DATA VISUALIZATION PROJECT REPORT

(Project Semester January-May 2024)

UEFA CHAMPIONS LEAGUE DASHBOARD

Submitted by:

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Programme and Section: K21BS

Course Code: INTB233

Under the Guidance of

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Discipline of CSE/IT

Lovely School of Computer Science & Engineering

Lovely Professional University, Phagwara

CERTIFICATE

This is to certify that Sai Kiran Sahu bearing Registration no. 12111456 has completed INTB233 project titled, **"UEFA CHAMPIONS LEAGUE DASHBOARD"** under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her original development, effort and study.

Signature and Name of the Supervisor:
Designation of the Supervisor:
School of Computer Science & Engineering
Lovely Professional University
Phagwara, Punjab.

Date: 21/04/2024

DECLARATION

I, Sai Kiran Sahu, student of DATA SCIENCE DOMAIN under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 21/04/2024

Registration Number. 12111456

Name of the Student: SAI KIRAN SAHU

Signature:

ACKNOWLEDGEMENT

We take this opportunity to present our votes of thanks to all those who guidepost really acted as lightening pillars to enlighten our way throughout this project that has led to successful and satisfactory completion of this study.

We are really grateful to Ms. Nidhi Arora for providing us with an opportunity to undertake this project and providing us with all facilities. I am highly thankful to mam for her active support, valuable time and advice, whole-hearted guidance, sincere cooperation and pains taking involvement during the study and in completing the assignment and preparing the assigned project within the time stipulated.

Lastly, I am thankful to those, particularly the various friends, who have been instrumental in creating proper, healthy and conductive environment and including new and innovative ideas for us during the project, without their help, it would have been extremely difficult for us to prepare the project within the time.

ABSTRACT

The purpose of this project is to develop a computerized and interactive dashboard to analyze the data in a scientific manner. In this project, the dataset is chosen from the website Kaggle.com which is about to analyze the UEFA Champions League Tournament. There is no such comprehensive and visually appealing tool for analyzing and tracking the UEFA Champions league tournament.

SYSTEM REQUIREMENTS

A. Project Profile:

Project Title:	UEFA CHAMPIONS LEAGUE DASHBOARD
Organization:	LOVELY PROFESSIONAL UNIVERSITY
Developed by:	SAI KIRAN SAHU
Internal Guide:	Ms. Nidhi Arora

B. Project Tools:

Platform Used:	Tableau Desktop 2024.1

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INTRODUCTION

1.1 About Data Management:

Data visualization is the representation of information and data using charts, graphs, maps, and other visual tools. These visualizations enable data professionals to easily understand any patterns, trends, or outliers in a data set.

Data visualization also presents data to the general public or specific audiences without technical knowledge in an accessible manner. For example, the health agency in a government (in the US, that would be the CDC) might provide a chart of populations with the highest cases of COVID-19 or a map of a country colored according to vaccinated regions.

The purpose of data visualization is to help drive informed decision-making and to add colorful meaning to an otherwise bland database.

TABLEAU:

Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format. Tableau helps create the data that can be understood by professionals at any level in an organization. It also allows non-technical users to create customized dashboards.

Data analysis is very fast with Tableau tool and the visualizations created are in the form of dashboards and worksheets.

The best features of Tableau software are

- Data Blending
- Real time analysis
- Collaboration of data

The great thing about Tableau software is that it doesn't require any technical or any kind of programming skills to operate. The tool has garnered interest among the people from all sectors such as business, researchers, different industries, etc.

Benefits of Using TABLEAU:

a) **Ease of Use**: Tableau provides a user-friendly interface that allows users to create and visually appealing dashboards without needing extensive coding knowledge.

b) **Data Visualization**: It allows users to create various types of visualizations, such as charts, graphs, maps and tables, to represent data in a meaningful way, making it easier to understand complex datasets.

c) **Data Connection**: It supports connections to a wide range of data sources, including databases, spreadsheets, cloud services, and big data platforms, allowing users to work with data from different sources seamlessly.

d) **Real-Time Analysis**: Tableau can connect to live data sources, enabling real-time analysis and updating of dashboards as new data becomes available.

e) **Mobile Compatibility**: Tableau Dashboards are responsive and can be accessed on various devices, including desktops, laptops, tablets, and smartphones, providing flexibility for users to access insights anytime, anywhere.

Overall, Tableau streamlines the process of data analysis and visualization, enabling users to uncover insights, make data-driven decisions, and communicate findings effectively.

OVERVIEW

Tableau offers various types of charts to visualize data effectively. Some of the commonly used charts in Tableau include:

1. **Bar Charts**: Suitable for comparing discrete categories or showing changes over time.

2. **Line Charts**: Effective for displaying trends over time or continuous data.

3. **Scatter Plots**: Used to show the relationship between two continuous variables.

4. **Pie Charts**: Ideal for displaying the proportion of each category in a dataset.

5. **Area Charts**: Similar to line charts, but the area below the line is filled, often used to represent cumulative totals.

6. **Histograms**: Useful for understanding the distribution of data by grouping them into bins.

7. **Heat Maps**: Visualize data density or intensity using color gradients.

8. **Treemaps**: Display hierarchical data structures in a nested rectangle format, where the size of each rectangle represents a certain value.

9. **Gantt Charts**: Represent project schedules, showing the start and finish dates of various elements.

10. **Box Plots**: Also known as box-and-whisker plots, they display the distribution of data, including outliers.

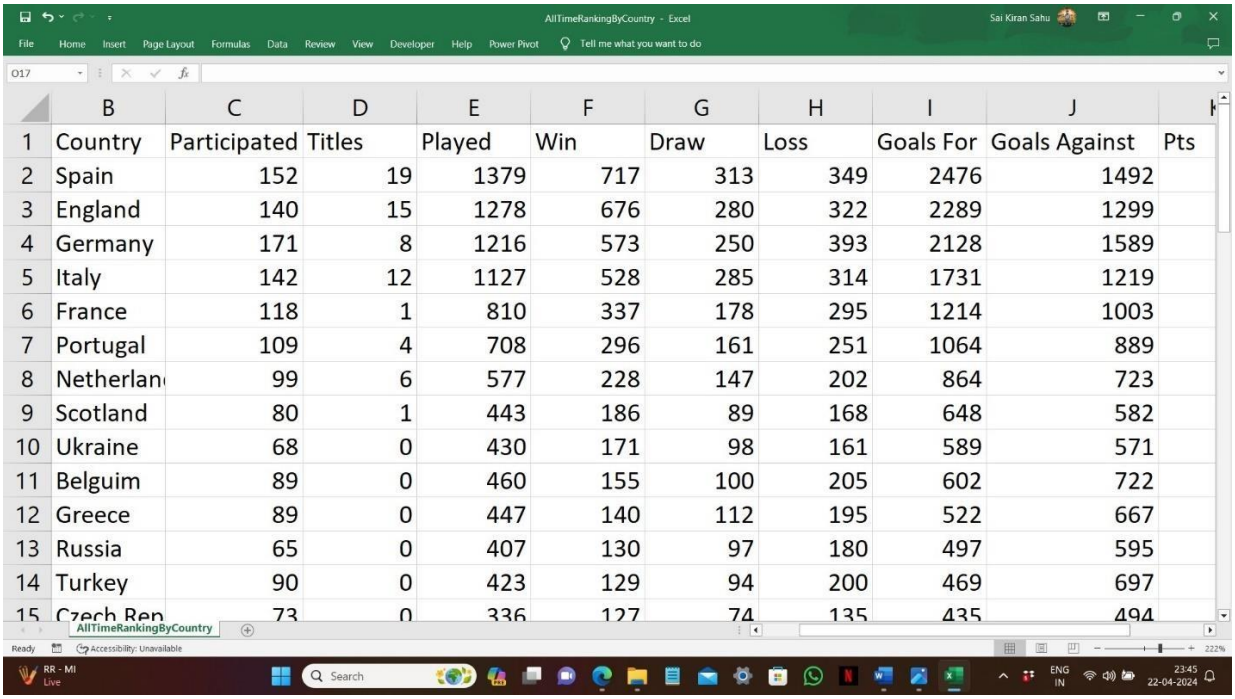
11. **Waterfall Charts**: Illustrate how an initial value is affected positively and negatively by sequential values.

12. **Bullet Graphs**: A variation of bar charts, ideal for tracking progress towards a goal.

IMPLEMENTATION & RESULTS

1. UEFA CHAMPIONS LEAGUE DASHBOARD

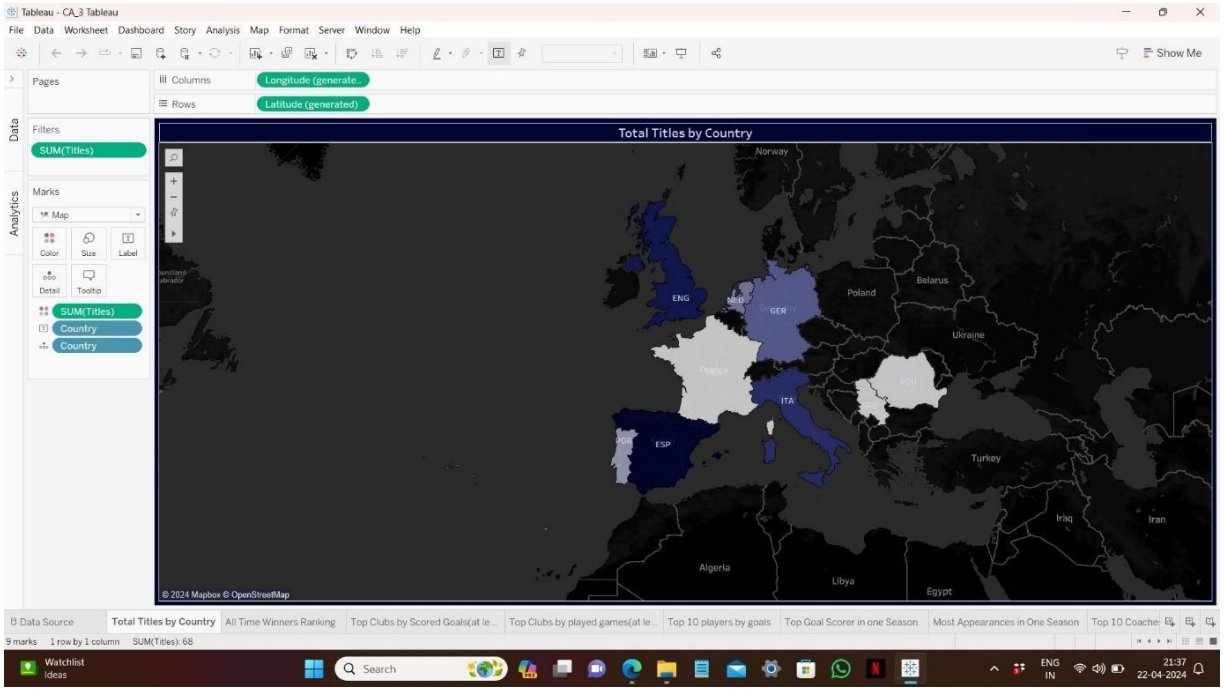
2. DATASET TABLE



AllTimeRankingByCountry - Excel

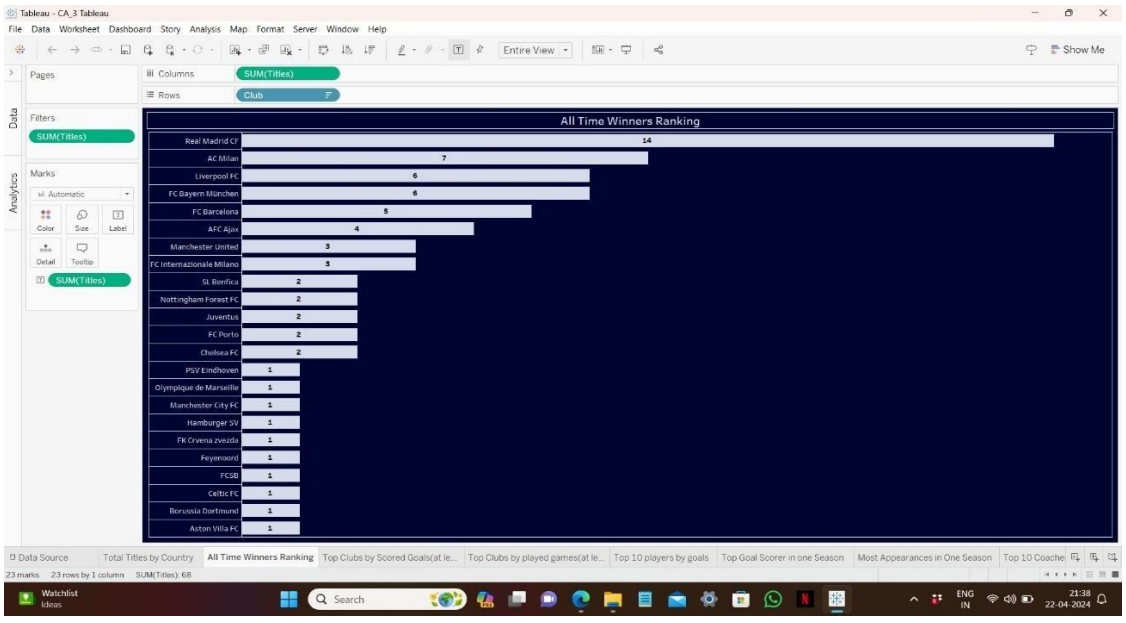
	B	C	D	E	F	G	H	I	J	K
1	Country	Participated	Titles	Played	Win	Draw	Loss	Goals For	Goals Against	Pts
2	Spain	152	19	1379	717	313	349	2476	1492	
3	England	140	15	1278	676	280	322	2289	1299	
4	Germany	171	8	1216	573	250	393	2128	1589	
5	Italy	142	12	1127	528	285	314	1731	1219	
6	France	118	1	810	337	178	295	1214	1003	
7	Portugal	109	4	708	296	161	251	1064	889	
8	Netherlan	99	6	577	228	147	202	864	723	
9	Scotland	80	1	443	186	89	168	648	582	
10	Ukraine	68	0	430	171	98	161	589	571	
11	Belguim	89	0	460	155	100	205	602	722	
12	Greece	89	0	447	140	112	195	522	667	
13	Russia	65	0	407	130	97	180	497	595	
14	Turkey	90	0	423	129	94	200	469	697	
15	Czech Rep	73	0	336	127	74	135	435	494	

OBJECTIVE 1: HEAT MAP



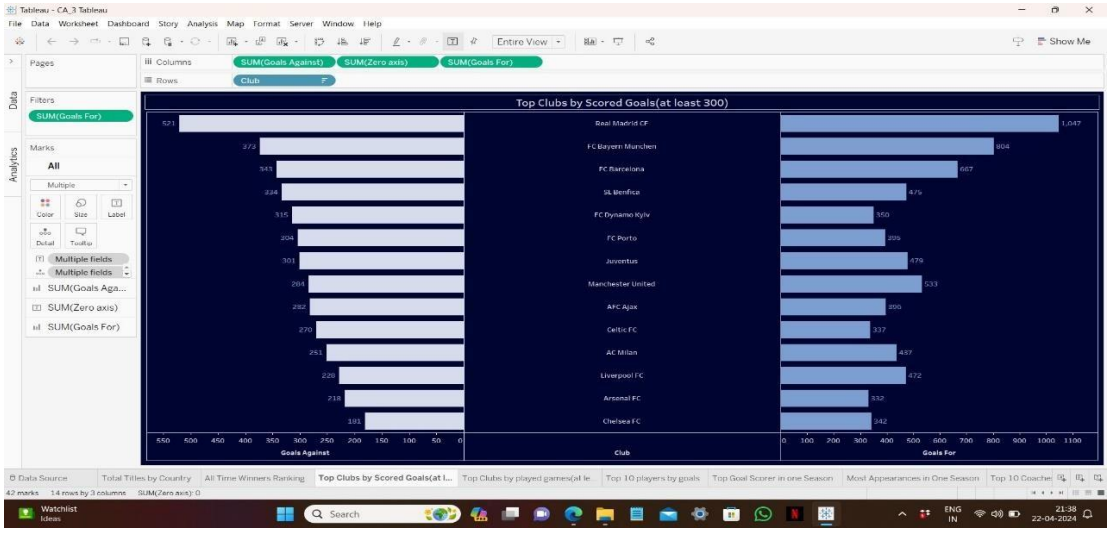
a) The above analysis says that the countries who won the titles in UEFA Champions League. It also shows that no of titles won by each country.

OBJECTIVE 2: Horizontal Bar Chart



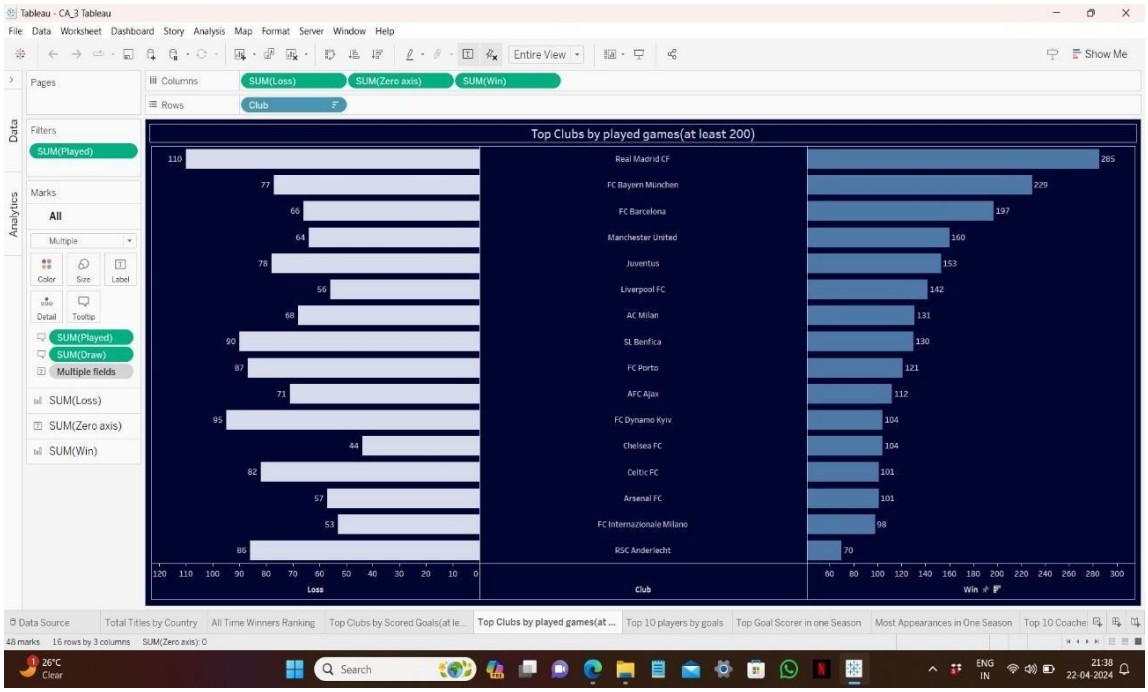
a) The above chart shows that the number of titles won by each Football Club and ordered them with their respective rankings.

OBJECTIVE 3: Horizontal Bar Chart



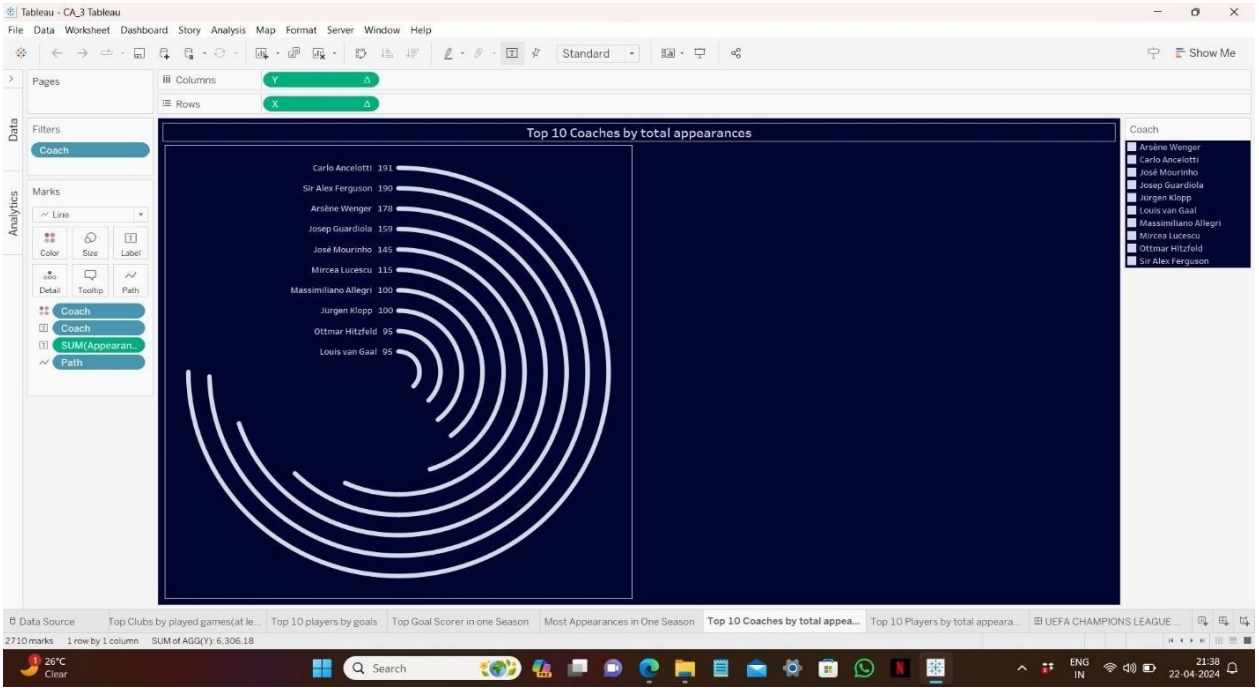
a) The above chart shows that the Clubs who have scored at least or more than 300 goals in the league.

OBJECTIVE 4: Horizontal Bar Chart



a) The above chart shows that the football clubs who have played at least or more than 200 games in the league. It also that no of wins and losses by each football club.

OBJECTIVE 5: RADIAL BAR CHART



a) The above chart shows the Top 10 coaches by their total appearances in the league. It also shows the total no of appearances by each coach in the league.

LINKEDIN POST SCREEENSHOT

CONCLUSION

In conclusion, this Tableau dashboard offers a comprehensive overview of the UEFA Champions League, providing valuable insights into team performance, player statistics, and match outcomes. Through interactive visualizations, it becomes evident that certain teams exhibit consistent dominance, while others showcase remarkable underdog stories. Additionally, analyzing player metrics sheds light on individual contributions and pivotal moments throughout the tournament. Overall, this dashboard serves as a powerful tool for fans, analysts, and enthusiasts alike, offering a deeper understanding of one of the most prestigious football competitions in the world.