1. **Introduction**

This project aims to build a system for managing putt putt tournaments, drink ordering, and sponsorship for the company SipNChip.

The system will allow customers to enroll in a putt putt tournament and keep track of their scores when in the tournament. This system will also allow sponsors to sponsor a tournament, or request a tournament on a certain day for them to sponsor. Each user will also be allowed to order drinks from a menu, which will be made and delivered to the hole the player is on.

1. **Functional Requirements**
   1. The app must support several different user types.
      1. Managers must be capable of setting roles for each user, creating tournaments, approving requests from sponsors for tournaments, and editing the drink menu.
      2. Sponsors must be able to spend money from their account balance to sponsor an already existing tournament or submit a request for a tournament.
      3. Bartenders can view the list of current orders made by users for drinks and manage the list as drinks are completed.
      4. Players can sign up for tournaments, keep track of their score during tournaments, submit a score to the leaderboard after they finish the tournament, and order drinks from the bar using the app.
   2. The app must support accounts for each user where they can deposit money to be spent at the putt putt course.
      1. Each account must have authentication with a username and password when logging in.
      2. Users must be able to add any amount of money to their account.
         1. If a user attempts to spend money from their account but does not have enough money for that purchase, the user must be notified that the purchase could not be completed.
      3. When users make purchases at the putt putt course, they must use their account balance as payment.
      4. There must be a separate account unaffiliated with any single user belonging to the putt putt course company itself.
         1. All managers must have access to the company account balance.
         2. All purchases made by users must be paid to the company account balance.
         3. All refunds for drink purchases must be paid from the company account balance.
      5. The account must store the user type.
   3. The app must be able to host tournaments for the putt putt course.
      1. Tournaments must be 18 holes in length.
      2. Players must be able to sign up for tournaments the day they are held.
      3. Players must only be able to sign up for any particular tournament once.
         1. Players should be able to view which tournaments they signed up for that day.
      4. As players play through the tournament, they must be able to keep track of their scores for each hole using the app.
      5. Once players finish the tournament, their scores must be sent to a leaderboard that is publicly viewable by all players in that tournament.
         1. Players must submit their scores to the leaderboard once they complete the tournament.
            1. Players must not be able to submit their scores if one or more holes do not have a score entered.
      6. When a tournament is finished, the top 3 finishers in the tournament should receive a cash prize credited to their user account.
         1. 1st place should receive $100, 2nd place should receive $50, and 3rd place should receive $25.
      7. Managers must be the only users who can create or cancel tournaments.
      8. After a tournament is finished, the tournament should be archived for historical purposes.
         1. The tournament must be archived the day after it finishes.
         2. Managers must be able to view the entire list of archived tournaments.
         3. Players must be able to view a list of archived tournaments they participated in.
      9. The tournament must be able to handle multiple players playing on the course at the same time.
         1. As players move through the course inputting their score for each hole, their hole location must be automatically updated.
      10. Tournaments must be able to be sponsored by a sponsor.
          1. Sponsors must be able to choose a specific tournament to sponsor.
          2. Sponsors must be able to request a tournament to be held on a specific date.
          3. Managers must be able to approve requests from a sponsor to hold a tournament.
          4. When a sponsor sponsors a tournament or submits a request for a tournament, $500 must be deducted from the sponsor’s account balance and added to the company account balance.
   4. Users must be able to order drinks from the bar using the app.
      1. There must be a menu of available drinks for users to order.
         1. The cost of each drink must be specified on the menu.
      2. The users must be able to specify how many of each drink they wish to order.
      3. Managers must be able to add or delete drinks on the menu of available drinks.
      4. Before a drink order is sent to the order list, the cost of the order must be subtracted from the user’s account and added to the company account.
      5. After a drink order is placed, it must be sent to a list of current orders.
         1. Only bartenders and managers can view this list.
         2. This list must automatically update as new orders arrive.
         3. The order list must have the drinks ordered, the user’s name, and the player’s current hole number, if a player.
         4. Bartenders and managers must be able to mark an order as complete.
      6. Users should be able to cancel a drink order they placed before it is completed.
         1. If a user cancels their drink order, the cost of the order must be refunded to their account balance from the company account balance.
      7. When drink orders are completed, if the user is a player currently in a tournament, a notification is sent to that player letting them know their drink order is being delivered to their current hole.
         1. Otherwise, the notification instead states that the order is complete and is ready for pickup at the bar.
      8. If a drink order is cancelled by the user who placed it, the order list must receive a notification stating the order was cancelled by the user.
2. **Non-functional Requirements**
   1. The app must be an HTML website created using the Python framework Django.
      1. The web page must be easy to use on a smartphone.
   2. The website must consist of several webpages, each of which perform a discrete task.
      1. There must be a webpage publicly available for users to create a player account.
      2. There must be a webpage where managers can view a list of all users and set user roles.
      3. There must be a webpage for adding money to a user’s account.
      4. There should be a webpage where players can view a list of tournaments being held that day.
      5. Each player should have access to a personal webpage where they can view tournaments they are registered for.
      6. Each player should input their score through a personal webpage that tracks only their score.
      7. The leaderboard for each tournament should be accessed on a separate webpage that is redirected to by the browser from the unique score page once the player finishes.
      8. There must be a webpage where managers can access the list of current tournaments, and create or cancel them.
      9. There should be a webpage where the list of archived tournaments can be accessed.
      10. There should be a webpage where sponsors can access a list of existing future tournaments and select one to sponsor.
      11. There should be a webpage where sponsors can fill out a form to request a tournament on a specific date.
      12. There must be a webpage for ordering drinks.
      13. The order list is hosted on a webpage that must only be accessible by bartenders and managers.
      14. There must be a webpage where managers can edit the list of available drinks.
   3. The web page must depend on a locally hosted database created by Django for user accounts, lists of tournaments, leaderboards for tournaments, and a drink menu.
      1. All account usernames, passwords, types, and balances must be maintained in the database.
      2. The list of currently available tournaments must be maintained in the database.
      3. The list of archived tournaments should be maintained in the database.
      4. Each player’s current hole in a tournament must be maintained in the database.
         1. When players are not playing in a tournament, their current hole must be marked as a null value.
      5. The drink menu must be maintained on the database.
      6. The list of current drink orders must be maintained on the database.
   4. Players must use an incrementing/decrementing counter with a range of 1 to 5 to input their score during tournaments.
   5. The list of drink orders should have buttons for bartenders and managers to mark orders as complete.
   6. The list of available tournaments should have buttons that only show up for managers allowing them to cancel tournaments.
3. **Future Features**
   1. Players who are waiting for their next hole during a tournament could be notified by the app when they can continue.
   2. The app could be hosted in the cloud using a hosting service.
4. **Glossary**
   1. *Player -* a user that uses the system to register/play in tournaments and   
      order drinks.
   2. *Manager -* a user that organizes and oversees tournaments, drinks, and users.
   3. *Sponsor -* a user that can request tournaments to be made and pay to   
      sponsor a tournament.
   4. *Bartender -* a user that can view, make, and fulfill drink orders/requests.
   5. *User -* any type of user role of the system (Player, Manager, Sponsor, Bartender)