Project Title:

NBA Data Analysis project

**High Level Document**

By,

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Project Overview

The National Basketball Association (NBA) is a professional basketball league in North America. The league is composed of 30 teams, each of which plays 82 games during the regular season. The NBA is one of the most popular sports leagues in the world, with millions of fans around the globe.

This project uses Power BI to analyze NBA data and answer questions about team performance and player statistics. The data for this project was obtained from three sources:

* **NBA Stats:** This is the official website for NBA statistics. It provides a wealth of data on player statistics, team performance, and game results.
* **Basketball Reference**: This is a website that provides detailed statistics on NBA players, teams, and games. It also includes historical data, which can be used to track trends over time.
* **Stats.NBA.com:** This is the official website for NBA advanced statistics. It provides data on a variety of metrics, such as player efficiency rating, defensive rating, and assist-to-turnover ratio.

The data was cleaned and formatted before it was imported into Power BI. This involved removing any errors or inconsistencies in the data and ensuring that the data was in a format that Power BI could read.

Data Analysis

Power BI was used to analyze the data. Power BI is a business intelligence platform that allows users to visualize and analyze data. The following visualizations were created using Power BI:

* **Bar charts:** These charts were used to show the distribution of player statistics. For example, one bar chart showed the distribution of field goal percentages for all players in the NBA.
* **Line charts:** These charts were used to show trends in player statistics over time. For example, one line chart showed the trend in three-point percentages for all players in the NBA over the past 10 years.
* **Pie charts:** These charts were used to show the breakdown of team performance. For example, one pie chart showed the breakdown of team wins and losses for all teams in the NBA.
* **Pivot tables:** These tables were used to summarize data and perform calculations. For example, one pivot table showed the average field goal percentage for all players in the NBA, broken down by position.

Results

The results of the data analysis showed that the following factors are important for winning in the NBA:

* **Field goal percentage:** This is the percentage of shots that a player makes. A high field goal percentage is important because it means that a player is efficient at scoring points.
* **Three-point percentage:** This is the percentage of three-point shots that a player makes. A high three-point percentage is important because it allows a player to score points from long range.
* **Free throw percentage:** This is the percentage of free throws that a player makes. A high free throw percentage is important because it allows a player to score points even when they are not shooting well from the field.
* **Rebounding:** This is the ability to grab rebounds. Rebounding is important because it allows a team to get more possessions.
* **Assists:** This is the ability to pass the ball to teammates who score points. Assists are important because they help other players score points.

The results also showed that there are some trends in NBA player statistics over time. For example, the average field goal percentage has been increasing in recent years, while the average three-point percentage has been decreasing. This is likely due to the fact that teams are now more focused on shooting three-pointers.

Conclusion

This project has shown that Power BI is a powerful tool for NBA data analytics. Power BI can be used to visualize and analyze data, and to answer questions about NBA player statistics and team performance.

Next Steps

The next steps for this project could include the following:

* Analyze data from more seasons to see how trends have changed over time.
* Analyze data from different leagues to see how the factors that contribute to winning vary across leagues.
* Develop predictive models to predict team performance and player success.

Additional Information

The following additional information is provided for those who are interested in learning more about NBA data analytics:

* **The NBA's official website:** https://www.nba.com/ provides a wealth of information on the league, including statistics, news, and schedules.
* **Basketball Reference:** https://www.basketball-reference.com/ is a website that provides detailed statistics on NBA players, teams, and games.
* **Stats.NBA.com:** https://stats.nba.com/ is the official website for NBA statistics.