

CSC 369 Final Project
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Overview

Our project seeks to explore data about the ongoing 2020-2021 National Basketball Association (NBA) season. Our main question concerns what To do this, we have collected data about players, teams, and coaches in the NBA. All data was downloaded as CSV files from [Basketball Reference](#).

Which statistics are most indicative of a winning team in basketball?

We broke this question down into three parts: player statistics, coach statistics, and team statistics. Player statistics regards information about an individual player's statistics and how that would relate to the win rate of a team. Coach statistics refers to information about their career and their current season and how they relate to the team that they are currently on. Team statistics is about the aggregate statistics about all the players currently on the team. These aggregate statistics can give some insight about a team's identity to see what the team generally does to perform well.

Player Statistics

- What players might make the 50, 40, 90 club (fg%, 3p%, ft%)? (within 5% for each category) Return all the eligible players and order by the highest shooting percentage for each (Brendan)
- List the 5 players with the most play time in order of play time, descending. Print each: player name, play time, points per game (Bryce)

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Nikola Vučević, 39.0, 25.0  
Brandon Ingram, 39.0, 23.7  
Julius Randle, 39.0, 22.9  
John Collins, 39.0, 17.9  
Andrew Wiggins, 39.0, 17.2  
RJ Barrett, 39.0, 17.1  
Duncan Robinson, 39.0, 12.8  
Serge Ibaka, 39.0, 10.9  
Danny Green, 39.0, 8.8
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After examining these data we can conclude that while there were some high scoring players with the most playtime, there are many high scoring players that did not have the highest play time. In addition these high play time players did not seem to overwhelmingly represent winning teams.

Coach Statistics

- What 10 coaches promote the most scoring per game? Print coach and the points the team scores per game along with team and record. (Brendan)
- What record does the coach who has the most career games have this season? Print name and record. (Terence)

The coach that has the most career games has the most experience. This statistic looks into whether or not that experience matters for the performance of a team.

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coach, team, win-lose in season, games in career
Gregg Popovich, SAS, 19-16, 1926
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Gregg Popovich has the most games in the current coaching lineup with 1926 games. However his record for the season is only 19-16, which is not impressive. The next coach Doc Rivers however, has about 300 less career games, but currently has a great record for the season, sitting at 27-12.

- Is there a difference between a coaches career win percentage and current season record with the current team that they are on? Print coach name, [team name], career win, season win percentage (sort by |career win % - current season win %| ascending) (Terence)

This statistic looks more at the win percentage of individual coaches rather than the amount of games. Instead of a coach being strong, the team itself could be more indicative of how a team performs.

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coach name, team name, win % this season, career win %
Mark Daigneault, OKC, 0.44, 0.44
Stephen Silas, HOU, 0.30, 0.30
Steve Nash, BRK, 0.67, 0.67
Monty Williams, PHO, 0.68, 0.46
Nick Nurse, TOR, 0.44, 0.66
Dwane Casey, DET, 0.26, 0.51
```

The first 3 coaches have no differences between their win percentage this season and their career win percentage. This is due to the fact that these coaches have only been coaching since the start

of the season. The last 3 coaches have the greatest difference between their season win rate and their career win rate. These differences could be attributed to the variation of strength of a team.

- What is the record for the coach who has the best record in games decided by 3 or less points? (Terence)

The teams that have close games need to maintain their composure from the pressure of a close game. This is the coaches job to make sure that the team stays in their best form until the end of the game. The team that performs better in these dire situations should be a better team overall.

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coach name, 3 point difference season record, season record
Scott Brooks, 7-2, 14-23
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While Scott Brooks has an impressive record whenever the games are close, his overall record for the season is not impressive. Half of the team wins are from close games.

Team Statistics

- What is the record for the 5 teams with most turnovers per game? Print team and turnovers per game, sorted in descending order by turnovers. (Bryce)

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ORL, 13-26, 3.7
ATL, 20-20, 3.9
BRK, 28-13, 4.5
NYK, 20-21, 4.8
HOU, 11-28, 5.0
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From these data we can see that having a low number of turnovers per game does not seem to be indicative of a strong showing in terms of overall record. For example, the Orlando Magic, who had the lowest number of turnovers per game had just a 50% win rate over the season. The Brooklyn Nets, who also had among the lowest turnover rates had quite a good record. Therefore we cannot safely conclude anything about the effect of turnover rate on overall team record.

- What team is attempting the most three-pointers this season? Print team name and three pointers attempted. (James)

The Utah Jazz is attempting the most three-pointers this season with 1589 three pointers this season. This may signal that taking lots of three-pointers is a winning strategy in the NBA.

- What 5 teams have the most players scoring at least 10 points per game? Print the team names and number of players sorted in descending order. (James)

Several teams have multiple players scoring at least ten points per game. The top five teams are as follows:

1. Utah Jazz, 6
2. San Antonio Spurs, 6
3. Sacramento King, 6
4. Toronto Raptors, 5
5. Washington Wizards, 4