




Baseball Player Management System



Status Report 1

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MOTIVATION

- America's Pastime
- MLB teams are worth \$66 billion
- Group is made of baseball fans and future baseball professional hopefuls
- Helpful project to show recruiters



GOALS



Project Rosters & Lineups

Analyzing statistics from performance stats, position stats, organizational location and previous rosters should allow us to make projections.



Analyze Pitcher vs Batter Lineups

Comparing pitchers and their pitches against different kinds of hitters to determine who would be the most successful vs a lineup.



Compare Projections to Historical Matchups

Compare our projected rosters with past rosters to see if stats alone determine a lineup.

DATA



MLB

Statcast Database: Hosts all current and historic game and player stats for Major League Baseball.

*baseball cube was used to find teams for all players on 40-man rosters

*planning to implement a weight for time in season and averaging the 2020 and 2021 regular season



MiLB

Hosts all current and historic game and player stats for Minor League Baseball.
(Can we find a player who should be brought up?)



Baseball Savant

Accesses MLB data with more specific filtering measures and CSV download ability; will allow us to more easily check our data

COMPONENT ARCHITECTURE



Random Game Generator

Randomly generates two unique opponents



Roster Creation

Dataframes created from Player Objects depending on team



Line-up Generator

Returns Starting Lineups as dataframe depending on:



Pitcher Selector

Randomly selects Pitcher from Roster



Position Selector

Selects lineup depending on pitcher & positional stats



Line-up Comparison

Compares generated lineup to most recent actual lineup of executed matchup

COMPONENT ARCHITECTURE



Roster

Class: Dataframe of objects
Player Class: Object



Pitcher Selector

Class: Object



Line-up Generator

Class: Object
(Players); Dataframe



Random Game Generator

Function



Position Selector

Methods



Line-up Comparison

Visualizations

GENERATED MATCH-UP



Game Matchup: New York Mets (home) vs Milwaukee Brewers (away)

The background is a dark gray to black gradient. It features several geometric elements: a large, solid orange hexagon in the lower center; a smaller, solid orange hexagon on the left side; a large, dark gray hexagon in the center-left; and a large, dark gray hexagon on the right side. There are also several orange lines and shapes: a line segment at the top left, a line segment at the top center, a line segment at the top right, a small orange circle at the top right, and a small orange circle at the top left. The word "THANKS!" is written in a bold, white, sans-serif font, centered horizontally and partially overlapping the central dark gray hexagon and the large orange hexagon below it.

THANKS!

RESOURCES

- <http://www.thebaseballcube.com/mlb/rosters/current.asp?T=7&View=40man>
- [https://baseballsavant.mlb.com/leaderboard/custom?year=2021,2020,2019,2018,2017,2016,2015&type=batter&filter=&sort=1&sortDir=desc&min=q&selections=player age,b ab, b total pa,b total hits,b single,b double,b triple,b home run,b strikeout,b walk,b k percent,b bb percent,battin g avg,slg percent,on base percent,on base plus slg,woba,&chart=false&x=player age&y=player age&r=no&chartType=beeswarm](https://baseballsavant.mlb.com/leaderboard/custom?year=2021,2020,2019,2018,2017,2016,2015&type=batter&filter=&sort=1&sortDir=desc&min=q&selections=player%20age,b%20ab,b%20total%20pa,b%20total%20hits,b%20single,b%20double,b%20triple,b%20home%20run,b%20strikeout,b%20walk,b%20k%20percent,b%20bb%20percent,battin%20g%20avg,slg%20percent,on%20base%20percent,on%20base%20plus%20slg,woba,&chart=false&x=player%20age&y=player%20age&r=no&chartType=beeswarm)
- <https://www.mlb.com/stats/>