MoneyBall

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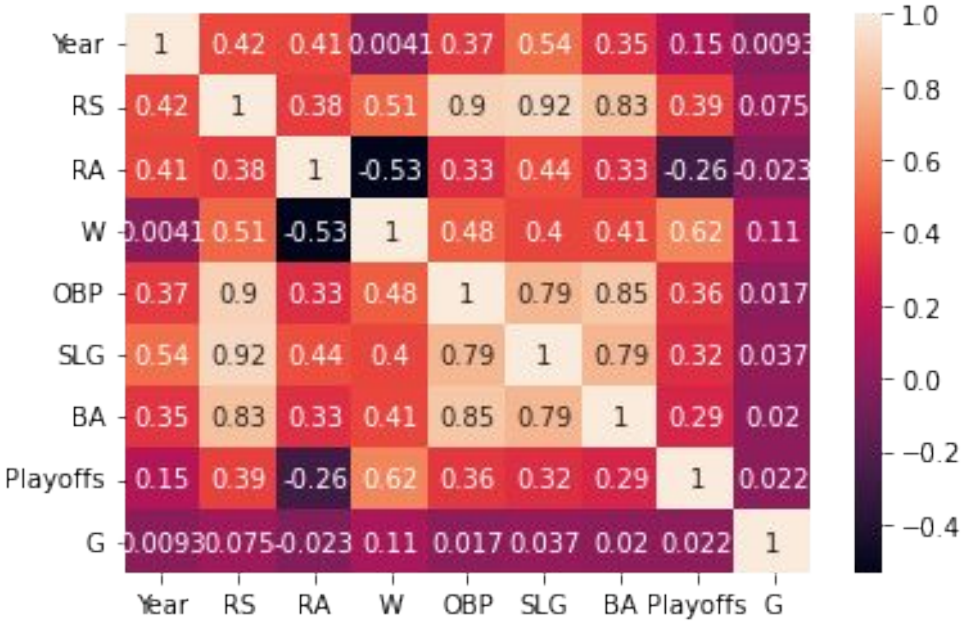
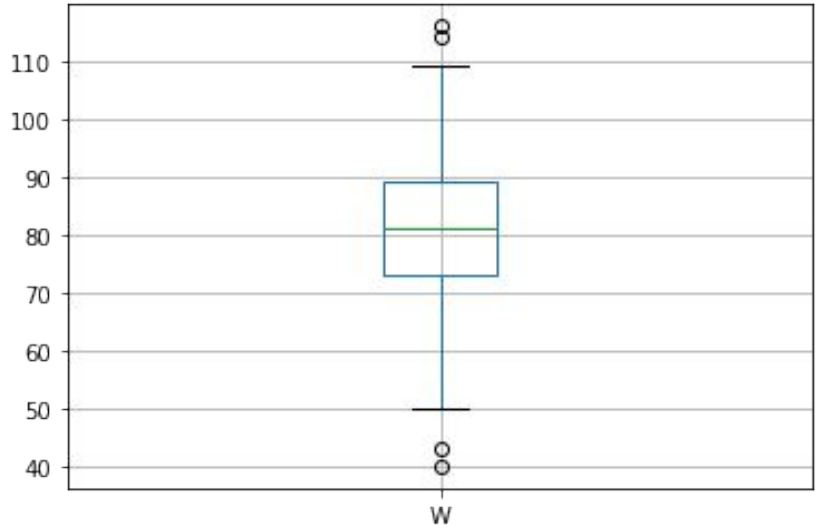
Introduction

- Where was this dataset found?
  - This dataset was found on Kaggle.
  - Made by Wes Duckett
  - Data was from 1962-2012
- What is the Machine Learning Problem?
  - What statistics determine whether or not a team makes the Playoffs or not.
- Feature Columns
  - League, Year, Runs Scored, Runs Allowed, Wins, OnBasePercentage, SluggingPercentage, Batting Average and Games Played
- Target Column
  - Playoffs

How can we better understand the data?

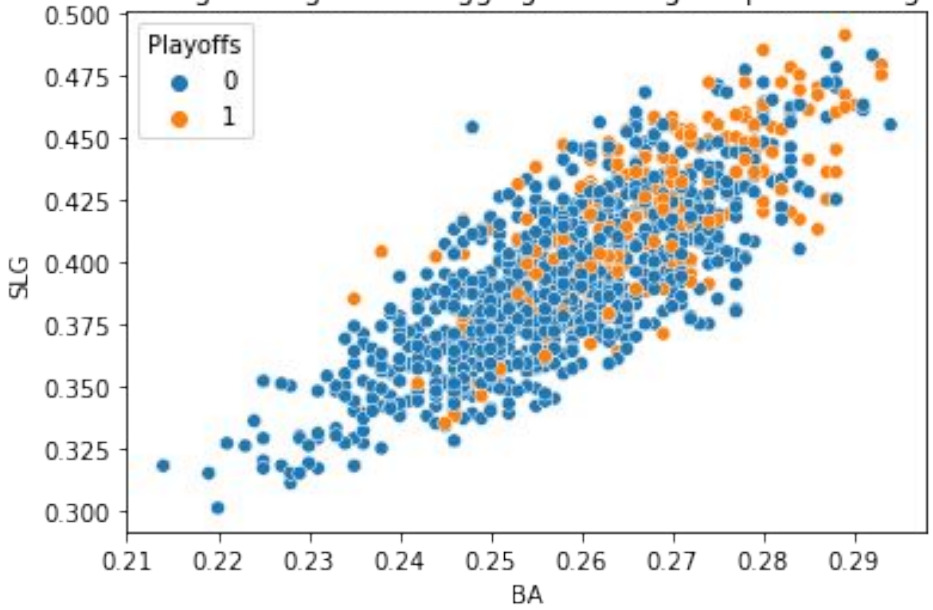
Exploratory Visuals

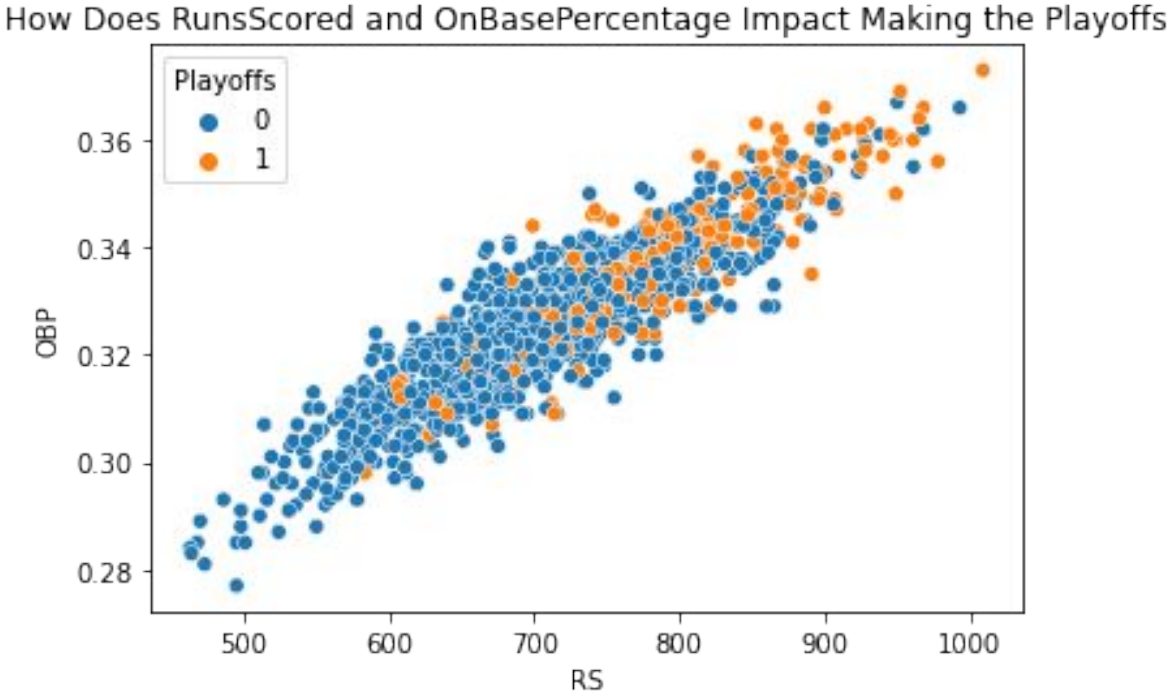




- A couple of outliers in the data for Wins but everything is plausible

How Does Batting Average and SluggingPercentage Impact Making the Playoffs




How Does RunsScored and OnBasePercentage Impact Making the Playoffs
Playoffs
0
1
OBP
0.36
0.34
0.32
0.30
0.28
500
600
700
800
900
1000
RS

Production Models

- What models did I use?
  - Random Forest, KNeighbors, Bagging Tree, and a Decision Tree
- Which model performed the best?
  - The Random Forest model did end up performing the best
  - First glance:
    - Train Score = 92%
    - Test Score = 57%
  - After Tuning the Hyperparameters:
    - Train Score = 69%
    - Test Score = 56%

Final Recommendations

- What does my final model tell me?
  - First need to get more data that includes the years 2013-2021.
  - More data can help me improve this model.
  - Need to focus on players that have a:
    - High On-Base Percentage
    - High Batting Average
    - High Slugging Percentage