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

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Game Matchup: New York Mets (home) vs Milwaukee Brewers (away)
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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,batting_avg,slg_percent,on_base_percent,on_base_plus_slg,woba,&chart=false&x=player_age&y=player_age&r=no&chartType=beeswarm
- https://www.mlb.com/stats/