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Department of Languages

BSc in Applied Data Science Communication

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Advanced SQL and Cloud Databases / LB2224

Year 2: Semester 2

Assignment number 1

25.08.2024

Content

1. Introduction

The modern-day Summer Olympics Games was first held in 1896 in Athens, Greece. The games are held every four consecutive years in different cities worldwide where any qualified athletes from 206 National Olympic Committees participate to compete in them. The Summer Olympic Games was organized by the International Olympic Committee, which was founded by Pierre de Coubertin in 1894.

The modern Olympics dataset is based on historical data collected from Athens, 1896 to Rio, 2016. The dataset contains 271116 rows and 15 columns. The column headers are as follows.

1. **ID** – number of the Row
2. **Name** – the name of the athlete
3. **Sex** – the gender the athlete
4. **Age** – age of the athlete competing the games
5. **Height** – height of the athlete in centimeters
6. **Weight** – weight of the athlete in kilograms
7. **Team** – name of the team competing in the games
8. **NOC** - National Olympic Committee 3-letter code
9. **Games** - year and season of the game
10. **Year** – year of the Olympic game
11. **Season** – season of the Olympic game - Summer or Winter
12. **City** – city which hosted the games
13. **Sport** – name of the sport
14. **Event** – name of the event
15. **Medal** – type of medal won by the athlete - Gold, Silver, Bronze, or NA

ID	Name	Sex	Age	Height	Weight	Team	NOC	Games	Year	Season	City	Sport	Event	Medal
1	A Dijiang	M	24	180	80	China	CHN	1992 Summer	1992	Summer	Barcelona	Basketball	Basketball Men's Basketball	NA
2	A Lamusi	M	23	170	60	China	CHN	2012 Summer	2012	Summer	London	Judo	Judo Men's Extra-Lightweight	NA
3	Gunnar Nielsen Aaby	M	24	NA	NA	Denmark	DEN	1920 Summer	1920	Summer	Antwerpen	Football	Football Men's Football	NA
4	Edgar Lindenau Aabye	M	34	NA	NA	Denmark/Sweden	DEN	1900 Summer	1900	Summer	Paris	Tug-Of-War	Tug-Of-War Men's Tug-Of-War	Gold
5	Christine Jacoba Aaftink	F	21	185	82	Netherlands	NED	1988 Winter	1988	Winter	Calgary	Speed Skating	Speed Skating Women's 500 metres	NA
5	Christine Jacoba Aaftink	F	21	185	82	Netherlands	NED	1988 Winter	1988	Winter	Calgary	Speed Skating	Speed Skating Women's 1,000 metres	NA
5	Christine Jacoba Aaftink	F	25	185	82	Netherlands	NED	1992 Winter	1992	Winter	Albertville	Speed Skating	Speed Skating Women's 500 metres	NA
5	Christine Jacoba Aaftink	F	25	185	82	Netherlands	NED	1992 Winter	1992	Winter	Albertville	Speed Skating	Speed Skating Women's 1,000 metres	NA
5	Christine Jacoba Aaftink	F	27	185	82	Netherlands	NED	1994 Winter	1994	Winter	Lillehammer	Speed Skating	Speed Skating Women's 500 metres	NA
5	Christine Jacoba Aaftink	F	27	185	82	Netherlands	NED	1994 Winter	1994	Winter	Lillehammer	Speed Skating	Speed Skating Women's 1,000 metres	NA
6	Per Knut Aaland	M	31	188	75	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 10 kilometres	NA
6	Per Knut Aaland	M	31	188	75	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 50 kilometres	NA
6	Per Knut Aaland	M	31	188	75	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 10/15 kilometres Pursuit	NA
6	Per Knut Aaland	M	31	188	75	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 4 x 10 kilometres Relay	NA
6	Per Knut Aaland	M	33	188	75	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 10 kilometres	NA
6	Per Knut Aaland	M	33	188	75	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 30 kilometres	NA
6	Per Knut Aaland	M	33	188	75	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 10/15 kilometres Pursuit	NA
6	Per Knut Aaland	M	33	188	75	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 4 x 10 kilometres Relay	NA
7	John Aalberg	M	31	183	72	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 10 kilometres	NA
7	John Aalberg	M	31	183	72	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 50 kilometres	NA
7	John Aalberg	M	31	183	72	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 10/15 kilometres Pursuit	NA
7	John Aalberg	M	31	183	72	United States	USA	1992 Winter	1992	Winter	Albertville	Cross Country Skiing	Cross Country Skiing Men's 4 x 10 kilometres Relay	NA
7	John Aalberg	M	33	183	72	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 10 kilometres	NA
7	John Aalberg	M	33	183	72	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 30 kilometres	NA
7	John Aalberg	M	33	183	72	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 10/15 kilometres Pursuit	NA
7	John Aalberg	M	33	183	72	United States	USA	1994 Winter	1994	Winter	Lillehammer	Cross Country Skiing	Cross Country Skiing Men's 4 x 10 kilometres Relay	NA
8	Cornelia "Cor" Aalten (-Strannood)	F	18	168	NA	Netherlands	NED	1932 Summer	1932	Summer	Los Angeles	Athletics	Athletics Women's 100 metres	NA
8	Cornelia "Cor" Aalten (-Strannood)	F	18	168	NA	Netherlands	NED	1932 Summer	1932	Summer	Los Angeles	Athletics	Athletics Women's 4 x 100 metres Relay	NA
9	Antti Sami Aalto	M	26	186	96	Finland	FIN	2002 Winter	2002	Winter	Salt Lake City	Ice Hockey	Ice Hockey Men's Ice Hockey	NA
10	Einar Ferdinand "Einari" Aalto	M	26	NA	NA	Finland	FIN	1952 Summer	1952	Summer	Helsinki	Swimming	Swimming Men's 400 metres Freestyle	NA
11	Jorma Ilmari Aalto	M	22	182	76.5	Finland	FIN	1980 Winter	1980	Winter	Lake Placid	Cross Country Skiing	Cross Country Skiing Men's 30 kilometres	NA
12	Jyri Tapani Aalto	M	31	172	70	Finland	FIN	2000 Summer	2000	Summer	Sydney	Badminton	Badminton Men's Singles	NA
13	Minna Maarit Aalto	F	30	159	55.5	Finland	FIN	1996 Summer	1996	Summer	Atlanta	Sailing	Sailing Women's Windsurfer	NA
13	Minna Maarit Aalto	F	34	159	55.5	Finland	FIN	2000 Summer	2000	Summer	Sydney	Sailing	Sailing Women's Windsurfer	NA
14	Pirjo Hannele Aalto (Mattila-)	F	32	171	65	Finland	FIN	1994 Winter	1994	Winter	Lillehammer	Biathlon	Biathlon Women's 7.5 kilometres Sprint	NA
15	Arvo Ossian Aaltonen	M	22	NA	NA	Finland	FIN	1912 Summer	1912	Summer	Stockholm	Swimming	Swimming Men's 200 metres Breaststroke	NA
15	Arvo Ossian Aaltonen	M	22	NA	NA	Finland	FIN	1912 Summer	1912	Summer	Stockholm	Swimming	Swimming Men's 400 metres Breaststroke	NA
15	Arvo Ossian Aaltonen	M	30	NA	NA	Finland	FIN	1920 Summer	1920	Summer	Antwerpen	Swimming	Swimming Men's 200 metres Breaststroke	Bronze
15	Arvo Ossian Aaltonen	M	30	NA	NA	Finland	FIN	1920 Summer	1920	Summer	Antwerpen	Swimming	Swimming Men's 400 metres Breaststroke	Bronze
15	Arvo Ossian Aaltonen	M	34	NA	NA	Finland	FIN	1924 Summer	1924	Summer	Paris	Swimming	Swimming Men's 200 metres Breaststroke	NA
16	Juhamatti Tapio Aaltonen	M	28	184	85	Finland	FIN	2014 Winter	2014	Winter	Sochi	Ice Hockey	Ice Hockey Men's Ice Hockey	Bronze
17	Paavo Johannes Aaltonen	M	28	175	64	Finland	FIN	1948 Summer	1948	Summer	London	Gymnastics	Gymnastics Men's Individual All-Around	Bronze
17	Paavo Johannes Aaltonen	M	28	175	64	Finland	FIN	1948 Summer	1948	Summer	London	Gymnastics	Gymnastics Men's Team All-Around	Gold
17	Paavo Johannes Aaltonen	M	28	175	64	Finland	FIN	1948 Summer	1948	Summer	London	Gymnastics	Gymnastics Men's Floor Exercise	NA

athlete_events | country_destinations

Figure 01

For the analysis, only the data regarding the 2000 to 2016 Summer Olympic Games were considered. Preparatory process for the dataset was carried out to clean the dataset for the preparation of the dashboard for further analysis. This was done after building a relationship between the NOC columns of the original dataset and the country_destinations dataset.

ID	Name	Gender	Age	NOC	Year	Season	City	Sport	Event	Medal	Country
574	rika Abril Surez	Female	38	COL	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Colombia
931	Nyakisi Adero	Female	30	UGA	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Uganda
1234	Alessandra Aguilar Morn	Female	38	ESP	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Spain
1527	Souad At Salem (-Mahour-Bacha)	Female	37	ALG	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Algeria
2135	Mayada Al-Sayad	Female	23	PLE	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Palestine
3600	An Seul-Ki	Female	24	KOR	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	South Korea
5050	Kellys Yesenia Arias Figueroa	Female	27	COL	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Colombia
5103	Yuliya Vladimirovna Arkhipova-Andreyeva	Female	32	KGZ	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Kyrgyzstan
5127	Alina Armas	Female	32	NAM	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Namibia
5848	Sarah Amer Attar	Female	23	KSA	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Saudi Arabia
5967	Jssica de Barros Augusto	Female	34	POR	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Portugal
6219	Esma Aydemir	Female	24	TUR	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Turkey
8775	Anne Sofie Holm Baumeister (Jrgensen-)	Female	28	DEN	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Denmark
8877	Bayartsogtyn Mnkhzayaa	Female	22	MGL	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Mongolia
9749	Dailn Belmonte Torres	Female	30	CUB	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Cuba
10351	Katarna Bereov	Female	28	SVK	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Slovakia
10900	Catherine Bertone	Female	44	ITA	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Italy
14022	Kawtar Boulaid	Female	26	MAR	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Morocco
15192	Fionnuala Britton-McCormack	Female	31	IRL	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Ireland
17470	Mara Elena Calle Galarza	Female	41	ECU	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Ecuador
19306	Jeena elnova-Prokopuka	Female	39	LAT	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Latvia
19525	Rosa Alba Chacha Chacha	Female	33	ECU	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Ecuador
20057	Viviana Micaela Chvez	Female	29	ARG	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Argentina
20135	Rose Chelimo	Female	27	BRN	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Bahrain
20147	Lonah Korlima Chemtai	Female	27	ISR	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Israel
20322	Chen Yu-Hsuan	Female	23	TPE	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Taiwan
21676	Elena Daniela Crlan	Female	35	ROU	2016	Summer	Rio de Janeiro	Athletics	Athletics Women's Marathon	No Medal	Romania

: Oympics_Original1 (67,474 rows)

Figure 02

NOC	region
AFG	Afghanistan
AHO	Curacao
ALB	Albania
ALG	Algeria
AND	Andorra
ANG	Angola
ANT	Antigua
ANZ	Australia
ARG	Argentina
ARM	Armenia
ARU	Aruba
ASA	American Samoa
AUS	Australia
AUT	Austria
AZE	Azerbaijan
BAH	Bahamas
BAN	Bangladesh
BAR	Barbados
BDI	Burundi
BEL	Belgium
BEN	Benin
BER	Bermuda
BHU	Bhutan
BIH	Bosnia and Herzegovina
BIZ	Belize
BLR	Belarus
BOH	Czech Republic

: country_destinations (230 rows)

Figure 03

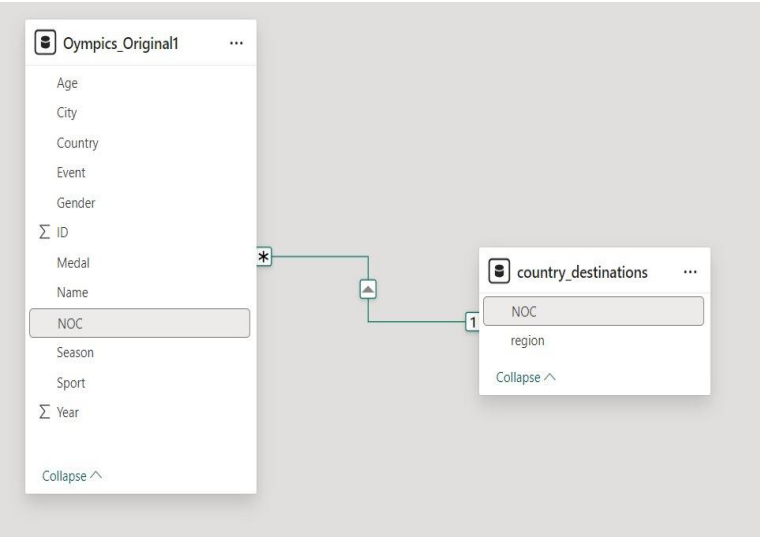


Figure 04

2.

Task 01

Olympic Games Insights: A Comprehensive Analysis from Sydney 2000 to Rio 2016

2.1. Key Patterns and Insights

The dashboard which presents the key patterns and insights observed through analyzing the dataset is as follows. The dashboard is prepared using the software Microsoft Power BI Desktop.

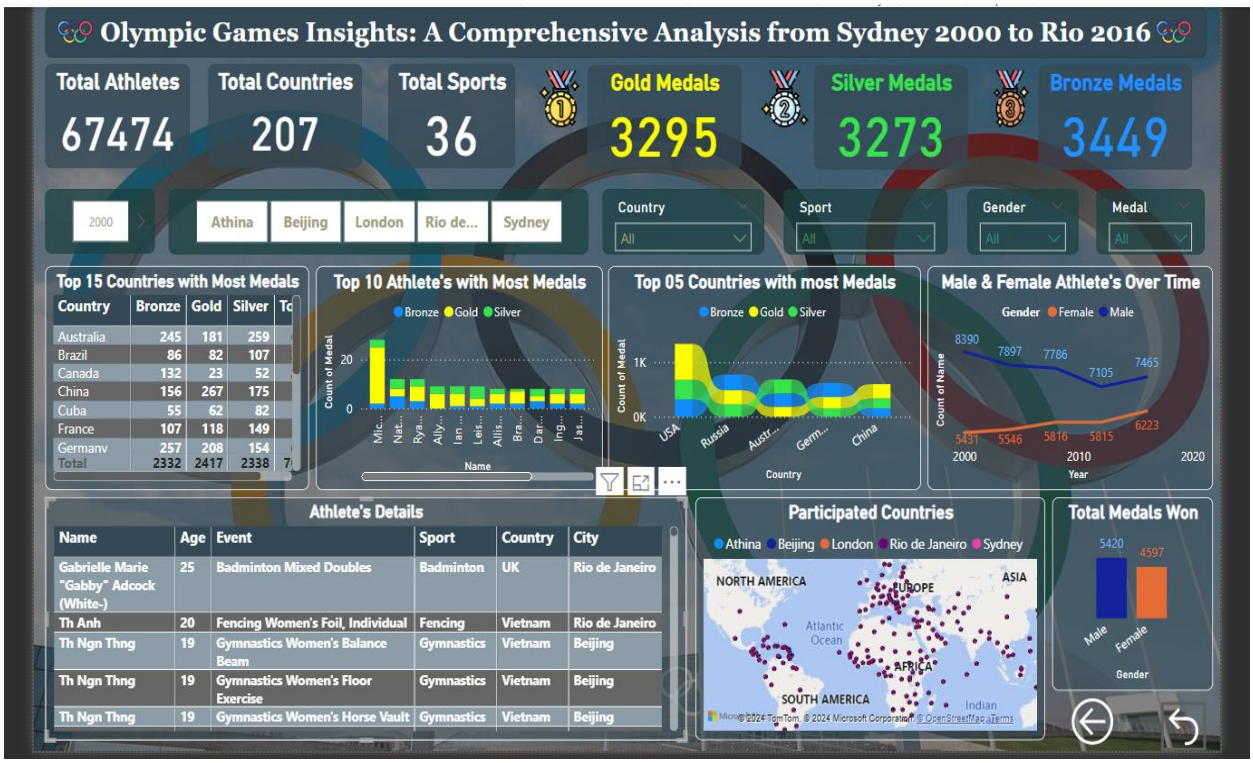


Figure 05

A further analysis observed from the key patterns and insights are provided in detail below.

- **Top 15 Countries with Most Medals**

Matrix Visualization is used to illustrate the chart of the top 15 countries with the most medals in the Summer Olympics from 2000 to 2016.

According to the visualization, The United States (USA) has the most overall medals which is 1334, including 658 gold medals, 357 silver medals, and 319 bronze medals. Cuba has the fewest medals among the top 15 countries, with 199 medals in total.

- **Top 10 Athletes with Most Medals**

The Stacked column chart shows the top ten athletes in the Summer Olympic Games who have won the most medals worldwide between 2000 and 2016.

According to the visualization, Michael Fred Phelps II leads the field with 23 gold medals, making him the most decorated athlete overall. Other known athletes, such as Allison Schmitt and Usain Bolt, had varying medal totals, with Usain Bolt collecting 8 gold medals but no silver or bronze medals.

- **Top 5 Countries with the Most Medals**

The Ribbon chart is utilized to visually represent the distribution of medals, including gold, silver, and bronze, among the top five countries with the most medals.

Accordingly, USA continues to lead, followed by Russia, Australia, Germany and China. The Ribbon Chart indicates that these countries have a balanced distribution of gold, silver, and bronze medals, with a couple of significant trends.

- **Male and Female Athletes Over Time.**

The line chart depicts the global participation trends in the Summer Olympics, including both male and female athletes.

Male athlete participation has decreased, from 8930 in 2000 to 7465 in 2015. In contrast, female participation has steadily increased, from 5431 in 2000 to 6223 in 2015.

- **Total Medals Won**

The stacked column chart depicts the relationship between male and female athletes and the total medals won at the Summer Olympics from 2000 to 2016.

Male athletes have won more medals overall 5420 than female competitors which is a total of 4597 medals.

- **Participated Countries**

The map depicts the countries that competed in the Summer Olympics from 2000 to 2016, with five color codes signifying the locations that hosted the games. The cities are sorted in ascending order and displayed on a map, highlighting the locations where athletes competed which is mentioned as follows;

City Hosted	Year Hosted	Representative Color
Athina	2004	Light blue
Beijing	2008	Dark blue
London	2012	Orange
Rio de Janeiro	2016	Purple
Sydney	2000	Pink

Table 01

The map shows cluster points scattered across Europe and Africa, while a few are scattered across North America and Australia.

- **Athletes Details**

The above chart shows the details of the athletes that participated the Summer Olympic Games from the year 2000 to 2016. A table visualization provides detailed information about athletes, including their names, ages, sports, countries, and the cities they competed in.

- **Anomalies**

1. Unequal medal distribution
   While Russia and China show a balanced distribution of medals, countries like USA have a significant dominance in the distribution of gold medals.

2. Gender participation distribution
   Although there is a gap between the participation of males and females in the games over time, there is still a noticeable difference in the participation rate.
   Despite the increasing of the participation of female athletes, the total number of medals won by females is lower in comparison to males.

3. Geographical participation
   Compared to Europe and Africa which have large clusters, North America and Australia have a small cluster which represents their fewer participation.

2.2. Recommendations

To enhance the adaptability and user-friendliness of the dashboard, various additional visualizations can be recommended which enunciates the Olympic Games, in this scenario the Summer Olympic Games allowing the user to have a better understanding about the Summer Olympic Games.

The recommendations are outlined as follows.

1. Historical Performance of the Top 10 athletes.
   - **Visualization type:** Line chart
   - **Insights:** the visualization will show the trend distribution of the total medals won by the Top 10 athlete's overtime. This shows the performance of the Top 10 athletes over the series of time.

2. Gender Participation by Sport
   - **Visualization:** Staked column chart
   - **Insights:** the visualization displays the ratio of male and female participation in each sport. This will represent the distribution of the gender participation in each sport.

3. Athlete Age Distribution
   - **Visualization type:** Histogram or Scatter Plot
   - **Insights:** the visualization displays the age distribution of the athletes who participated the games across different categories such as sports, genders, or countries. This highlights the age distribution among the athletes can be seen.

3.

Task 02

Olympic Games Insights:

A Comprehensive Analysis from London 1948 to Rio 2016

3.1. Key Patterns and Insights

- **Summary table of the dataset.**

Olympic Games Analysis

Year	City	Countof Sports	Countof Events	Countof Teams	Total Athletes	Total Medals
1948	London	20	153	111	4402	852
1952	Helsinki	19	149	133	4932	897
1956	Melbourne	18	145	116	3189	857
1956	Stockholm	1	6	29	158	36
1960	Roma	19	150	186	5352	911
1964	Tokyo	21	163	168	5137	1029
1968	Mexico City	20	172	112	5558	1057
1972	Munich	23	193	139	7114	1215
1976	Montreal	23	198	92	6073	1320
1980	Moskva	23	203	80	5259	1384
1984	Los Angeles	25	221	140	6798	1476
1988	Seoul	27	237	177	8454	1582
1992	Barcelona	29	257	212	9386	1712
1996	Atlanta	31	271	246	10339	1842
2000	Sydney	34	300	243	10647	2004
2004	Athina	34	301	260	10557	2001
2008	Beijing	34	302	292	10899	2048
2012	London	32	302	245	10517	1941
2016	Rio de Janeiro	34	306	249	11179	2023

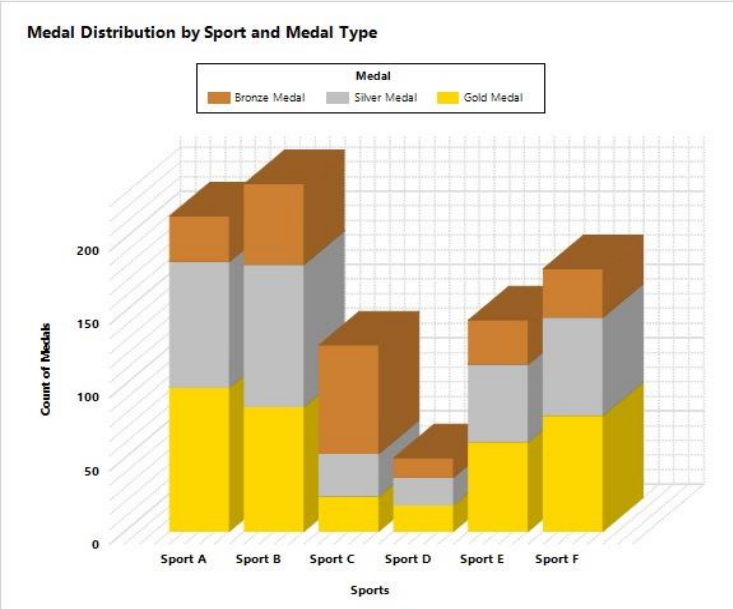
Figure 06

The range of sports and events has steadily increased, from 20 in 1948 to 34 in 2016, for a grand total of 306 events over time. The number of athletes competing in the Olympics increased significantly from 4,402 in 1948 to 11,179 in 2016. The number of medals awarded increased from 852 in 1948 to 2023 in 2016, attributed largely to an increase in events and participation of athletes.

Since 1996, the Olympic Games have grown significantly, with the 2008 Beijing Games containing 10,899 athletes and the 2016 Rio Games featuring 11,179, indicating continuous engagement.

This is the parent report of the dataset where the columns, count of sport, total medal and total athletes are considered for the preparation of the further analysis of the parameterized reports of the Performance Analysis, Medal Distribution Analysis and a Participation Trend respectively to identify the performance analysis and the trends the selected are drilled through from the report.

- **Medal Distribution Analysis**



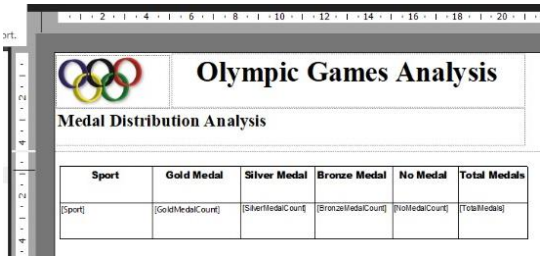


Figure 07

Figure 08

The parameters utilized for the 3D Stacked column chart are Team and Year. Based on the parameters provided the analysis of the chart and table will vary.

Sport A and Sport B have the most total medals, signifying fierce competition or an increased number of events. Sport A and Sport B have an equal distribution of gold, silver, and bronze medals, indicating no preference for winning specific medal types.

Sport D has the least total medals among the other sports, which could indicate fewer events or less competitive performance in that sport.

Sport C and Sport F follow similar patterns, with Sport C having slightly more overall medals and a very fair distribution of medal types.

Sport E's unequal distribution of gold and bronze medals indicates an improved performance in winning events while only missing higher placements when compared to other sports.

- **Athlete Performance by Event and Medal Type.**

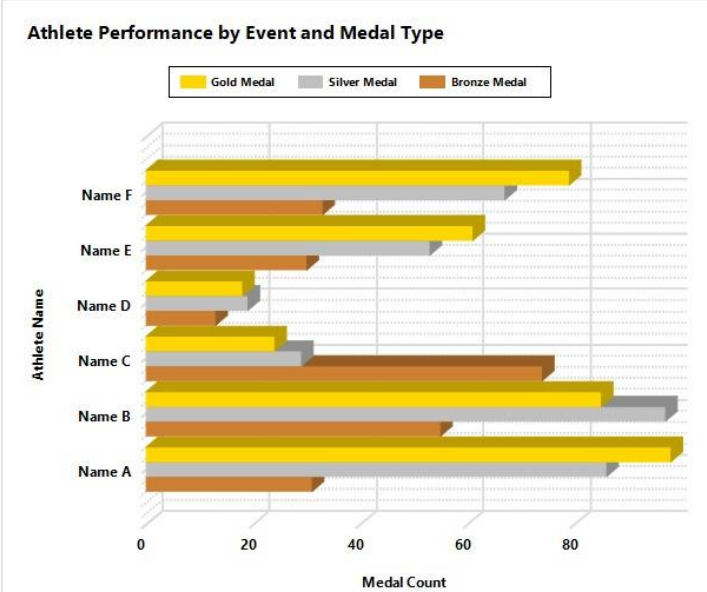


Figure 09

Figure 10

The parameters utilized for the 3D Stacked bar chart are Year, Sport and Team. Based on the parameters provided the analysis of the chart and table will vary.

Athlete A has the most overall medals, with a large number of gold, silver, and bronze medals, including an extremely high count of gold medals.

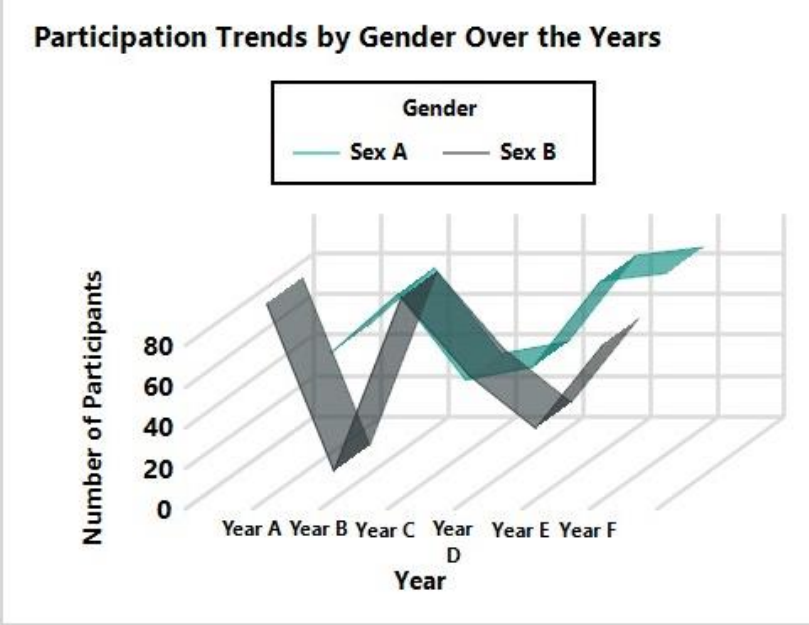
Athlete B falls behind Athlete A in the overall count of medals, but has outstanding results in all three medal types.

Despite earning relatively few medals, Athlete C has more gold medals than Athlete D.

Athlete E and Athlete F have the fewest total medal counts; however, Athlete F has a higher count of gold medals when compared to other athletes.

Most athletes constantly exceed silver and bronze medalists.

- **Participation Trends by Gender Over the Years.**



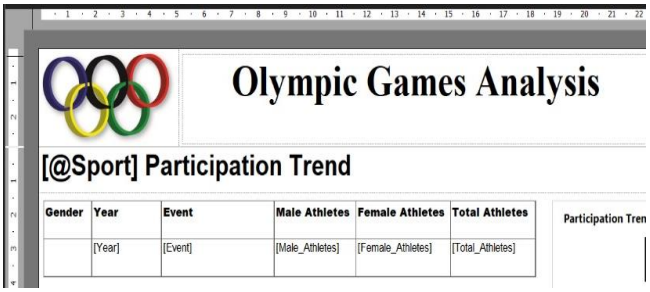


Figure 11

Figure 12

The parameters utilized for the 3D Line chart are Sport and NOC. Based on the parameters provided the analysis of the chart and table will vary.

Sex A and Sex B have significant variances in participation throughout time, with periods of rising and falling participation.

Sex B has a significant decline between Years A and B, followed by an apparent recovery and increase in participation in the beginning of the Year D, eventually leading 60 by Year F.

The participation of Sex A in the study increased steadily from Year D, eventually surpassing Sex B by Year F, demonstrating a steady increase in interest over time.

The study revealed a gender crossover from Year D to Year E, with Sex A and Sex B participation trends intersecting, indicating a potential shift in dynamics.

Both sexes exhibit excellent recovery and growing engagement in the subsequent years - Years E and F, showing successful attempts to attract interest in events.

3.2. Recommendations

To enhance the depth and clarity of insights provided, various additional visualizations can be recommended which can provide a more comprehensive understanding of the data highlighting important trends, patterns and outliers.

The recommendations are mentioned as follows.

1. Medal Count by Athlete and Year.
    - **Visualization type:** 3D Clustered column chart.
    - **Purpose:** to compare individual performance of each athlete year wise, showing how many medals – gold, silver and bronze medals each athlete has won.
    - **Insight:** identifying the athletes who consistently performed at the top and identifying those who have improved and declined over time.

2. Participation Trend Based on Gender.
    - **Visualization type:** Area chart.
    - **Purpose:** emphasizes the participation of each gender – male and female over time.
    - **Insight:** provides a better visual representation of how the total participation of athletes of both genders evolve and their contribution overtime.

3. Medal Distribution by Athlete.
    - **Visualization type:** Pie chart.
    - **Purpose:** to provide a breakdown of the total medals won by each athlete.
    - **Insight:** identifying the proportion of medals won by each athlete at total.

4. References

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5. Appendices

***Figure 01*:** The dataset which is used for further analysis – extracted from the website.
***Figure 02*:**.The preprocessed original dataset which is used for further analysis.
***Figure 03*:** country_destinations dataset.
***Figure 04*:**.The relationship build up between the original and the country_destinations dataset.
***Figure 05*:** The Power BI dashboard.
***Figure 06*:** Olympic Games Analysis – a summary table of the dataset.
***Figure 07*:** The table for the medal distribution analysis.
***Figure 08*:** The chart visualization for the medal distribution analysis.
***Figure 09*:** The table for the athlete performance by event and medal type.
***Figure 10*:** The chart visualization for the athlete performance by event and medal type.
***Figure 11*:** The table for the participation trends by gender over the years.
***Figure 12*:** The chart visualization for the participation trends by gender over the years.

***Table 01*:** Table visualization which shows the details of the athletes who participated in the games.