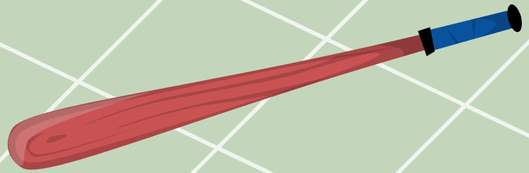
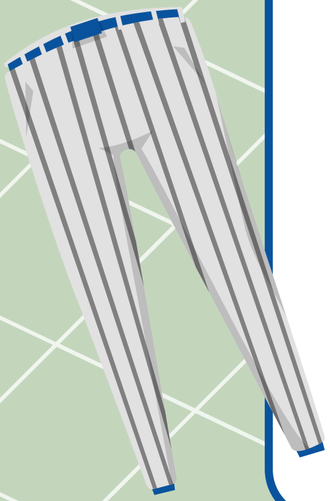
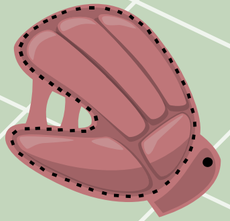
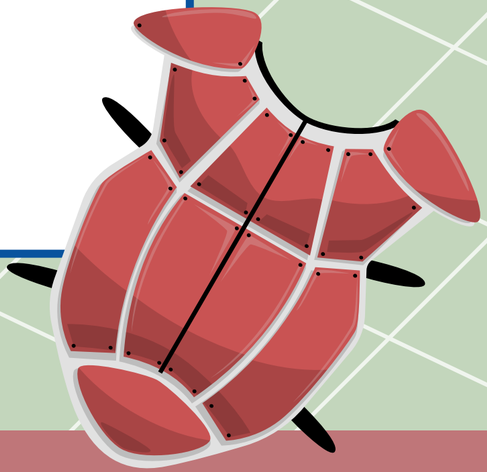
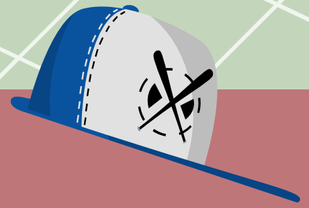





MLB Playoffs

MATH 311 FINAL

Alec Schrock & Brianna Rawlings

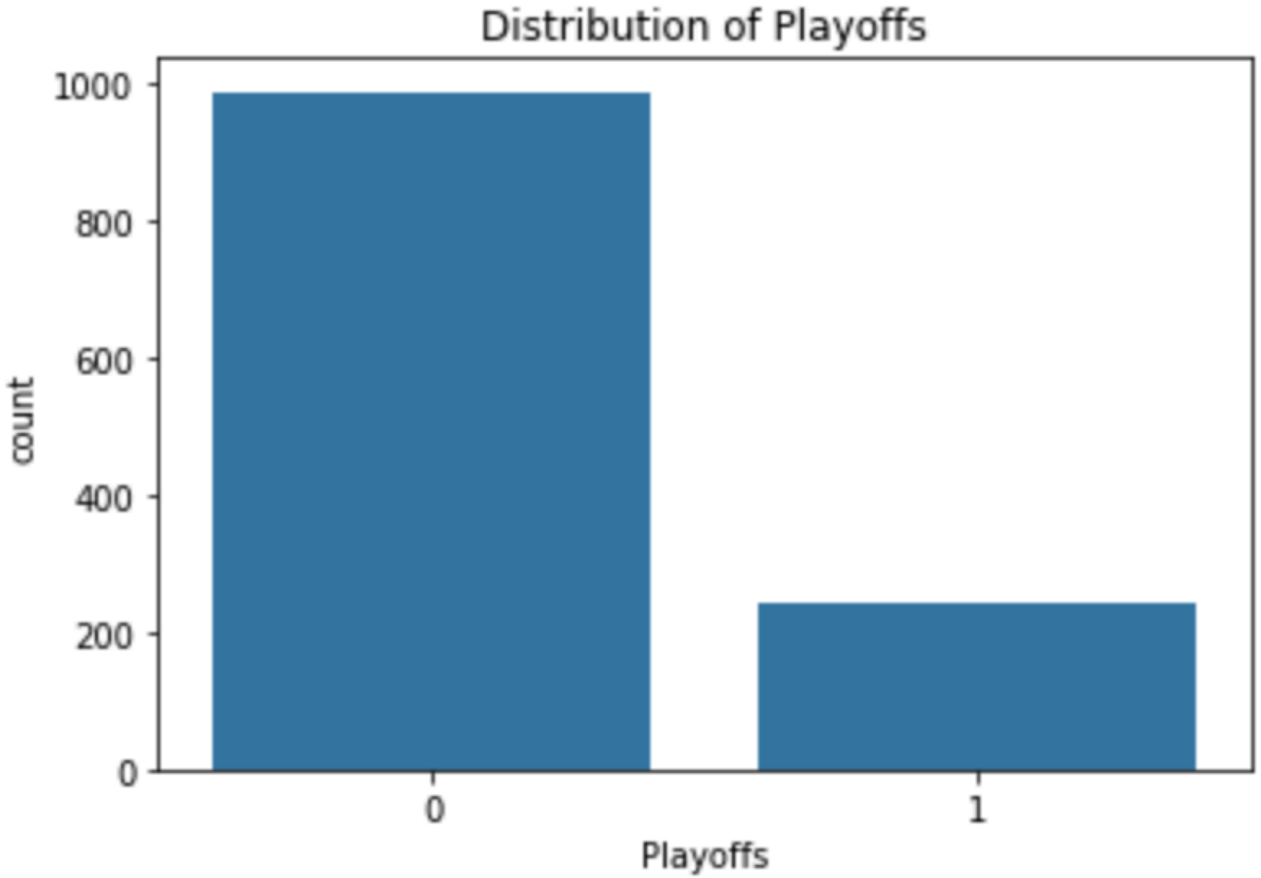
PREDICTION

What stat is the best indicator for if a team will make the playoffs?

THE DATA

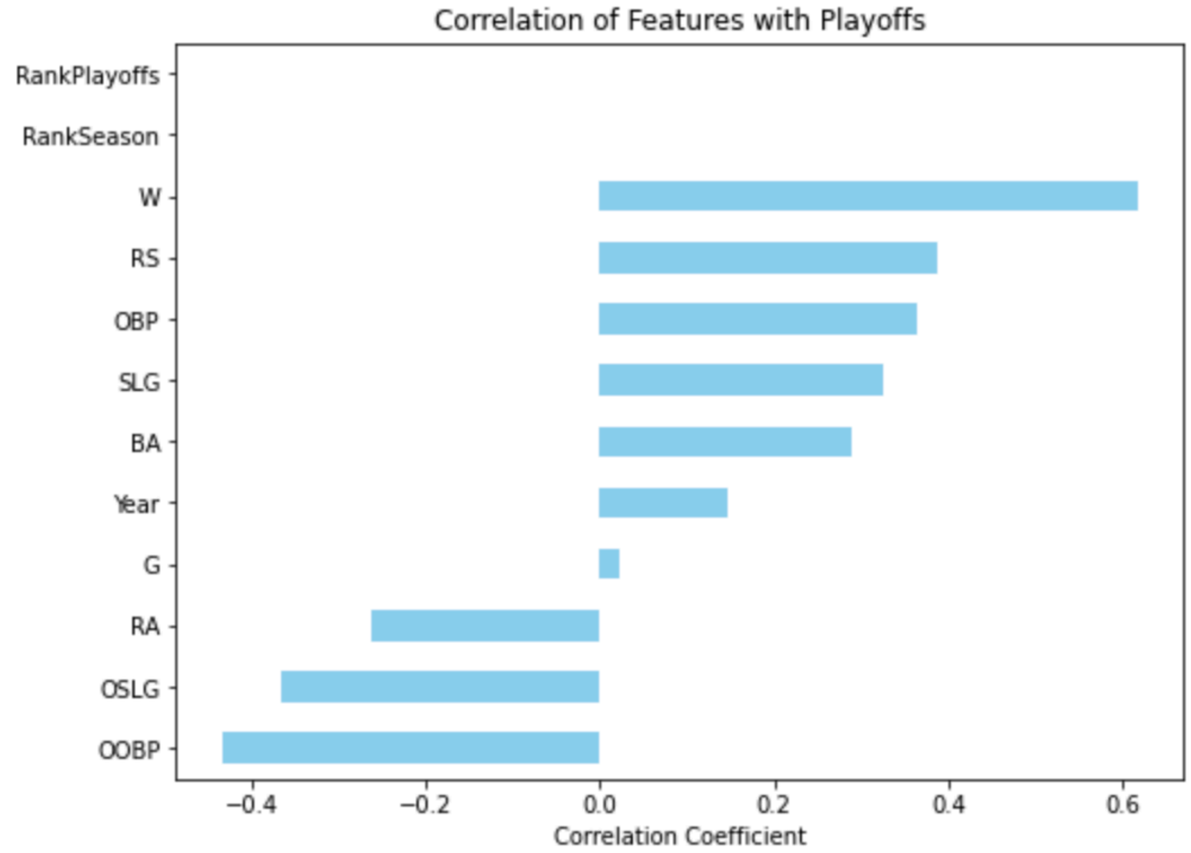
Name	Type	Description
Team	Categorical	The MLB team name
League	Categorical	Which league the team is in
Year	Numerical	The season the stats are from
RS	Numerical	The total runs scored for the season
RA	Numerical	The total runs allowed for the season
W	Numerical	Win total for the season
OBP	Numerical	On base percentage for the season
SLG	Numerical	Slugging percentage for the season
BA	Numerical	Batting average for the season
Playoffs	Binary	If the team made the playoffs
RankSeason	Numerical	The teams ranking at the end of the season
RankPlayoffs	Numerical	The teams ranking at the end of the playoffs
G	Numerical	The number of games played
OOBP	Numerical	The opponents on base percentage
OSLG	Numerical	The opponents slugging percentage

EDA FOR DISTRIBUTION OF TARGET CLASS



EDA FOR FEATURES

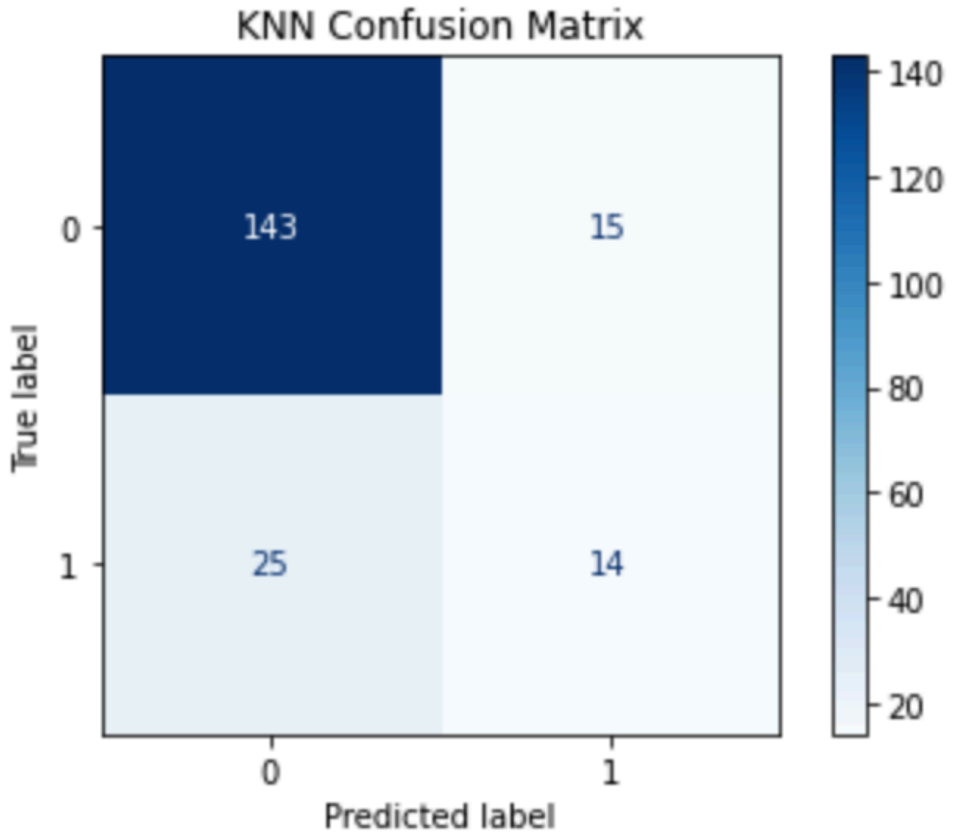
Correlation of each feature with the target playoffs



MODEL TRAINING RESULTS

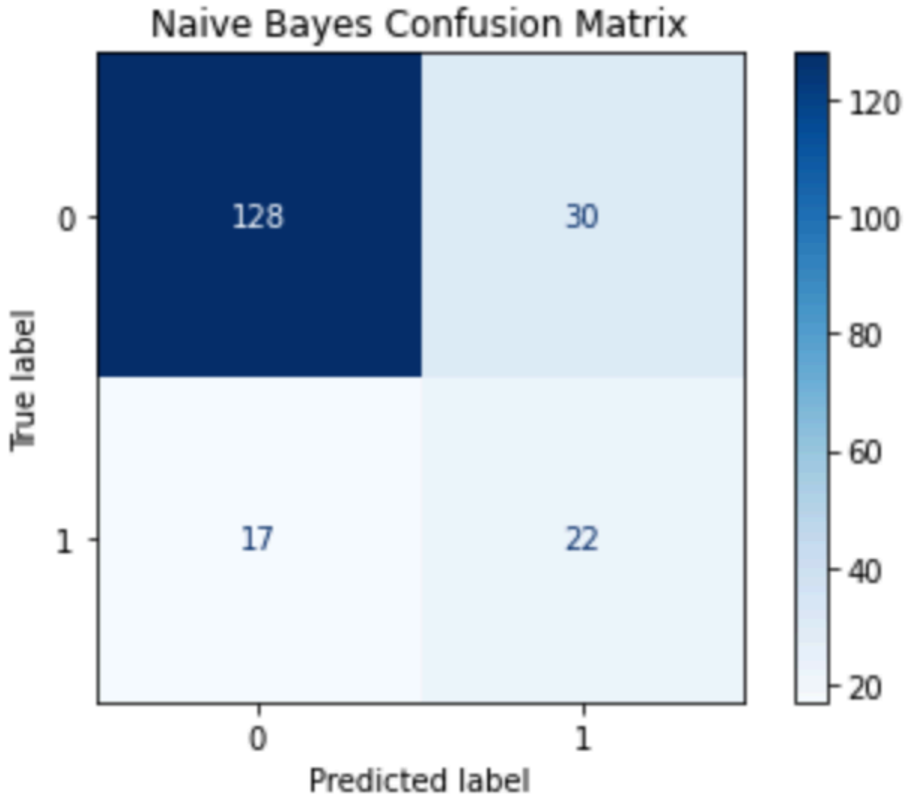
KNN

Accuracy: .80
Precision: .78
Recall: .80
F1-score: .79
Specificity: .90



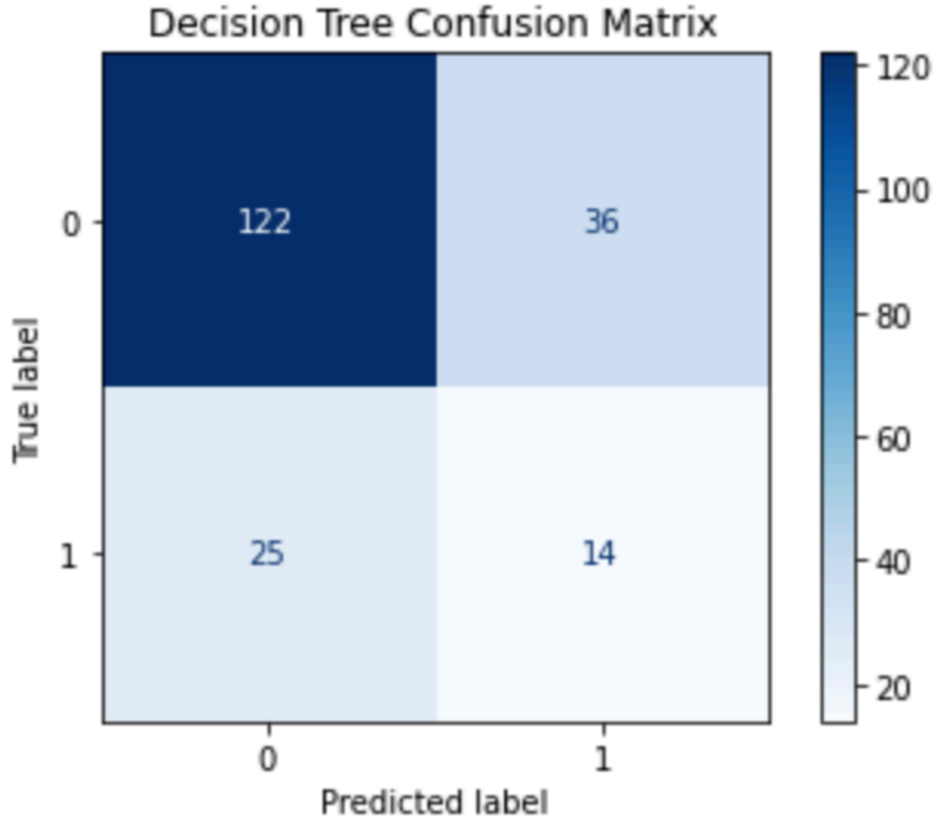
Naïve Bayes

Accuracy: .76
Precision: .79
Recall: .76
F1-score: .77
Specificity: .81

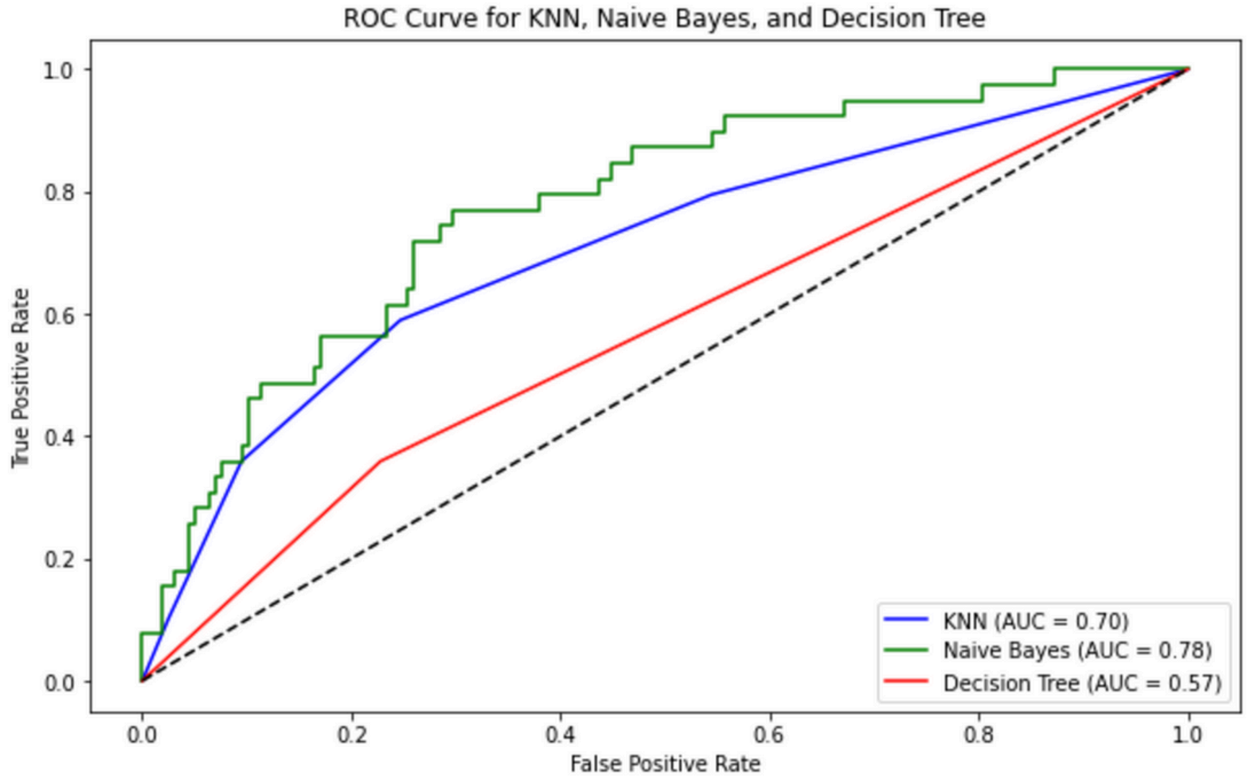


Decision Tree

Accuracy: .69
Precision: .72
Recall: .69
F1-score: .70
Specificity: .77

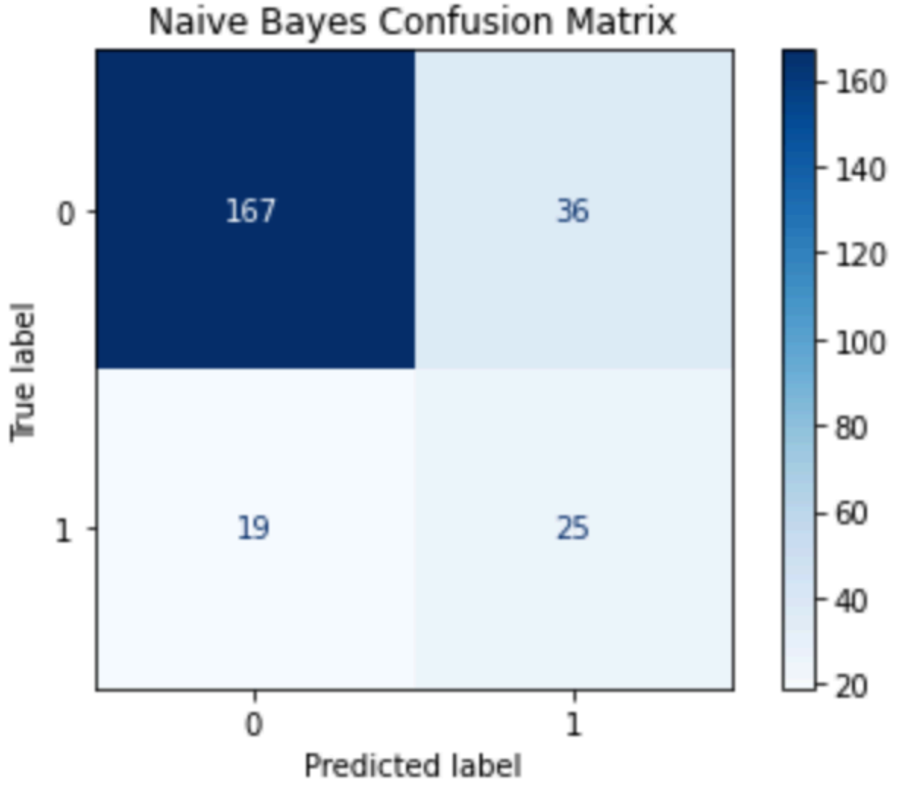


ROC CURVE


ROC Curve for KNN, Naive Bayes, and Decision Tree
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
KNN (AUC = 0.70)
Naive Bayes (AUC = 0.78)
Decision Tree (AUC = 0.57)

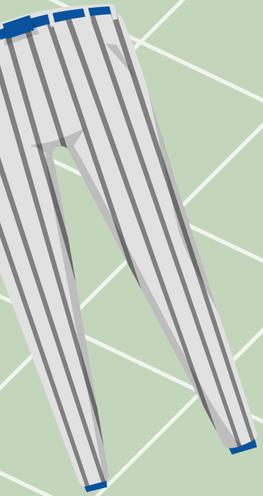
Naïve Bayes Test

Accuracy: .78
Precision: .81
Recall: .78
F1-score: .79
Specificity: .82

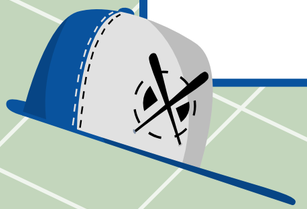
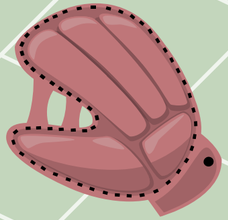


IMPACT

- Our model could have performed better if we looked at more features that include pitching and defensive statistics
- It would also be interesting to look at advanced metrics that they have started tracking recently although it would be a small data set
- Predictions can help managers and front offices decide what to focus on improving if they want to make the playoffs





THANK YOU!!