

Fantasy Baseball Simulator

1 Executive Summary

Fantasy baseball is extremely popular in our day. It has become a forum in which people can socialize, compete, and even gamble in some situations. However, for me it's a great way to compete with friends while being able to enjoy the sport I love. While competing is always fun, winning is even better. My goal with this project was to be able to maximize my chances of winning in my own fantasy baseball league. This is great because it can be utilized by anyone to be able to up their chances any given week. Because of the manner in which some people play, I believe that there would be many players who would be willing to pay a price in order to put the best team possible together to improve their chances of winning. The Fantasy Baseball Simulator uses all the batting positions available on a typical fantasy baseball team to determine who would win in a particular matchup. The pitching portion of fantasy baseball is not included in my project.

2 Implementation Documentation

In order to optimize you fantasy baseball lineup for a given week you follow the steps below.

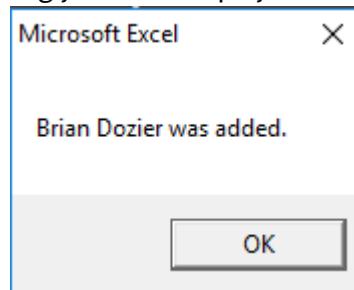
- Add players from your team and the opposing team to the workbook.
- Select desired lineup for your team and the opposing team for the given week making sure you include the number of games being played that week and the predicted status of your players.
- Simulate to receive information on how your team is expected to stack up against the opposing team.
- Repeat with differing lineups to optimize your results.

2.1 Adding Players

In order to optimize your lineup for your upcoming opponent you first need to add your team as well as your opponent's team to the workbook. On the workbook there is a button called "add player", once you selected the following userform will appear.

When the userform “Add Player” appears take the following steps

1. Add your player’s name under “Player Name”
2. Enter your player’s ID Number under “ID Number”
 - a. Find your player’s ID Number by using the following link
 - i. <http://sports.yahoo.com/mlb/players>
 - b. Once you select your player add find their ID Number by finding the 4 digit number in the new URL
3. Select the position of your player
4. Conclude with the “Add Button”
5. A message will appear informing you that the player has been added



6. You will now be able to add the player to “My Team” or the “Their Team” section of the workbook
7. Names will appear on the “PlayerIDs” worksheet. Players can be removed if necessary on that page

2.2 Set Up Your Team

After adding the player from both teams to the workbook, you can then add the appropriate players to your team and your opponent’s team. This process is simplified by the VLOOKUP function. Simply type in the name of each player under the “Name” column and “ID Number” and “Position” will be added automatically.

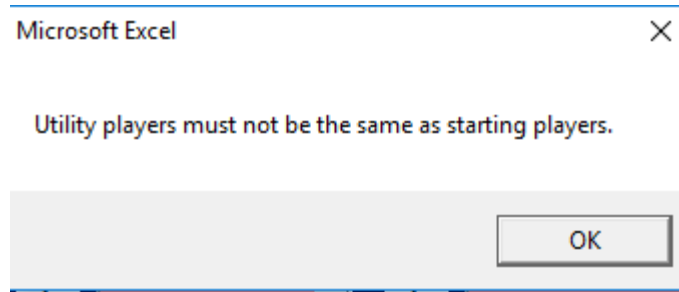
My Team					Their Team				
ID Number	Name	Position	Games Played	Stat Adjustment	ID Number	Name	Position	Games Played	Stat Adjustment
9174	Brian Dozier	2B	5	100%	6863	Marlon Byrd	LF	5	100%
7163	Miguel Cabrera	1B	5	100%	8861	Mike Trout	CF	5	100%
8190	Colby Rasmus	LF	5	100%	8875	Bryce Harper	RF	5	100%
7455	Curtis Granderson	RF	5	100%	8996	Jose Altuve	2B	5	100%
9590	Byron Buxton	CF	5	100%	8629	Todd Frazier	3B	5	100%
8578	Buster Posey	C	5	100%	7845	Chris Ianneta	C	5	100%
8723	Josh Donaldson	3B	5	100%	7290	Prince Feilder	P/DH	5	100%
7634	Billy Butler	P/DH	5	100%	9403	Chris Colabello	1B	5	100%
7744	Erick Aybar	SS	5	100%	7850	Troy Tulowitzki	SS	5	100%
7062	Joe Mauer	1B	5	100%	9574	Delino DeShields	CF	5	100%
8213	Denard Span	CF	5	100%	7264	Jose Bautista	RF	5	100%
8285	Chris Davis	1B	5	100%	9111	Manny Machado	3B	5	100%

The next step is to fill in the number of games you expect your player to play in that week under “Games Played”. Lastly is to predict the “Stat Adjustment” which is your prediction of how well your player is playing (if he is injured you might play him at 50%).

2.3 Running the Simulation

Assuming both teams have been added the next step would be to select the “Simulate” to bring up the “Lineups” userform.

In this userform is filled there are Comboboxes for each position available for a team’s lineup. Each Combobox is populated with only the players that can fill that position on the team. Utility players can be anyone on the team that you wish to be a batter however if a player you include in the utility fields already populates another position an error message will appear.



Once both team's ComboBoxes have been populated the simulation is ready to run. The simulation runs by adding a new worksheet (unseen by the user) and using the internet in a "get data from web" step by searching the following URL: "<http://sports.yahoo.com/mlb/players/>" & ID.

Data from the site is then printed and the appropriate stats are grabbed from a specific table taken from the web page. "If statements" are used to make sure that the statistics in question are populated in the table. The stats are then compiled and added to the eight arrays at the bottom of the workbook. This process is looped and can take several minutes. The worksheet that was created is deleted and the results are shown.

Simulation Results									
Category	RBIs	Walks	Singles	Runs	Triples	Homeruns	Doubles	Steals	Score
My Team	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Their Team	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8

The code finds the sum of array value for each player, multiplies it by the number of "games played", and adjusts for the "stat adjustment" percentage indicated. The final score is determined by who has more points in each category. For example, if My Team has more RBI's than Their Team I will receive a point. One point is rewarded for each of the eight categories. My Team score is first tallied and then Their Team score is determined by subtracting My Team score from 8.

3 Learning and Conceptual Difficulties

While working on this project I learned a lot about VBA programming. One of the most important things I learned was the importance of organization. Without proper organization this code would have been very difficult to write and almost impossible to debug. There were several times where simple typos made working with this code very frustrating. Without proper organization it would have taken much more time than it did to find and correct problems. I found that when using so many different Dim Names it is important to be clear and different variable names for each variable. One of the most frustrating and difficult parts of my code was fixing issues where names like "utl2" and "utl2b" were switched or confused. Working with URLs was also difficult and frustrating. Many times the format of the URLs I used changed making it difficult to get the right data to import into the workbook.

4 Assistance

I received help on this project largely from the internet. I looked at other people's vba code to determine the best way to retrieve data from the internet so that it would function properly. I also received some help with debugging from a friend that had taken the class before.