As a baseball fan, I want to be able to view a display of all information related to one baseball team so that I can learn more about their stadium location.

1. Description

- a. The program should display the information related to only one baseball team at a time.
- b. Information related to any other MLB teams is not displayed.
- c. Information displayed includes the following: stadium name, seating capacity, location, playing surface, team name, league, date opened, distance to center field, ballpark typology, and roof type.

2. Assumptions

- a. Each team that is viewable has stored information associated with it that can be retrieved, as listed previously.
- b. There is a selection option to change what team is currently being displayed.

3. Tasks

- a. Implement a way to select a team to view.
- b. Implement a way to retrieve all information associated with the currently selected team.
- c. Display all retrieved information.

4. Tests

- a. Verify that any user can view all necessary information associated with a team.
- b. Verify that only one team's information is being displayed at one time.
- c. Verify that changing the selected team will change the information being displayed to the correct associated data.

5. Done

- a. All information (stadium name, seating capacity, location, playing surface, team name, league, date opened, distance to center field, ballpark typology, roof type) associated with one team is successfully displayed and easily readable.
- b. No other team information is being displayed at the same time.
- c. The currently viewed team can be changed.

6. Assignee

- a. Nicholas
- 7. Estimate:
 - a. 3
- 8. Priority
 - a. S1

(#2)

As a Major League Baseball fan, I want to be able to view a list of major league teams and their stadiums sorted by either team name or stadium name so that I can easily find my favorite team's stadium.

1. Description

- a. The program should be able display a list of all major league team names and their corresponding stadiums in an order sorted by the team name.
- b. The program should be able to display a list of all major league team names and their corresponding stadiums in an order sorted by stadium name.

2. Assumptions

a. Each major league team has a stored, associated stadium name and vice versa.

3. Tasks

- a. Implement a way to display a list of all major league team names and their corresponding stadiums.
- b. Add an option for users to sort the list of names by either stadium name or team name.

4. Tests

- a. Verify that any user can view the sorted list of major league team names.
- b. Verify that changing the sorting option will re-sort the list of team names into the selected sorting order.

5. Done

- a. A list of all major league team names and their associated stadiums is displayed in an easily readable way.
- b. Options are accessible to the user to sort by either team name or stadium name.

6. Assignee

- a. Nicholas
- 7. Estimate:
 - a. 2
- 8. Priority
 - a. S1

(#3)

As an American League Baseball fan, I want to be able to view a list of American League teams and their stadiums sorted by team name so that I can easily find my favorite team's stadium.

1. Description

a. The program should be able display a list of all American League team names and their corresponding stadiums in an order sorted by the team name.

2. Assumptions

- a. American League teams are able to be identified and separated from all other teams so that only they are displayed.
- b. Each American League team has a stored, associated stadium name.

3. Tasks

- a. Filter through all stored team names to find only American League team names and stadiums.
- b. Implement a way to display a list of all American League team names and their corresponding stadiums.
- c. Sort the displayed list by team name.

- a. Verify that any user can view the sorted list of American League team names and their stadiums, sorted by team name.
- b. Ensure only American League teams are listed.

5. Done

- a. A list of all American League team names and their associated stadiums is displayed in an easily readable way.
- 6. Assignee
 - a. Huyang
- 7. Estimate:
 - a. 2
- 8. Priority
 - a. S1

(#4)

As a National League Baseball fan, I want to be able to view a list of National League teams and their stadiums sorted by stadium name so that I can easily find my favorite stadiums and their teams.

1. Description

a. The program should be able display a list of all National League team names and their corresponding stadiums in an order sorted by the stadium name.

2. Assumptions

- a. National League teams can be identified and separated from all other teams so that only they are displayed.
- b. Each National League team has a stored, associated stadium name.

3. Tasks

- a. Filter through all stored team names to find only National League team names and stadiums.
- b. Implement a way to display a list of all National League team names and their corresponding stadiums.
- c. Sort the displayed list by stadium name.

4. Tests

- a. Verify that any user can view the sorted list of National League team names and their stadiums, sorted by stadium name.
- b. Ensure only National League team names are displayed.

5. Done

- a. A list of all National League team names and their associated stadiums is displayed in an easily readable way.
- 6. Assignee
 - a. Huyang
- 7. Estimate:
 - a. 2
- 8. Priority
 - a. S1

(#5)

As a baseball stadium enthusiast, I want to be able to view a list of baseball stadiums, their corresponding team name, and their park typology sorted by park typology so that I can easily find the stadium type I am interested in.

- 1. Description
 - a. The program should be able display a list of all stored stadium names and their corresponding team names and park typology.
 - b. The list of stadiums will be sorted by park typology.
- 2. Assumptions
 - a. Stadiums stored and are associated with team names and a park typology.
- 3. Tasks
 - a. Retrieve all stored stadiums, their park typology, and their team.
 - b. Implement a way to display a list of all stadiums, their teams, and their park typology.
 - c. Sort the displayed list by park typology.
- 4. Tests
 - a. Verify that any user can view the sorted list of stadiums and their associated team and park typologies, sorted by park typology.
- 5. Done
 - a. A list of all stored stadiums, their team names, and their park typologies are displayed.
 - b. The list is sorted by park typology.
- 6. Assignee
 - a. Nicholas
- 7. Estimate:
 - a. 2
- 8. Priority
 - a. S1

(#6)

As a baseball fan, I want to be able to view a list of baseball teams that have an open roof so that I can easily find baseball teams with an open roof.

1. Description

- a. The program should be able display a list of all team names that have an open roof type, sorted by team name.
- b. The number of teams with an open roof type should also be displayed.

2. Assumptions

a. Baseball teams are stored and associated with a roof type.

3. Tasks

- a. Retrieve all teams which have an open roof type.
- b. Implement a way to display the list of all teams with an open roof type.
- c. Sort the displayed list by team name.
- d. Display the number of teams with an open roof type.

4. Tests

- a. Verify that any user can view the sorted list of team names which have an open roof type only.
- b. Verify that an accurate count of teams with an open roof type is displayed.

5. Done

- a. The list of all teams with an open roof type are displayed.
- b. The list is sorted by team name.
- c. The number of teams with an open roof is displayed.

6. Assignee

- a. Huyang
- 7. Estimate:
 - a. 2

8. Priority

a. S1

(#7)

As a baseball fan, I want to be able to view a list of baseball stadiums and their corresponding team names in chronological order of the date opened so that I can easily find older or newer stadiums.

1. Description

- a. The program should be able display a list of all stadiums, their corresponding team name, and the date the stadium was opened.
- b. The list should be sorted in chronological order, from oldest to newest, using the date opened.

2. Assumptions

a. Stadiums are stored and associated with a specific opened date and team name.

3. Tasks

- a. Implement a way to display the list of all stadiums, their teams, and their date opened.
- b. Sort the displayed list by date opened, oldest to newest.

- a. Verify that any user can view the sorted list of stadium names and their corresponding team names and date opened.
- b. Verify that the list is sorted in chronological order by date opened.

5. Done

- a. The list of all stadiums and their corresponding team names and their date opened are displayed.
- b. The list is sorted by date opened.

6. Assignee

- a. Nicholas
- 7. Estimate:
 - a. 2
- 8. Priority
 - a. S1

(#8)

As a baseball fan, I want to be able to view a list stadiums and their corresponding team names sorted by seating capacity so that I can easily find stadiums with certain seating capacities.

1. Description

- a. The program should be able display a list of all stadiums, their corresponding team name, and their seating capacity.
- b. The list should be sorted by seating capacity, from smallest to largest.
- c. The total seating capacity of all listed stadiums should be displayed.

2. Assumptions

a. Stadiums are stored and associated with a specific seating capacity and team name.

3. Tasks

- a. Implement a way to display the list of all stadiums, their teams, and their seating capacity.
- b. Sort the displayed list by seating capacity, smallest to largest.

4. Tests

- a. Verify that any user can view the sorted list of stadium names and their corresponding team names and seating capacity.
- b. Verify that the list is sorted in increasing order by seating capacity.

5. Done

- a. The list of all stadiums and their corresponding team names and their seating capacity are displayed.
- b. The total capacity is displayed.
- c. The list is sorted by seating capacity.

6. Assignee

a. Behrad

- 7. Estimate:
 - a. 3
- 8. Priority
 - a. S1

(#9)

As a baseball fan, I want to be able to view only the stadiums and their teams that have the greatest distance to center field so that I can easily see which stadiums have the greatest distance to center field.

1. Description

- a. The program should be able display only stadiums with the greatest distance to center field, their corresponding team name, and their distance to center field.
- b. There may be only one stadium with the greatest distance to center field, or there may be several sharing the same greatest distance.

2. Assumptions

a. Stadiums are stored and associated with a specific distance to center field and team name.

3. Tasks

- a. Find the stadium(s) with the greatest distance to center field.
- b. Implement a way to display that list of stadiums, their teams, and their distance to center field.

4. Tests

- a. Verify that any user can view a list of only the stadium(s) with the greatest distance to center field, their team name, and their distance to center field.
- b. Verify that the displayed stadium(s) have a greater distance to center field than all other unlisted stadiums.

5. Done

a. Stadium(s) with the greatest distance to center field are displayed.

6. Assignee

- a. Amin
- 7. Estimate:
 - a. 2

8. Priority

a. S1

(#10)

As a baseball fan, I want to be able to view only the stadiums and their teams that have the smallest distance to center field so that I can easily see which stadiums have the smallest distance to center field.

1. Description

- a. The program should be able display only stadiums with the smallest distance to center field, their corresponding team name, and their distance to center field.
- b. There may be only one stadium with the smallest distance to center field, or there may be several sharing the same smallest distance.

2. Assumptions

a. Stadiums are stored and associated with a specific distance to center field and team name.

3. Tasks

- a. Find the stadium(s) with the smallest distance to center field.
- b. Implement a way to display that list of stadiums, their teams, and their distance to center field.

4. Tests

- a. Verify that any user can view a list of only the stadium(s) with the smallest distance to center field, their team name, and their distance to center field.
- b. Verify that the displayed stadium(s) have a smaller distance to center field than all other unlisted stadiums.

5. Done

a. Stadium(s) with the smallest distance to center field are displayed.

6. Assignee

- a. Amin
- 7. Estimate:
 - a. 2

8. Priority

a. S1

(#11)

As a baseball fan, I want to be able to plan a trip to teams of my choice starting at the Dodger Stadium so that I can visit my favorite baseball teams.

1. Description

- a. The trip will begin at the Dodger Stadium with the Los Angeles Dodgers and will continue to visit any other teams selected by the user.
- b. The trip will travel the shortest possible distance between stadiums.
- c. The total distance travelled in the trip will be displayed.
- d. This trip should be implemented using Dijkstra's or the A* algorithm.

2. Assumptions

- a. Team and stadium information is stored and accessible by the program.
- b. The user will select at least one other team to visit.

3. Tasks

a. Allow selection of any available baseball teams to visit other than the Los Angeles Dodgers.

- b. Implement Dijkstra's or the A* algorithm to find traverse the route between teams' stadiums in the shortest distance.
- c. Display the total distance traveled at the end of the trip.

- a. Verify that any selection of teams will create a route and allow it to be completed.
- b. Ensure that the shortest distance is traveled between stadiums.
- c. Verify that an accurate total travel distance is displayed.

5. Done

- a. Option to begin planning the trip starting from the Dodger Stadium and Los Angeles Dodgers team is accessible.
- b. A list of other teams to visit can be selected from and included in the trip.
- c. The trip visits all included teams and is done in the shortest distance.
- d. The total distance traveled is displayed.
- 6. Assignee
 - a. Amin, Behrad
- 7. Estimate:
 - a. 13
- 8. Priority
 - a. S2

(#12)

As a baseball fan, I want to be able to plan a trip starting at my choice of team and visiting all other teams I choose so that I can plan my dream vacation.

1. Description

- a. The trip will begin at the selected starting team.
- b. The trip will take place using the order specified using the shortest path.
- c. The total distance traveled in the trip will be displayed.

2. Assumptions

- a. Team and stadium information is stored and accessible by the program.
- b. The user will select a starting team and at least one other team to visit.

3. Tasks

- a. Allow selection of any available baseball teams to visit first.
- b. Allow selection of any other number of baseball teams to visit in the trip following the starting team.
- c. Visit every selected team, starting at the specified first team, using the order specified using the shortest path.
- d. Display the total distance traveled at the end of the trip.

4. Tests

- a. Verify that any selection of teams will create a route and allow it to be completed.
- b. Ensure that the trip follows the order specified using the shortest path.
- c. Verify that an accurate total travel distance is displayed.

d. Ensure that the user cannot select a starting team and visit the same team again in the trip.

5. Done

- a. Option to begin the custom trip is accessible.
- b. A list of all available teams to visit can be selected from and included in the trip.
- c. The trip visits all included teams starting from the specified first team in the order specified using the shortest path.
- d. The total distance traveled is displayed.
- 6. Assignee
 - a. Amin, Behrad
- 7. Estimate:
 - a. 13
- 8. Priority
 - a. S2

(#13)

As a baseball fan, I want to be able to plan a trip to visit all available teams starting at Miami Marlins' stadium so that I can visit as many baseball teams as possible.

1. Description

- a. The trip will begin at the Miami Marlins team and visit every other available team, traveling the shortest distance.
- b. The stadium closest to the Miami Marlins will be chosen, then the stadium closest to that, and so on.
- c. The total distance travelled in the trip will be displayed.

2. Assumptions

a. Team and stadium information is stored and accessible by the program.

3. Tasks

- a. Begin the trip at the Miami Marlins team stadium.
- b. Create the trip and travel between all other teams in the shortest distance possible between stadiums.
- c. Display the total distance traveled at the end of the trip.

4. Tests

- a. Verify that the trip begins with the Miami Marlins and visits every other team available.
- b. Ensure that the shortest distance is traveled between stadiums.
- c. Verify that an accurate total travel distance is displayed.

5. Done

- a. Option to begin planning the trip starting from the Miami Marlins team stadium is accessible.
- b. The trip visits all other available teams and is done in the shortest distance.
- c. The total distance traveled is displayed.

- 6. Assignee
 - a. Amin, Behrad
- 7. Estimate:
 - a. 13
- 8. Priority
 - a. S2

(#14)

As a baseball fan, I want to be able to plan a trip starting at my choice of team and visiting all other teams I choose in the most efficient order so that I can plan my dream vacation.

1. Description

- a. The trip will begin at the selected starting team.
- b. The trip will travel between all other team stadiums in the most efficient order, recursively choosing the team closest to the previous team.
- c. The total distance traveled in the trip will be displayed.

2. Assumptions

- a. Team and stadium information is stored and accessible by the program.
- b. The user will select a starting team and at least one other team to visit.

3. Tasks

- a. Allow selection of any available baseball teams to visit first.
- b. Allow selection of any other number of baseball teams to visit in the trip following the starting team.
- c. Visit every selected team, starting at the specified first team, in the most efficient order recursively.
- d. Display the total distance traveled at the end of the trip.

4. Tests

- a. Verify that any selection of teams will create a route and allow it to be completed.
- b. Ensure that the trip uses the most efficient order.
- c. Verify that an accurate total travel distance is displayed.
- d. Ensure that the user cannot select a starting team and visit the same team again in the trip.

5. Done

- a. Option to begin the custom trip is accessible.
- b. A list of all available teams to visit can be selected from and included in the trip.
- c. The trip visits all included teams starting from the specified first team in the most efficient order.
- d. The total distance traveled is displayed.

6. Assignee

a. 13

7. Estimate:

a. Amin, Behrad

8. Priority

a. S2

(#15)

As a baseball fan, I want to be able to view the minimum spanning tree (MST) connecting all MLB stadiums so that I can estimate my mileage when visiting all MLB stadiums.

1. Description

- a. The minimum spanning tree (MST) will be determined using *Prim's* or *Kruskal's* algorithm.
- b. The associated mileage will be displayed.

2. Assumptions

a. Team and stadium information is stored and accessible by the program.

3. Tasks

- a. Use *Prim's* or *Kruskal's* algorithm to find the minimum spanning tree connecting all stadiums.
- b. Display the total mileage associated with the minimum spanning tree.

4. Tests

- a. Verify that the tree produced is accurate.
- b. Verify that the correct total mileage associated with the tree is accurate.

5. Done

- a. Option to produce the tree and view its mileage is accessible.
- b. The minimum spanning tree produces an accurate mileage.

6. Assignee

- a. Huyang
- 7. Estimate:
 - a. 8
- 8. Priority
 - a. S2

(#16)

As a baseball fan, I want to be able to perform a DFS starting at Oracle Park so that I can estimate my mileage when visiting all MLB stadiums in this order.

1. Description

- a. A DFS beginning at Oracle Park, or the stadium of the San Francisco Giants, will be performed.
- b. Whenever there is a choice, the shortest distance will always be chosen.
- c. The associated mileage will be displayed.

2. Assumptions

a. Team and stadium information is stored and accessible by the program.

3. Tasks

- a. Perform a DFS starting at Oracle Park or the stadium of the San Francisco Giants.
- b. Allow the shortest distance to be chosen whenever a choice must be made.
- c. Display the total mileage associated.

4. Tests

- a. Verify that the DFS is accurately performed.
- b. Verify that the shortest distance is chosen when there is a choice.
- c. Verify that the starting point is the Oracle Park.
- d. Verify that an appropriate mileage is produced and displayed.

5. Done

- a. Option to perform the DFS starting at Oracle Park is accessible to a user.
- b. A mileage is produced using the DFS.
- c. The associated mileage is displayed.
- 6. Assignee
 - a. Behrad
- 7. Estimate:
 - a. 8
- 8. Priority
 - a. S2

(#17)

As a baseball fan, I want to be able to perform a BFS starting at Target Field so that I can estimate my mileage when visiting all MLB stadiums in this order.

1. Description

- a. A BFS beginning at Target Field, or the stadium of the Minnesota Twins, will be performed.
- b. Whenever there is a choice, the shortest distance will always be chosen.
- c. The associated mileage will be displayed.

2. Assumptions

a. Team and stadium information is stored and accessible by the program.

3. Tasks

- a. Perform a BFS starting at Target Field or the stadium of the Minnesota Twins.
- b. Allow the shortest distance to be chosen whenever a choice must be made.
- c. Display the total mileage associated.

4. Tests

- a. Verify that the BFS is accurately performed.
- b. Verify that the shortest distance is chosen when there is a choice.
- c. Verify that the starting point is the Target Field.
- d. Verify that an appropriate mileage is produced and displayed.

5. Done

a. Option to perform the BFS starting at Oracle Park is accessible to a user.

- b. A mileage is produced using the BFS.
- c. The associated mileage is displayed.
- 6. Assignee
 - a. Amin
- 7. Estimate:
 - a. 8
- 8. Priority
 - a. S2

(#18)

As a baseball fan, I want to be able to purchase multiple souvenirs and view information about my purchases so that I can have information about what I collect.

1. Description

- a. Multiple souvenirs can be purchased at any stadium.
- b. The number of souvenirs purchased at each stadium must be kept track of.
- c. The total amount spent at each stadium in a trip and the grand total for all stadiums visited must be displayed.

2. Assumptions

- a. Each stadium visited has an associated list of souvenirs that can be purchased.
- b. Each souvenir has a valid name and price.

3. Tasks

- a. Implement an option to purchase multiple souvenirs during any trip and from any stadium.
- b. Keep track of how many souvenirs are purchased.
- c. Keep track of how much is spent at each individual stadium in the trip.
- d. Calculate the grand total spent during the trip between all stadiums visited.
- e. Display all above information after the trip.

4. Tests

- a. Verify that souvenirs can be purchased from any stadium.
- b. Verify that all souvenirs associated with a stadium are displayed and able to be purchased.
- c. Verify the amount spent at each stadium, grand total of the trip, and number of souvenirs purchased at each stadium are all accurate.
- d. Verify that the display of the previous information is accurate and readable.
- e. Verify that more than one souvenir can be easily purchased.

5. Done

- a. Option to purchase souvenirs exists during any trip and at any stadium.
- b. Number of souvenirs purchased at each stadium, total spent at each stadium, and grand total spent in the trip are all tracked and displayed.

6. Assignee

a. Huyang, Nicholas

- 7. Estimate:
 - a. 13
- 8. Priority
 - a. S2

(#19)

As an administrator, I want to be able to log in using an encrypted password so that I can ensure administrative privileges are only available to verified individuals.

1. Description

- a. Any user can attempt to log in as an administrator from the main page.
- b. Attempting to log in will prompt the user for a password.
- c. The password will appear encrypted (text is not visible) while it is being input.
- d. Entering a valid password will grant the user administrative privilege for the duration of the program execution, or until they choose to log out.

2. Assumptions

- a. The program will recognize and accept the correct password.
- b. The program will keep track of the user's status as an administrator.

3. Tasks

- a. Implement an option to log in as an administrator using a password.
- b. Ensure the password is encrypted while it is being entered (not visible).
- c. Ensure the password grants administrative privileges if it is valid.
- d. Allow the user to log out if they are an administrator.
- e. Notify the user if an invalid password is entered and do not grant them administrative privileges.

4. Tests

- a. Verify that the correct password is accepted.
- b. Verify that entering an incorrect password will not change the user's status.
- c. Verify that the user can log in or out.
- d. Verify that logging out as an administrator removes administrative privileges from the user.

5. Done

- a. Users are able to attempt to log in using an encrypted password.
- b. Valid passwords are accepted, invalid passwords are not.
- c. Administrators can choose to log out and lose their administrative privileges.

6. Assignee

- a. Nicholas
- 7. Estimate:
 - a. 1
- 8. Priority
 - a. S1

(#20)

As an administrator, I want to be able to modify stadium information so that I can maintain accurate information if a team moves to a new stadium.

1. Description

- a. Only administrators are able to modify stadium information.
- b. Stadium information that can be modified includes its capacity, stadium name, playing surface, roof type, ballpark typology, date opened, distance to center field, and location.

2. Assumptions

- a. The program can modify currently stored stadium information.
- b. The program will save any changes made so that they persist between program executions.

3. Tasks

- a. Implement options that only administrators can access to modify stadium information.
- b. Allow the administrators to modify any and all information related to a stadium.
- c. Ensure that changes made are saved and persist between executions.

4. Tests

- a. Verify that the option to modify stadium information is only available to an administrator.
- b. Verify that changing a stadium's information will save it between executions.

5. Done

- a. Administrators are able to view and access all information related to a stadium.
- b. Changes made to stadiums are saved until they are changed again.

6. Assignee

a. 8

7. Estimate:

a. Nicholas

8. Priority

a. S3

(#21)

As an administrator, I want to be able to add, delete, or modify traditional souvenirs so that I can maintain accurate information.

1. Description

- a. Only administrators are able to modify traditional souvenir information of any stadium.
- b. Souvenir information that can be modified includes its name and price.

- c. Traditional souvenirs can be deleted.
- d. New traditional souvenirs can be added.

2. Assumptions

- a. The program can modify currently stored souvenir information.
- b. The program can add or delete any souvenirs.
- c. The program will save any changes made so that they persist between program executions.

3. Tasks

- a. Implement options that only administrators can access to modify souvenirs.
- b. Allow the administrator to modify the name and price of a souvenir.
- c. Allow the administrator to add new souvenirs.
- d. Allow the administrator to delete any existing souvenirs.
- e. Ensure that changes made are saved and persist between executions.

4. Tests

- a. Verify that the option to add, delete, and modify souvenirs is only available to an administrator.
- b. Verify that changing a souvenir's information will save it between executions.

5. Done

- a. Administrators are able to view and access all information related to all souvenirs.
- b. Changes made to souvenirs, including adding or deleting souvenirs, are saved until they are changed again.

6. Assignee

- a. Nicholas
- 7. Estimate:
 - a. 8
- 8. Priority
 - a. S3

(#22)

As an administrator, I want to be able to add a new stadium from an input file so that I can keep up to date with current stadiums.

1. Description

- a. Only administrators are able to add new stadiums.
- b. The stadium(s) are added via an external input file.

2. Assumptions

- a. The program can read and store the information in the input file.
- b. The format of the input file will remain consistent.
- c. The program will save any changes made so that they persist between program executions.

3. Tasks

a. Implement options that only administrators can access to add a new stadium.

- b. Allow the administrator to add the new stadium(s) from an input file.
- c. Read from the input file and save the information about the new stadium.

- a. Verify that the option to add stadiums is only available to an administrator.
- b. Verify that the new stadium(s) are visible and accessible in all other features of the program.
- c. Verify that adding a stadium will save it between executions.

5. Done

- a. Administrators are able to add new stadiums.
- b. The new stadiums are read from an external input file.
- c. Added stadiums are saved and persist between executions.
- d. New stadiums behave exactly as previously existing stadiums throughout the program.
- 6. Assignee
 - a. Huyang
- 7. Estimate:
 - a. 8
- 8. Priority
 - a. S3