# Toronto Raptors Statistics Analysis

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# Topic

For my final project, I will be examining a database of the 2018-2019 NBA Champion Toronto Raptors to study the teams production and performance numbers in their historic run.

# Topic Reasoning

I will be researching the 2018-2019 Toronto Raptors to examine the correlations between the teams and players different NBA statistics during the regular season and playoffs.

# Data source

For my data source, I was able to find a dataset off the data website Kaggle. I was able to find four main CSV files that examine both the Raptors team and players statistics.
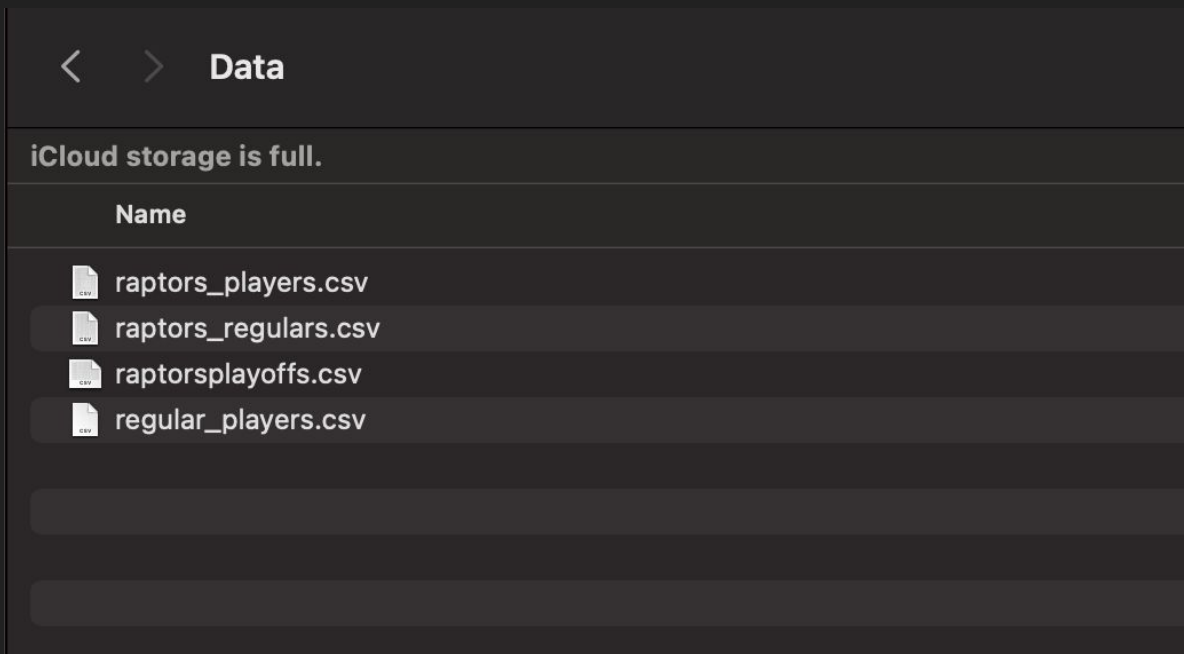
# Questions to analyze

**Questions we will try to answer in our analysis:**

- What player was the best performing overall by main NBA stats(PTS, REB, AST, STL) through the regular and playoff series.
- What is the correlation between the amount of minutes played for each Raptors player and the overall outcome(W/L)?
- What is the correlation between the amount of assists the Raptors have in a win versus a loss in regular season and playoffs.
- What is the correlation between the difference of wins and losses for the Raptors based on three pointers made.

# Data exploration

For our data exploration, we aim to look at the two main data sets of the regular and playoff games for our Jupyter Notebook algorithm analysis. In our Preprocessing, we are able to import our pandas, numy, pathlib, and collections in order to set up our notebook correctly. For our exploration, we dived into the file_path code in order to link our Toronto Raptors Analysis.

# Analysis Phase

From our data collection and coding reports above, we can see that the RandomOverSampler had the highest accuracy score at the 85.83% mark. Our second highest was the ClusterCentroids at the 85% mark, very close to our RandomOverSampler. I believe that we have collected very important data, but it would be interesting to see more about the history of the teams playoff and regular seasons data previous to the 2018-2019 Championship season.

# Technologies

For our Toronto Raptors analysis, we used a database software(SQL), machine learning model(Pandas in Jupyter Notebook), and a visualization software(Tableau) to interpret and analyze our results
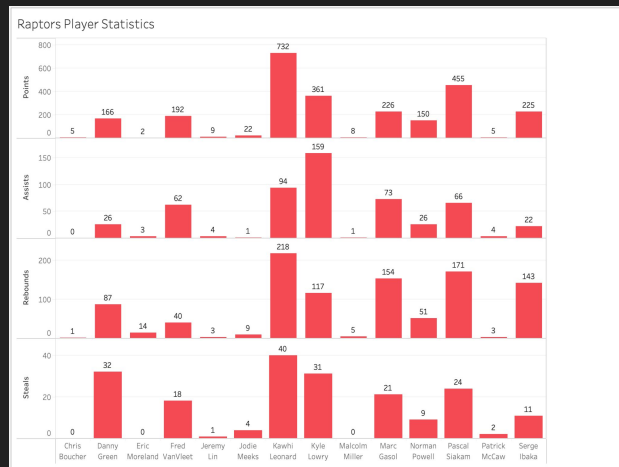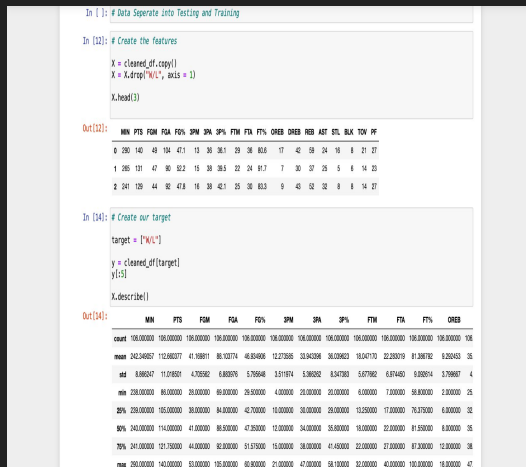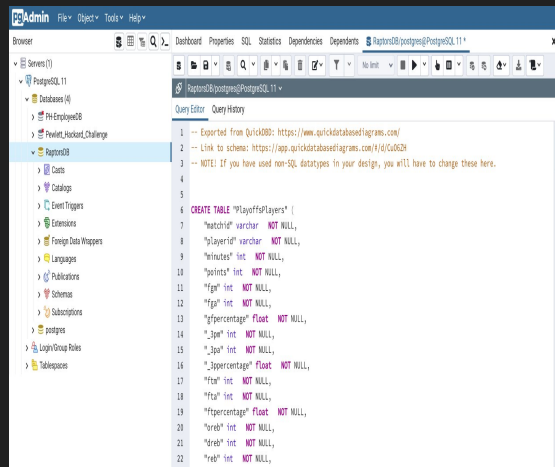
# Results of Analysis

**1. What player was the best performing overall by main NBA stats(PTS, REB, AST, STL) through the regular and playoff series.**

we concluded that Kawhi Leonard was our highest performing overall players on the 2018-2019 Toronto Raptors Championship team, leading in almost all categories for the team.

**2. What is the correlation between the amount of minutes played for each Raptors player and the overall outcome(W/L)?**

The leading players in all statistics for the team were Kawhi Leonard, Kyle Lowry, and Pascal Siakam. These three players had the most minutes played in all of the wins for the team, concluding that the amount of minutes played for the best players has direct effect on the overall outcome.

**3. What is the correlation between the amount of assists the Raptors have in a win versus a loss in regular season and playoffs.**

The Toronto Raptors have a far better performance and winning outcome in games when they record a higher amount of assists compared to when the team losse, 1539 and 629 W/L ratio.

**4. What is the correlation between the difference of wins and losses for the Raptors based on three pointers made.**

In the regular season, the amount of three pointers made was at 398, over 2 times as much as the amount of three pointers made in the teams losses. The team has a much higher chance of winning when they are dominant from the three point range compared to their losses.

# Recommendation

The Toronto Raptors have not always been the team it was for certain during this 2018-2019 period, so it would be interesting to collect data going back since 2000 in order to further evaluate the performance and accuracy score levels of these years prior to the championship run. I would recommend when we run this analysis next time to incorporate date from the teams past in order to see the differences in old teams versus the best toronto team in while.

# Thank You!

Thank you for your time and a great year! I am very lucky to have been apart of this program, thank you to everyone involved.