A list of all major league baseball stadiums resides at <http://en.wikipedia.org/wiki/List_of_Major_League_Baseball_stadiums>. A list of all the major league baseball teams reside at <http://mlb.com>. Your software team is to write a program that stores this data in a suitable data structure. (map, vector, list, heap, BST, tree, etc.) Your application will allow baseball fans to plan their dream vacation.

The initial souvenir list is a follows

1. Baseball cap $23.99
2. Baseball bat $45.39
3. Team pennant $15.99
4. Autographed baseball $19.99
5. Team jersey $85.99
6. Write at least 10 agile stories (including description, tasks, test scenarios, and story points) before any software development.
7. You should create a list of the major league stadiums by name in alphabetical order.
8. You should create a list of major league stadiums sorted by team name.
9. You should create a list of American League stadiums sorted by team name.
10. You should create a list of National League stadiums sorted by team name.
11. You should create a list of stadiums that have a grass surface sorted by team name.
12. You should create a list of stadiums in chronological order by date opened
13. You should create a list of stadiums sorted by seating capacity.
14. You should create a list of stadiums sorted by park typology.

**Planning a vacation:**

1. Design trips to visit each major league stadium travelling the shortest distance starting at Dodger stadium using *Dijkstra’s* algorithm (note: each trip begins at Dodger stadium).
2. Provide the capability for a baseball fan to plan his/her dream vacation by allowing a baseball fan to choose their starting stadium and all the other stadiums they would like to visit. Use *Dijkstra’s* algorithm to calculate the shortest distance for this dream vacation.
3. Determine the minimum spanning tree (MST) connecting all the major league stadiums using Prim’s or Kruskal’s algorithm. Calculate the associated mileage.
4. Provide the capability to track souvenirs purchased by the baseball fans on their trips and the corresponding costs.
5. Output the total revenue for each stadium including a grand total for all the stadiums.
6. Provide the ability to modify stadium information if a team moves into a new stadium. (administrator only) (Atlanta Braves are planning to move to a new stadium in 2017).
7. Provide the ability to add a new team and corresponding stadium if major league baseball decides to add new teams. (administrator only)
8. You should be able to randomly access any baseball stadium.
9. You should be able to modify (add/delete/change) the souvenirs list and their prices. (administrator only)

Please let me know your partners by March 28nd (three points will be deducted from your score if you do not meet this deadline). All projects are due by May 16th. **No late projects will be accepted.** Your team must demonstrate your project to me before it will be graded. Each teammate must identify their accomplishments on the project. Not all team members will necessarily earn the same score.

1. Design a very readable, easy to use interface to demonstrate your program.
2. Contingency handling should include addressing invalid input.
3. Write at least 10 agile stories (including description, tasks, test scenarios, and story points) before any software is developed. The team must follow the Scrum process (the Scrum master must document all meetings and the product owner must document the backlog).
4. Submit a UML class diagram, at least three use cases, and at least three state diagrams with your project.
5. Submit a test plan.
6. All changes must be persistent between executions.
7. Submit a paragraph discussing the **Big-Oh** of your project. Identify all the data structures used.
8. Each team must use a version control system, graphical user interface tool, automated documentation tool, and an Agile management tool. (GITHUB, DOXYGEN, WAFFIO.IO, QT, etc.)

The assignment will be graded using the following scale:



Schedule:

First checkpoint – April 18th – 5 points

Second checkpoint – May 2nd – 5 points

Final checkpoint – May 16th – 30 points

**Stadiums**

The information is in the following format:

- Stadium Name

- Team Name

- Street Address

- City, State, Zip

- Box Office #

- Date Opened

- Seating Capacity

- Surface

AMERICAN LEAGUE TEAMS:

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Angels Stadium of Anaheim

Los Angeles Angels of Anaheim

2000 E Gene Autry Way,

Anaheim, CA 92806

(714)940-2000

Opened – April 19, 1966

Capacity – 45,957

Grass

Comerica Park

Detroit Tigers

2100 Woodward Ave,

Detroit, MI 48201

(313) 962-4000

Opened – April 11, 2000

Capacity – 41,547

Grass

Fenway Park

Boston Red Sox

4 Yawkey Way,

Boston, MA 02215

(877) 733-7699

Opened – April 20, 1912

Capacity – 37,673

Grass

Globe Life Park in Arlington

Texas Rangers

1000 Ballpark Way,

Arlington, TX 76011

(817) 273-5222

Opened – April 1, 1994

Capacity – 48,114

Grass

Kauffman Stadium

Kansas City Royals

1 Royal Way

Kansas City, MO 64129

(816) 921-8000

Opened – April 10, 1973

Capacity – 37,903

Grass

Minute Maid Park

Houston Astros

501 Crawford St,

Houston, TX 77002

(713) 259-8000

Opened - March 30, 2000

Capacity – 421,574

Grass

O.co Coliseum

Oakland Athletics

7000 Coliseum Way

Oakland, CA 94621

(510) 569-2121

Opened - September 18, 1966

Capacity – 35,067

Grass

Oriole Park at Camden Yards

Baltimore Orioles

333 West Camden Street

Baltimore, MD 21201

(410) 685-9800

Opened - April 6, 1992

Capacity – 45,971

Grass

Progressive Field

Cleveland Indians

2401 Ontario Street

Cleveland, OH 44115

(216) 420-4487

Opened - April 2, 1994

Capacity – 37,675

Grass

Rogers Centre

Toronto Blue Jays

1 Blue Jays Way

Toronto, Ontario, Canada M5V1J3

+1 416-341-1000

Opened - June 3, 1989

Capacity - 49,282

Astro turf

SafeCo Field

Seattle Mariners

1516 First Avenue South

Seattle, WA 98134

(206) 346-4000

Opened - July 15, 1999

Capacity - 47,574

Grass

Target Field

Minnesota Twins

353 N 5th St

Minneapolis, MN 55403

(800) 338-9467

Opened - April 12, 2010

Capacity - 39,021

Grass

Tropicana Field

Tampa Bay Rays

1 Tropicana Dr

St. Petersburg, FL 33705

(727) 825-3137

Opened - March 3, 1990

Capacity - 31,042

Astro turf

US Cellular Field

Chicago White Sox

333 West 35th Street

Chicago, IL 60616

(312) 674-1000

Opened - April 18, 1991

Capacity - 40,615

Grass

Yankee Stadium

New York Yankees

1 E 161st St

South Bronx, NY 10451

(718) 293-4300

Opened - April 16, 2009

Capacity – 49,642

Grass

NATIONAL LEAGUE TEAMS:

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AT&T Park

San Francisco Giants

24 Willie Mays Plaza

San Francisco, CA 94107

(415) 972-2000

Opened - April 11, 2000

Capacity - 41,915

Grass

Busch Stadium

St. Louis Cardinals

700 Clark Street

St. Louis, MO 63102

(314) 345-9600

Opened - April 10, 2006

Capacity – 43,975

Grass

Chase Field

Arizona Diamondbacks

401 East Jefferson Street

Phoenix, AZ 85004

(602) 462-6500

Opened - March 31, 1998

Capacity - 48,519

Grass

Citi Field

New York Mets

126th St. & Roosevelt Ave.

Queens, NY 11368

(718) 507-6387

Opened - April 13, 2009

Capacity - 41,922

Grass

Citizens Bank Park

Philadelphia Phillies

1 Citizens Bank Way

Philadelphia, PA 19148

(215) 463-1000

Opened - April 3, 2004

Capacity - 43,651

Grass

Coors Field

Colorado Rockies

2001 Blake St

Denver, CO 80205

(303) 292-0200

Opened - April 26, 1995

Capacity - 50,398

Grass

Dodger Stadium

Los Angeles Dodgers

1000 Elysian Park Avenue

Los Angeles, CA 90090

(323) 224-1507

Opened - April 10, 1962

Capacity - 56,000

Great America Ball Park

Cincinnati Reds

100 Joe Nuxhall Way

Cincinnati, OH 45202

(513) 381-7337

Opened - March 31, 2003

Capacity - 42,319

Grass

Marlins Park

Miami Marlins

501 Marlins Way

Miami, FL 33125

(305)480-1300

Opened - April 4, 2012

Capacity – 36,742

Grass

Miller Park

Milwaukee Brewers

1 Brewers Way

Milwaukee, WI 53214

(414) 902-4400

Opened - April 6, 2001

Capacity - 41,900

Grass

Nationals Park

Washington Nationals

1500 S Capitol St SE

Washington, DC 20003

(202) 675-6287

Opened - March 30, 2008

Capacity - 41,888

Grass

Petco Park

San Diego Padres

19 Tony Gwynn Drive

San Diego, CA 92101

(619) 795-5000

Opened - April 8, 2004

Capacity – 41,164

Grass

PNC Park

Pittsburgh Pirates

115 Federal St

Pittsburgh, PA 15212

(412) 321-2827

March 31, 2001

Capacity - 38,362

Grass

Turner Field

Atlanta Braves

755 Hank Aaron Drive

Atlanta, GA 30315

(404) 522-7630

Opened - March 29, 1997

Capacity - 49,586

Grass

Wrigley Field

Chicago Cubs

1060 West Addison Street

Chicago, IL 60613

(773) 404-2827

Opened - April 23, 1914

Capacity - 42,495

Grass