TEAM DATA ANALYSIS USING PYTHON, TABLEAU AND MORE  
PROJECT PROPOSAL

The proposed sports analytics project is analyzing the performance of a sports team over a season. By analyzing a team's performance over time, I plan to identify areas where the team is excelling and areas where they need improvement. This can help coaches and players make adjustments to their strategies in the real world for example and adjust their training methods to improve overall performance. Analyzing performance data can also help coaches and players make more informed decisions about game strategy and tactics. For example, if the data shows that a team struggles against opponents who play a particular style, the coach can adjust the team's strategy to better counter that style. Performance data can also be used to evaluate individual players and identify strengths and weaknesses. This can help coaches make decisions about which players to use in which positions, and can also be helpful in scouting new players. Finally, analyzing performance data over time allows teams to track their progress and see how they are improving (or not) over the course of a season or multiple seasons.

Here's how I plan to go about it:

1. Collect data: Gather statistics for each game, such as the score, goals/points scored, and the performance of individual players.
2. Identify trends: Look for trends in the data, such as which players consistently performed well or which games the team struggled in.
3. Compare to other teams: Compare the team's performance to other teams in the league to see where they rank and identify areas for improvement.
4. Identify key factors: Identify key factors that may have influenced the team's performance, such as injuries or changes in coaching strategies.
5. Present findings: Creating a report or presentation to share findings, highlighting areas for improvement and potential strategies for future success of the sports team.

Project Details and Timelines

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Project Title- Sports Team Data Analysis (Note: the team has not been decided yet. Im currently juggling between two, three teams and will confirm in the coming days)

Project Duration- 20 to 30 days

Programming Languages- Python and additional languages, tools if needed

Project Title: Comprehensive Sports Team Performance Analysis and Prediction

Project Phases:

1. Data Collection and Preparation:

- Gather historical data related to the team's performance, including game results, player statistics, and other relevant metrics. Ensure data quality and consistency.

- Collect data for multiple seasons to enable historical analysis.

2. Data Cleaning and Preprocessing:

- Clean and preprocess the collected data to handle missing values, remove outliers, and ensure data uniformity.

3. Data Exploration and Descriptive Analysis:

- Conduct exploratory data analysis (EDA) to understand the dataset's structure, trends, and relationships. Visualize key performance metrics and identify patterns.

4. Performance Metrics Identification:

- Define key performance metrics relevant to the sport and team under analysis, such as points scored, rebounds, assists, and shooting percentages.

5. Team and Player Analysis:

- Analyze historical team-level and player-level performance to identify areas of strength and weakness. Create visualizations and summaries to present insights.

6. Opponent Analysis:

- Analyze how the team performs against different opponents and playing styles. Identify patterns and trends in team performance based on opponents' characteristics.

7. Strategy and Tactics Adjustment:

- Suggest adjustments to the team's strategies and tactics based on historical performance data. Consider opponent-specific strategies.

8. Player Evaluation and Scouting:

- Evaluate individual player strengths and weaknesses based on historical data. Use this information for player selection, position assignments, and scouting potential new players.

9. Progress Tracking:

- Create visualizations and reports that allow teams and stakeholders to track their progress over time. Assess whether the team is improving or facing challenges.

10. Predictive Modeling:

- Develop predictive models to forecast future team and player performance. Consider using techniques like time series forecasting, regression analysis, or machine learning.

11. MVP Prediction (Optional):

- If relevant to the sport, build a predictive model to forecast the Most Valuable Player (MVP) for the upcoming season based on historical player data and performance metrics.

12. Prediction Reporting:

- Present predictions for future performance, including expected win-loss records, player performance, and potential MVP candidates. Include confidence intervals and model accuracy assessments.

13. Code and Documentation:

- Ensure that your code is well-documented and organized, making it easy for others to understand and replicate your analysis and predictions.

14. Recommendations and Actionable Insights:

- Provide actionable recommendations for coaches, players, and team management based on both historical analysis and predictions. Suggest strategies for improvement.

15. Integration of Predictions:

- Incorporate the predictions into the team's decision-making process. Discuss how coaches and players can use the predictions to enhance their strategies and preparations for the upcoming season.

16. Feedback Loop:

- Establish a feedback mechanism for continuous improvement. Monitor the team's actual performance in the upcoming season and compare it with the predictions. Adjust recommendations and strategies accordingly.

This comprehensive project plan combines historical analysis, predictive modeling, and actionable insights to help the sports team make data-driven decisions for both the present and the future. It provides a holistic approach to sports analytics, leveraging past data to inform future strategies and tactics.