TITLE: FOOTBALL DATA ANALYTICS AND VISUALIZATION REPORT

Introduction

In this report, we present a comprehensive football data handling and visualization project focusing on the English Premier League (EPL), with additional insights into the UEFA Champions League (UCL). The project encompasses various visualizations, including bar charts, pie charts, scatter plots, shot maps, heat maps, and time series charts, to provide a nuanced understanding of player performance, team dynamics, and the iconic Ronaldo vs. Messi rivalry.

Data Sources

The data used in this project was collected from reliable football statistics databases like Kaggle and Fbref ensuring accuracy and completeness. EPL and UCL data spanning multiple seasons were compiled to facilitate in-depth analysis and visualization.

Technology Stack

The project utilized two key technologies:

Python: Python served as the core programming language for data handling, analysis, and visualization. Libraries like pandas, matplotlib, seaborn, and plotly were instrumental in robust data processing and visualization.

Tableau: Tableau was employed for creating interactive and visually impactful dashboards. Its user-friendly interface facilitated the

development of dynamic visualizations, enhancing the overall presentation of our findings.

EPL Data Analytics

Bar and Pie Charts

Bar charts were employed to visualize key performance metrics across different teams and players in the EPL. This includes metrics such as goals scored, assists, and other relevant statistics. Pie charts were used to represent the distribution of specific metrics within a team or player's overall performance.

Scatter Plot for Underrated Players

A scatter plot was utilized to identify and highlight underrated midfielders and wingers in the EPL. Metrics such as pass accuracy, successful dribbles, and key passes were considered to evaluate player contributions.

Advanced Visualizations - Shot Map and Shot Heat Map

To provide a spatial understanding of team and player performance, shot maps and shot heat maps were created. These visualizations showcase where shots were taken on the field and the concentration of shots in specific areas, offering insights into offensive strategies and player positioning.

Ronaldo vs. Messi Rivalry Comparison

Time Series Chart

A time series chart was used to visualize the goals and assists of Cristiano Ronaldo and Lionel Messi over multiple seasons. This comparison helps to understand the ebb and flow of their individual performances and their impact on their respective teams.

UCL Data Analytics

Geographical Maps - Country Wise Title Distribution

Geographical maps were employed to display the distribution of UCL titles across different countries. This visualization provides a clear representation of the dominance of certain nations in the Champions League.

Horizontal Bar Charts for Title Comparison

Horizontal bar charts were utilized to compare the number of UCL titles won by different football clubs. This visualization highlights the success of specific clubs and their standing in European football history.

Tree maps for Goals Comparison

Tree maps were employed to compare the goal-scoring contributions of different players in the UCL. This visualization allows for a hierarchical representation of goal distribution, showcasing the top goal scorers and their impact on the tournament.

Conclusion

This football data handling and visualization project offer a comprehensive overview of the English Premier League and UEFA Champions League. The diverse set of visualizations provides valuable insights into team and player performances, highlights underrated players, and presents a detailed analysis of the Ronaldo vs. Messi rivalry. The inclusion of advanced visualizations enhances the depth of understanding, making this project a valuable resource for football enthusiasts, analysts, and clubs alike.