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**CST3990: Undergraduate Individual Project**

**Data Analysis on International Football Results Over the Last 150 Years and Predicting Future Footballing Results Through Machine Learning**

**Coursework 2: Literature Review & Initial Steps**

**Submission: Sunday 14th January 2024, 23:50hrs (End of Week 13)**

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**Title: Data Analysis on International Football Results Over the Last 150 Years and Predicting Future Footballing Results Through Machine Learning**

**Chapter 1: Literature Review**

* 1. **introduction**

The topic is to tackle is 150- years of international football results examining historical records and predicted results from machine learning techniques. The aim of this is to find patterns within the footballing data and predict results, focus on the historical trend, and produce predictive modelling. The concept of the literature is to highlight the growing data availability and new developments in football analytics. This study displays the information and a developing approach as it tries to conclude the justification of the data sources. While acknowledging the constraints of research, this analysis defines the scope and limitations of research forming an analytical and critical assessment of football data analysis and predictive modelling. The main goal is to identify patterns embedded in the football dataset and use predictive modelling to anticipate outcomes in the future. The goal of the literature is to highlight how football analytics is changing, with a focus on the increasing amount of data that is available and the simultaneous improvements in analytical methods. This research seeks to navigate the challenges of historical data analysis while clarifying the dynamic nature of football analytics through an examination of past trends and the application of predictive modelling. It seeks to offer a thorough evaluation of the data sources while identifying the investigation's constraints. This introduction acts as a guideline, directing an exploration of past data, analytical patterns and forecasting results and finding techniques to enhance the football industry.

* 1. **Relevant Literature**

**Machine Learning**

To predict football results, Baboota & Kaur (2019) establishes a solid foundation for forecasting football outcomes by use of a variety of strategies that are crucial factors in football. The project is measured by goals per game, minutes played and a detailed study of the club budget, to highlight the extent to which the writers of project went to deliver a quality thesis and how all those elements effect match results. The study indicates the significance of team integration, and the roles different dynamics play for football teams, the viewpoint also adds the complexity of finances of teams and how the combination of those can lead to a thesis focusing on the value of team strategy, dynamics, and the financial stability of teams. The evaluation of the literature review includes a combination of emphasises and elements of the advancement of football match predictions. Baboota & Kaur’s (2019) technique is commendable to which they have provided a solid review to predict football matches. However, the project lacks the importance of individual players performances and how they can decide ball games alone. The study minimises the impact a singular player can have on results, ignoring the complex dynamics that are present in player-specific contributions, therefore a thorough study on player-specific contributions is key to overcome this problem. Examples such as the injury list, ranking of teams, player statistics, formation are all suggestion that can be taken to enhance the methodology of this project. Including these components not only offers a more complex picture of team dynamics but recognises the influence that players can have on the outcome of a game. Overall, the project is clear and concise but adding these new perspectives can lead to a wider approach and understanding of football predictions.

In contrast to Baboota & Kaur's (2019) methodology, Rodrigues & Pinto (2022) offers a different point of view as it focuses on the players and historical match data. The approach is significantly different because it vitalises how a single player can determine the outcome of matches through their abilities. Furthermore, the literature review explores the player contribution, acknowledging the influence of any athlete can have on a football match. The study persists the importance of players and how they can change the fate of a team and become victorious. This introduces a more in-depth analysis of the sport move from team to player analysis, which captures the player form, consistency, and skill sets of players. Although it provides a useful player focus perspective, the project has a few limitations that could hinder it, the lack of team dynamics is the reason for it. Football is a team sport, including team strategies, formations, tactics is vital for match predictions, therefore further studying to investigate football can achieve a balance and a more accurate prediction.

Che Mohamad Firdaus Che Mohd Rosli et al. (2018) displayed a comparative study that examines the reliability and adaptability of data mining approaches, and the research paper explores the variety of forecasting approaches such as decision trees and Bayesian networks. The study examines the methods that can be used in football, to which illustrates the disadvantages and advantages of both Bayesian networks and decision tree model evaluation. The research has insights to predictive analytics by utilizing these data mining techniques to predict football matches. Despite this commendable project, the study forgets to include football dynamics such as team tactics, variables like starting line-up consistency and how it effects the results. The model evaluation is both great predictive models, but it is difficult to represent the dynamic of the sport, problems such as overwriting code can delay results or lead to a less precise forecasts. Differently, Pantzalis & Tjortjis (2020) uses past data and advance statistics to predict other for team performance included refer to whether a team is going to have a better chance or not next season. This approach emphasises the use of data and how it can lead to strategic decisions for stakeholders of football and how it can be used for prediction purposes and aligns with the trends of sports analytics. Furthermore, the research paper takes on statistical categories that separates players into ability, the experimental results are based on data available of the beginning season which highlights the effectiveness of results. The study adds to classifying players based on their skills and contributions, giving knowledge of how individuals affect team outcomes. This player-centric viewpoint improves the outcomes and adds to a thorough understanding of projecting and assessing team performance in sports.

Alam & Almulla (2020) uses machine learning classification frameworks to investigate a relationship between player performance and results. The theory highlights the importance role that individual players determine the outcome of the results, identified patterns is utilized by machine learning techniques. Sports analytics present a how team overall performance affect whether they win a match and how they can improve for team tactics and forecast on player dynamics. Alternatively, the selected methodology has a disregards team variables, particularly the effect of injuries to results and player performances. The dynamics of a team can be easily halted by injuries, illnesses for example, and can change how the fame plays out. To improve the overall effectiveness of their research, a more thorough examination that incorporates individual players as well as team-related aspects that can lead to a more accurate model.

Stubinger, Mangold and Koll (2019) investigated football prediction and found significant returns, the research paper emphasis on the potential financial rewards from targeting specific betting strategies. The studies above are all machine learning related to which they all collectively focus on the predictive analysis and offering valuable insights to stakeholders and narrowing certain aspects to achieve a prediction. Differently, to the earlier research, Stubinger examines the financial environment of football and how it can benefit stakeholders, therefore proposing precise predictions can give a betting company or betters a financial advantage. The study creates a body of work that focuses on a variety of areas to improve the precision and relevance of forecasts in football. However, a lot of complexity involves in predicting match outcomes, displaying the necessity of a balanced approach that incorporates both team and player contributions to the results. Sports are a team collaboration, therefore its critical to consider the effectiveness of players, finding a balance between accuracy and a review of an events. Developing stern predictions model requires a wide range of methods to consider meaning that both team and player should be taking into consideration.

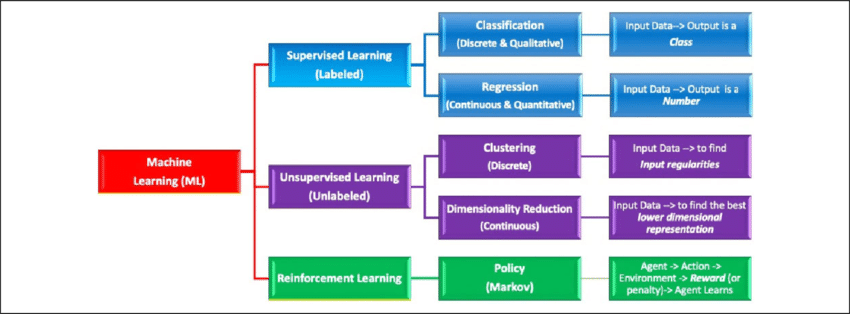


Figure 1

**Data visualization**

Data visualization is pivotal part of footballing performance analysis as it provides a detailed understanding of games. Gásquez & Royuela (2016) decided to analyse team performances by concentrating on goals scored and displaying it. Exploring differences between team dynamics and visualizing to insight managers, betting’s companies, and fan engagement. Their work purpose is to a serve a variety of stakeholders that includes managers that can use insights to enhance their skillset and find method to win more football matches. Betting organizations can try improving odds and fans interests can increase their engagement for the sports as they can compare predicted results to actual results. When the data is visualised, it becomes a great tool to make a well-informed decision and adds values to the sporting industry. Mohamad (2023) instead focuses on how much statistics affect team performance using data visualization tool. The purpose of this study was to determine whether match statistics influence team victories, the concept is to link performances to real world match results. The goal aims to align the performance measurement and real-world matches, using data visualization can create a connection between statistics and actual outcomes. This approach allows for data easier to understand, but it also makes it easier to comprehend how performance can affect a team’s ability to succeed. Football analytics gains a practical understanding of this study as it emphasises on the application of predicting matches. However, its necessary to address wider ranges of team successes for examples data visualized the key formation to winning match helps provide a further understanding of performance enhancement.

Sainan (2023) explores sports data visualization with an emphasis on degree cardinality, the purpose of the research paper is to visualize and present the playing pattern throughout the game and a focused approach found in football games. The goal of the research paper is to highlight the complex playing patterns that occur during a game, focusing on football matches. The study improves understanding of dynamic character of football game play because it provides analysis of interactions, formations, and strategic movements. On the other hand, neglection of direction can lead to a lacklustre analysis and leaves gaps in knowledge on the implications of the team success. This can lead to an ordinary analysis only to which it forgets the implications of team performances, ignoring this factor could reduce the depth of understanding from visualisations and makes it harder to identify the patterns and for team performance is neglected thoroughly. Elkins (2017) moves the emphasis to real-world uses, using data analytics techniques to improve football performance. The idea is to give coaches play probabilities that are based on data analytics to enhance the skillset of coaches understand what the common patterns within the sports are. Although the study has immediate application and provides valuable insights for coaches, its limitation when defining the scope of the project may prevent a comprehensive assessment of all factors that influence performance in international football such as the availability of players and home advantage. These studies all significantly focus on data visualization within football performance, overlooking broader factors that lead to team victories. However, it provides a realistic approach that bridges statistical insights with a more robust understanding of how data visualization can truly enhance football performance analysis and contribute to team victories.

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Figure 2

**Data Science**

Mansoor Alam (2020), the paper presents a data science approach to minimize the time taken in team selections. Using Power BI and Python Pandas to statistical analysis of player performance based on abilities and skills for players can demonstrate and improve managers to select players and help provide knowledgeable data for stakeholders. The benefits of this are to stakeholders such as management can learn what players are beneficial and that can lead to great victories. Using a programming language for predictive analytics helps to forecast results using model evaluation and what field out the best player for team selection in code. Power BI is a great tool for storytelling data insights to which it can be displayed in a dashboard that helps understand the player performance through charts, figures, and line graphs. However, this literature review focuses on the business side of football but the main interest in sports is internal, the abstract should include fan engagement and management strategies as they enhance the sport’s popularity. The reason being is that internal factors of football are a major responsibility to the success of the sports so that it is important to acknowledge as stakeholders in this project.

Poojan Thakkar & Manan Shah (2021) literature review aims and delves into the impact of data and the influences of data science of football and seeks to advance and transform the sports. Also, the research paper highlights changes in sports and examines the effects and displays how different strategies, tactics, and overall approach to playing a match can affect. In addition, the competitive edge to gain an advantage over opponents highlights how useful insights can lead to a quality understanding of football. The review also extends into the political and economic state and how it affects various aspects within and beyond sports. The reason these are great points in football because the tactical approach of football can lead to better results, had an inexperienced manager who wants to stick to playstyle can have a read of this research and find the best route to success in football management. Using data science to advance sport is a great move as predictive analysis can lead to actual outcomes in football. On the other hand, the research paper is vague because it generalizes a lot of important topics that need detailing, for example the project can be formulated better if there was a direct aim of the project rather than overview because of the complexity of each topic and it leaves the reader with little understanding of football analytics as it fails to narrow down on one topic.

Hucaljuk and Rakovic's (2011) research uses an exploration of the complex challenge of predicting football match results. It is a crucial resource because it focuses on using machine learning specifically to anticipate results and presents a methodology to maximize predictive powers. It also gathers the different methods that can be used to predict football matches, including logistic regression, highlighting the project using model evaluation to predict results. The aim of the project is to find the differences and difficulties of predicting results using Python. This literature review focuses on stakeholder demand and gives them a guide to use if needing to predict results. The research does, however, also show several limits that should be considered. Furthermore, because it was published in 2011, it might not include the most recent developments or machine learning techniques that are relevant to sports analytics. This study's main goal is to use machine learning approaches to handle the complexity involved in forecasting the results of football matches. Its goal is to provide a software-based solution that improves the predictive capacity for football results by feature selection and classifier models. It acts as a starting point, providing a structure or preliminary method for creating football prediction models. Additionally, it creates a standard by proving better predictive performance than conventional techniques, giving the project's models a benchmark to measure them against.

A diagram of data science process

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Figure 3

**Relevancy to project**

The project is in line with the literature review, which supports a variety of machine learning techniques while highlighting player characteristics and team dynamics. Understanding data visualisation techniques offers a way to successfully interpret game dynamics from the past. Furthermore, player performance analysis throughout football periods is enhanced by data science applications for squad selection. Recognising the effects of game scenarios helps predictive models by taking outside factors into account. Finally, the project's emphasis on examining tournament hosting and the impact of friendly matches throughout several footballing eras aligns with the review's need for uniqueness. By adding team within historical settings, these insights enhance the project's predictive models and provide a more thorough knowledge of football outcomes.

**Resilience of the team/player’s study**

Miguel-Angel Gomez (2020) focuses on soccer teams performances in close game scenarios over various match-status intervals from seventeen Spanish professional league games. There is a notable number of dynamics in football, and each can affect the winning team’s play, particularly in the final third of a game. For example, the clubs usually with less ball possession of all parts of game are more likely to lose the match. The goals of this research paper are to understand the resiliency of players and managers and how the results can interpret what scenario are likely to lead players to perform better whether scoring first or scoring later, it covers all aspects game development. Differently the review of this topic still lacks direction and certainty because no matter what order of sequence of a game, there are more factors such as the weather and players fitness that decide the game. The review of this subject nevertheless struggles with uncertainty and lacks a clear direction, despite the thorough investigation. This uncertainty arises external variables such as players' fitness levels and the weather, have a considerable influence on game outcomes, directly dependant of the events that happen during a match. These extra variables add an unpredictable factor that makes it more difficult to determine whether certain patterns can be seen or whether there is a clear relationship between team performances and match scenarios.



Figure 4

**Recommendations to Project**

The organised approach to the current research is presented in this overview of the literature review to which a detailed summary of the topic has been presented, however for this project there will be an element of originality as it will review how hosting big tournaments affects a nation's success rate, and how long friendly matches affect team performances—all while incorporating machine learning and data visualisation techniques. A more detailed understanding of football through data analysis will be presented and an analysis on different decades of results as players retire or regress in quality, therefore there will be a significant analysing between timelines of players and how different teams prevail depending on the national team. As such, the study seeks to characterise the complex relationship between time and team success, identifying trends that shed light on how different national teams succeed in changing environments. This project seeks to provide comprehensive insights into the diverse field of football analysis by analysing the complex relationships within football dynamics and shedding light on how the sport has changed over time.

**Conclusion**

To conclude this literature review consists of machine learning data visualization and scientific projects that provide a detailed understanding of football analysis to a certain extent. The analysis of the body of research in football analytics demonstrates the predictive power of machine learning and how it could benefit necessary stakeholders such as manager and betting agencies to predict the correct winner from the code. In addition, displaying the data in a dashboard helps create a visual picture of football and how it can benefit fan engagement because they can see the complex patterns of data simplified into bar charts and line graphs allows for non-technical stakeholders understand it. To improve the conversation, further study should go into the unexplored areas mentioned to offer a thorough comprehension of the complex dynamics of football that this project will include and is going to be beyond prediction models and visualisation strategies. This thorough literature study provides a substantial comprehension of football analysis by encompassing a variety of machine learning, data visualisation, and scientific endeavours. It draws attention to the predictive power of machine learning techniques and highlights how important stakeholders, including managers and betting agencies looking to make accurate match predictions. But this investigation opens new avenues for research into football dynamics, indicating that more research is necessary to fully examine these undiscovered areas. This project aims to provide a better understanding of football dynamics by going beyond simple prediction models and visualisation techniques that instead seeks to provide a thorough grasp of present football dynamics.

**Chapter 2: Initial Steps**

* 1. **Overview**

In this chapter, the project will focus on the first stages of date cleaning and preparation on Excel, to which one sizeable dataset will be analyzed and data cleaned for data explore. This will include a dataset on the results of over 45,000 rows of data to be analyzed, all the international results and those matches decided by penalties. When working with datasets, data cleansing is crucial for several reasons, particularly prior to any analysis or exploration as it contributes to accuracy by correcting mistakes, discrepancies, or missing values in the data. Regarding trustworthy judgements and decisions to be made based on the information given, accuracy is essential. Additionally, data cleaning makes the dataset easier to read and understand. Formats are standardized, duplication is eliminated, and outliers are addressed to make the information more arranged and simpler for the average reader to understand. By cleaning the data, you can make sure that any insights you get from it are well-founded and avoid biased or false information that could distort your findings.

* 1. **Excel**

Results Dataset

**1) remove duplicates**

A screenshot of a computer error

Description automatically generated

No duplicates rows provide originality and more accurate findings.

**2) Change source type**

A screenshot of a computer

Description automatically generated

The source type currently is text based; therefore, it has been changed to the date format.

**3) new date format**

A screenshot of a computer

Description automatically generated

A screenshot of the date with the correct format allows for the date of matches.

**A screenshot of a computer

Description automatically generated4) Capitalize first word**

**A screenshot of a phone

Description automatically generatedA screenshot of a computer

Description automatically generated**

This is the three-step process from transforming capital words only to just the first word.

**5) data quality**

A screenshot of a computer

Description automatically generated

Checking whether the data has any errors or empty rows.

**A screenshot of a computer

Description automatically generated6) Find and replace**

**A screenshot of a computer error

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Description automatically generated**

This is the replacement of the dash to a slash, as its the common calendar date separator.

**A white grid with black text

Description automatically generatedA screenshot of a cellphone

Description automatically generated7) Change column name**

**A screenshot of a computer

Description automatically generatedA screenshot of a computer

Description automatically generated**

The name of the column has been changed to provide context of what is being analysed.

**Old dataset**

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**Updated dataset**

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The changes have been made to the dataset, is cleaned, and prepared and is going to be explored in the next chapter.

**2.3 SQL**

In this section of the project, the data has now been cleaned and prepared, now data is going to be explored using the query language and to find patterns of results, trends of how international teams performed dependant on the scenario of the match, and it will provide an overview of data exploration to football results.

**Results Dataset 13 rows - 1870 - 1879**

1. **How many games were played in the 1870s.**

****

**A screenshot of a computer

Description automatically generated**

This is the first decade of football and only thirteen matches were played.

**2) What is the average number of goals scored by home teams and away teams**

**A close up of words

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

The home team is three times as likely to score than the away team.

**3) Games were home team won in 1870s.**

****

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Description automatically generated**

Eight out of the thirteen matches which shows 60% of the time the home team won.

**3b) Games were away team won in 1870s.**

****

**A screenshot of a computer

Description automatically generated**

The away team only won three matches in the 1870s.

**4) National team with most home wins in 1870s**

**A screenshot of a computer code

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

Scotland was the best home team in terms of winning.

**4b) National team with least home wins in 1870s.**

**A black and blue text

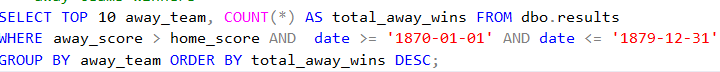
Description automatically generated**

**A screenshot of a computer

Description automatically generated**

England won the least home matches however only them and Scotland played at home in 1870s.

**4c) National team with the most away wins in the 1870s.**

****

**A screenshot of a computer

Description automatically generated**

Scotland was the most successful away team in the 1870s.

**5) Total Home goals scored in 1870s**

**A screen shot of a computer

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

Scotland scored the most goals at home, eleven more than England.

**5b) Least Home goals scored in 1870s.**

**A close up of text

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

Wales failed to score at home in 1870s.

1. **Highest away goals scored in 1870s.**

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**A screenshot of a computer

Description automatically generated**

Scotland scored the most away goals in the 1870s.

**6b) least away goals scored in 1870s.**

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**A screenshot of a computer

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Wales scored the least away goals, England being a close second.

1. **Matches that ended in a draw in 1870s.**

****

**A screenshot of a computer

Description automatically generated**

Only two matches ended in a draw in 1870s.

**7b) Most home team draws in 1870s.**

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Description automatically generated**

**A screenshot of a computer

Description automatically generated**

The joint most draws at home in this era of football is both Scotland and England.

**7c) Least draws at home in 1870s.**

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Description automatically generated**

They both also had the least draws due to being the only draw of this decade.

1. **Most away draws in 1870s.**

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Both England and Scotland and the most away draws with only one.

**8b) Least away draws in 1870s.**

**A screenshot of a computer

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**A screenshot of a computer

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Both England and Scotland and the least away draws with only one.

1. **Tournaments hosts in the 1870s.**

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No countries hosted a singled tournament in this decade due to it being the first era of football.

1. **Home games played in 1870s.**

****

**A screenshot of a computer

Description automatically generated**

Scotland played the most home games in the 1870s, one more than England.

**10b) Least home games played in 1870s.**

****

**A screenshot of a computer

Description automatically generated**

Wales played the least home games, exactly three times less than Scotland.

1. **Highest away games played in 1870s.**

****

**A screenshot of a computer

Description automatically generated**

Scotland played the most away games , two more than second place England.

**11b) Least away games played in 1870s.**

****

**A screenshot of a computer

Description automatically generated**

Wales played the least away games played in 1870s.

1. **Neutral venue matches in 1870s.**

**A close up of a sign

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**A screenshot of a computer

Description automatically generated**

All matches played a team had an advantage in the 1870s.

**Summary of 1870s data explorations**

This is start of international football that is document to which only thirteen matches were played. The home team held a clear upper hand as 60% of games ended in them winning. Scotland was both the dominant force at home and away, they also scored the most goals overall. On the other hand, Wales failed to find the net whether they played home or away and played the least matches whilst Scotland played the most. Only two matches ended in a draw, to which Scotland and England share the highest draws. This era signifies the home advantage, Scotland dominance, England and Wales finding their feet in the early stage of footballs and limited matches.

**Results Dataset 55 rows - 1880 - 1889**

1. **Total matches played in the 1880s.**

****

**A screenshot of a computer

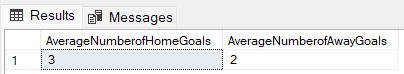
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Fifty-five matches were played in 1880s, around extra forty matches were played.

1. **Average number of goals scored both home and away in 1880s.**

**A close up of words

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The home goals score on average one more goal than the away team.

1. **Times were home team won in 1880s.**

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Around 50% matches the home team won in the 1880s.

**3b) Times were away teams won in 1880s.**

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Around 40% matches the away team won.

1. **Most home winning teams in 1880s.**

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Scotland was the most successful home winning team in 1880s, an extra four more than second place England.

**4b) Least home winning teams in 1880s.**

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United States and Northen Ireland combined had the least home wins with 1 each.

**4c) Best away winning teams in 1880s**

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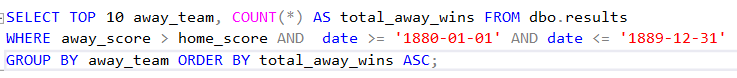
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Scotland won the most away matches, another three more than England.

**4d) Least away teams wins 1880s.**

****

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Canada got the least away wins in the 1880s.

1. **Total home goals scored in 1880s.**

**A black and red text

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Scotland scored the most home goals , a seven more than England.

**5b) Least home goals scored in 1880s.**

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**A screenshot of a computer

Description automatically generated**

United States scored the least home goals with the second team Northen Ireland managed to score an extra twelve more than them.

1. **Highest away goals scored in 1880s.**

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England and Scotland both scored the most away goals , so much they have 35 more than the second-place team.

**6b) Least away goals scored in 1880s.**

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Canada scored the least away goals , with a close second is Northen Ireland how scored only five.

1. **Matches that ended in a draw in 1880s.**

****

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Only 10% of matches ended in a draw in 1880s, showing there is a 90% chance of victories which is exceedingly high.

**7b) Team who drew the most at home in 1880s.**

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**A screenshot of a computer

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England got the most draws at home in 1880s.

**7c) Team who drew the least at home in 1880s.**

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Three national teams share the least draws , which suggests they had a confident playstyle at home.

1. **Team that drew the most as the opposing team in 1880s.**

**A screenshot of a computer

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Wales and Scotland both had the most away draws in 1880s.

**8b) Teams that drew the least as the opposing team in 1880s.**

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England got the least away draws in 1880s.

1. **Teams that hosted tournaments in order in 1880s.**

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Description automatically generated**

England had the most tournaments, only one more joint second Ireland and Scotland.

**9b) Teams that hosted the least tournaments in 1880s.**

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Wales hosted the least tournaments in 1880s, but is only two less than the most England, this suggest that everyone had a fair chance in hosting tournaments.

1. **Most home matches played in 1880s.**

****

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England had the most home games played but only four more than fourth place Northen Ireland which indicates many national teams had the opportunity to play at home.

**10b) Least home matches played in 1880s.**

****

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United States played the least games at home, potentially due most teams being British, the travel can be too much.

1. **Most away matches played in 1880s by teams.**

****

**A screenshot of a computer

Description automatically generated**

Wales played the most away games in the 1880s.

**11b) Least away matches played in 1880s per teams.**

****

**A screenshot of a computer

Description automatically generated**

Canada played the least away matches in 1880s.

1. **Matches played in a neutral venue.**

**A close up of a number

Description automatically generated**

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All matches played a national team had an advantage.

**Summary of 1880s data explorations**

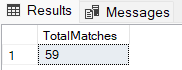
In the 1880s, football had an expansion with 55 matches played which is a significant rise from the previous decade. Home team held a moderate advantage, winning approximately 50% of the matches, while away team managed victories in around 40% of the games. Scotland emerged once again excelled both home and away whilst United States and Northen Ireland struggled to secure wins.

Only around 10% of matches ended in a draw highlighting the likelihood of a clear winner in matches during period. England hosted the most tournaments but each national had a fair chance in hosting a tournament as they are all shared out. England also topped the list of home games played, with United States playing the least. Wales and Canada stood out with the least matches played. This era signifies the home advantage and highlighting the evolving landscape of football and its reach to different continents.

**Results Dataset Next 59 rows - 1890 - 1899**

1. **Total matches played in the 1890s.**

****

****

Only four more matches played in the 1890s.

1. **Average amount of goals scored both sides in 1890s.**

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The home teams are more likely to score an extra goal than the average.

1. **Where home team won in 1890s.**

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Around 50% of matches the home team won in the 1890s.

**3b) Where away won in 1890s.**

****

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Around a third of matches the away team won in 1890s.

1. **The highest home winning team in 1890s.**

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The England won the most home matches in the 1890s.

**4b) Least home winning team in 1890s.**

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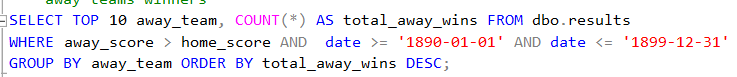
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Northen Ireland and Wales both had the least home wins in 1890s.

1. **Best away winning team in 1890s.**

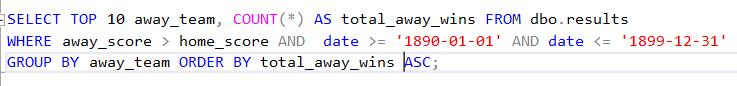
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England won the highest number of away matches, three more than Scotland.

**5b) Least away winning team in 1890s.**

****

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Northen Ireland won the least away matches with only one.

1. **Teams with the most home goals in 1890s.**

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**A screenshot of a computer

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England scored the highest home goals, an extra fifteen more than Scotland in 1890s.

**6b) Teams with the least home goals in 1890s.**

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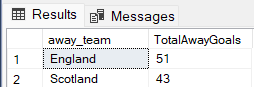
Description automatically generated**

United States scored only three goals at home, twelve less than Northen Ireland and thirty-six less than Wales, to signify how little number of goals they have scored.

1. **Most away goals scored in 1890s.**

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England scored the most away goals with a total number of 51, Scotland is second place with 43.

**7b) Least away goals scored in 1890s.**

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Wales scored the least number of away goals, only one less from Northen Ireland.

1. **Matches that the game ended in a draw in 1890s.**

****

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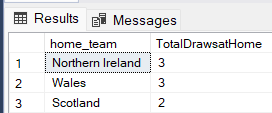
Description automatically generated**

Around 15% of matches ended a draw in 1890s.

**8b) Total draws at home in 1890s.**

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Northen Ireland and Wales drew the most home games , Scotland is a close second with 2 draws.

**8c) Least draws at home in 1890s.**

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England had the least draws in 1890s.

1. **Most away draws in 1890s.**

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Scotland and England have the joint most away draws in 1890s.

**9b) Least away draws in 1890s.**

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Northen Ireland drew the least away from home in 1890s.

**8) Tournaments that was hosted by a country in 1890s.**

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England hosted the most tournaments one more than Scotland.

**8b) Tournaments hosted the least amount by a country in 1890s.**

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**A screenshot of a computer

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The least tournaments were hosted by Ireland and Wales and 1890s.

**9) Most home games played in 1890s.**

****

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3 home team all played fifteen games played and are the highest number of it in the 1890s.

**9b) Least home games played in 1890s.**

****

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Northen Ireland played the least home games , only one less than the highest.

1. **Most away games played in 1890s.**

****

**A screenshot of a computer

Description automatically generated**

3 national teams all played the most away matches in 1890s.

**10b) Least away games played in 1890s.**

****

**A screenshot of a computer

Description automatically generated**

Wales played the least away games but only one less than the joint highest.

1. **Number of non-neutral games played in 1890s.**

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Description automatically generated**

All matches a national team had an advantage in the 1890s.

**1890s data explorations**

The era showed the traditional home advantage, emphasizing on the importance of local support. England displayed dominance, winning both at home and away the highest. However, Northern Ireland and Wales faced difficulties in home victories, highlight support from crowd doesn’t dictate results. Moreover, England where the highest goal scored and outperforming opponents both home and away. United States face significant challenges in scoring goals at home, these trends highlighted a variety of performance and dynamics among different national teams.

**Results Dataset 124 rows - 1900 - 1909**

1. **How many games that were played in the 1900s decade.**

****

**A screenshot of a computer

Description automatically generated**

This is the first decade of football were over a hundred of matches played in 1900s.

1. **On average goals scored from home and away matches in the 1900s decade.**

**A close up of words

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The home team is twice as likely to score than the away team.

1. **home team won in the 1900s decade.**

****

**A screenshot of a computer

Description automatically generated**

Only 45% of matches the home team won to which portrays their more loses and draws then other decades.

**3b) When away team won in the 1900s decade.**

****

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Description automatically generated**

35% of matches the away team won in 1900s.

1. **Teams with the most home wins in the 1900s decade**

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England is the highest and the only team to win double digits at home.

**4b) Teams with the least home wins in the 1900s decade.**

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5 national teams all won only one match at home.

1. **Teams with the most away wins in 1900s decade.**

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**A screenshot of a computer

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England dominated this decade as they won fifteen away matches, second place Scotland only one six.

**5b) Least away wins for a team in 1900s decade.**

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Hungary won only one matches as the away team, the least in this decade.

1. **Highest home goals scored in 1900s decade.**

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Description automatically generated**

**A screenshot of a football match

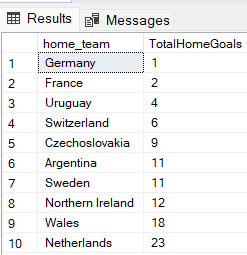
Description automatically generated**

Scotland scored the most home goals in 1900s, and Hungary scored only two less.

**6b) Least home goals scored in 1900s decade.**

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Description automatically generated with medium confidence**

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Germany scored only 1 home goals, the least in the decade.

1. **Most away goals scoring teams in order of 1900s decade.**

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England scored the most away goals, fifty more goals than second place Scotland.

**7b) Least away goals scoring teams in order of 1900s decade.**

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Description automatically generated**

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Switzerland as the opposing is the only team to not score an away goal in the decade.

1. **Matches that ended in a draw in 1900s in decade.**

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Description automatically generated**

Around 20% of matches that ended in a draw.

**8b) Matches ended in a draw in 1900s in decade.**

**A screenshot of a computer

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

3 national teams had the highest draws at home, Wales, Hungary, and England are the countries.

**8c) Least matches that ended in a draw in 1900s.**

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**A screenshot of a computer

Description automatically generated**

Three national teams all drew the least at home this includes Argentina and Belgium.

1. **Away teams that drew the most in 1900s decade.**

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Scotland drew the most away games, with England being a close second with four only one less.

**9b) Teams with the least draws away from home in 1900s decade.**

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Description automatically generated**

**A screenshot of a computer

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5 teams share the least amount of draws to which includes Hungary, Germany, France, and Uruguay.

1. **Most tournaments hosted in 1900s decade.**

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Description automatically generated**

England hosted the most tournaments they pipped Ireland and Wales by 1.

**10b) least tournaments hosted in 1900s decade.**

**A close-up of a number

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Belgium hosted the least tournaments with only and two less than Uruguay.

1. **Most home games played in 1900s.**

****

**A screenshot of a computer

Description automatically generated**

England and Hungary both played the most home games in the first ten years of 1900s.

**11b) Least home games played in 1900s.**

****

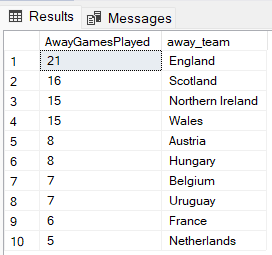
**A screenshot of a computer

Description automatically generated**

Germany and Sweden both only played one home game in this period, but both made their debut.

**11c) Most away games played in 1900s.**

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England played the most away games, five more than Scotland in 1900s.

**11d) Least away games played in 1900s.**

****

**A screenshot of a computer

Description automatically generated**

Norway played the least away games with only one match in the 1900s.

1. **Non-neutral matches 1900s.**

****

**A screenshot of a computer

Description automatically generated**

All matches were played at a neutral venue.

**1900s data exploration**

There was a surge of more matches with over a hundred, highlighting the growing interest in the sport. Home team enjoyed a notable advantage, scoring twice as then the away team, but there was a dip in their percent by 5%, indicating more losses and draws than previous decade. England were the front runners as they were victorious in the bulk of their home and away matches. Notably, Germany and Hungary faced challenges recording minimal wins and goal-scoring struggles. Draws were slightly more frequent, accounting for about 20% of matches with Wales, Hungary, England recording the highest number of home draws. Scotland led in away draws, emphasizing their resilience. Hosting tournaments became prevalent , with England leading in hosting, while Belgium hosted the least events. The decade portrays England dominance, fluctuations in home team advantage, varied hosting trends and portraying a landscape in football.

**Results Dataset 283 rows - 1910 - 1919**

1. **How many matches played in 1910s.**

****

**A screenshot of a computer

Description automatically generated**

Over double number of matches were played in the 1910s.

1. **A screenshot of a computer

   Description automatically generatedAverage number of goals scored both sides in 1910s.**

**A screenshot of a computer

Description automatically generated**

The home goals scored twice as more than away goals scored.

1. **Where home team won in 1910s.**

****

**A screenshot of a computer

Description automatically generated**

Only 50% of matches the home team won in 1910s.

**3b) Where away team won in 1910s.**

****

**A screenshot of a computer

Description automatically generated**

30% of matches the away team won in 1910s.

1. **Where home team won in total in 1910s.**

**A screenshot of a computer

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**A screenshot of a computer

Description automatically generated**

Argentina won the most at home with the only team with twenty or more wins.

**A screenshot of a computer

Description automatically generated4b) Teams that won at home the least in 1910s.**

**A screenshot of a computer

Description automatically generated**

Four home team all won only once at home in the 1910s.

1. **Best away winning teams in 1910s.**

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**A screenshot of a computer

Description automatically generated**

Hungary won the most as the opposing team, only won more than Argentina.

**5b) Least away winning teams in 1910s.**

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Description automatically generated**

**A screenshot of a computer

Description automatically generated**

6 national teams all won only once away from home, the top ten only has 3 away wins this decade.

1. **Most home goals scored by teams in order in 1910s.**

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Description automatically generated**

**A screenshot of a computer

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Argentina scores the highest home goals, but 5 teams managed to score sixty or more which shows the quality of football being played.

**6b) Least home goals scored by teams in order in 1910s.**

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1. **Most away goals scored by teams in order in 1910s.**

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Hungary scores the most away goals by twenty more than second place Argentina.

**7b) Least away goals scored by teams in order in 1910s.**

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Luxembourg scored zero away goals in the 1910s.

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1. **Matches that ended in a draw in 1910s.**

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Description automatically generated**

Around 18% of matches ended in a draw which shows 82% of matches ended in a team winning.

**8b) Total home draws in 1910s.**

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Argentina and Norway share the stat of drawing at home in 1910s.

**8c) Least home draws in 1910s.**

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Description automatically generated**

4 national teams all drew only once at home in the 1910s.

1. **Most away draws by teams in order in 1910s.**

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**A screenshot of a computer

Description automatically generated**

Uruguay drew the most away matches , three twice more than tenth placed Basque Country.

**9b) Least away draws by teams in order in 1910s.**

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7 national teams all drew only one away matches in 1910s.

1. **Teams who hosted the most tournaments in 1910s.**

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Uruguay hosted the most tournaments , Argentina hosted only two less.

**10b) Teams with the least hosted tournaments in 1910s.**

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England hosted the least tournaments in the 1910s, with joint seconds Brazil and Scotland**.**

1. **Home games played by teams top 10 in order in 1910s.**

****

**A screenshot of a computer

Description automatically generated**

Argentina played the most home games, only four more than Uruguay.

**11b) Least home games played by in order in 1910s.**

****

**A screenshot of a computer

Description automatically generated**

Japan played the least home games in 1910s.

**11c) Most away games played in 1910s by teams.**

****

**A screenshot of a computer

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Argentina also played the highest away games in 1910s.

**11d) Least away games played in 1910s by teams in order.**

****

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Luxembourg and Philippines both played the least number of games in 1910s.

1. **Non-neutral matches in 1910s.**

**A close up of a number

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**A screenshot of a computer

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All matches a national team played at home, so all were non-neutral venues.

**1910s data explorations summary**

This was a transformative decade of football with doubling the matches played, popularity increased. Home reams demonstrated clear dominance, scoring twice as many as the away team, reinforcing the influence of playing on a similar turf. Despite a 50% home victory rate, Argentina emerged as the front runner for home victories, whilst many struggled. Away victories were minimal with Hungary excelling as the most successful away team, and many nations with only one away win. Draws were around 18%, majority of matches decided by specific outcomes, Uruguay and Argentina led in tournaments hosting, highlight South America’s prominence and arrival to world football, while England and Scotland had fewer hosts that usual. Teams such as Japan and Philippines had minimal involvement due to geographical reasoning, overall, this decade continued home advantage, Argentina’s brilliance, and comfort on familiar pitches.

**Results Dataset 729 rows - 1920 – 1929**

1. **How many games were played in the 1920s.**

****

**A screenshot of a computer

Description automatically generated**

An Extra 446 matches were played in the 1920s.

1. **Average goals scored both sides in 1920s.**

**A screenshot of a computer

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Description automatically generated**

The average home team scored double amount then the away team scored.

1. **Where home team won in 1920s.**

****

**A screenshot of a computer

Description automatically generated**

49% of home team won their game, a one out of two chance the home team won.

**3b) where away team won in 1920s.**

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**A screenshot of a computer

Description automatically generated**

Only 31% of chance the away team won.

1. **Home teams that won the most in 1920s.**

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Argentina won the most home matches, four more than Sweden in 1920s.

**A screenshot of a computer

Description automatically generated4b) Least home team wins in 1920s.**

**A screenshot of a computer

Description automatically generated**

All ten teams only won one home matches in 1920s.

1. **Away teams that won the most in 1920s.**

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Description automatically generated**

**A screenshot of a computer

Description automatically generated**

England won the most away matches but the list is tight with 1 win difference between the top 4.

**5b) least away teams winning matches in 1920s.**

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Description automatically generated**

10 away teams all won only once away from home.

1. **Most home goals scored in 1920s.**

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Description automatically generated**

Sweden scored the most home goals in 1920s, an extra forty more than the second-place team.

**6b) Least home goals scored in 1920s.**

**A math equations and numbers

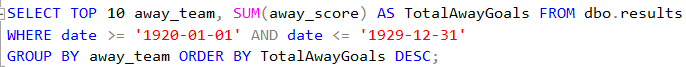
Description automatically generated with medium confidence**

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Aruba is the only home team not to score at home in the 1920s.

1. **Most away goals scored in 1920s.**

****

**A screenshot of a computer

Description automatically generated**

Sweden scored the most away goals in 1920s, pipping England by 9 Goals.

**7b) Least away goals scored in 1920s.**

**A screenshot of a computer

Description automatically generated**

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Description automatically generated**

7 national teams failed to score away from home in 1920s.

1. **Where the match ended in a draw in 1920s.**

****

**A screenshot of a computer

Description automatically generated**

20% of the time the match ended as a draw in 1920s.

**8b) Home teams that drew the most in 1920s.**

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Italy drew the most home matches, but three teams are joint second with only one less.

**8c) Least teams that drew at home in 1920s.**

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Description automatically generated**

All 10 teams all drew only once at home in 1920s.

1. **Away teams that drew the most in 1920s.**

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Description automatically generated**

**A screenshot of a computer

Description automatically generated**

Argentina drew the most away from home, pipping Austria and Netherlands.

**9b) least away draws by teams in 1920s.**

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10 teams only drew once in 1920s.

1. **Countries that hosted the most tournaments in 1920s.**

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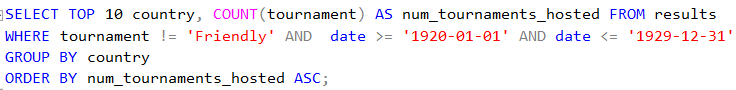
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Description automatically generated**

Argentina hosted the most tournaments in 1920s, hosting twelve more than second place.

**10b) Least tournaments in countries in 1920s.**

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**A screenshot of a computer

Description automatically generated**

Romania hosted only one tournament in 1920s.

1. **Home games played the most in 1920s.**

****

**A screenshot of a computer

Description automatically generated**

Sweden played the most home games, pipping Argentina by only one**.**

**11b) least home games played in 1920s.**

****

**A screenshot of a computer

Description automatically generated**

All 10 national teams only played 1 home game in 1920s.

**11c) Most away games played in 1920s by teams.**

****

**A screenshot of a computer

Description automatically generated**

Sweden played the most away games in 1920s,only three more than second place Austria.

**11d) Least away games played in 1920s by teams,**

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**A screenshot of a computer

Description automatically generated**

All 10 national teams all played won away games in 1920s.

1. **Non-neutral in matches in 1920s.**

**A close up of a text

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**A screenshot of a computer

Description automatically generated**

All matches a team had the advantage in the 1920s.

**1920s data exploration summary**

1920s data exploration portrays several findings, starting with the surplus of matches compared to previous decades. Home teams notably dominated by scoring double the number of goals and highlighting the influence of familiar territory. Argentina and Sweden emerged as dominant forces at home, securing the most victories, while an unusual trend emerged with all ten teams managing only one home win each. England led in away victories by a slim margin, however parity was evident, with ten nations securing just one away win. Sweden stood out in goal-scoring, whilst Aruba failed to score at home. Draws were in the 20-percentile range with Italy leading in home draws. Argentina stood out in away draws, they also held the most tournaments and Romania the least. Each match was played on a home team ground and consistent home advantage in 1920s.

**Results Dataset Next 1010 rows - 1930 – 1939**

1. **How many games were played in the 1930s.**

****

**A screenshot of a computer

Description automatically generated**

There was a little over a thousand games played, meaning that it is the first decade were football has taken off globally.

**2) What is the average number of goals scored by home teams and away teams**

****

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Description automatically generated**

The home team are twice as likely to score than the away team this again is due to the home crowd supporting the team, potentially due to it being the first global decade of international matches there was little amount of away fans present.

**3) Games were home team won in 1930s.**

****

**A close up of a message

Description automatically generated**

Again, a little over 50% of home team won meaning that they were the majority for obvious reasoning, and a third of matches were won by the away team.

**3b) Games were away team won in 1930s.**

****

**A screenshot of a computer

Description automatically generated**

Around a third of matches ended in the away team winning which a common them in football results.

1. A screenshot of a computer

   Description automatically generated**National team with most home wins in 1930s (Top 10)**

**A screenshot of a computer

Description automatically generated**

Germany was the most successful home team in this period as they won a total of 29 matches at home.

**A screenshot of a computer

Description automatically generated4b) National team with least wins in 1930s.**

**A screenshot of a computer

Description automatically generated**

There are 10 joint teams with the least number of wins, potentially due to being a smaller number of matches than an international team such as England potentially financial and economic where factors included.

1. **Total Home goals scored in 1930s.**

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Sweden have scored the most home goals in this period however they were not the most successful home teams this shows that scoring more goals doesn’t always equate to winning more matches.

**5b) Least Home goals scored in 1930s.**

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**A screenshot of a football match

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There are 3 joint home teams that scored zero goals, this finding presents that all three teams were unsuccessful potentially due to not playing enough home matches or all their matches were against the top 10 team home goals scoring teams.

1. **Most away goals scored in 1930s.**

****

**A screenshot of a computer

Description automatically generated**

Germany have scored the most goals away from home, the only other team is Hungary that scored over a hundred goals.

**6b) least away goals scored in 1930s (bottom 10)**

****

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Philippines is the only team to not score an away goal in the 1930s.

1. **Matches that ended in a draw in 1930s.**

****

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Description automatically generated**

A little over 10 percent of matches in the draw which highlights that there is a 90% chance of a winning teams, also football betting also started to take off in this period meaning that with this data picking a team to win is beneficial if betting.

**A screenshot of a computer

Description automatically generated7b) Most home team draws in 1930s.**

**A screenshot of a computer code

Description automatically generated**

Germany drew the most home games due playing more matches than the average national teams.

**A screenshot of a computer

Description automatically generated7c) Least draws at home in 1930.**

**A screenshot of a computer code

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There 10 national teams that were joint least drawing home which shows that they had a more offensive playstyle as they lost or won matches and only drew once.

1. **Most away draws in 1930s.**

**A screenshot of a computer code

Description automatically generatedA screenshot of a computer

Description automatically generated**

Hungary have drawn the most away matches potentially due to playing the more matches they were in the top 3 of most goals scored away or home.

**A screenshot of a computer

Description automatically generated8b) Least away draws in 1930s.**

**A screenshot of a computer code

Description automatically generated**

There is joint 10 teams that drew away matches the least in the 1930s.

1. **Top 10 countries who hosted tournaments.**

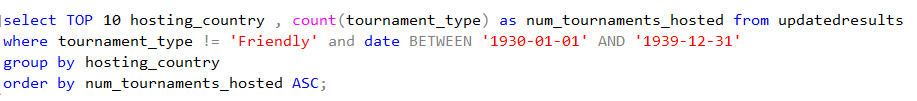
**A computer screen shot of a computer code

Description automatically generatedA screenshot of a computer

Description automatically generated**

Italy have hosted the most tournaments which benefited them as they were the second most home winning, this shows they have taken advantage of playing home matches.

**9b) Least 10 countries hosting tournaments.**

****

**A screenshot of a computer

Description automatically generated**

This is the list of the least 10 national teams that hosted a tournament, Germany despite hosting two tournaments never struggled throughout as they won the most home matches and scored the most home goals in this period and had a great away form.

1. **Top 10 countries playing home games in 1930s.**

****

**A screenshot of a computer

Description automatically generated**

Germany played the most home games which resulted in the most wins in the 1930s.

**10b) Top 10 least countries playing home games in 1930s.**

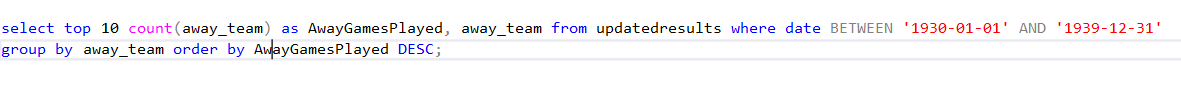
****

**A screenshot of a computer

Description automatically generated**

8 teams played the least home game in the 1930s which led to less wins at home due to not having the opportunity to play enough.

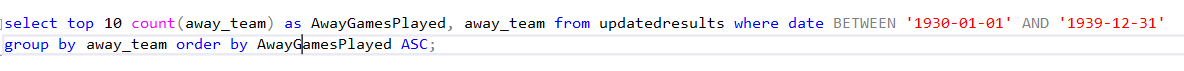
1. **Most Away games played in 1930s.**

**A screenshot of a computer

Description automatically generated**

Hungary played the most away games in this period however they still managed to score over a hundred goals as the opposing teams.

**11b) Least aways games played in 1930s.**

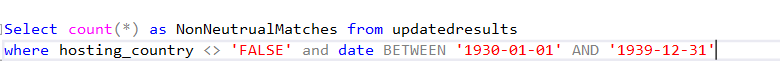
****

**A screenshot of a computer

Description automatically generated**

There are 6 teams who played the least away games potentially to economic factors that led to also less home matches.

1. **Played in a neutral venue or not.**

****

**A screenshot of a computer

Description automatically generated**

All matches played where a home teams hosted meaning that there was not a neutral venue, and a team had an advantage.

**1930s data exploration summary**

In the 1930s, football experience a global surge with over a thousand matches, marking its widespread in international growth. Home teams maintained a distinct advantages, due to home support and emerging era of international matches, in resulting to minimal away presence. Goals scoring patterns show Sweden to most home goals scored but never had the best home form but was the best away team in terms of victories. 90% of matches ended in a definite result which could be decisive in football betting as it became a rising trends in the 1930s.

**Results Dataset – 804 Rows – 1940-1949**

1. **The amount games played in the 1940s.**

****

**A screenshot of a computer

Description automatically generated**

A total of 804 matches where played, matches were put to a pause because events outside the national team’s control as there are at least 200 less games in this decade.

1. **The average number of home and away goals scored.**

**A screenshot of a computer

Description automatically generated**

The home team again is twice as likely to score as the opposition in the 1940s.

1. **Retrieve results were home team won in 1940s.**

****

**A screenshot of a computer

Description automatically generated**

Over 52% of matches the home team won showing on average the home team is likely to win.

**3b) Retrieve results were away teams won in 1940s.**

****

**A screenshot of a computer

Description automatically generated**

Over 30% matches were won by the away team showing that for betting purpose the opposing team had a decent chance to win.

1. **A screenshot of a table

   Description automatically generatedMost wins from national teams in 1940s**

**A white background with black text

Description automatically generated**

Argentina is undoubtedly the best home team and majority of teams are in the continent of South America to which it shows due worldwide events led to them playing more matches than European national teams.

**4b) Least wins from national teams in 1940s.**

**A screenshot of a computer

Description automatically generatedA screenshot of a computer

Description automatically generated**

The least wins at home were 10 national teams all joint.

1. **Top 10 home goals scored by national teams in 1940s.**

**A close up of text

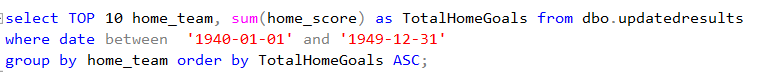
Description automatically generated**

**A screenshot of a computer

Description automatically generated**

Argentina dominated playing home games as they scored 149 goals to put it in perspective, the 10th most goals scoring team only got 50.

**5b) Least 10 home goals scored by national teams in the 1940s.**

****

**A screenshot of a computer

Description automatically generated**

There are 4 national teams that scored zero goals at home in 1940s.

1. **Top 10 teams’ goals scored by national away from home.**

****

**A screenshot of a computer

Description automatically generated**

Uruguay ,82 away goals scored in 1940s to highlight their confident playstyle.

**6b) Least 10 teams goals scored by national teams.**

****

**A screenshot of a computer

Description automatically generated**

Out of the bottom 10 national away scoring team only Barbados managed to score, potentially to show the difficulty of playing away from home.

1. **Find the amount of draws in 1940s.**

****

**A screenshot of a computer

Description automatically generated**

Around 16% matches were drawn in the 1940s which shows it is the most to the current date.

**7b) Find the team with most home draws in 1940s.**

**A screenshot of a computer

Description automatically generatedA white background with black text

Description automatically generated**

Curacao drew the most home matches in 1940s.

**A screenshot of a computer

Description automatically generated7c) Find the least home draws in 1940s.**

**A screenshot of a computer program

Description automatically generated**

The least drawn is joint in the 1940s between 10 teams.

1. **Most away draws from home in 1940s.**

**A screenshot of a computer

Description automatically generatedA white background with black text

Description automatically generated**

3 teams share the joint most away draws; all 3 findings are from various parts of the world.

**A screenshot of a computer

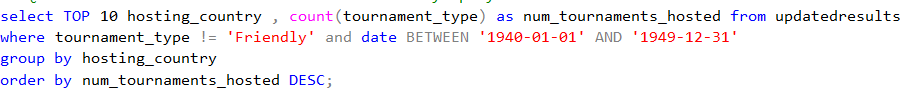
Description automatically generated8b) Least away draws for national teams in 1940s.**

**A screenshot of a computer code

Description automatically generated**

The least drawn is joint in the 1940s between 10 teams.

1. **National teams that hosted tournaments in 1940s**

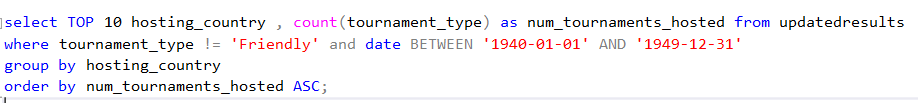
****

**A screenshot of a computer

Description automatically generated**

Brazil hosted the most tournaments in the 1940s by large amount to put it in to perspective, they hosted 29 more tournaments than the 10th country on the list.

**9b) Least hosted tournaments by national teams bottom 10 in 1940s.**

****

**A screenshot of a computer

Description automatically generated**

5 national teams hosted the least tournaments in this period.

1. **Home games played in 1940s by national teams.**

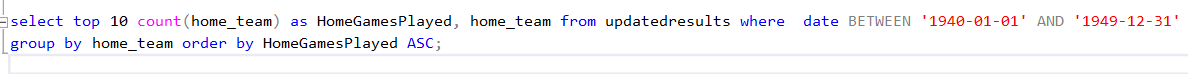
****

**A screenshot of a computer

Description automatically generated**

Argentina manages to play the most home games which they managed to win 33 out of 37 matches.

**10b) Least Home games played in 1940s by bottom 10 national teams.**

****

**A screenshot of a computer

Description automatically generated**

10 Teams only got play 1 match at home which could be due to assorted reasons outside their control.

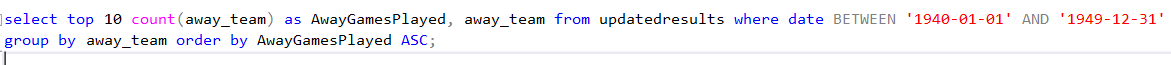
1. **Most away games played in the 1940s by national teams.**

**A screenshot of a computer

Description automatically generated**

Uruguay played the most away game in this period.

**11b) Least away games played in the 1940s by national teams.**

****

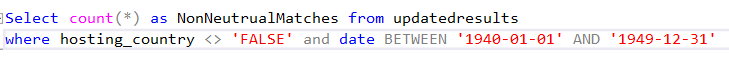
**A screenshot of a computer

Description automatically generated**

10 national teams all played only 1 match away from home which could be an advantage however it could be due to external reasons.

1. **Games played in a neutral venue.**

**A screenshot of a computer

Description automatically generated**

All matches a national team had the advantage.

**1940s data exploration summary**

1940s saw a total of 804, a decline in matches due to external events interrupting flow of matches. A consistent trend emerged with home teams dominating, scoring twice as many goals as the visiting teams, underscoring the home advantage. A balanced competition as a third of the matches the away team won, and the home team won half the matches displaying over three quarters there was a definite result.

Argentina emerged as a powerhouse, dominating home games and score 149 goals significantly surpassing other teams. Uruguay stood out in away games with 82 goals indicating their strong away playstyle. Draws were notably high, accounting for about 16% of matches, Brazil hosted significant more tournaments than any other country. Argentina played the most home games and winning 90% of matches, due to uncontrollable factors many teams only played one home match. This decade did not witness neutral venue games, and distinct home team advantage.

**Results Dataset – 1576 Rows – 1950-1959**

1. **Amount of national football matches played in the 1950s.**

****

**A screenshot of a computer

Description automatically generated**

This is the number of matches that were played in the 1950s.

1. **Home goals scored and away goals scored on average.**

****

**A screenshot of a computer

Description automatically generated**

The home team are twice as likely to score as likely as the away team.

1. **Home teams wins in 1950s.**

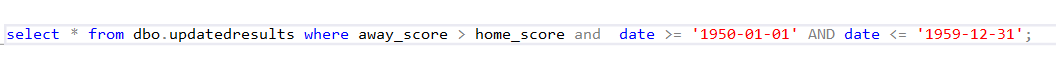
****

**A screenshot of a computer

Description automatically generated**

Around 48% of matches the home team won, which shows it’s the least amount of since international football started.

**3b) Away teams win in 1950s.**

****

**A screenshot of a computer

Description automatically generated**

A third of the matches the away team came out victorious in the 1950s.

1. **A screenshot of a computer

   Description automatically generatedSelect top 10 home teams winners in 1950s.**

**A screenshot of a computer

Description automatically generated**

Brazil undoubtedly was the best home team as the won the most matches by fourteen more.

**4b) Least 10 home teams win in 1950s.**

**A screenshot of a computer

Description automatically generatedA white background with black text

Description automatically generated**

10 national teams all managed to win only 1 game in the 1950s.

1. **Top 10 teams with home goals scored in 1950s.**

**A screenshot of a computer

Description automatically generatedA screen shot of a message

Description automatically generated**

Brazil also scored the most home goals which resulted in to the most wins in the 1950s.

**A screenshot of a computer

Description automatically generated5b) Least 10 teams goals scored at homes in 1950s.**

**A close up of a number

Description automatically generated**

4 teams managed to score zero goals at home in the 1950s.

1. **Top 10 national teams of away goals scored in 1950s.**

**A table with numbers and a number

Description automatically generated**

Hungary scored the most away goals, almost a hundred more than the 10th highest away goal scoring team Norway.

**6b) Least 10 national teams away goals scored in 1950s.**

****

**A screenshot of a computer

Description automatically generated**

7 national teams managed not to score a single goal away from home in the 1950s.

1. **Total draws in national football matches in 1950s**

****

**A screenshot of a computer

Description automatically generated**

20% of matches ended in a draw which shows that 1 out of 5 matches ended in a draw in the 1950s.

**A screenshot of a computer

Description automatically generated7b) Top 10 national teams with the most draws in order (1950s)**

**A white background with text and numbers

Description automatically generated**

Three national teams managed to draw double digits matches.

**7c) Least 10 national teams with draws in the 1950s**

**A screenshot of a computer

Description automatically generatedA screenshot of a computer

Description automatically generated**

10 teams all managed to draw only 1 game at home in the 1950s.

1. **A screenshot of a computer

   Description automatically generatedTop 10 away with the most draws in 1950s.**

**A screenshot of a computer code

Description automatically generated**

**A screenshot of a computer

Description automatically generated** England got the most away draws in the 1950s.

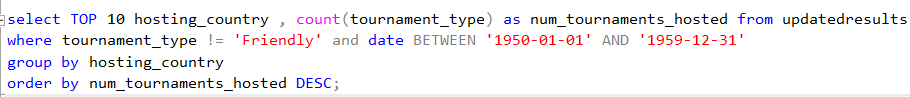
**8b) Least 10 away teams with draws in 1950s**

**A white background with black text

Description automatically generated**

10 away teams managed to get only 1 draw in this period in the 1950s.

1. **Top 10 countries that hosted the most tournaments in the 1950s.**

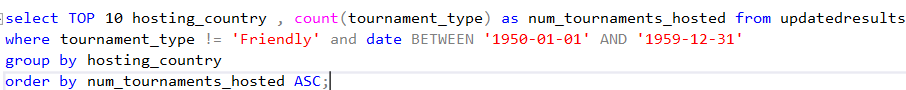
****

**A screenshot of a computer

Description automatically generated**

Sweden hosted the most tournaments in the 1950s, around thirty more matches than the 10th most in the 1950s.

**9b) Least 10 countries that hosted tournaments in 1950s.**

****

**A screenshot of a computer

Description automatically generated**

8 teams only hosted one tournament in the 1950s.

1. **Top 10 home games played in 1950s.**

****

**A screenshot of a computer

Description automatically generated**

Brazil played the most home games to which they benefited as they won the most home games, however Argentina has a better winning ratio.

**10b) Least 10 home games played in 1950s.**

****

**A screenshot of a computer

Description automatically generated**

10 national teams only got to play one home game in the 1950s.

1. **Top 10 teams that played games away from home in 1950s.**

****

**A screenshot of a computer

Description automatically generated**

Uruguay played the most away games to which can lead to a disadvantage as every other national team played less away games.

**11b) Least 10 teams that played away matches in 1950s.**

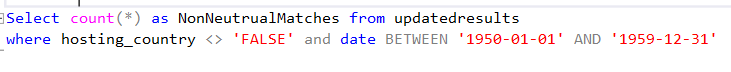
****

**A screenshot of a computer

Description automatically generated**

10 teams managed to play only one away game which can be an advantage as they played more home matches.

1. **Matches played in a non-neutral match.**



**A screenshot of a computer screen

Description automatically generated**

Every match a team had an advantage in the 1950s.

**1950s data exploration summary**

In the 1950s, a considerable number of football matches were played, revealing a noticeable trend where home team exhibited a clear advantage. Home teams scored twice as many goals on average then the away team to symbol the dominance of home ground. Brazil successfully was the best home winning team and scored the highest number of home goals to display their dominance. However, away wins were significant, with a third of matches resulting in victories for the visiting teams. Hungary stood out in away goal scoring and draws were also quite common in 1950, these scenarios competitive balance, influencing teams’ performance on a variety of factors.

**Results – 2810 rows – 1960 – 1969**

1. **Total matches played in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

Almost double number of matches were played in the 1960s compared to the 1950s.

1. **Comparing the average number of goals home to away in the 1960s.**

**A screenshot of a computer

Description automatically generated**

Home team once again are likely to score twice as many as the away goals.

1. **Home team won the match in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

Around 50% of matches the home team won which shows every other in the 1960s the home team have the chance win.

**3b) away team won the match in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

Less than third of matches the away team won which highlights by 1960s, winning an away match was at its most difficult.

1. **Total home wins in 1960s**

**A screenshot of a computer

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**A screenshot of a computer

Description automatically generated**

Brazil once again dominated by winning the home wins in the 1960s.

**4b) Least 10 team with home wins in 1960s**

**A screenshot of a computer

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This is the 10 home teams that won only one match at home in the 1960s.

1. **Top 10 teams with the home teams scored in 1960s.**

**A screen shot of a computer code

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

Brazil scored the most home gaols however Indonesia managed to score only three less and is the highest goal tally.

**5b) Least 10 teams with home goals scored in 1960.**

**A close up of text

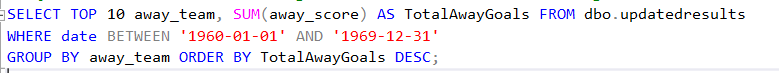
Description automatically generated**

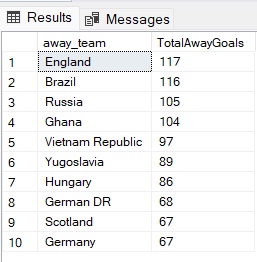
**A screenshot of a computer

Description automatically generated**

3 national teams managed to score zero goals in the 1960s.

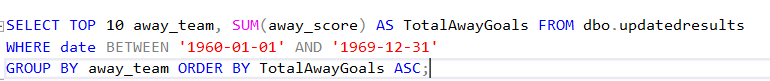
1. **Top 10 teams with most away goals scored in 1960s.**

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****

England were the front running away scoring goals in the 1960s.

**6b) Least 10 teams with away goals scored in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

10 national teams scored zero away goals in the 1960s, this can be due to the difficulty of playing away from home.

1. **Total draws in the 1960s**

****

**A screenshot of a computer

Description automatically generated**

Exactly 20 per cent of matches were a draw which has been the theme to the current date(1960s)

**7b) Top 10 with total home draws in 1960s**

**A screen shot of a computer

Description automatically generated**

A screenshot of a computer

Description automatically generatedMalaysia had the most draws at home almost double the amount the 10th most(Brazil), potentially highlights there resilient to either sustain pressure or be able to do a comeback.

**A screenshot of a computer

Description automatically generated7c) least 10 teams that drew in 1960s.**

**A screenshot of a computer

Description automatically generated**

10 teams only managed to draw one home game in the 1960s.

1. **Top 10 teams with the most draw away from home in 1960s**

**A screen shot of a computer

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**A screenshot of a computer

Description automatically generated**

Russia have drawn the most away games which indicates their ability to sustain pressure and maintain.

**A screenshot of a computer

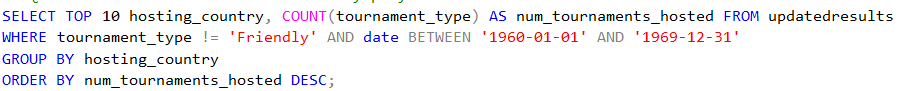
Description automatically generated8b) Least 10 teams that drew away from home in 1960s.**

**A screenshot of a computer

Description automatically generated**

10 teams drew only 1 match away from home, an offensive playstyle which led to a definite result(won/lost) in the 1960s.

1. **Top 10 teams that hosted the most tournaments in 1960s.**

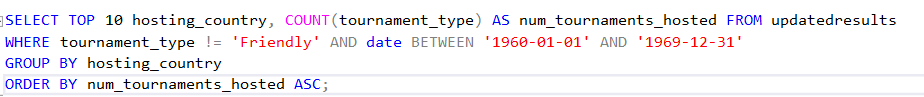
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**A screenshot of a computer

Description automatically generated**

Malaysia hosted hundred more than the second team on this list which shows the advantage they have had over competitors in matches.

**9b) Least 10 teams that hosted the most tournaments in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

6 national teams only had 1 tournament they have hosted in the 1960s.

1. **Top 10 home games played in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

Malaysia played the most home games in the 1960s.

**10b) Least 10 home games played in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

8 national teams played only 1 home matches which can be disadvantageous or due to factors out of control.

1. **Top 10 teams that played away from home in 1960s.**

****

**A screenshot of a computer

Description automatically generated**

Russia have played the most away games in the 1960s.

**11b) Least 10 teams that played away from home in 1960s.**

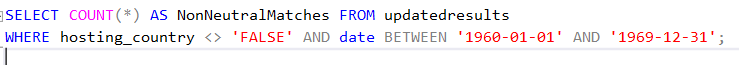
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**A screenshot of a computer

Description automatically generated**

10 teams only played one away game in the 1960s.

1. **Number of non-neutral matches played.**

****

**A screenshot of a computer

Description automatically generated**

All matches a single team had an advantage in 1960s because there wasn’t a neutral venue.

**1960s data exploration findings**

Once again nearly doubling of matches then previous decade, home team continued their dominance, translating into home advantage. Brazil and England emerged prominently, Brazil home wins were the highest, whilst England excelled in goal scoring. Draws remained in the 20-percentile range, Malaysia notably hosted the numerous tournaments displaying their home advantage. Whilst several teams played a single home or away game. Non-neutral matches persisted throughout every game favoured a particular team, illustration absences of neutral venues.

**Results – 3924 rows – 1970-1979**

1. **Total matches played in the 1970s.**

****

**A screenshot of a computer

Description automatically generated**

Over an extra 1000s games were played in the 70s compared to the 80s.

1. **The amount of home and away goals scored on average in the 1970s.**

****

**A screenshot of a computer

Description automatically generated**

This is the first decade which the away team is as likely to score as the home team in the 1970s.

1. **Where home team won in the 1970s**

****

**A screenshot of a computer

Description automatically generated**

50% of matches were won by the home team which is a common finding throughout the analysis of the results.

**3b) Where away team won in the 1970s.**

**A screenshot of a computer

Description automatically generated**

A little under a third of the matches the away team won which again is common throughout.

1. **Total home wins for top 10 teams in 1970s**

**A screenshot of a computer

Description automatically generated**

**A screenshot of a computer

Description automatically generated**

South Korea has the highest amount of home wins in 1970s, this is also the most in a decade up to date.

**4b) Least 10 teams winning at home in 1970s.**

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Description automatically generated**

**A screenshot of a computer

Description automatically generated**

10 home teams only one matches to which majority are unsuccessful national teams for numerous factors.

1. **Top 10 total home goals scored in 1970s.**

**A close up of text

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South Korea dominated, first national team to score 200 goals or more at home in the 1970s.

**5b) Least 10 teams that scored at home in 1970s.**

**A close up of text

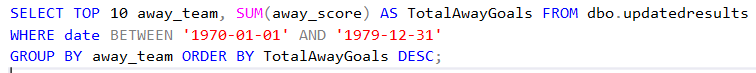
Description automatically generated**

**A screenshot of a computer

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8 national teams managed to score zero goals at home in the 1970s.

1. **Top 10 teams with the most away goals scored in 1970s.**

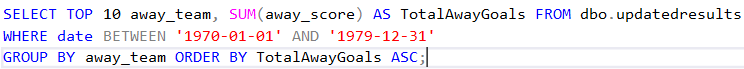
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**A screenshot of a computer

Description automatically generated**

South Korea also scored the most away goals in the 1970s, which shows they have dominated this era offensively.

**6b) Least 10 teams with away goals scored in 1970s.**

****

**A screenshot of a computer

Description automatically generated**

For the first time, all bottom ten teams managed not to score an away goal in the 1970s.

1. **Total draws in the 1970s**

**A screenshot of a computer

Description automatically generated**

The highest total of draws to date to which is around 23% which shows a quarter of matches were a draw in the 1970s.

**A screenshot of a computer

Description automatically generated 7b) Top 10 with home draws in order in 1970s**

**A screenshot of a computer

Description automatically generated**

Malaysia have drawn the most home games in 1970s.

**7c) Least 10 team with home draws in 1970s**

**A close up of a text

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All 10 teams managed to draw 1 game to highlight it is the from the current findings it’s the most drawn decade of football.

1. **A screenshot of a computer

   Description automatically generatedTop 10 away teams with draws in 1970s**

**A screen shot of a computer

Description automatically generated**

Russia and Thailand both have the joint most draws away from home, also South Korea are third to signify they have dominated throughout and had minimal losses in this period.

**8b) Least 10 away teams with draws in 1970s**

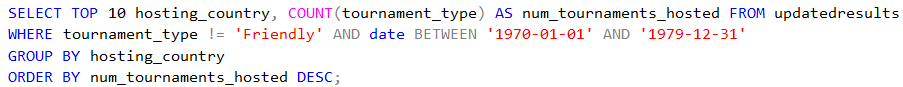
**A screenshot of a computer

Description automatically generatedA screenshot of a computer

Description automatically generated**

10 national teams all managed to get 1 away draw in the 1970s.

1. **Top 10 countries that hosted the most tournaments in 1970s.**

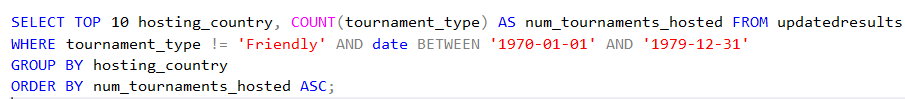
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**A screenshot of a computer

Description automatically generated**

Malysia hosted the most tournaments by over a hundred more than the second most in the 1970s.

**9b) Least 10 countries that hosted the tournaments in 1970s.**

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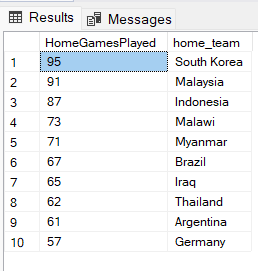
**A screenshot of a computer

Description automatically generated**

6 teams only managed to host one tournament in this period.

1. **Teams that played the most home games in 1970s**

****

****

South Korea played the most home games which led to scoring the most goals.

**10b) Teams that played the least home games in 1970s.**

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10 Teams all played 1 game at home, again due to factors.

1. **Most away games in 1970s**

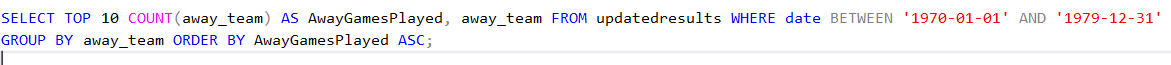
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Thailand played the most away games, the only team to play over a hundred matches in 1970s.

**11b) least away games played in 1970s.**

****

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Description automatically generated**

10 national teams all played 1 game away from home which can benefit them results based in the 1970s.

1. **Non-Neutral Matches in 1970s**

****

**A screenshot of a computer

Description automatically generated**

A team had an advantage there was not a neutral venue for any matches in the 1970s.

**1970s data exploration summary**

The 1970s marked a significant surge in matches played, exceeding 100 games more than the previous decade. It’s the first era the away team is equal to score a goal to the home team, and around half the victories the home team it was. A third of wins were away sides and a fifth of matches ended in a draw in the 1970s. South Korea emerged prominently, dominant with home win and goals, using the home crowd. Malaysia notably hosted the highest number of tournaments, non-neutral matches continued and the absence of venues.

**Results – 4797 rows – 1980 – 1989**

1. **Total number of matches playing in the 1980s**

****

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Description automatically generated**

Another extra 800 hundred more matches were played , football has now taken off globally and matches are being played more regularly.

1. **The average number goals scored home and away in 1980s.**

****

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Description automatically generated**

On average the home team is likely to score first and, in this decade, the away team went goalless on average.

1. **Where home teams won in 1980s**

****

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This is the least amount a home team capitalized on their advantage, only 46% of home teams won their match.

**3b) Where away teams won in 1980s.**

****

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28% percent of matches the away team have won in this period.

1. **Top 10 home winning team in 1980s.**

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Once again South Korea have won the most home matches in the 1980s.

**4b) Least 10 home winning team in 1980s**

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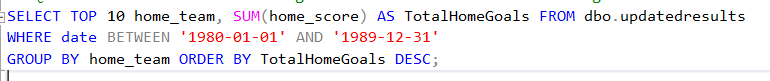
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10 home teams all managed to win one game in this period.

1. **Total home goals scored (Top 10) in 1980s**

****

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South Korea managed to score the most home goals which led to the most home wins.

**6b) Least home goals scored (bottom 10) in 1980s.**

**A close up of text

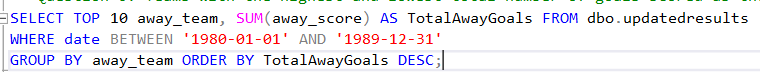
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7 national teams failed to score a single goal at home in the 1980s.

1. **Top 10 teams with the most away goal scored in the 1980s.**

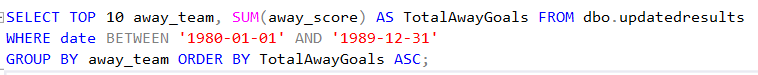
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Senegal scored the most away goals in the 1980s.

**6b) Least 10 teams with away goals scored in 1980s.**

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**A screenshot of a computer

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6 national teams scored zero goals away from home in the 1980s.

1. **Matches that ended in a draw in 1980s.**

****

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Description automatically generated**

Around 27% of matches ended in a draw which is the highest tally, this supports the finding of the away team failing to score.

**7b) Top 10 teams with the most draws in 1980s.**

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Malawi by over 10 draws got the most home draws in the 1980s.

**7c) Least 10 team that drew in 1980s.**

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10 teams drew at home once in the 1980s.

1. **Top 10 with the most away draws in 1980s.**

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Guinea drew the most games away from home.

**8b) least 10 teams that drew in 1980s.**

**A screenshot of a computer

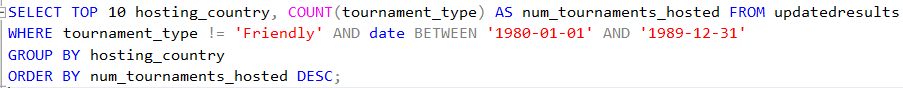
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Once again ten teams managed to draw only 1 away game.

1. **Top 10 countries that hosted tournaments in 1980s.**

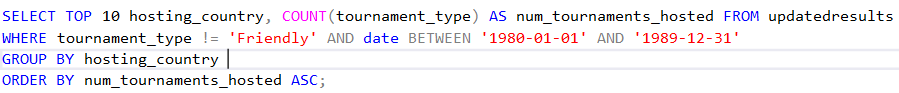
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Malaysia again managed to host the most tournament in the 1980s.

**9b) least 10 countries that hosted tournaments in 1980s.**

****

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Three teams only managed to host 1 tournament in the 1980s, every other team got to host more.

1. **Top 10 teams with most home games played in 1980s.**

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Description automatically generated**

Malawi played the most home games in the 1980s.

**10b) Least 10 teams with home games played in 1980s.**

****

**A screenshot of a computer

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10 teams only got play one home game in the 1980s.

1. **Top 10 teams that played away from home in 1980s.**

****

**A screenshot of a computer

Description automatically generated**

Senegal played the most away games in the 1980s.

**11b) Least 10 teams that played away from home in 1980s.**

****

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Description automatically generated**

Seven teams played only game as the opposing team in the 1980s.

1. **Non-neutral matches played in 1980s.**

**A close up of a text

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**A screenshot of a computer

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All matches played were favoured to a team as they had the home advantage in the 1980s.

**1980s data exploration summary**

An additional 800 matches were played compared to the 1970s, indicating a growing global interest in football. Home teams remained dominant, away teams won one in third. South Korea once again, dominating home wins and goals as they are front runners. A quarter of matches ended in a draw which is a record high since the start of international football, it gives a clear alternative to sports betting agencies as in the 80s there was a solid chance of a draw every 3 game. Malaysia continued the trend of hosting tournaments, while several teams played minimal home or away matches.

**Results – 6623 rows – 1990-1999**

1. **Total matches played in the 1990s.**

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Description automatically generated**

An extra 2000 matches were played in the 1990s, all over the world football is the go-to sport.

1. **What is the average number of home and away goals in 1990s?**

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Both teams whether home and away on average can score in the 1990s.

1. **Where home team won in the 1990s**

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Around 50% of matches played the home team won in the 1990s.

**3b) Where away team won in 1990s.**

****

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Only a quarter of the matches the away team have won the matches, which is less than the last few decades.

1. **Total home wins in 1990s**

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Brazil won the most home matches and were the winners of the world cup in 1994.

**4b) least home wins in 1990s**

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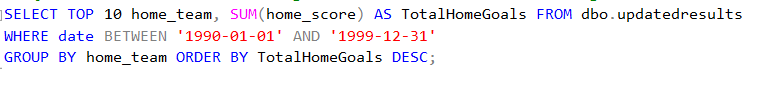
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All 10 teams managed to only win one home match.

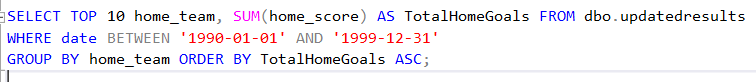
1. **The most home goals scored in 1990s.**

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Brazil dominated as to date(1990s) scored the most home goals in one decade.

**5b) least home goals scored in 1990s.**

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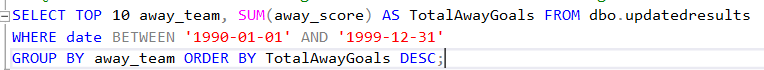
**A screenshot of a computer

Description automatically generated**

Only 1 team managed not to score at home in the 1990s.

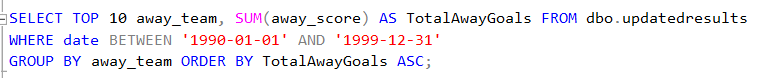
1. **Top 10 away teams’ goals scored in 1990s.**

**A screenshot of a computer

Description automatically generated**

Russia scored the highest number of away goals in the 1990s.

**6b) Least 10 teams that scored away from home in the 1990s.**

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**A screenshot of a computer

Description automatically generated**

Only two teams failed to score as the opposing team in the 1990s.

1. **Matches that ended in a draw in 1990s.**

****

**A screenshot of a computer

Description automatically generated**

Around a quarter of the match managed to finish in a draw, to which it is equivalent to the away team winning for the first time, drawing is as likely as the away team winning in the 1990s.

**A screenshot of a computer

Description automatically generated7b) Most home draws in 1990s.**

**A screen shot of a computer

Description automatically generated**

United States drew the highest amount in the 1990s.

**7c) least home draws in 1990s**

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10 home teams only drew 1 game in this period.

1. **Top 10 teams with the most away draws in 1990s.**

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Colombia drew the most away games, also the first time a top ten away drawing that is 21 draws which is usually the highest in previous decade.

**A screenshot of a computer

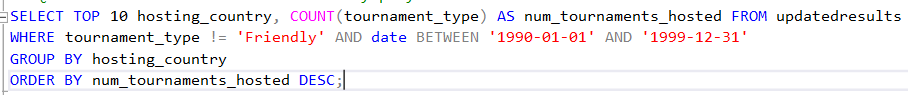
Description automatically generated 8b) least 10 teams drawing away from home in 1990s.**

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Description automatically generated**

10 national teams drew only one game, this indicates that chased a win, but some led to loses.

1. **Top 10 countries that hosted a tournament in 1990s.**

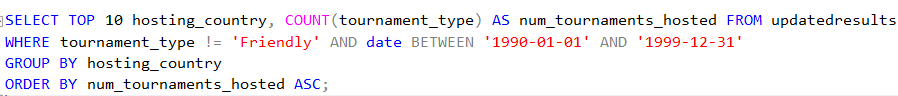
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United States hosted over 150 tournaments in the 1950s , a hundred more than 10th place Jamacia.

**9b) least 10 teams that hosted a tournament in 1990s.**

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8 national team only hosted 1 tournament throughout the decade of the 1990s.

1. **Top 10 that played the most home games in 1990s.**

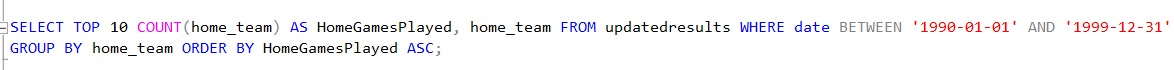
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United States played the most home games in the 1990s, the only team with over a hundred home games played.

**10b) least 10 team that is played home games in 1990s.**

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6 teams got only played 1 match to home throughout the whole decade.

1. **Most away games played in 1990s.**

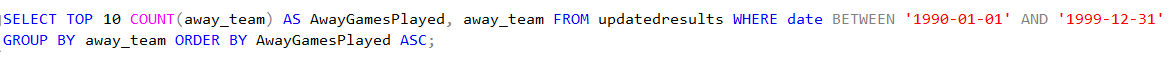
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Zambia played the most away games in the 1990s.

**11b) least 10 teams that played away games in 1990s.**

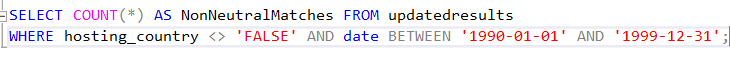
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3 national teams played only 1 away game in the 1990s.

1. **Non-neutral matches in 1990s**

****

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All matches were in favour of the home team, there was not a neutral venue.

**1990s data exploration summary**

With an extra 2000 games, football just kept getting more popular, marking a widespread appeal to football. A balanced decade, due home and away team scoring an equal amount per game. Home team victories remained dominant at around 50%, whilst away wins stood at a quarter which is an all-time low in the 1900s.

Brazil highlighted dominance, securing most home wins, and scoring the highest number of home goals. As a result, this helped them achieve the prestigious award of winning the World cup in 1994. However, a quarter of matches ended in a draw highlighting a similar playing field for both sides. Tournament hosting first place is United States including the World Cup 1994, and all played a

United States emerged prominently, hosting numerous tournaments, and playing the most home games, while some teams had minimal participation, playing only a single match either home or away throughout the decade. Non-neutral matches persisted, favouring the home team consistently.

**Results - 9459 rows- 2000-2009**

1. **Total matches played in 2000s.**

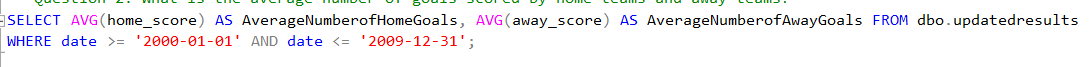


**A screenshot of a computer results

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Highest total of matches played to date comparing to previous decade, a little under five figures.

1. **The average number of goals scored home and away in 2000s.**

****

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The second decade in a row, the away team on average can score a goal like the home team.

1. **Where home team wins in the 2000s**

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Around 50% of matches were played in the 2000s that the home team won.

**3b) Where away team wins in 2000s.**

****

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Description automatically generated**

Around 28% of matches ended in the away team being victorious.

1. **A screenshot of a computer

   Description automatically generatedThe top 10 team with the most home wins**

**A screenshot of a computer

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Mexico won the most home matches in this period, United States and Saudi Arabia were close and are runner ups.

**4b) least 10 home team wins**

**A screenshot of a computer

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All 10 managed to only win 1 home game in the 2000s.

1. **Top 10 with the most home goals scored.**

**A screenshot of a computer

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Like winning the most home matches , Mexico also scored the most home goals in the 2000s.

**5b) least 10 home teams goals scored.**

**A close-up of a number

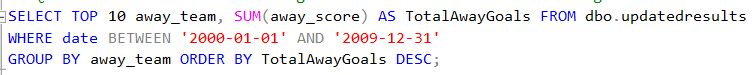
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7 national teams managed not score at all at home which is the most in a decade.

1. **Top 10 teams with the most away goals scored.**

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Brazil were the best away goals scorers in the 2000s.

**6b) Least 10 teams with the least away goals scored.**

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4 national teams failed to score an away goal in 2000s.

1. **The amount of draws in the 2000s.**

****

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A quarter of the matches ended in a draw meaning that , the away team winning or a draw happening is as likely.

**7b) The top 10 teams with the most draws in 2000s.**

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Japan drew the most at home, whilst South Korea and Qatar being honourable mentions in the 2000s.

**7c) The least 10 teams with the least draws in 2000s**

**A screenshot of a computer

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10 teams all drew only once at home which suggests they had an offensive playstyle which led to more wins or loses.

1. **Top 10 with the most away draws in 2000s.**

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Iraq and Paraguay drew the most at away from home in the 2000s to which highlights they resiliency to sustain constant pressure or have the momentum to do a comeback.

**8b) Least 10 with the least away draws in 2000s.**

**A screenshot of a computer

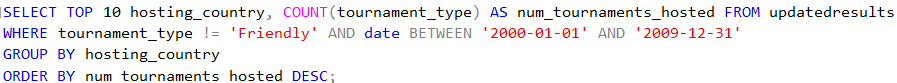
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10 teams all drew away once in the 2000s.

1. **Top 10 countries who hosted a tournament in 2000s.**

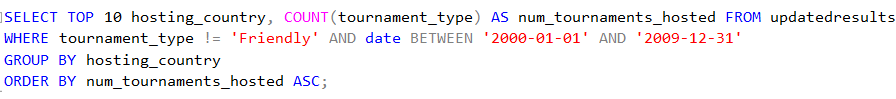
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United States hosted the most tournaments in the 2000s a hundred more than Kuwait(10th place)

**9b) Least 10 countries who hosted a tournament in 2000s.**

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Description automatically generated**

Only Dominica managed to host two tournaments the rest only were responsible for one tournament.

1. **Top 10 home teams played in 2000s.**

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**A screenshot of a computer

Description automatically generated**

Mexico played the most home games, also it’s the highest amount of home games played as the majority of the top ten played over a hundred matches as the home team.

**10b) Least 10 home matches played in 2000s by teams.**

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All 10 team only got play 1 home match in the 2000s.

1. **Top 10 away games played in 2000s by teams.**

****

**A screenshot of a computer

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Iraq played the most away matches but the whole top ten played a high number of away matches.

**11b) Least 10 away games played in 2000s by teams.**

****

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3 teams played only 1 match away games and had the home advantage for most matches.

1. **Non-neutral matches in 2000s**

****

**A screenshot of a computer

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All matches a national teams had the advantage in the match.

**Summary of 2000s data explorations**

The number of football matches increased in the 2000s compared to earlier decades, and the home team continued to have a significant edge, winning about half of the games. On the other hand, the percentage of away wins rose little to about 28%. Mexico became a dominant force, topping the table in terms of goals scored both at home and abroad. Brazil was the best at scoring goals on the road, while South Korea and Japan often drew at home. About 25% of the matches were draws, indicating a balanced level of competition. Notably, Iraq and Paraguay frequently pulled away from home. Football events were held more frequently in the United States, which hosted the most tournaments. Many teams, most notably Mexico, participated in many games, stressing the need of a reliable home performance. On the other hand, a few teams saw truly modest home or away action. There were no neutral grounds, and matches were always biassed in favour of the home team over the ten years.

**Results – 9794 rows – 2010-2019**

1. **Total matches played in the 2010s.**

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**A screenshot of a computer

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This is the most matches played in a decade since international football has started.

1. **The amount of home and away goals scored on average in 2010s.**

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Both teams on average can score as both are 1 in this finding.

1. **Where home team won in 2010s**

****

**A screenshot of a computer

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Only a 47% chance of winning at home which is the second lowest toll for a home team since the start of international football.

**3b) Where away teams won in 2010s.**

****

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A 28% chance that the away team can win, which has been a similar outcome.

1. **Top 10 teams with the most home wins in the 2010s**

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**A screenshot of a computer

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Mexico won the most home matches in the 2010s , United States and Egypt are honourable mentions as they are only a few wins behind.

**A screenshot of a computer

Description automatically generated4b) Least 10 home teams win in 2010s.**

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All 10 teams all only won 1 match in the 2010s.

**4c) top 10 away teams’ winners in 2010s**

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Spain won the most away matches in this period including winning the World Cup in 2010.

**4d) Least 10 away teams’ winners in 2010s**

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All 10 teams managed to win only 1 away match in 2010s.

1. **Top 10 home goals scored in 2010s.**

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Japan pipped Germany with the most goals in the decade, the whole ten teams all scored a huge amount and would have been top if it was an earlier decade.

**5b) Least 10 home goals scored in 2010s.**

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Three teams weren’t managed to score a home goal in the 2010s.

1. **Top 10 teams with the most away goals scored in 2010s.**

**A screenshot of a computer screen

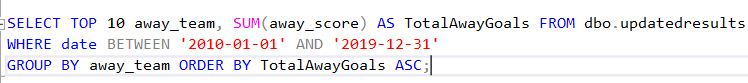
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**A screenshot of a computer

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Germany scored the most away goals, close by was Spain and Brazil, bar Belgium all other nine teams scored over 100 away goals in the 2010s.

**6b) Least 10 teams with the most away goals scored in 2010s.**

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**A screenshot of a computer

Description automatically generated**

6 teams failed to score a goal in the 2010s.

1. **Total home draws in 2010s**

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**A screenshot of a computer

Description automatically generated**

Around a quarter of matches ended in a draw in the 2010s.

**7b) Top 10 teams with the most draws at home in 2010s.**

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**A screenshot of a computer

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South Africa drew the most home matches , followed by Zambia in the 2010s.

**7c) Least 10 teams with the least draws at home in 2010s**

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**A screenshot of a computer

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10 teams all drew once at home in the 2010s.

1. **Top 10 away teams that drew in 2010s.**

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Cameroon drew the most away games in the 2010s.

**8b) Least 10 away teams that drew in 2010s.**

**A screenshot of a computer

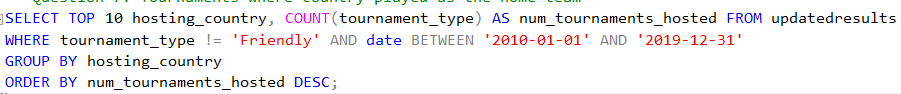
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10 teams all drew only one game away from home in the 2010s.

1. **Top 10 countries hosting the most tournaments in 2010s.**

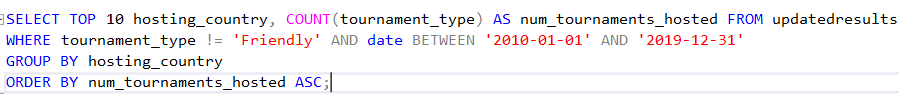
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South Africa hosted the most tournaments in the 2010s due to the World Cup to which covered a lot of matches.

**9b) Least 10 countries hosting tournaments in 2010s.**

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**A screenshot of a computer

Description automatically generated**

Three teams all hosted 1 tournament in the 2010s, all other countries got to do it at least twice or more.

1. **Top 10 home games played in 2010s.**

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**A screenshot of a computer

Description automatically generated**

United States played the most home games , closely after is Mexico in the 2010s.

**10b) Least 10 home games played in by countries in 2010s.**

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**A screenshot of a computer

Description automatically generated**

Apart from Matabeleland all other countries only played at home once in 2010s.

1. **Top 10 away games played in by nations in 2010s.**

**A screenshot of a computer

Description automatically generated**

Costa Rica played the most away matches in the 2010s.

**11b) Least 10 away games played by national teams in 2010s.**

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**A screenshot of a computer

Description automatically generated**

8 teams got favoured and played only 1 away match, this can positively improve their home results.

1. **Non-neutral matches in 2010s**

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**A screenshot of a computer

Description automatically generated**

All matches a team had the home advantage in the 2010s.

**Summary of 2010s data exploration**

With the most matches ever played, the 2010s were the busiest decade in international football history. Remarkably, home teams won about 47% of games, a significantly lower percentage of victories than in prior decades, while away teams continued to win about 28%. Mexico won the greatest number of games played at home, while Spain won the most games played away, including the 2010 World Cup. Germany and Japan both shown outstanding goal-scoring abilities at home. In the meantime, Germany led the way in goals scored away from home, closely followed by Brazil and Spain. About 25% of the games were drawn, with South Africa and Zambia having the most home draws. The most away Cameroon drew games. Due in large part to the World Cup, South Africa hosted the most tournaments, but some countries had few opportunities to hold competitions that exhibit an unequal distribution. Some countries tended to play their home games or their away games, indicating tactical advantages in their schedules. Due to a dearth of neutral locations, home advantage persisted throughout the decade.

**Results – 3255 rows – 2020-2023**

1. **Total matches that were played in 2020s.**

****

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This is the most matches played in only 4 years in the 2020s.

1. **The amount of home and away goals scored on average in the 2020s.**

****

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The away team once again are likely to score on average as much as the home in the 2020s.

1. **Where home team won in the 2020s**

****

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Around 48% of matches the home team won which is a common theme in the few previous decades.

**3b) Where away team won in the 2020s.**

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30 percent of matches ended in the away being victorious in the 2020s.

1. **Top 10 with the most home wins in 2020s**

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United States so far are most successful home team as they won the most matches.

**4b) Least 10 home wins in 2020s**

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10 teams only won 1 game at home in the 2020s.

**4c) Top 10 away winning matches in 2020s**

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Algeria so far have won the most away games, but this list is likely to change soon due to 10th place only having 2 less away wins.

**4d) Least 10 away winning teams in 2020s**

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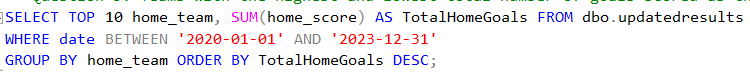
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Least 10 teams all managed to win 1 away match in the 2020s so far.

1. **Top 10 home teams with the most home goals in 2020s**

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United States comfortably scored the most goals as second place scored over 20 less.

**5b) Least 10 home teams with the least home goals in 2020s**

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Apart from Yoruba Nation, the other nine teams failed to score in the 2020s.

1. **Top 10 away teams with the most goals in 2020s**

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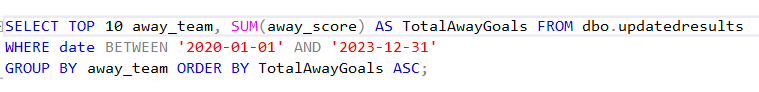
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Canada scored the most away goals in the 2020s, they have scored an extra thirteen over second place.

**6b) Least 10 away teams goals scored in 2020s.**

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Froya and Mauritius both failed to score an away goal in 2020s.

1. **Matches that were draws in 2020s.**

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Around 23% matches have ended in a draw which is a little lower than the last few decades meaning that more matches ended in a definite result.

**7b) Most home matches draw in 2020s.**

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Mexico have drawn the most home games in the 2020s.

**7c) Least 10 home teams that drew in 2020s.**

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All ten teams only drew one game at home, highlighting the confidence the teams must play their chosen playstyle.

1. **Top 10 away teams with the most draws in 2020s.**

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5 teams all are joint with the most away draws, however this list likely to change as the decade continues as the 10th place team have only 2 less draws.

**8b) Least 10 away teams that drew in 2020s.**

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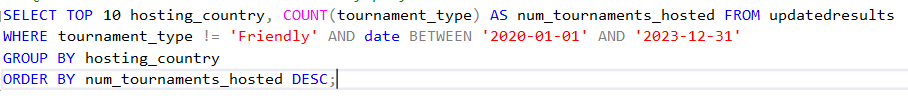
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All teams have drawn once in this decade in 2020s.

1. **Top 10 countries that hosted the most tournaments in 2020s.**

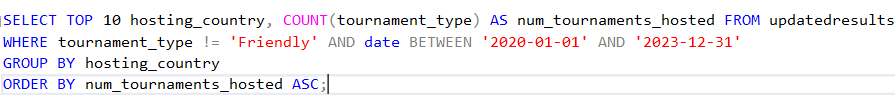
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Qatar hosted the most tournaments in the 2020s because they hosted the 2022 World Cup.

**9b) Least 10 countries that hosted tournaments in 2020s.**

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10 countries all hosted 1 tournament in this decade so far which is likely to change as the decade continues.

1. **Top 10 home games played in 2020s.**

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Mexico pipped United States by one and they have played the most home games in the last few years.

**10b) Least 10 home games played in 2020s.**

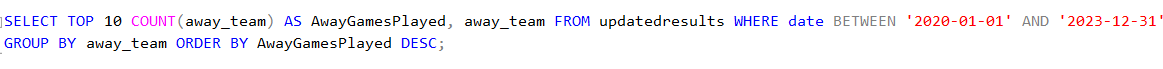
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All teams on this list played only 1 home games which is likely to change as another 6 years is set to go.

1. **Top 10 away teams’ games played in 2020s.**

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Panama have so far played the most away games, but Iceland could overtake in the future.

**11b) Least 10 away teams games played in 2020s.**

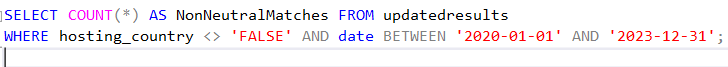
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All ten teams only played one away match in four years.

1. **Non-neutral matches played in 2020s.**

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All matches played were not a neutral venue and a team had an advantage.

**Summary of 2020s data exploration so far**

Football matches are played more frequently in the first part of the 2020s, and home and away goal averages are balanced. As in the past, home team triumphs average 48%, while away team victories increase to 30%. In terms of wins at home and away, respectively, the United States and Algeria stand out as formidable competitors. There are noticeable scoring differences; Yoruba Nation, for example, has not yet scored a goal at home. Drawn match percentage drops to 23%, suggesting a shift towards more clear-cut results. Qatar is the best at hosting the 2022 World Cup. Teams display differing numbers of matches played; Mexico and Panama are the most active. There are still no impartial sites, which confirms home advantage's dominance.

**All time results from 1872-2023 findings**

1. **Total matches played in international football.**

****

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The list of matches played since the start of international football.

1. **What is the average number of home and away goal scored in international football?**

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An average of all time both teams scoring per game.

1. **Where home team won in international football matches?**

****

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49% of matches the home team won of all time, the home advantage is proven by this finding.

**3b) Where away team won in international football matches?**

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28% of matches the away team have of all time**.**

1. **Top 10 most successful home teams of all time in international football?**

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Brazil is the most dominant home winning team of all time to which Argentia is an honourable mention.

**A screenshot of a computer

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There is a joint least successful home winning teams to which is 10 national teams.

1. **Top 10 most successful away teams of all time in international football?**

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England of all time is the most successful away winning team to which they have almost thirty more victories than second place Germany.

**5b) Least 10 successful international football teams of all time away from home**

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There is a joint least successful away winning teams to which is 10 national teams.

1. **Top 10 teams with the most home goals scored of all time?**

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Brazil scored the most home goals and easily over a hundred more than second place Germany.

**6b) Least 10 home goal scoring teams of all time?**

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7 national teams failed to score a home goal of all time.

1. **Top 10 teams with the most away goals scored of all time?**

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England have scored the most away goals of all time by a clear margin so much there are the only team with more than 1000 goals.

**7b) Top 10 teams with the least away goals scored of all time?**

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A joint four national teams scored zero goals away from home of all time.

1. **How many draws of all time in international teams?**

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23% of matches ended in a draw of all time.

**8b) Top 10 home teams that drew at home of all time?**

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Mexico pipped Argentina by five to have drawn the most home games of all time.

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Description automatically generated 8c) Least 10 home teams that drew at home of all time?**

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10 national teams sharing being the least drawn home teams of all time.

1. **Top 10 away teams that who drew away from home?**

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England have recorded the most away draws of all time , to which Argentina and Uruguay are joint second.

**9b) Least 10 drawing away teams of all time in international football?**

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10 national teams sharing having the least away draws of all time.

1. **Top 10 teams that hosted the most tournaments of all time in international football.**

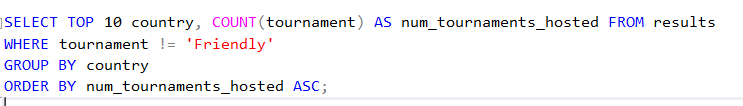
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Malaysia hosted the most tournaments since international football started whilst United State being a close second, the rest of the other countries theirs at least a two hundred between third.

**10b) Least 10 teams that hosted the tournaments of all time in international football? **

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6 teams all share hosting the least amount of not tournaments in international football.

1. **Top 10 teams who played the most home games of all time in international football?**

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Brazil managed to play exactly 600 home games which is the most in international football and Argentina being the runner up with 580.

**11b) Least 10 teams who played home games of all time in international football?**

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10 national teams all played only 1 home game of all time, potentially a change of name or terminating from international football.

**A screenshot of a computer

Description automatically generated11c) Top 10 teams who played matches as the opposing team of all time in international football?**

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Uruguay have played the most away matches of all time.

**11d) Least 10 teams who played matches as the opposing team of all time in international football?**

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10 national teams all have the least away games of all time , potentially due other factors causing it.

1. **Matches played in a non-neutral match of all time in international football.**

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All matches played there was a home advantage for a team in international football.

**All time data exploration of international football results**

Several themes appear from the long history of international football, which spans from its inception to the present. Numerous matches have taken place over the years, demonstrating the sport's growth and international appeal. The trend in average scoring for home and away teams is still balanced, with a significant home advantage seen in 49% of home victories vs 28% for away teams.

Brazil is the most dominant squad at home, while England is the best away team in the world, having had unmatched success playing abroad. Brazil is the clear leader in goals scored at home, while England leads the world in goals scored away. Twenty-three percent of games are drawn, which indicates that teams are in a state of equilibrium competition.

Mexico, who always do well at home, comes out as the team with the most drawn home games. England leads the table in away draws, demonstrating their adaptability in a variety of settings. The number of tournaments held by the host countries varies; Malaysia has hosted the most, highlighting their historical importance in international football competitions.

Brazil and Uruguay, who have played in the most home and away games, respectively, have demonstrated their devotion to the game. Still, a few of countries have notably participated in very few games, suggesting that there may be organisational or participation issues.

The frequency of games that are not neutral highlights the advantage that home teams have had throughout football history. Together, these results highlight how dynamic the game is, highlighting different team dynamics, historical supremacy, and the lasting impact of home field advantage in international football. The data on international football tells a story of perseverance, strength, and tough competition.

**Research Ethics Screening Form for Students**

Middlesex University is concerned with protecting the rights, health, safety, dignity, and privacy of its research participants. It is also concerned with protecting the health, safety, rights, and academic freedom of its students and with safeguarding its own reputation for conducting high quality, ethical research.

*This Research Ethics Screening Form will enable students to self-assess and determine whether the research requires ethical review and approval via the Middlesex Online Research Ethics (MORE) form before commencing the study. Supervisors must approve this form after consultation with students.*

|  |  |  |
| --- | --- | --- |
| Student Name: | Abdullahi Mohamed | Email: am3630@live.mdx.ac.uk |
| Research project title: | Data Analysis on International Football Results Over the Last 150 Years and Predicting Future Footballing Results Through Machine Learning | |
| Programme of study/module: | Information Technology Bsc | |
| Supervisor Name: | Carl James-Reynolds | Email: c.james-reynolds@mdx.ac.uk |

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| --- | --- | --- |
| *Please answer whether your research/study involves any of the following given below:* | | |
| 1. HANIMALS or animal parts. | Yes | No |
| 1. MCELL LINES (established and commercially available cells - biological research). | Yes | No |
| 1. HCELL CULTURE (Primary: from animal/human cells- biological research). | Yes | No |
| 1. HCLINICAL Audits or Assessments (e.g. in medical settings). | Yes | No |
| 1. XCONFLICT of INTEREST or lack of IMPARTIALITY.   If unsure see “Code of Practice for Research” (Sec 3.5) at:   https://unihub.mdx.ac.uk/study/spotlights/types/research-at-middlesex/research-ethics | Yes | No |
| 1. XDATA to be used that is not freely available (e.g. secondary data needing permission for access or use). | Yes | No |
| 1. XDAMAGE (e.g., to precious artefacts or to the environment) or present a significant risk to society). | Yes | No |
| 1. XEXTERNAL ORGANISATION – research carried out within an external organisation or your reseach is commissioned by a government (or government body). | Yes | No |
| 1. MFIELDWORK (e.g biological research, ethnography studies). | Yes | No |
| 1. HGENETICALLTY MODIFIED ORGANISMS (GMOs) (biological research). | Yes | No |
| 1. HGENE THERAPY includes DNA sequenced data (biological research). | Yes | No |
| 1. MHUMAN PARTICIPANTS – ANONYMOUS Questionnaires (participants not identified or identifiable). | Yes | No |
| 1. XHUMAN PARTICIPANTS – IDENTIFIABLE (participants are identified or can be identified):  survey questionnaire/ INTERVIEWS / focus groups / experiments / observation studies. | Yes | No |
| 1. HHUMAN TISSUE (e.g., human relevant material, e.g., blood, saliva, urine, breast milk, faecal material). | Yes | No |
| 1. HILLEGAL/HARMFUL activities research (e.g., development of technology intended to be used in an illegal/harmful context or to breach security systems, searching the internet for information on highly sensitive topics such as child and extreme pornography, terrorism, use of the DARK WEB, research harmful to national security). | Yes | No |
| 1. XPERMISSION is required to access premises or research participants. | Yes | No |
| 1. XPERSONAL DATA PROCESSING (Any activity with data that can directly or indirectly identify a living person).  For example, data gathered from interviews, databases, digital devices such as mobile phones, social media or internet platforms or apps with or without individuals'/owners' knowledge or consent, and/or could lead to individuals/owners being IDENTIFIED or SPECIAL CATEGORY DATA (GDPR1) or CRIMINAL OFFENCE DATA.   1Special category data (GDPR- Art.9):” personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person’s sex life or sexual orientation”. | Yes | No |
| 1. XPUBLIC WORKS DOCTORATES: Evidence of permission is required for use of works/artifacts (that are protected by Intellectual Property (IP) Rights, e.g. copyright, design right) in a doctoral critical commentary when the IP in the work/artifactis jointly prepared/produced or is owned by another body | Yes | No |
| 1. HRISK OF PHYSICAL OR PSYCHOLOGICAL HARM (e.g., TRAVEL to dangerous places in your own country or in a foreign country (see <https://www.gov.uk/foreign-travel-advice>), research with NGOs/humanitarian groups in conflict/dangerous zones, development of technology/agent/chemical that may be harmful to others,  any other foreseeable dangerous risks). | Yes | No |
| 1. XSECURITY CLEARANCE – required for research. | Yes | No |
| 1. XSENSITIVE TOPICS (e.g., anything deeply personal and distressing, taboo, intrusive, stigmatising, sexual in nature, potentially dangerous, etc). | Yes | No |

 M – Minimal Risk;         X – More than Minimal Risk. H – High Risk

If you have answered 'Yes' to ANY of the items in the table, your application REQUIRES ethical review and approval using the MOREform **BEFORE commencing your research**. Please apply for ethical  approval using the MOREform (<https://moreform.mdx.ac.uk/>). Consult your supervisor for guidance. Also see *Middlesex Online Research Ethics (*MyLearning area*) and* [*www.tiny.cc/mdx-ethics*](http://www.tiny.cc/mdx-ethics)   
(CS students).

If you have answered 'No' to ALL the items in the table, your application is Low Risk, and you may NOT require ethical review and approval using the MOREform before commencing your research. Your research supervisor will confirm this below.

 Student Signature: Abdullahi            Date: 12/12/2023

**To be completed by the supervisor:**

|  |  |
| --- | --- |
| *Based on the details provided in the self-assesment form, I confirm that:* | Insert Y or N |
| The study is Low Risk and *does not require* ethical review & approval using the MOREform | y |
| The study *requires* ethical review and approval using the MOREform. | n |

 Superivsor Signature:C James-Reynolds Date14/12/23

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