

THE GOLDEN RECORDS : TRACING THE LEGACY AND GROWTH OF THE SUMMER GAMES



Developing parameterized reports using Microsoft Report Builder, leveraging historical data from the modern Summer Olympics from London 1948 to Rio 2016 Games.

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01. Introduction

Athletes all over the world come together to compete at the highest level at the Olympic Games, which are regarded at the crowning glory of international sporting events. They showcase athletic prowess and global unity.

The historical data from the modern summer Olympic Games, which run from the London 1948 Games to the Rio 2016 Games, is thoroughly analyzed in this report. Through the creation of interactive reports using Microsoft Report Builder, this task seeks to explore and visualize important aspects of the Olympics, such as trends in athlete participation, medal distribution and performance metrics. These reports use data to identify trends and insights that illustrate how the Summer Olympics are changing, offering a more comprehensive understanding of the elements that have contributed to the success and legacy of this esteemed competition.

02. Explanation and Preparation of the Dataset

The Olympics dataset, which contains an abundance with details from many previous Olympics Games, offers a strong basis for examining these patterns and trends as well as unique opportunity to witness the narratives and accomplishments that characterize the modern Olympic Legacy. The following link allows you to download this dataset.

https://figshare.com/articles/dataset/Olympic_history_longitudinal_data_scraped_from_www_sports-reference_com/6121274?file=11693840

Initially, the dataset contained 271,116 rows and 15 columns, including the missing values. First, the dataset was imported to the SQL Server Management Studio, where it was subsequently cleaned, wrangled, and pre-processed by transforming it to meet our specific requirements. This process entailed addressing any anomalies and missing data and eliminating null values and duplicates before moving forward with the analysis. The null values were replaced with the mean value of the relevant columns.

After pre-processing and preparing the dataset, the server was connected to the Microsoft Report Builder to proceed with creating the reports. Subsequently, we focused on creating insightful visualizations as well as constructing an interactive parameterized report.

03. Implementation and Designing of the Reports

Parameterized reports were developed using Microsoft Report Builder, with the primary goal of exploring and visualizing key aspects of the Summer Olympic Games, including trends in

athlete participation, medal distribution, and performance metrics, through the application of various data visualization techniques such as various graphs and charts.

We developed three parameterized reports.

- **Medal Distribution Report**
- **Athletes Participation Analysis Report**
- **Athletes Performance Report**

04. Key Patterns and Insights

When observing the reports, the following visualizations displayed a few key patterns and insights.

• The Medal Distribution Analysis Report

This report shows the total number of medals won by the athletes in each country at different Olympic Games. The selected parameters for the report are the **Year and Medal**. When the relevant parameters are selected, the report illustrates a table with 4 columns as the NOC (National Olympics Committee), The year of achievement, Total (The total number of medals won), Medal (The type of medal achieved) and as a summary of the report, the data are denoted visually using a pie chart and a bar chart.

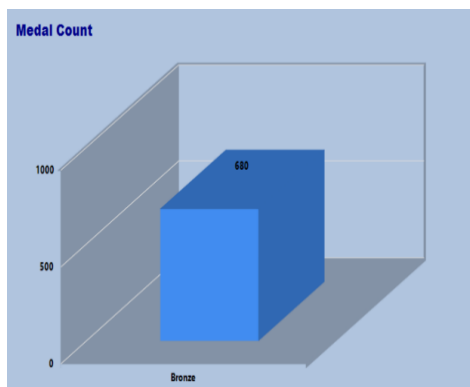
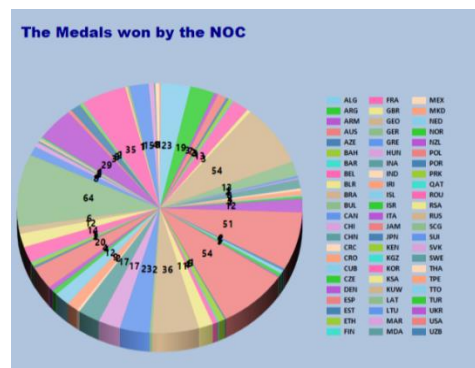
For example, when we input the parameters as ; Year - 2000 and Medal – Bronze, the report shall be illustrated as follows. Here, the total number of bronze medals that has been won by the athletes in the year 2000 at the Sydney Olympics is displayed by the NOC. Each row describes individual statistics under the NOC. **Accordingly, BRA (Brazil) has won 36 Bronze Medals in year 2000 at the Sydney Olympics.**

This pie chart above denotes the totals of bronze medals won by each country in the year 2000. **According to this chart, the highest number of significant numbers of bronze medals were won by GER (Germany) which is 64.**

The bar chart denotes the sum of the medal category won in a specific year. Here, **the total number of bronze medals won by the athletes in the year 2000 at the Sydney Olympics is displayed as 68.**

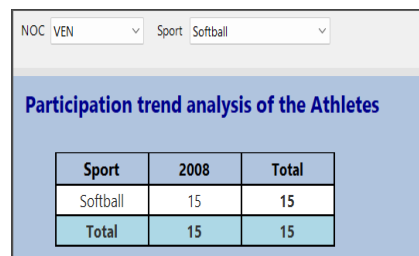
Medal Distribution Broken Down by the NOC
The Total medals won by each country in 2000

NOC	2000	Total	Medal
ALG	3	3	Bronze
ARG	3	3	Bronze
ARM	1	1	Bronze
AUS	54	54	Bronze
AZE	1	1	Bronze
BAH	5	5	Bronze
BAR	1	1	Bronze
BEL	4	4	Bronze
BLR	11	11	Bronze
BRA	36	36	Bronze
BUL	2	2	Bronze
CAN	23	23	Bronze
CHI	17	17	Bronze
CHN	17	17	Bronze
CRC	2	2	Bronze
CRO	9	9	Bronze
CUB	12	12	Bronze
CZE	4	4	Bronze
DEN	4	4	Bronze
ESP	20	20	Bronze
EST	2	2	Bronze
ETH	3	3	Bronze
FIN	1	1	Bronze
FRA	14	14	Bronze
GBR	12	12	Bronze
GEO	6	6	Bronze
GER	64	64	Bronze

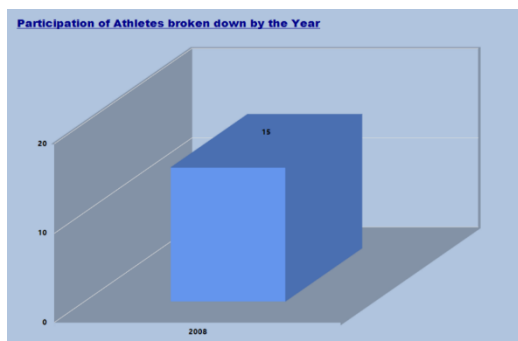


- **Athlete Participation Analysis Report**

The Athlete Participation Analysis Report illustrates the total number of athletes participating in various sports at each year of which the Olympic Games were held. The selected parameters for the report are the **NOC and Sport**. When the relevant parameters are selected, the report illustrates a table with 3 columns. The table column headings are displayed as Sport (The Name of the Sport), The year of participation, Total (The total number of athletes participated), and as a summary of the report, the data are denoted visually using a bar chart. Each row of the displayed report shall describe the individual statistics under each sport of the selected NOC.



For example, when the parameters are selected as follows ; NOC as VEN and Sport as Softball, the report shall be illustrated as follows. The total number of participants for each sport is displayed by the NOC. Each row describes the individual statistics under the Sport category of the relevant NOC. Accordingly, ***the total number of athletes from VEN (Venezuela) that has participated for Softball in the year 2008 at the Athens Olympics is displayed as a total of 15 participants.***



The bar chart displays the sum of athletes participation at a Sport under the relevant NOC. According to the bar chart, ***the total number of athletes that participated for the softball sport in the year 2008 at Athens Olympic from VEN (Venezuela) is displayed as a total of 15.***

- **Athlete Performance Analysis Report**

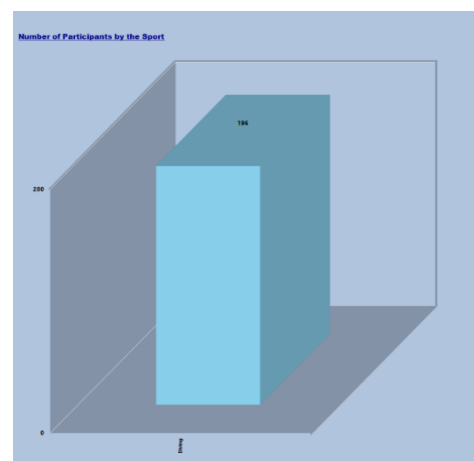
This report helps to analyze the athlete performances based on their medal achievement at the relevant sport under each year. As the parameters for the report, **Year and Sport** was selected. When the relevant parameters are selected, the report illustrates a table with 4 columns. The headings of each columns are displayed as Year (The year of which the Olympics Game was held), Name (Name of the Athlete), Sport (Name of the Sport), Medal (The type of medal achievement), and as a summary of the report, the data is denoted visually using a pie chart and bar chart. Each row of the displayed report shall describe the individual statistics of an athlete under each sport of the selected year.

For example, when we select the parameters as follows ; Year as 2004 and Sport as Diving, the shall be illustrated as depicted below. Here, an athlete's individual achievements under each year for various sports is displayed. As per the report, ***the medals won by each athlete at the Diving sport in the year 2004 are displayed. For a fact, Yuliya Vladimirovna Pakhalina has won***

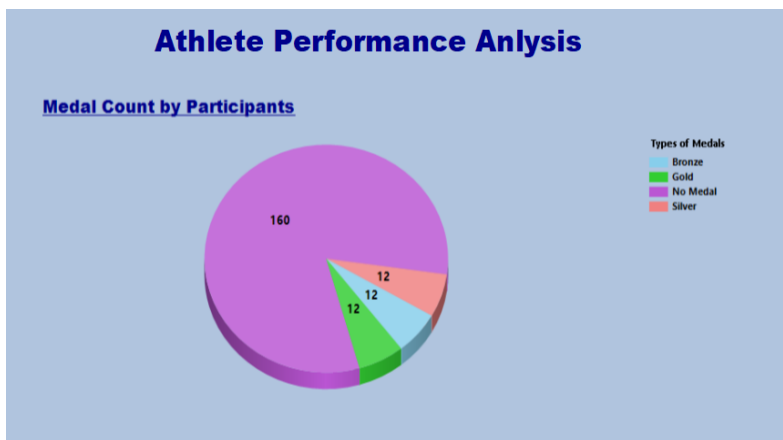
Year	2004	Sport	Diving
Athlete Performance Analysis			
Year	Name	Sport	Medal
2004	Paola Milagros Espinosa Snchez	Diving	No Medal
2004	Paola Milagros Espinosa Snchez	Diving	No Medal
2004	Paola Milagros Espinosa Snchez	Diving	No Medal
2004	Paola Milagros Espinosa Snchez	Diving	No Medal
2004	Yolanda M. Ortiz Espinosa	Diving	No Medal
2004	Rommel Agmed Pacheco Manrufo	Diving	No Medal
2004	Rommel Agmed Pacheco Manrufo	Diving	No Medal
2004	Pak Yong-Ryong	Diving	No Medal
2004	Yuliya Vladimirovna Pakhalina	Diving	Bronze
2004	Yuliya Vladimirovna Pakhalina	Diving	Silver
2004	Claire Febvay	Diving	No Medal
2004	Olena Olehivna Fedorova	Diving	No Medal
2004	Heike Fischer	Diving	No Medal
2004	Ertvkhia Pappa-Papavaslopoulou	Diving	No Medal
2004	Ertvkhia Pappa-Papavaslopoulou	Diving	No Medal
2004	Lynda Mary Folauhola	Diving	No Medal
2004	Erick Fornaris Ivarez	Diving	No Medal
2004	Erick Fornaris Ivarez	Diving	No Medal
2004	Erick Fornaris Ivarez	Diving	No Medal
2004	Ramn Antonio Fumad Rodriguez	Diving	No Medal
2004	Hugo Pellicer Parisi	Diving	No Medal

a Silver and a Bronze medal while Paola Milagros Espinosa Snchez, Yolanda M. Ortiz Espinosa, Rommel Agmed Pacheco Manrufo and Pak Yong-Ryong has earned no medal under the Diving Sport in the year 2004 at the Athens Olympics.

The bar chart depicted below, denotes the sum of the participants under each sport for the relevant year. Here, *the total number of athletes participated for the Diving Sport in the 2004 Athens Olympics is displayed as 196.*



This pie chart below denotes the sum of medal types won by the athletes under the relevant Sport and Year. *According to this chart, there are each 12 medals won under the Gold, Silver and Bronze categories, while there are 160 non – medalists for the Diving Sport in the year 2004.*



05. Recommendations for further analysis

Expanding on the knowledge acquired from this thorough analysis, there are several avenues for further exploration that could yield even more detailed comprehensions of the Olympic Games. An investigation of trends in medal distribution and athlete participation that are specific to a given gender is one area of possible relevance. We may learn more about the evolution of gender equality in the Olympics by analyzing how male and female competitors' participation rates and success measures change over time. Additionally, investigating the influence of geopolitical factors on athlete performance and participation could reveal correlations between global events and Olympic outcomes. A study like this could look at how certain countries' or areas' participation has been affected by changes in international relations, politics, or the economy.

Another prominent area for further research could focus on the evolution of specific sports within the Olympics. By tracking the growth or decline of sports, we can better understand evolving global interests and how they reflect broader societal trends. For example, examining the emergence of new sports and the discontinuation of others may provide insights on how cultural norms are changing regarding the dynamics of international sports governance. Examining the long-term career paths of medal-winning athletes may also provide insight into the elements that support continued athletic success or the difficulties athletes encounter in sustaining their best performance throughout several Olympic cycles. These additional analyses could enrich our understanding of the complex factors that shape the Olympic games, contributing to a more broader perspective of this iconic global event.

06. Conclusion

This report has provided a comprehensive analysis of the Summer Olympic Games, focusing on data from London 1948 to Rio 2016. By utilizing Microsoft Report Builder, we were able to explore and visualize key elements of the Olympics, such as athlete participation, medal distribution and performance metrics. The creation of interactive parameterized reports allowed us to delve deeper into the data, uncovering significant trends and insights that illustrate how the Olympics have evolved over time. These results highlight the remarkable accomplishments of international athletes as well as the evolving nature of international sports competition.

The visualizations and analyses provided here, offers a thorough knowledge of the factors that have gone into making the Olympic Games successful and establishing a legacy. The trends and patterns found in this report will be useful references for future study and analysis as the Olympics expand and evolve to reflect the modern world. As the Olympic Games continue to evolve, the patterns and trends identified in this report will serve as valuable references for future analyses and discussions surrounding the impact and significance of the Olympics on the world stage.

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