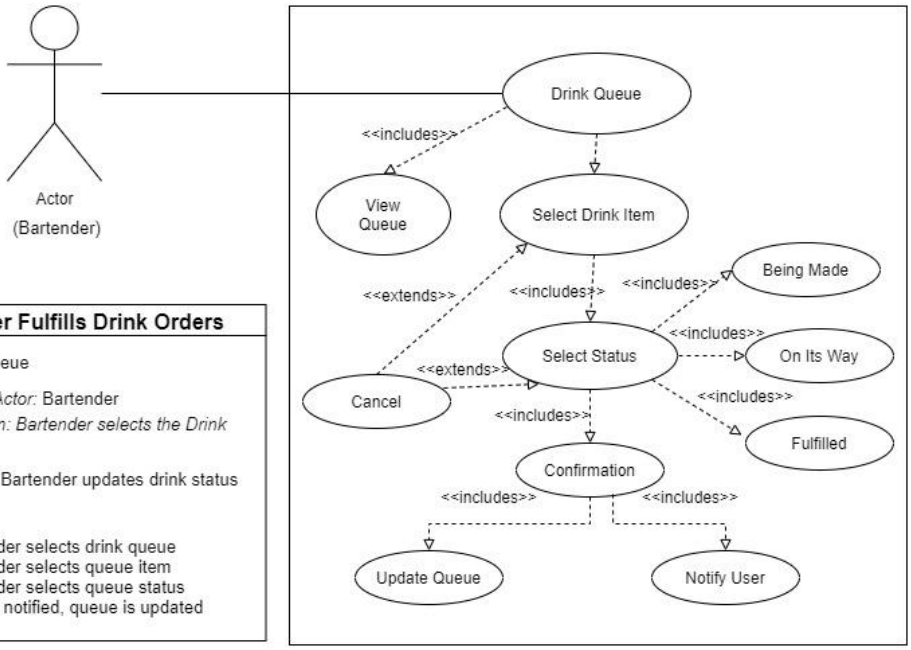
Participating Actor: Player / Golfer

Entry Condition: User navigates to Money Management View

Exit condition: User edits amount/leaves view

Event flow:
1. User views account balance
2. User clicks Add/Remove money from account
3. User enters the amount to be added/subtracted
4. User clicks okay
5. Balance is adjusted accordingly

Figure 5 - Bartender fulfills orders



Bartender Fulfills Drink Orders

Name: Drink Queue

Participating Actor: Bartender

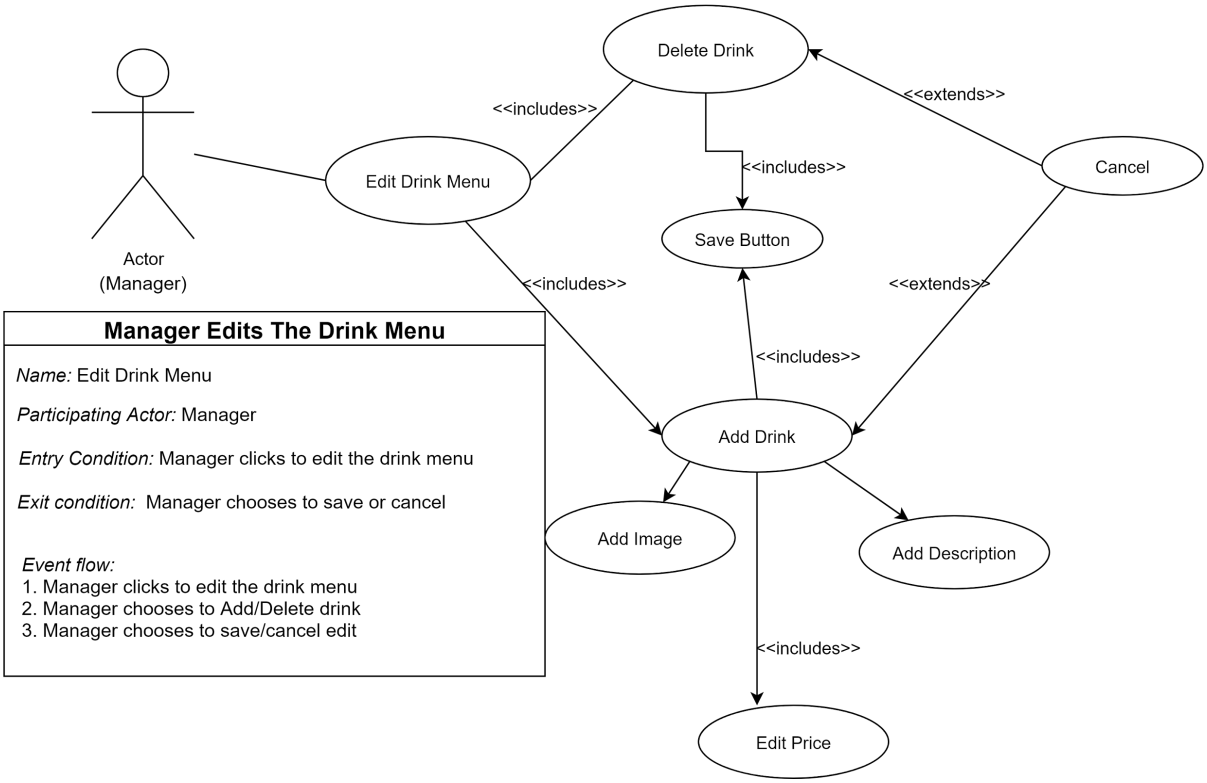
Entry Condition: Bartender selects the Drink Queue

Exit condition: Bartender updates drink status

Event flow:

1. Bartender selects drink queue
2. Bartender selects queue item
3. Bartender selects queue status
4. User is notified, queue is updated

Figure 6 - Manager edits drink menu



Manager Edits The Drink Menu

Name: Edit Drink Menu

Participating Actor: Manager

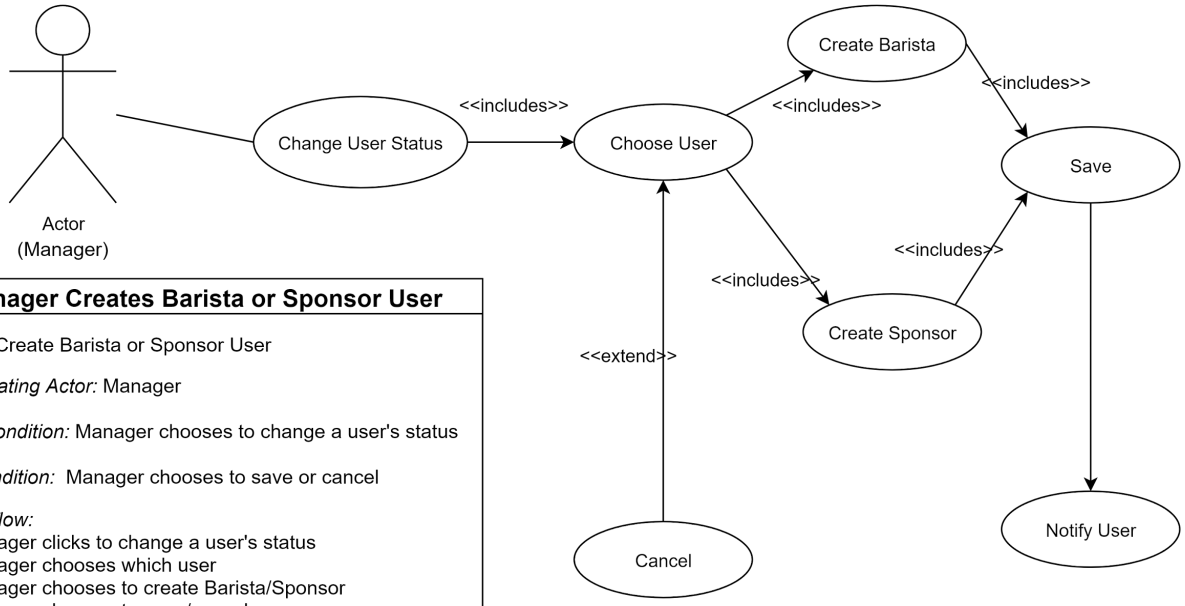
Entry Condition: Manager clicks to edit the drink menu

Exit condition: Manager chooses to save or cancel

Event flow:

1. Manager clicks to edit the drink menu
2. Manager chooses to Add/Delete drink
3. Manager chooses to save/cancel edit

Figure 7 - Manager creates barista or sponsor user



Manager Creates Barista or Sponsor User

Name: Create Barista or Sponsor User

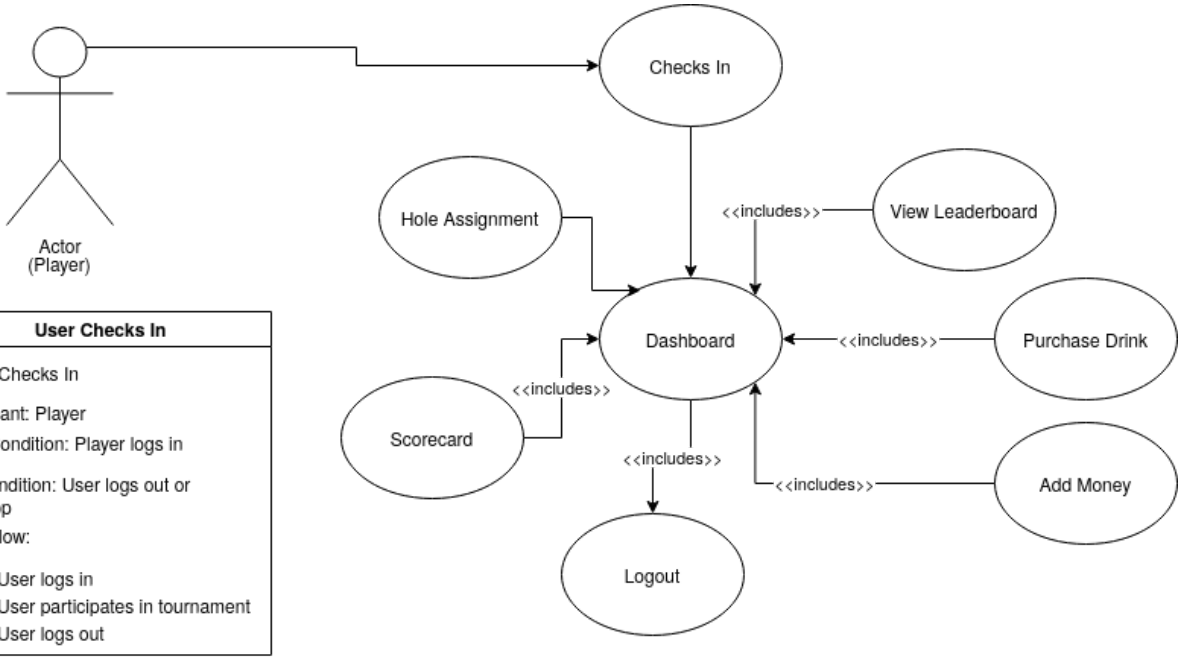
Participating Actor: Manager

Entry Condition: Manager chooses to change a user's status

Exit condition: Manager chooses to save or cancel

Event flow:
1. Manager clicks to change a user's status
2. Manager chooses which user
3. Manager chooses to create Barista/Sponsor
4. Manager chooses to save/cancel
5. User is notified if change occured

Figure 8 - User signs in to tournament



User Checks In

Name: Checks In

Participant: Player

Entry Condition: Player logs in

Exit Condition: User logs out or exits app

Event Flow:

1. User logs in
2. User participates in tournament
3. User logs out

3. Functional Requirements

To more easily designate between MUST, COULD, SHOULD, and WON'T, following scheme is used:

MUST is left as is
COULD is highlighted as so
SHOULD is highlighted as so
WON'T, the requirements don't include anything we won't do

1. User Authentication and Access
    - 1.1. The system must require all users to authenticate themselves before giving them access to the system
        - 1.1.1. On first login, the system must allow the user to create an account with a username and password
            - 1.1.1.1. The system must get user's email address during account creation
        - 1.1.2. On subsequent logins, the system must allow users to enter their username and password. If entered correctly, the user must be given access to the system. If entered incorrectly, the system must allow the user to try again.
    - 1.2. Users could have a combination of the following access rights: Player, Barista, Sponsor, and Manager
        - 1.2.1. Users with Player rights must have access to all Player features, See FR #2
        - 1.2.2. Users with Barista rights must have access to all Barista features, See FR #3
        - 1.2.3. Users with Sponsor rights must have access to all Sponsor features, See FR #4
        - 1.2.4. Users with Manager rights must have access to all Manager features, See FR #5
2. Player Features
    - 2.1. Players must be able to enter and play in a tournament
    - 2.2. Players must have the ability to keep track of their score on each hole
    - 2.3. Players should be able to view their ongoing score
    - 2.4. Player must be able to add funds into their account
    - 2.5. Players should be able to withdraw funds from their account
    - 2.6. Players must have the ability to buy a drink while on the course
    - 2.7. Players should be able to view a leaderboard with all players and their scores
3. Barista Features
    - 3.1. Barista must be able to view all orders
        - 3.1.1. Each order must list the player, the drink order, and the current hole the player is on
    - 3.2. After completing an order Barista must be able to mark the order complete
    - 3.3. If drink is unavailable Barista should be able to refund the drink

4. Sponsor Features
    4.1. Sponsor must be able to view and reserver available tournament days
    4.2. Sponsor should be able to upload an advertisement to show on its day
5. Manager Features
    5.1. Managers must be able to approve/decline sponsor tournament requests
    5.2. Manager must be able to add/remove barista user
    5.3. Manager must be able to add/remove sponsor user

4. Non-Functional Requirements

1. The system must use a database
    1.1. The system's database must store user account information, including the following fields: Username, Password, Email Address, Account Balance
    1.2. The system must store information about the tournaments represented in the system
    1.3. The system must store players' scores
2. The team should use the git version control system, with GitHub as a remote repository
3. The system must be deployable
    3.1. The system could be either locally hosted or hosted by a cloud service
4. The system's interface must be mobile device friendly

5. Future Features

This section contains a list of features that are beyond the scope of the project, but could be implemented in future versions.

1. View and track personal records and statistics of past games/tournaments
2. Sponsor or Manager selects the date of the tournament
3. Manager boots Golfer from tournament
4. Drinks are available in limited quantities
5. Sponsor uploads logo or advertisements
6. Projected total score based on the averages of the played holes
7. Dynamic leaderboard of Golfers in tournament
8. Alcoholic beverages for 21+ users
9. User selects tee time or start hole in numbered order

6. Glossary

This section contains a list of important terms and their definitions.

Bartender - the user that fulfills drink orders and delivers to the Golfer

Manager - the user that creates a Sponsor or Bartender user and edits the drink menu. Also determines when the tournament is done

Player/Golfer - the user that plays in the tournament by editing their scorecard, adding funds, and purchasing drinks

Sponsor - the user that sponsors the tournament

User - refers to any of the four types of users of the system (Bartender, Manager, Player/Golfer, Sponsor)