# Excel Project

# Background

- Your hometown minor league baseball team has decided to build a new baseball park. The land has been purchased, and a construction company, Field of Dreams Corporation, has been hired to build the park. Field of Dreams has hired you to provide decision support during the ballpark's design phase.

# Current Stadium

- The team's current stadium was built for baseball and football.
- It has an enclosed oval shape, with seating around the entire circumference.
- When filled to capacity, the park can accommodate 70,000 people.
- Football crowds can fill the stadium to capacity.
- Baseball games, however, don't fill the stadium to capacity: usually 30,000-40,000 fans attend each game. Crowds of more than 50,000 fans are rare.

# New Park

- The new park will be for baseball only.
- Unlike the old stadium, it will not be oval in shape, nor will it have seating all around its periphery.
- Rather, it will be U-shaped, like a horseshoe.
- Home plate would be at the closed end of the U.
- Seating would be all around the U, but there would be no seats at the open end.

# Detentions

- Field of Dreams' engineers have calculated the length around the U (again, leaving out the open part) as 1375 feet from the left-field foul pole tip to the right-field foul pole tip.
- The engineers plan to build a stadium that has 100 rows of seats that extend back and up from the playing field.

# Assumptions

- In fact, the geometry of a stadium is such that the row closest to the playing field (row 1) is shorter in length than the row farthest from the playing field (row 100).
- However, some of those rows are broken by equipment, exits, and concessions, so to simplify calculations for this study; you can assume that each of the 100 rows is 1375 feet in length.

# Kinds of Seats

- The construction engineers plan to install four kinds of seats:
  - **Box Seats** are the rows of seats closest to the playing field and are usually considered the most desirable.
  - **Red Seats** are the rows of seats in the next level up.
  - **Blue Seats** are the rows of seats in the level above the red seats.
  - **Yellow seats** are the farthest rows up and away from the playing field. These are the least desirable seats because they are the farthest from the field.
  - Note: **General Admission,** at the open end of the U, will not have any structured seating but can accommodate 1000 people.

# Pricing

- Traditionally in baseball parks, the seats closest to the playing field cost the most, and the new park will follow this rule.
- Thus, the most well-to-do fans (or those who are truly fanatical about the game) buy the seats closest to the field, and those who are least well-to-do (or just do not want to pay very much for a ticket) sit farthest away.

# Pricing

- Admission ticket prices per game, by seat type:
  - Box Seats $50
  - Red Seats $35
  - Blue Seats $25
  - Yellow Seats $20
  - General Admission (grass) $10

# Seat Widths

- The seat types differ by more than just paint color and their positions in the ballpark.
- The most-expensive seats will be the widest and, therefore, the most comfortable.
- The least-expensive seats will be the narrowest and, therefore, the least comfortable.

# Width of Seats

- The width of the seats in feet, by seat type:
  - Box Seats 3.50
  - Red Seats 3.25
  - Blue Seats 3.00
  - Yellow Seats 2.75
- Thus, because of seat widths, the number of seats in a Box Seat row will be fewer than the number of seats in a Red Seat row, and so on.

# Other Revenue

- People who come to ballgames usually buy souvenirs and food.
- In fact, many fans spend more money buying souvenirs and food than they do buying their admission thicket.
- The team's research department has determined that there is a correlation between where fans sit and how much they spend on souvenirs and food.

# Concessions

- The average expenditures per game:
  - Box Seats $30
  - Red Seats $25
  - Blue Seats $15
  - Yellow Seats $10
  - General Admission $5

# Parking

- The new field will also needs a parking lot that can accommodate 15,000 cars.
- The team's researchers have studied how fans get to the ballpark.
- They have found that less-affluent fans are more likely to use public transportation rather than drive a car to the game.

# Parking

- Their research reveals the following average:
  - For every 2 fans sitting in Box Seats, 1 car arrives at the ballpark.
  - For every 3 fans sitting in Red Seats, 1 car arrives at the ballpark.
  - For every 3 fans sitting in Blue Seats, 1 car arrives at the ballpark.
  - For every 5 fans sitting in Yellow Seats, 1 car arrives at the ballpark.
  - For every 8 fans sitting in General Admission, 1 car arrives at the ballpark.

# Looking to the future

- Major league baseball rules say a stadium must be able to seat at least 44,000 fans, so, at a minimum, the park must be able to seat that many fans, however, team management wants the park to seem “intimate” so they do not want to be able to seat more than 46,000 fans.

# Balancing Seating

- Team management also wants a balance among the different seating types.
- The minimum number of rows for each kind of seat:
  - Box Seats 10
  - Red Seats 10
  - Blue Seats 10
  - Yellow Seats 10

# Balancing Seating

- The maximum number of rows for each kind of seat is shown below
  - Box Seats 30
  - Red Seats 40
  - Blue Seats 40
  - Yellow Seats 50

# Excel Project Requirements

1. Create a worksheet keep in mind design features you learned.
2. Calculate the revenue if you maximized the number of Box and Red seats.
3. Calculate the revenue if you maximized the number of Blue and Yellow seats.
4. Calculate and display the additional revenue that would be generated for "Other Products" sales for your configurations.
5. Calculate and display in an attractive manner the parking requirements for each of your configurations. Do not change your seating data if the parking exceeds the limit given in the Case Study document.
6. Create an appropriate graph to show profit from ticket sales for the configuration that generate the highest profit.
7. Create an appropriate graph to show "Other Products" revenue from the configuration you would recommend to the designers.
8. Second worksheet with configuration that maximizes all seating. This worksheet should also state your recommendation to the designers on if this is feasible or not. Don’t forget the parking!!

# On Blackboard

- The complete Case, Project requirements and Grading criteria can be found under the Excel Project
- When you complete the project load ONLY the final Excel workbook to the link.
- Project Due 8 AM, Monday, 9/25