Power BI Developer – Qena Branch

Graduation Project
(Olympics Games)
Documentation

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Table of Contents

Abstract

The Olympic Games is a global sporting event that brings together athletes from around the world to compete in various disciplines. With the increasing complexity and scale of the Games, the effective management and analysis of data have become crucial for optimizing performance and making strategic decisions. This graduation project aims to explore the application of business intelligence (BI) techniques in the context of the Olympic Games.

The project focuses on leveraging data analytics to gain valuable insights into athlete performance, resource allocation, and event management. The primary objective is to develop a comprehensive BI framework that integrates various data sources, including historical performance data, editions data, athlete bio, seasons, and results analysis. By harnessing these diverse datasets, the project aims to provide Olympic stakeholders with actionable intelligence that can drive performance improvements and enhance the overall spectator experience.

The project involves several key phases. Firstly, data collection and preprocessing techniques will be employed to gather and clean the relevant datasets. Subsequently, datasets will be integrated through SSIS and debugged in OLE DB. These insights will be visualized through interactive dashboards and reports, enabling stakeholders to make data-driven decisions in real-time.

Data Cleaning

To clean the given data in the athletics bio sheet, there are several steps that can be taken. Firstly, the names in the data should be trimmed to remove any leading or trailing spaces. Additionally, it is important to check the spelling of the names and make corrections as necessary to ensure accuracy.

Next, the given dates should be split and reformatted to a consistent format. This can involve separating the day, month, and year components of the dates, and then reformatting them according to a specified convention, such as YYYY-MM-DD.

Furthermore, any empty cells in the data should be replaced with the value "NULL" to indicate missing information. This helps maintain the integrity of the dataset and ensures that there are no gaps in the data.

By performing these data cleaning steps, the athletics bio sheet can be standardized, errors can be minimized, and the dataset can be prepared for further analysis or use.

special_no	description	country_nc	country	weight	height	born	sex	name	athlete_id	
na	KÃjroly Te	HUN	Hungary	na	na	1891-07-2(	Male	KÃjroly Te	16809	2
Listed in O	na	POL	Poland	72	173	31-08-47	Male	Andrzej Sc	43737	3
na	na	SUI	Switzerlar	50	170	03-06-71	Female	Nathalie W	50147	4
Listed in O	na	YUG	Yugoslavia	76	182	10-09-35	Male	Miha Lokar	5085	5
na	na	USA	United Sta	100	203	17-05-92	Male	Austin Hac	136329	6
na	na	JPN	Japan	80	181	30-07-42	Male	Tsuneo Og	38633	7
Listed in O	na	EGY	Egypt	na	na	20-11-28	Male	Saad Rash	24791	8
na	Personal E	UGA	Uganda	51	165	23-11-47	Male	Fulgence F	77095	9
na	na	JPN	Japan	58	162	10-02-49	Female	Taeko Kub	48654	10

(Before)

	athlete_id	name	sex	born	height	weight	country_noc
2	2279	Arturo Hortal	Male	1-1-1900	NULL	NULL	ARG
3	2654	Pavel Macenauer	Male	1-1-1900	NULL	NULL	TCH
4	11226	Karel cervenka	Male	1-1-1900	NULL	NULL	TCH
5	11556	Raul Antoli	Male	1-1-1900	NULL	NULL	ARG
6	12980	Werner Wallden	Male	1-1-1900	NULL	NULL	FIN
7	13581	Ricardo Bermejo	Male	1-1-1900	NULL	NULL	CHI
8	15915	Arnold Notzli	Male	1-1-1900	NULL	NULL	SUI
9	18104	Ion Girlesteanu	Male	1-1-1900	NULL	NULL	ROU
10	20204	Ernst Luchsinger	Male	1-1-1900	NULL	NULL	SUI

(After)

To clean the given data in the Olympics results sheet, the following steps can be undertaken. Firstly, unnecessary columns should be removed from the dataset. This involves identifying columns that do not contain relevant information for the analysis or are redundant and can be safely excluded.

Next, it is important to check the spelling of the data, particularly for columns containing names, countries, or event names. Correcting any spelling errors ensures consistency and accuracy in the dataset.

Additionally, the given dates should be reformatted to a standardized format. This can involve converting the dates to a specific format such as YYYY-MM-DD or DD/MM/YYYY, depending on the desired convention. Splitting the date components into separate columns may also be necessary for further analysis.

Furthermore, any empty cells in the dataset should be replaced with the value "NULL" to indicate missing information. This ensures that the dataset is complete and ready for analysis or presentation.

time	end_date	start_date	result_des	result_deta	result_forn	result_part	result_loca	sport_url	sport	edition_id	edition	event_title	result_id	1
na	09-07-20	07-07-20	There	na	Three race	8 from 2 c	Oostende	/editions/7/	Sailing	7	1920 Sum	7 metres,	9270	2
14:00-19:0	na	22-07-80	The	na	Total of be	18 from 14	Dvorets sp	/editions/2(	Weightliftin	20	1980 Sum	Featherwe	29722	3
na	05-08-48	04-08-48	Sammy	na	10 metre p	25 from 15	Wembley /	/editions/12	Diving	12	1948 Sum	Platform, N	54126	4
na	23-08-20	22-08-20	Watten	na	na	12 from 6 (	Zwemstad	/editions/7/	Swimming	7	1920 Sum	100 metres	4684	5
na	na	23-02-02	The last	Jesse Hun	Two runs,	77 from 43	Park City N	/editions/4?	Alpine Skiir	47	2002 Wint	Slalom, Me	1465	6
na	03-08-92	02-08-92	The two	na	10 metre p	23 from 15	Piscina Mu	/editions/2?	Diving	23	1992 Sum	Platform, N	54255	7
na	21-09-00	20-09-00	Ralf	na	na	20 from 17	Sydney Int	/editions/2?	Shooting	25	2000 Sum	Rapid-Fire	51929	8
na	01-10-00	27-09-00	The field	na	na	26 from 13	Sydney Int	/editions/2?	Canoe Spr	25	2000 Sum	Kayak Dou	256298	9
na	na	17-10-64	Parry	na	na	22 from 13	Kokuritsu	/editions/1(	Athletics	16	1964 Sum	Shot Put, N	60270	10

(Before)

result_id	event_title	edition_id	sport	result_location	result_participants	result_description	start_date	e
9270	7 metres, 1907 Rating, Open	7	Sailing	Oostende	8 from 2 countries	There were two yachts competing. Britainâ€™s Ancora lost the first race to Norw	7-7-1920	
19000470	4 y 100 metres Relay, Men	61	Athletics	Japan National Stadium, Kasumigaoka, Shinjuku, Tokyo	64 from 16 countrie	Jamaica had â€œwonâ€ the last three gold medals, anchored by Usain Bolt, althou	5-8-2021	
54126	Platform, Men	12	Diving	Wembley Arena, Wembley, London	25 from 15 countrie	Sammy Lee won this event, leading in both the preliminary round and the final. Lee	4-8-1948	
4684	100 metres Backstroke, Men	7	Swimming	Zwemstadion van Antwerpen, Antwerpen	12 from 6 countries	Watten Paoa Kealoha set a world record of 1:14.8 in the second semi-final, breaking the mark of 1:15.6 that had been set by Otto Fahr (GER) in 1912. Kealoha	22-8-1920	
1465	Slalom, Men	47	Alpine Skiing	Park City Mountain Resort, Park City, Utah	77 from 43 countrie	The last few World Cups had gone to Austrian Benjamin Raich and Norwegian superstar Kjetil Andre Aamodt, but leading the 2001-2002 World Cup race was	23-2-2002	n
54255	Platform, Men	23	Diving	Piscina Municipal de Montju¨c, Barcelona	23 from 15 countrie	The two Chinese divers were favored. Xiong Ni was the defending champion and h	2-8-1992	
51929	Rapid-Fire Pistol, 25 metres, Men	25	Shooting	Sydney International Shooting Centre, Cecil Park, New South Wales	20 from 17 countrie	Ralf Schumann was the gold medalist in 1992 and 1996, World Champion in 1990 ar	20-9-2000	
256298	Kayak Doubles, 500 metres, Women	25	Canoe Sprint	Sydney International Regatta Centre, Penrith, New South Wales	26 from 13 countrie	The field for the womenâ€™s K-2 500 at the 2000 Summer Olympics was fairly ope	27-9-2000	
60270	Shot Put, Men	16	Athletics	Kokuritsu Kyogijo, Shinjuku, Tokyo	22 from 13 countrie	Parry Oâ€™Brien was back for his fourth Olympics but was no longer the dominant thrower. That honor fell to 1960 bronze medalist Dallas Long. Long had	17-10-1964	n

(After)

To clean the given data in the medal sheet and enhance its analysis capabilities, the following steps can be taken. Firstly, a new column can be generated to consist of a unique identifier for each medal. This identifier can be a combination of the event or discipline name, the year, and a sequential number. This allows for easy referencing and tracking of individual medals.

Next, it is important to check the country names in the dataset. During times of war or political changes, countries may merge or separate, leading to variations in names. It is crucial to identify and unify these country names to maintain consistency. For example, if there were changes in country names during wars, such as the union of East and West Germany, or the separation of Czechoslovakia into the Czech Republic and Slovakia, the data should be updated accordingly.

Additionally, it is advisable to review the dataset for any missing or incomplete country information, especially for cases where the country is not specified. Empty or ambiguous cells can be replaced with the value "NULL" to indicate missing information and maintain data integrity.

total	bronze	silver	gold	country_nc	country	year	edition_id	edition	
20	2	7	11	USA	United Stat	1896	1	1896 Summ	2
47	19	18	10	GRE	Greece	1896	1	1896 Summ	3
13	2	5	6	GER	Germany	1896	1	1896 Summ	4
11	2	4	5	FRA	France	1896	1	1896 Summ	5
7	2	3	2	GBR	Great Brita	1896	1	1896 Summ	6
6	3	1	2	HUN	Hungary	1896	1	1896 Summ	7
5	2	1	2	AUT	Austria	1896	1	1896 Summ	8
2	0	0	2	AUS	Australia	1896	1	1896 Summ	9
6	3	2	1	DEN	Denmark	1896	1	1896 Summ	10
3	0	2	1	SUI	Switzerlan	1896	1	1896 Summ	11
2	1	0	1	MIX	Mixed tean	1896	1	1896 Summ	12

(Before)

|	Medal_Id	edition	edition_i	country	country_r	gold	silver	bronze	total
1	Medal_Id	edition	edition_i	country	country_r	gold	silver	bronze	total
2	100000	1896 Sum	1	United St	USA	11	7	2	20
3	100001	1896 Sum	1	Greece	GRE	10	18	19	47
4	100002	1896 Sum	1	Germany	GER	6	5	2	13
5	100003	1896 Sum	1	France	FRA	5	4	2	11
6	100004	1896 Sum	1	Great Brit	GBR	2	3	2	7
7	100005	1896 Sum	1	Hungary	HUN	2	1	3	6
8	100006	1896 Sum	1	Austria	AUT	2	1	2	5
9	100007	1896 Sum	1	Australia	AUS	2	0	0	2
10	100008	1896 Sum	1	Denmark	DEN	1	2	3	6
11	100009	1896 Sum	1	Switzerla	SUI	1	2	0	3
12	100010	1896 Sum	1	Mixed te	MIX	1	0	1	2

(After)

# Entity Relationship Diagram
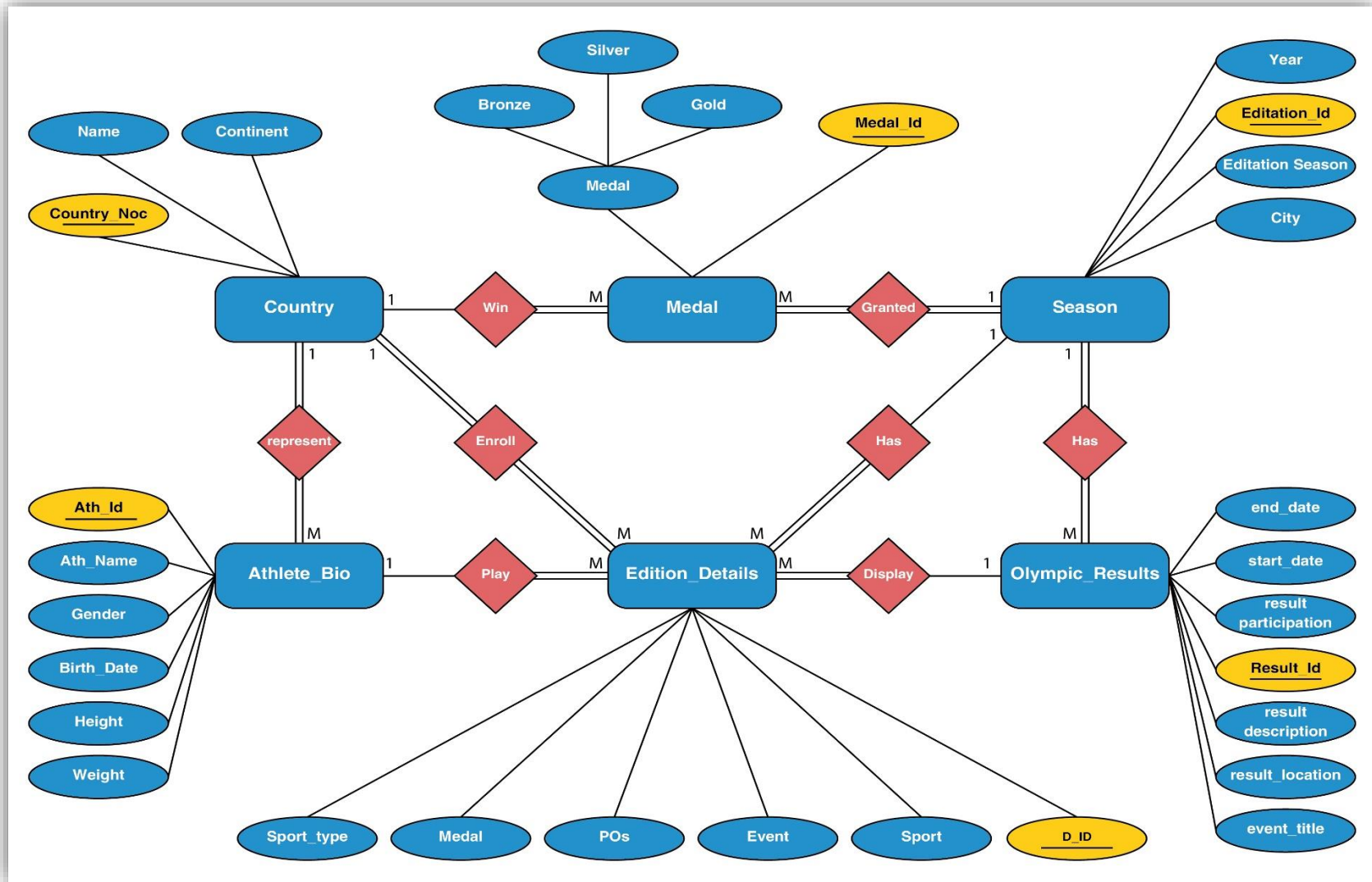
Mapping
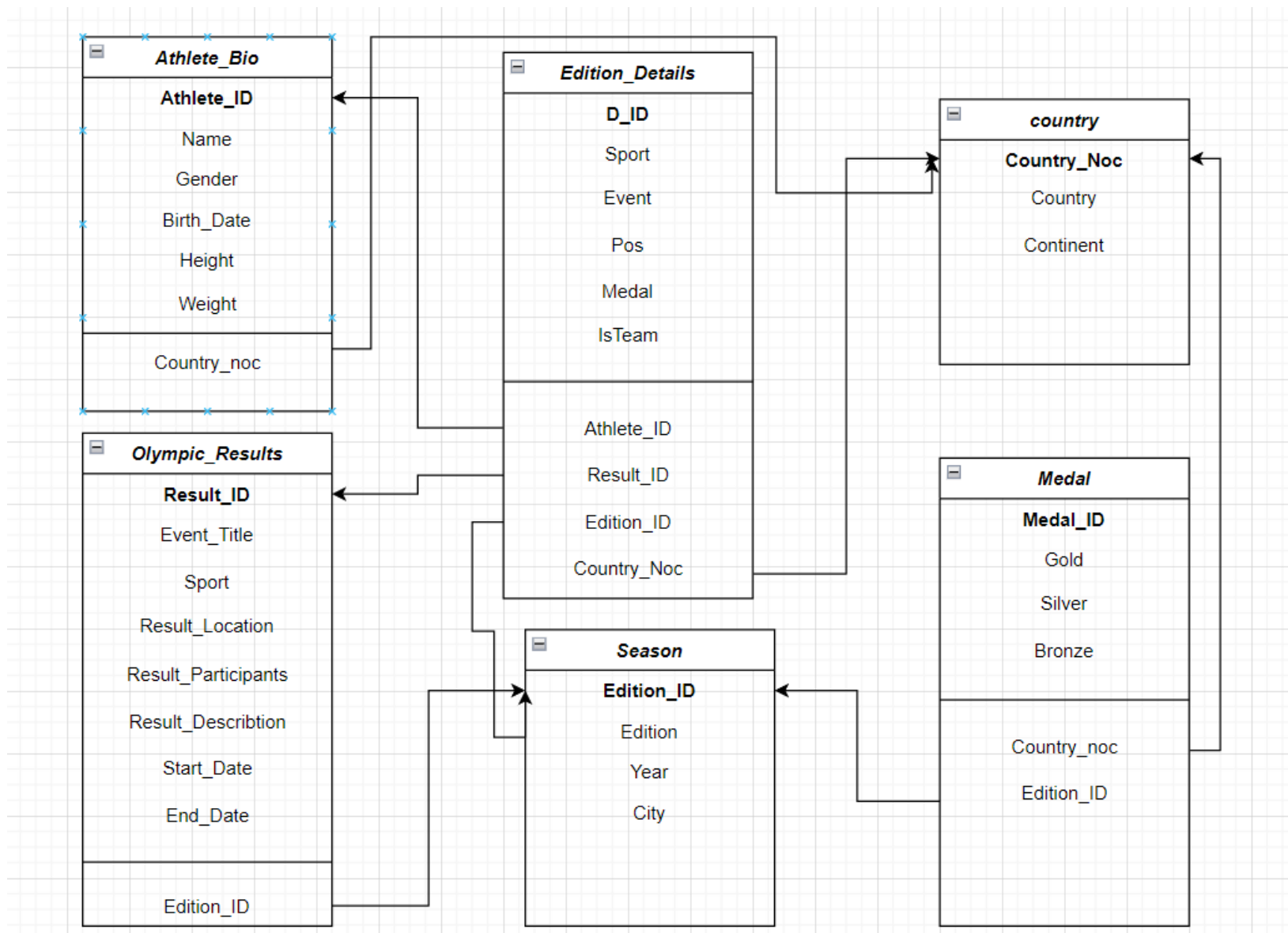
Integration process

The integration process using SQL Server Integration Services (SSIS) can effectively integrate the following Excel sheets into two separate packages. To begin the integration process, SSIS leverages the Excel Connection Manager to establish connections to each Excel sheet, enabling easy access to the data they contain. The data flow tasks and transformations available in SSIS are then utilized to extract, transform, and load the data from these sheets.

In **Package** (1), the Olympic athlete bio sheet can be integrated using the Excel Source component, extracting athlete information that can be transformed and loaded into the destination. The Season sheet can be integrated using the Excel Source component as well, and a Sort component can be added to sort the data based on a specified column before further transformations or loading.
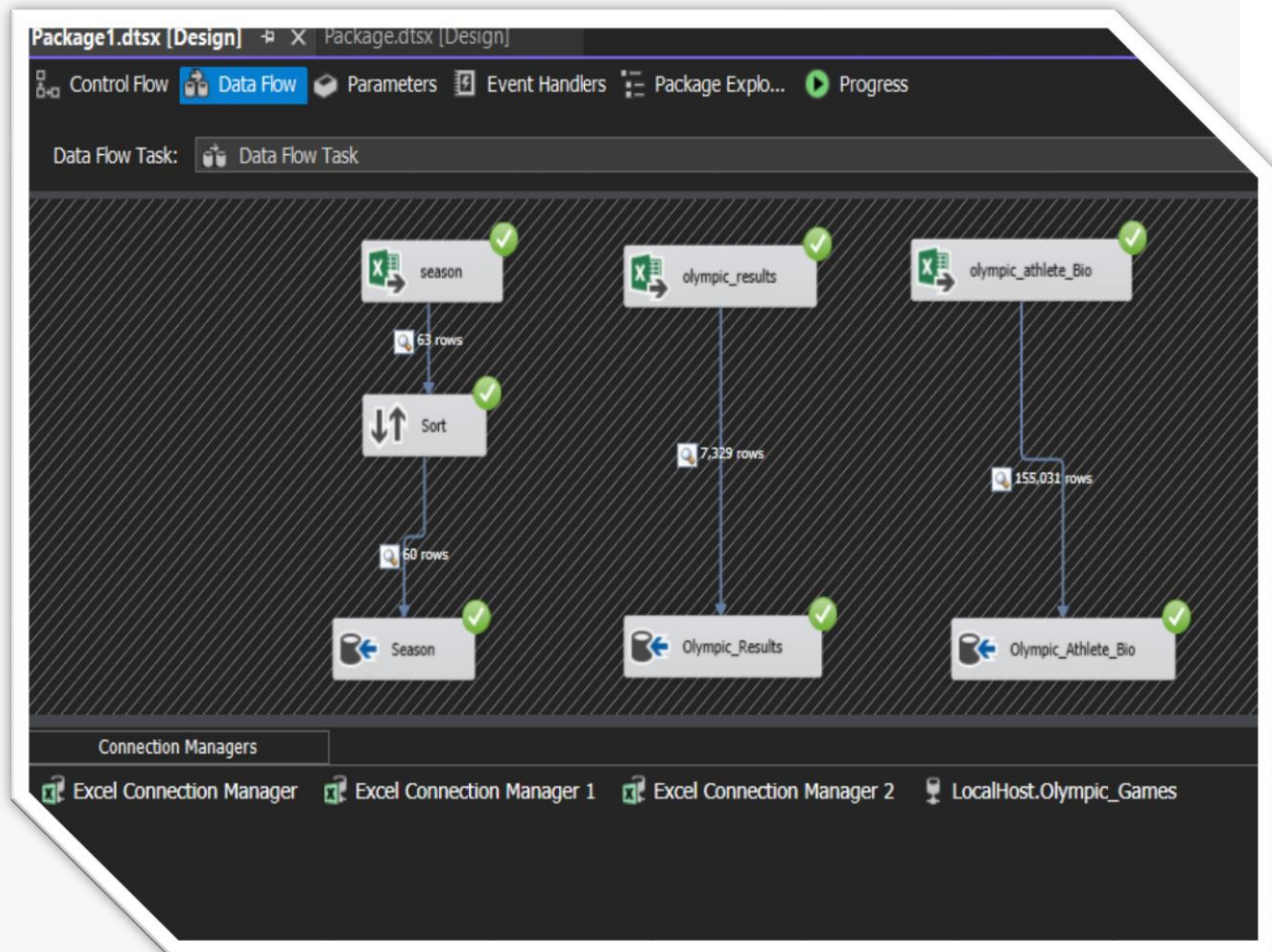
Package (1)

In **Package** (2), the Edition details sheet can be integrated using the Excel Source component, extracting relevant data for further processing. The Country sheet can also be integrated using the Excel Source component, and a Sort component can be added to sort the country data. Additionally, the Medal sheet can be integrated using the Excel Source component, and a Derived Column component can be added to create new columns based on expressions or calculations.
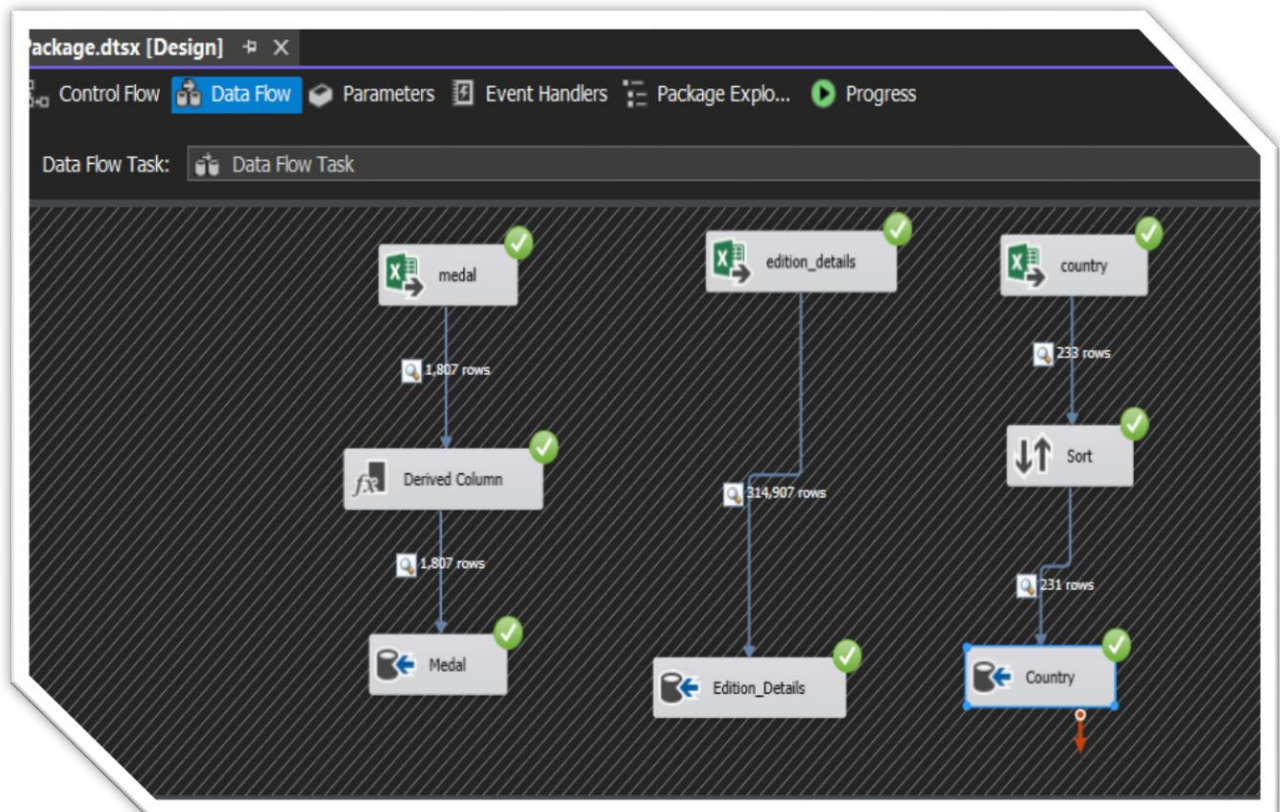
Package (2)

By incorporating these components into the integration process in SSIS, organizations can effectively sort the data in the Season and Country sheets and perform advanced calculations in the Medal sheet. This enhances the data integration workflow, providing organizations with the ability to organize data and derive additional insights for analysis, reporting, or further processing.

Database

Tables

Seasons Table

Primary Key – PK: edition_id

Column Name	Data Type	Allow Nulls
edition	nvarchar(255)	☑
edition_id	float	☐
year	float	☑
city	nvarchar(255)	☑
		☐

Olympic Results Table

Primary Key – PK: result_id

Column Name	Data Type	Allow Nulls
result_id	float	☐
event_title	nvarchar(255)	☑
edition_id	float	☑
sport	nvarchar(255)	☑
result_location	nvarchar(255)	☑
result_participants	nvarchar(255)	☑
result_description	nvarchar(MAX)	☑
start_date	datetime	☑
end_date	datetime	☑
		☐

Medals Table

Primary Key – PK: Medal_id

Column Name	Data Type	Allow Nulls
Medal_Id	float	☐
edition	nvarchar(255)	☑
edition_id	float	☑
country	nvarchar(255)	☑
country_noc	nvarchar(255)	☑
gold	float	☑
silver	float	☑
bronze	float	☑
total	float	☑
		☐

Edition Details Table

Primary Key – PK: D_id

Column Name	Data Type	Allow Nulls
edition_id	float	☑
country_noc	nvarchar(255)	☑
sport	nvarchar(255)	☑
event	nvarchar(255)	☑
result_id	float	☑
athlete_id	float	☑
pos	nvarchar(255)	☑
medal	nvarchar(255)	☑
isTeamSport	bit	☐
D_Id	float	☐
		☐

Country Table

Primary Key – PK: country_noc

Column Name	Data Type	Allow Nulls
🔑 country_noc	nvarchar(255)	☐
Country	nvarchar(255)	☑
continent	nvarchar(255)	☑
		☐

Olympic Athlete Bio Table

Primary Key – PK: athlete_id

Column Name	Data Type	Allow Nulls
🔑 athlete_id	float	☐
name	nvarchar(255)	☑
sex	nvarchar(255)	☑
born	datetime	☑
height	nvarchar(255)	☑
weight	nvarchar(255)	☑
country_noc	nvarchar(255)	☑
		☐

Stored Procedures
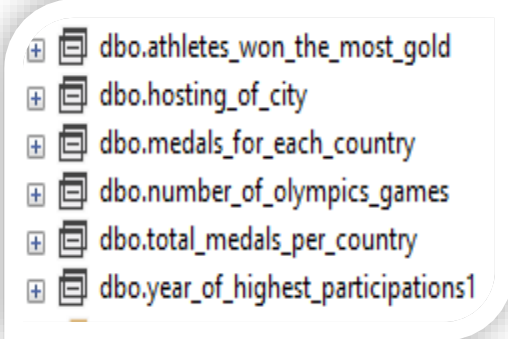
These stored procedures provide insights on Olympic Games data, including the number of hosting per city, overall medal count by country, total participating nations, medal count by country (gold, silver, bronze), Egypt's participation and medals, and top 10 athletes with the most medals.

```
⊞ ▤ dbo.city_count
⊞ ▤ dbo.country_won_the_most_medals
⊞ ▤ dbo.Egypt_medals_in_olympics
⊞ ▤ dbo.most_medals_per_country
⊞ ▤ dbo.top_Atheltes_won_Medals
⊞ ▤ dbo.Total_Participating_Nations1
```

Views

The SQL views provide insights on the total number of Olympic Games held, the highest number of countries participating in an Olympics, the medal counts by country for each Olympic Games, the total medal counts by country, and the top 10 athletes with the most gold medals.

```
⊞ ▤ dbo.athletes_won_the_most_gold
⊞ ▤ dbo.hosting_of_city
⊞ ▤ dbo.medals_for_each_country
⊞ ▤ dbo.number_of_olympics_games
⊞ ▤ dbo.total_medals_per_country
⊞ ▤ dbo.year_of_highest_participations1
```

Insights

Data insight: How many Olympic Games have been held?

```sql
CREATE VIEW number_of_olympics_games as
select COUNT(distinct edition) as Total_Olympic_Games
from [dbo].[Season$]


go
select * from number_of_olympics_games
```

	Total_Olympic_Games
1	60

Data insight: The location of each Olympic games

```sql
go
create view hosting_of_city AS

select edition , city from [dbo].[Season$]
go
select * from hosting_of_city
```

	edition	city
1	1896 Summer Olympics	Athina
2	1900 Summer Olympics	Paris
3	1904 Summer Olympics	St. Louis
4	1906 Intercalated	Athina
5	1908 Summer Olympics	London
6	1912 Summer Olympics	Stockholm
7	1920 Summer Olympics	Antwerpen
8	1924 Summer Olympics	Paris
9	1928 Summer Olympics	Amsterdam
10	1932 Summer Olympics	Los Angeles
11	1936 Summer Olympics	Berlin
12	1948 Summer Olympics	London
13	1952 Summer Olympics	Helsinki
14	1956 Summer Olympics	Melbourne
15	1960 Summer Olympics	Roma
16	1964 Summer Olympics	Tokyo
17	1968 Summer Olympics	Ciudad de Mĺ©xico
18	1972 Summer Olympics	Mĺ¼nchen
19	1976 Summer Olympics	Montrĺ©al
20	1980 Summer Olympics	Moskva
21	1984 Summer Olympics	Los Angeles

Data insight: Number of hosting per city

```
go
create proc city_count as
SELECT city, COUNT(*) AS duplicate_count
FROM [dbo].[Season$]
GROUP BY city
ORDER BY duplicate_count DESC;
go
city_count
```

	city	duplicate_count
1	London	4
2	Athina	3
3	Beijing	2
4	Berlin	2
5	Los Angeles	2
6	Helsinki	2
7	Innsbruck	2
8	Lake Placid	2
9	Paris	2
10	Sankt Moritz	2
11	Cortina d'Ampezzo	2
12	Garmisch-Partenkirchen	2
13	Stockholm	2
14	Tokyo	2
15	Torino	1
16	Vancouver	1
17	Sydney	1
18	Grenoble	1
19	Sapporo	1
20	Sarajevo	1
21	Seoul	1

Data insight: Identify which country won the most medals overall in each Olympic Games

```
go
create or alter proc country_won_the_most_medals as
SELECT
    edition,
    country,
    MAX(overall) AS max_overall
FROM (
    SELECT
        edition,
        FIRST_VALUE(country) OVER (PARTITION BY edition ORDER BY (gold + silver + bronze) DESC) AS country,
        (gold + silver + bronze) AS overall
    FROM Medal$
) AS medal_summary
GROUP BY
    edition,
    country
    order by   edition

    exec country_won_the_most_medals
```

	edition	country	max_overall
1	1896 Summer Olympics	Greece	47
2	1900 Summer Olympics	France	111
3	1904 Summer Olympics	United States	248
4	1906 Intercalated	France	40
5	1908 Summer Olympics	Great Britain	146
6	1912 Summer Olympics	Sweden	65
7	1920 Summer Olympics	United States	95
8	1924 Summer Olympics	United States	99
9	1924 Winter Olympics	Norway	17
10	1928 Summer Olympics	United States	56
11	1928 Winter Olympics	Norway	15
12	1932 Summer Olympics	United States	110
13	1932 Winter Olympics	United States	12
14	1936 Summer Olympics	Germany	101

Data insight: Total no of nations who participated in each Olympics game

```
go
create proc Total_Participating_Nations1 as
SELECT edition AS Olympics_Game,year , COUNT(DISTINCT C.country_noc) AS Total_Participating_Nations
FROM Season$ M
INNER JOIN Edition_Details$ C ON M.edition_id = C.edition_id
GROUP BY edition,year
ORDER BY edition;

go
```

	Olympics_Game	year	Total_Participating_Nations
1	1896 Summer Olympics	1896	13
2	1900 Summer Olympics	1900	27
3	1904 Summer Olympics	1904	10
4	1906 Intercalated	1906	1
5	1908 Summer Olympics	1908	23
6	1912 Summer Olympics	1912	29
7	1920 Summer Olympics	1920	29
8	1924 Summer Olympics	1924	45
9	1924 Winter Olympics	1924	19
10	1928 Summer Olympics	1928	46
11	1928 Winter Olympics	1928	25
12	1932 Summer Olympics	1932	47
13	1932 Winter Olympics	1932	17
14	1936 Summer Olympics	1936	49

Data insight: Which year saw the highest number of countries participating in Olympics?

```
go
create view year_of_highest_participations1 as
SELECT top 1 e.[edition_id], s.[edition], COUNT(DISTINCT e.[country_noc]) AS 'number of countries'
FROM [dbo].[Edition_Details$] e
INNER JOIN [dbo].[Season$] s ON s.edition_id = e.edition_id
GROUP BY e.[edition_id], s.[edition]
ORDER BY COUNT(DISTINCT e.[country_noc]) DESC;

go

select * from year_of_highest_participations1
```

	edition_id	edition	number of countries
1	59	2016 Summer Olympics	207

Data insight: Identify which country won the most gold, most silver and most bronze medals in each Olympic Games.

```sql
go
create proc most_medals_per_country as
SELECT
    edition,
    gold_country,
    silver_country,
    bronze_country,
    MAX(gold) AS max_gold,
    MAX(silver) AS max_silver,
    MAX(bronze) AS max_bronze
FROM (
    SELECT
        edition,
        FIRST_VALUE(country) OVER (PARTITION BY edition ORDER BY gold DESC) AS gold_country,
        FIRST_VALUE(country) OVER (PARTITION BY edition ORDER BY silver DESC) AS silver_country,
        FIRST_VALUE(country) OVER (PARTITION BY edition ORDER BY bronze DESC) AS bronze_country,
        gold,
        silver,
        bronze
    FROM Medal$
) AS medal_summary
GROUP BY
    edition,
    gold_country,
    silver_country,
    bronze_country

exec most_medals_per_country
```

	edition	gold_country	silver_country	bronze_country	max_gold	max_silver	max_bronze
1	1896 Summer Olympics	United States	Greece	Greece	11	18	19
2	1900 Summer Olympics	France	France	France	31	40	40
3	1904 Summer Olympics	United States	United States	United States	80	85	83
4	1906 Intercalated	France	Greece	France	15	14	16
5	1908 Summer Olympics	Great Britain	Great Britain	Great Britain	56	51	39
6	1912 Summer Olympics	United States	Sweden	United States	26	25	19
7	1920 Summer Olympics	United States	United States	United States	41	27	27
8	1924 Summer Olympics	United States	United States	United States	45	27	27
9	1924 Winter Olympics	Norway	Norway	Norway	4	7	6
10	1928 Summer Olympics	United States	United States	Germany	22	18	19
11	1928 Winter Olympics	Norway	Norway	Norway	6	4	5
12	1932 Summer Olympics	United States	United States	United States	44	36	30
13	1932 Winter Olympics	United States	United States	Canada	6	4	5
14	1936 Summer Olympics	Germany	Germany	Germany	38	31	32
15	1936 Winter Olympics	Norway	Norway	Norway	7	5	3
16	1948 Summer Olympics	United States	United States	United States	38	27	19
17	1948 Winter Olympics	Norway	Switzerland	Austria	4	4	4
18	1952 Summer Olympics	United States	Soviet Union	Soviet Union	40	30	19
19	1952 Winter Olympics	Norway	United States	Norway	7	6	6
20	1956 Equestrian	Sweden	Germany	Great Britain	3	3	2
21	1956 Summer Olympics	Soviet Union	Soviet Union	Soviet Union	37	29	32
22	1956 Winter Olympics	Soviet Union	Sweden	Soviet Union	7	4	6
23	1960 Summer Olympics	Soviet Union	Soviet Union	Soviet Union	43	29	31
24	1960 Winter Olympics	Soviet Union	Soviet Union	Soviet Union	7	5	9

Data insight: Egypt's participation in the Olympics and the medals won

```
  go
⊟create proc Egypt_medals_in_olympics as

⊟select [edition_id],[edition],[country],[gold],[silver],[bronze],[total]
 from [dbo].[Medal$]
 where [country] in ('Egypt','United Arab Republic')
 order by total desc

 exec Egypt_medals_in_olympics
```

	edition_id	edition	country	gold	silver	bronze	total
1	61	2020 Summer Olympics	Egypt	1	1	4	6
2	11	1936 Summer Olympics	Egypt	2	1	2	5
3	12	1948 Summer Olympics	Egypt	2	2	1	5
4	26	2004 Summer Olympics	Egypt	1	1	3	5
5	54	2012 Summer Olympics	Egypt	0	3	1	4
6	9	1928 Summer Olympics	Egypt	2	1	1	4
7	59	2016 Summer Olympics	Egypt	0	0	3	3
8	53	2008 Summer Olympics	Egypt	0	0	2	2
9	15	1960 Summer Olympics	United Arab Republic	0	1	1	2
10	21	1984 Summer Olympics	Egypt	0	1	0	1
11	13	1952 Summer Olympics	Egypt	0	0	1	1

Data insight: The maximum number of medals won by Egypt in a Olympics

```
select top 1 [edition_id],[edition],[country],[country_noc],[gold],[silver],[bronze],[total]
 from [dbo].[Medal$]
 where [country] in ('Egypt','United Arab Republic')
 order by total desc
```

	edition_id	edition	country	country_noc	gold	silver	bronze	total
1	61	2020 Summer Olympics	Egypt	EGY	1	1	4	6

Data insight: The maximum number of gold medals won by Egypt in a one Olympic game

```sql
select top 1 with ties [edition_id],[edition],[country],[country_noc],[gold],[silver],[bronze],[total]
from [dbo].[Medal$]
where [country] in ('Egypt','United Arab Republic')
order by  gold desc
```

	edition_id	edition	country	country_noc	gold	silver	bronze	total
1	9	1928 Summer Olympics	Egypt	EGY	2	1	1	4
2	11	1936 Summer Olympics	Egypt	EGY	2	1	2	5
3	12	1948 Summer Olympics	Egypt	EGY	2	2	1	5

Data insight: Number of countries per edition using inline function

```sql
CREATE FUNCTION dbo.GetParticipatingCountry(@year INT)
RETURNS TABLE
AS
RETURN
(
  SELECT
    edition AS Olympics_Game,
    year,
    COUNT(DISTINCT C.country_noc) AS Total_Participating_Nations
  FROM
    Season$ M
    INNER JOIN Edition_Details$ C ON M.edition_id = C.edition_id
  WHERE
    M.year = @year
  GROUP BY
    edition, year
);
SELECT * FROM dbo.GetParticipatingCountry(2020);
```

	Olympics_Game	year	Total_Participating_Nations
1	2020 Summer Olympics	2020	206

Data insight: List down total gold, silver and bronze medals won by each country corresponding to each Olympic Games

```sql
create or alter view medals_for_each_country as
select edition ,country ,gold , silver ,bronze,total from Medal$


select * from medals_for_each_country
```

	edition	country	gold	silver	bronze	total
1	1896 Summer Olympics	United States	11	7	2	20
2	1896 Summer Olympics	Greece	10	18	19	47
3	1896 Summer Olympics	Germany	6	5	2	13
4	1896 Summer Olympics	France	5	4	2	11
5	1896 Summer Olympics	Great Britain	2	3	2	7
6	1896 Summer Olympics	Hungary	2	1	3	6
7	1896 Summer Olympics	Austria	2	1	2	5
8	1896 Summer Olympics	Australia	2	0	0	2
9	1896 Summer Olympics	Denmark	1	2	3	6
10	1896 Summer Olympics	Switzerland	1	2	0	3
11	1896 Summer Olympics	Mixed team	1	0	1	2
12	1900 Summer Olympics	France	31	40	40	111
13	1900 Summer Olympics	United States	20	13	15	48
14	1900 Summer Olympics	Great Britain	20	9	9	38
15	1900 Summer Olympics	Belgium	6	7	5	18

Data insight: List down total gold, silver and bronze medals won by each country corresponding to each Olympic Games. Using inline function

```
go
CREATE FUNCTION GetMedalTableByYear(@Year INT)
RETURNS TABLE
AS return
(
   SELECT m.edition, m.country, gold, silver, bronze, total, year
   FROM Medal$ m
   INNER JOIN Season$ s
   ON m.edition_id = s.edition_id
   WHERE s.year = @Year
)
select * from GetMedalTableByYear(1900)
```

	edition	country	gold	silver	bronze	total	year
1	1900 Summer Olympics	France	31	40	40	111	1900
2	1900 Summer Olympics	United States	20	13	15	48	1900
3	1900 Summer Olympics	Great Britain	20	9	9	38	1900
4	1900 Summer Olympics	Belgium	6	7	5	18	1900
5	1900 Summer Olympics	Switzerland	6	3	1	10	1900
6	1900 Summer Olympics	Germany	4	3	2	9	1900
7	1900 Summer Olympics	Italy	3	2	0	5	1900
8	1900 Summer Olympics	Denmark	1	3	2	6	1900
9	1900 Summer Olympics	Mixed team	1	2	3	6	1900
10	1900 Summer Olympics	Netherlands	1	2	3	6	1900
11	1900 Summer Olympics	Hungary	1	2	2	5	1900
12	1900 Summer Olympics	Cuba	1	1	0	2	1900
13	1900 Summer Olympics	Spain	1	0	0	1	1900
14	1900 Summer Olympics	Austria	0	3	3	6	1900
15	1900 Summer Olympics	Norway	0	2	3	5	1900
16	1900 Summer Olympics	India	0	2	0	2	1900
17	1900 Summer Olympics	Bohemia	0	1	1	2	1900

Data insight: Which countries have never won gold medal but have won silver/bronze medals? Using function

```sql
CREATE FUNCTION GetCountriesWithNoGoldButOtherMedals()
RETURNS TABLE

As return   (

    SELECT c.Country, SUM(m.gold) AS gold, SUM(m.silver) AS silver, SUM(m.bronze) AS bronze, sum(total) as total
    FROM [dbo].[country$] c
    INNER JOIN [dbo].[Medal$] m ON c.country_noc = m.country_noc
    GROUP BY c.Country
    HAVING SUM(m.gold) = 0 AND (SUM(m.silver) > 0 OR SUM(m.bronze) > 0)
)

select * from GetCountriesWithNoGoldButOtherMedals()
```

	Country	gold	silver	bronze	total
1	Afghanistan	0	0	2	2
2	Barbados	0	0	1	1
3	Bohemia	0	1	5	6
4	Botswana	0	1	1	2
5	Burkina Faso	0	0	1	1
6	Cyprus	0	1	0	1
7	Djibouti	0	0	1	1
8	Eritrea	0	0	1	1
9	Gabon	0	1	0	1
10	Ghana	0	1	4	5
11	Guatemala	0	1	0	1
12	Guyana	0	0	1	1
13	Haiti	0	1	1	2
14	Iceland	0	2	2	4
15	Iraq	0	0	1	1
16	Kingdom of Saudi Arabia	0	2	2	4
17	Kuwait	0	0	3	3

Data insight: List down total gold, silver and bronze medals won by each country. Using view

```sql
create view total_medals_per_country as
select  country, sum (gold) as total_gold ,sum(silver) as total_silver,sum(bronze) as total_bronze, sum( total)  as total_medal
FROM Medal$
group by country

select * from total_medals_per_country
order by  total_gold desc
```

	country	total_gold	total_silver	total_bronze	total_medal
1	United States	1194	970	845	3009
2	Soviet Union	473	376	355	1204
3	Germany	355	377	366	1098
4	Great Britain	312	340	337	989
5	France	287	307	356	950
6	People's Republic of China	284	231	196	711
7	Italy	271	244	274	789
8	Sweden	216	233	248	697
9	Norway	208	188	173	569
10	Russian Federation	194	169	188	551
11	East Germany	192	165	162	519
12	Japan	186	178	211	575
13	Hungary	186	163	186	535
14	Australia	168	177	218	563
15	Finland	151	152	186	489
16	Netherlands	151	156	172	479
17	Canada	148	183	222	553

Data insight: List down total gold, silver and bronze medals won by each country. Using view

```sql
go
create or alter  view athletes_won_the_most_gold as
select a.athlete_id, a.name,d.sport,count(d.medal) as gold_medals,c.Country
from Olympic_Athlete_Bio$ a inner join Edition_Details$ d
on a.athlete_id=d.athlete_id inner join country$ c on c.country_noc=d.country_noc
where d.medal='gold'
group by a.athlete_id, a.name,d.sport,c.Country

select top 10 * from athletes_won_the_most_gold
order by  gold_medals desc
```

	athlete_id	name	sport	gold_medals	Country
1	93860	Michael Phelps	Swimming	23	United States
2	29198	Larisa Latynina	Artistic Gymnastics	9	Soviet Union
3	67728	Paavo Nurmi	Athletics	9	Finland
4	51572	Mark Spitz	Swimming	9	United States
5	78692	Carl Lewis	Athletics	9	United States
6	85378	Bjorn Dahlie	Cross Country Skiing	8	Norway
7	78385	Ray Ewry	Athletics	8	United States
8	105512	Usain Bolt	Athletics	8	Jamaica
9	30593	Sawao Kato	Artistic Gymnastics	8	Japan
10	51217	Jenny Thompson	Swimming	8	United States

Data insight: Fetch the top 10 athletes who have won the most gold medals

```sql
go
create or alter  view athletes_won_the_most_gold as
    select a.athlete_id, a.name,d.sport,count(d.medal) as gold_medals,c.Country
    from Olympic_Athlete_Bio$ a inner join Edition_Details$ d
    on a.athlete_id=d.athlete_id inner join country$ c on c.country_noc=d.country_noc
    where d.medal='gold'
    group by a.athlete_id, a.name,d.sport,c.Country

    select top 10 * from athletes_won_the_most_gold
    order by  gold_medals desc
```

	athlete_id	name	sport	gold_medals	Country
1	93860	Michael Phelps	Swimming	23	United States
2	29198	Larisa Latynina	Artistic Gymnastics	9	Soviet Union
3	67728	Paavo Nurmi	Athletics	9	Finland
4	51572	Mark Spitz	Swimming	9	United States
5	78692	Carl Lewis	Athletics	9	United States
6	85378	Bjorn Dahlie	Cross Country Skiing	8	Norway
7	78385	Ray Ewry	Athletics	8	United States
8	105512	Usain Bolt	Athletics	8	Jamaica
9	30593	Sawao Kato	Artistic Gymnastics	8	Japan
10	51217	Jenny Thompson	Swimming	8	United States

Data insight: Top 10 Athletes won Medals

```sql
go
create proc top_Atheltes_won_Medals as
select top 10 a.athlete_id, a.name,d.sport,count(d.medal) as all_medals,c.Country
from Olympic_Athlete_Bio$ a inner join Edition_Details$ d
on a.athlete_id=d.athlete_id inner join country$ c on c.country_noc=d.country_noc
where d.medal !='NULL'
group by a.athlete_id, a.name,d.sport,c.Country
order by count(d.medal) desc

exec top_Atheltes_won_Medals
```

	athlete_id	name	sport	all_medals	Country
1	93860	Michael Phelps	Swimming	28	United States
2	29198	Larisa Latynina	Artistic Gymnastics	18	Soviet Union
3	31235	Nikolay Andrianov	Artistic Gymnastics	15	Soviet Union
4	101008	Marit Bjorgen	Cross Country Skiing	15	Norway
5	109767	Ireen Wost	Speed Skating	13	Netherlands
6	22677	Edoardo Mangiarotti	Fencing	13	Italy
7	31267	Boris Shakhlin	Artistic Gymnastics	13	Soviet Union
8	30611	Takashi Ono	Artistic Gymnastics	13	Japan
9	84154	Ole Einar Bjorndalen	Biathlon	13	Norway
10	51218	Dara Torres	Swimming	12	United States

Data insight: Trigger prevent users from delete from table student and show massege not allowed for user

```
go
CREATE TRIGGER prevent_from_delete
ON [dbo].[Medal$]
INSTEAD OF DELETE
AS
    SELECT 'not allowed for user '

DELETE FROM [dbo].[Medal$]
WHERE Medal_Id = 100000
```

	(No column name)
1	not allowed for user

Data insight: Make table Edition Details for read only

```
go
CREATE TRIGGER only_for_read
ON [dbo].[Edition_Details$]
INSTEAD OF INSERT , UPDATE , DELETE
AS
SELECT 'table read only'


SELECT * FROM [dbo].[Edition_Details$]
DELETE FROM [dbo].[Edition_Details$] where edition_id=5
```

	edition_id	country_noc	sport	event	result_id	athlete_id	pos	medal	isTeamSport	D_Id
1	5	ANZ	Athletics	100 metres, Men	56265	64710	DNS	NULL	0	1000
2	5	ANZ	Athletics	400 metres, Men	56313	64756	DNS	NULL	0	1001
3	5	ANZ	Athletics	800 metres, Men	56338	64808	3 h8 r1/2	NULL	0	1002
4	5	ANZ	Athletics	800 metres, Men	56338	922519	DNS	NULL	0	1003
5	5	ANZ	Athletics	800 metres, Men	56338	64735	DNS	NULL	0	1004
6	5	ANZ	Athletics	800 metres, Men	56338	64756	DNS	NULL	0	1005
7	5	ANZ	Athletics	1,500 metres, Men	56349	64735	5 h2 r1/2	NULL	0	1006
8	5	ANZ	Athletics	1,500 metres, Men	56349	79576	AC h3 r1/2	NULL	0	1007
9	5	ANZ	Athletics	1,500 metres, Men	56349	922519	DNS	NULL	0	1008
10	5	ANZ	Athletics	1,500 metres, Men	56349	64619	DNS	NULL	0	1009
11	5	ANZ	Athletics	5 miles, Men	56360	64619	3 h1 r1/2	NULL	0	1010

	(No column name)
1	table read only

Dimensional Modeling
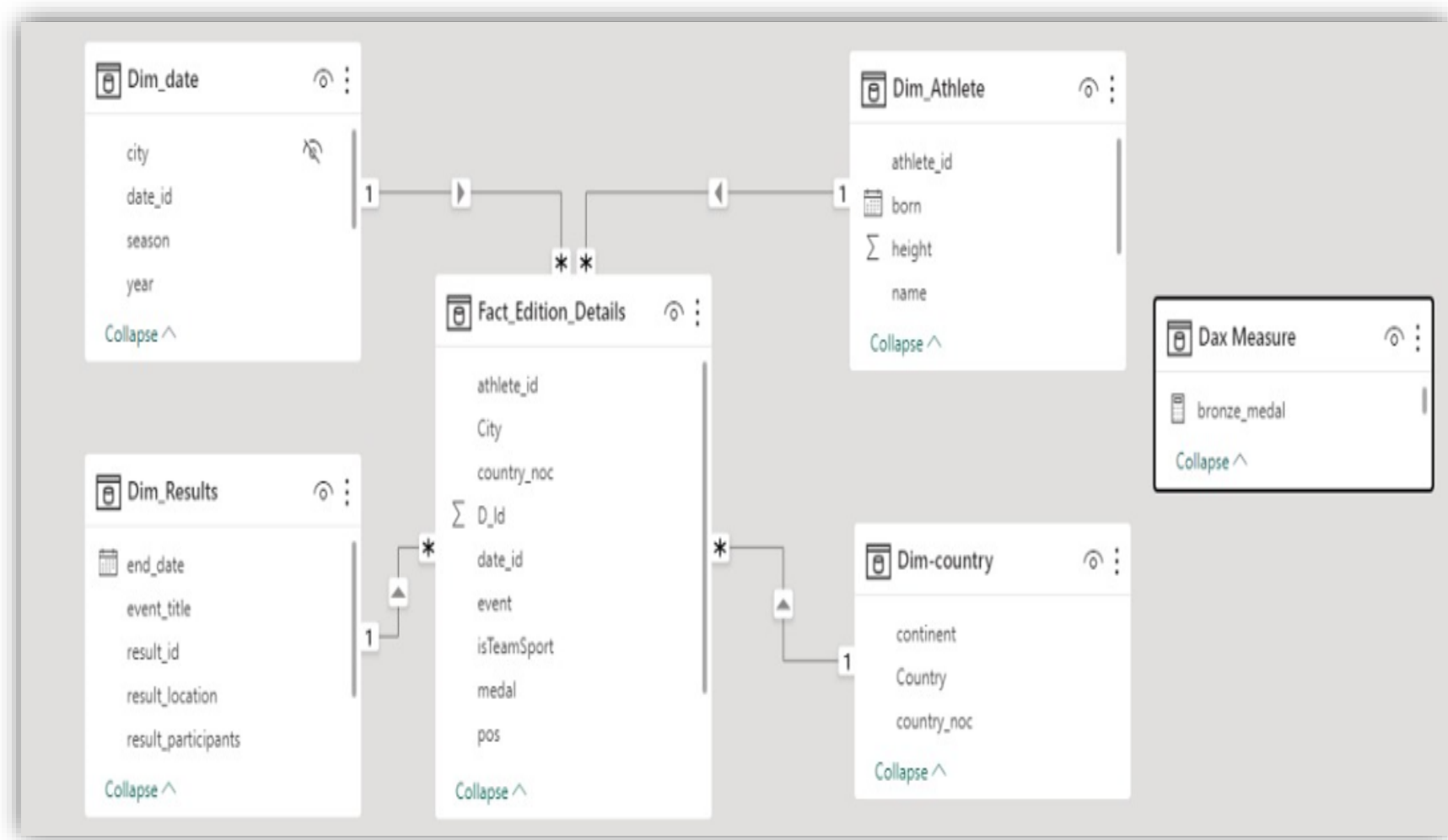
SSRS Reports

Hosting cities report

Olympics Games Hosting Cities Report! This comprehensive report provides valuable insights into the cities that have had the honor of hosting the prestigious Olympic Games throughout history. By utilizing a user-friendly drop-down list for time intervals, this report allows you to explore and analyze the hosting cities based on specific time periods. Whether you are an avid sports enthusiast, a historian, or simply curious about the evolution of the Olympic Games, this report is designed to meet your needs.

Countries participated report

The Countries Participated in the Olympic Games Edition Report! This dynamic report provides valuable insights into the countries that participated in a specific edition of the Olympic Games. By clicking on the Edition ID value in the hosting cities report, you can generate this second report that focuses on the participating countries for that particular edition. Explore the diverse array of nations that came together to compete, showcase their athletic prowess, and foster global unity in the pursuit of Olympic glory.
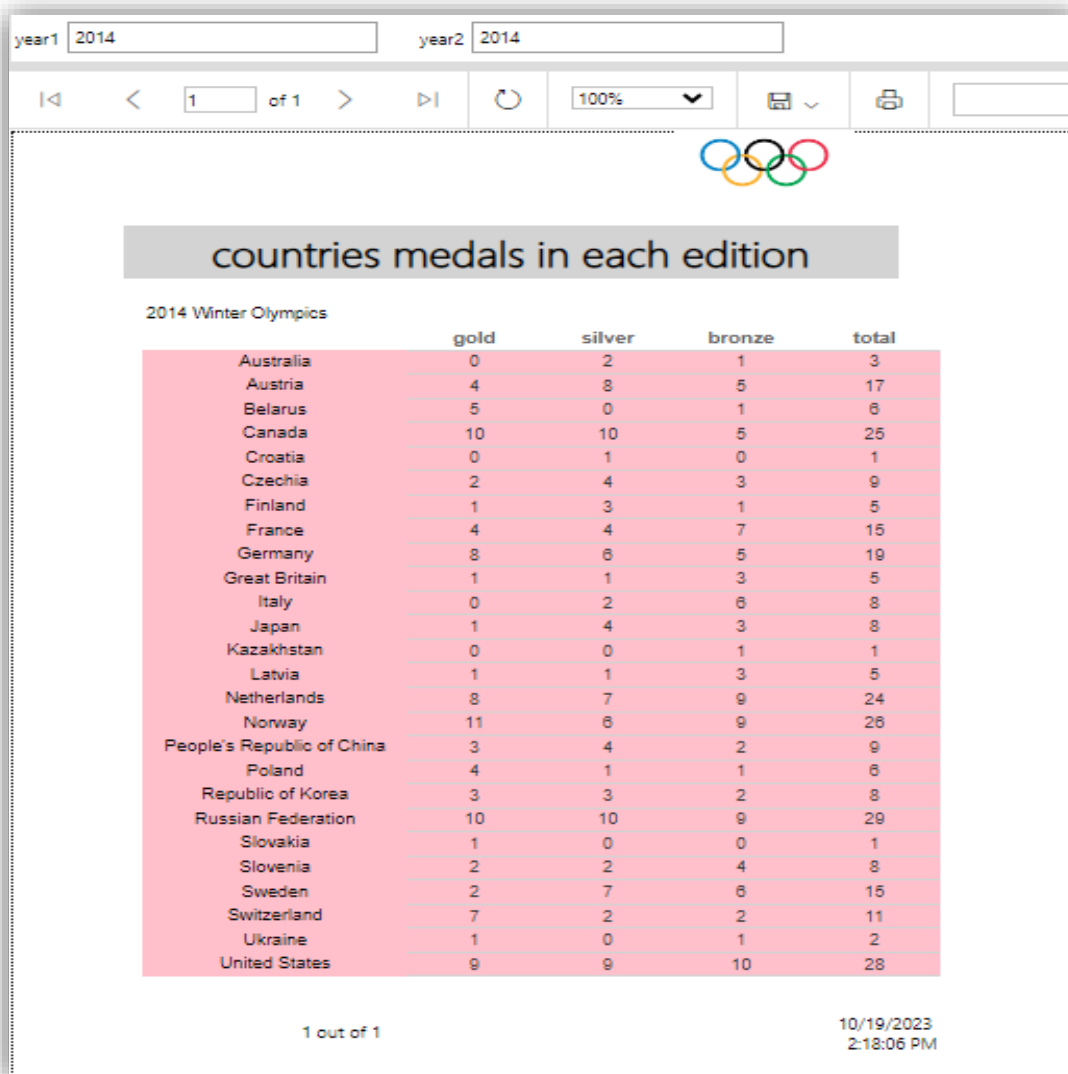
countries participations

edition id	edition	number of countries
61	2020 Summer Olympics	206

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Medals won by country report

The Medals Won by Country Report! This comprehensive SSRS report provides a detailed analysis of the medals won by each country within a specified time interval in the history of the Olympic Games. Whether you're a sports enthusiast, a researcher, or simply interested in the triumphs of nations on the global stage, this report offers valuable insights into the distribution of medals among competing countries.

| year1 | 2014 | | year2 | 2014 | |

|◁ < | 1 | of 1 | > | ▷| | ↻ | 100% ∨ | 🖫∨ | 🖶 |

countries medals in each edition

2014 Winter Olympics

	gold	silver	bronze	total
Australia	0	2	1	3
Austria	4	8	5	17
Belarus	5	0	1	6
Canada	10	10	5	25
Croatia	0	1	0	1
Czechia	2	4	3	9
Finland	1	3	1	5
France	4	4	7	15
Germany	8	6	5	19
Great Britain	1	1	3	5
Italy	0	2	6	8
Japan	1	4	3	8
Kazakhstan	0	0	1	1
Latvia	1	1	3	5
Netherlands	8	7	9	24
Norway	11	6	9	26
People's Republic of China	3	4	2	9
Poland	4	1	1	6
Republic of Korea	3	3	2	8
Russian Federation	10	10	9	29
Slovakia	1	0	0	1
Slovenia	2	2	4	8
Sweden	2	7	6	15
Switzerland	7	2	2	11
Ukraine	1	0	1	2
United States	9	9	10	28

1 out of 1

10/19/2023
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Egypt participation report

Egypt Participation Details Report for the Olympic Games! This comprehensive SSRS report provides a detailed analysis of Egypt's involvement and performance in the prestigious Olympic Games. Whether you're a sports enthusiast, a historian, or simply curious about Egypt's journey on the global sporting stage, this report offers valuable insights into the country's participation, achievements, and contributions to the Olympic movement.

Egypt participations Details

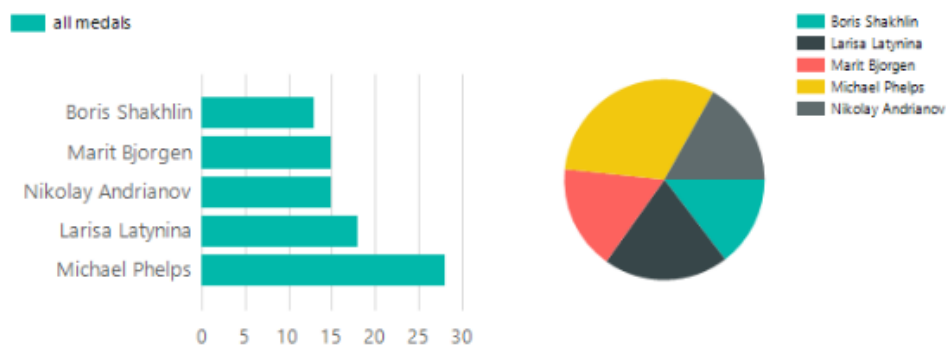| edition	country	gold	silver	bronze	total	Gold indicator
1928 Summer Olympics	Egypt	2	1	1	4	★
1936 Summer Olympics	Egypt	2	1	2	5	★
1948 Summer Olympics	Egypt	2	2	1	5	★
1952 Summer Olympics	Egypt	0	0	1	1	★
1960 Summer Olympics	United Arab Republic	0	1	1	2	★
1984 Summer Olympics	Egypt	0	1	0	1	★
2004 Summer Olympics	Egypt	1	1	3	5	☆
2008 Summer Olympics	Egypt	0	0	2	2	★
2012 Summer Olympics	Egypt	0	3	1	4	★
2016 Summer Olympics	Egypt	0	0	3	3	★
2020 Summer Olympics	Egypt	1	1	4	6	☆

Top 5 Gold Medalist Athletes Report

Top 5 Gold Medalist Athletes Report for the Olympic Games! This comprehensive SSRS report showcases the outstanding achievements of the top five athletes who have won the most gold medals in Olympic history. Whether you're a sports enthusiast, a fan of exceptional athletic performances, or simply curious about the legends of the Olympic Games, this report offers a fascinating glimpse into the elite realm of gold medalists.

Top 5 Atheltes won gold medals

Athlete id	Name	Country	Sport	Gold medals
93860	Michael Phelps	United States	Swimming	23
67728	Paavo Nurmi	Finland	Athletics	9
29198	Larisa Latynina	Soviet Union	Artistic Gymnastics	9
78692	Carl Lewis	United States	Athletics	9
51572	Mark Spitz	United States	Swimming	9
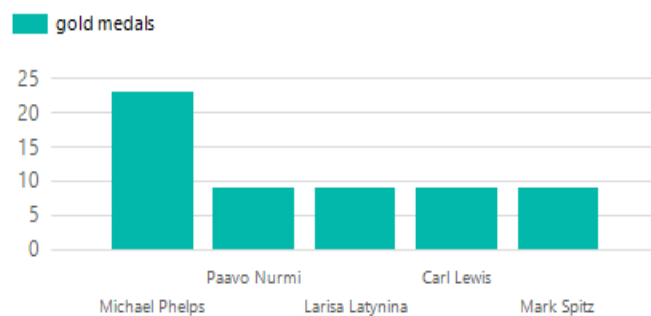
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Top 5 Medalist Athletes Report

Top 5 Medallist Athletes Report for the Olympic Games! This comprehensive SSRS report highlights the exceptional accomplishments of the top five athletes who have garnered the highest number of medals in Olympic history. Whether you're a sports enthusiast, a fan of athletic greatness, or simply intrigued by the achievements of legendary Olympians, this report offers a captivating journey into the realm of medal-winning athletes.

Top 5 Atheltes won Medals

Athlete id	Name	Country	Sport	Medals
93860	Michael Phelps	United States	Swimming	28
29198	Larisa Latynina	Soviet Union	Artistic Gymnastics	18
31235	Nikolay Andrianov	Soviet Union	Artistic Gymnastics	15
101008	Marit Bjorgen	Norway	Cross Country Skiing	15
31267	Boris Shakhlin	Soviet Union	Artistic Gymnastics	13

10/19/2023
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Top 5 Medallist Athletes Report for the Olympic Games! This comprehensive SSRS report highlights the exceptional accomplishments of the top five athletes who have garnered the highest number of medals in Olympic history. Whether you're a sports enthusiast, a fan of athletic greatness, or simply intrigued by the achievements of legendary Olympians, this report offers a captivating journey into the realm of medal-winning athletes.

Top 10 participations

edition id	edition	number of countries
59	2016 Summer Olympics	207
61	2020 Summer Olympics	206
54	2012 Summer Olympics	205
53	2008 Summer Olympics	204
26	2004 Summer Olympics	201
25	2000 Summer Olympics	200
24	1996 Summer Olympics	197
23	1992 Summer Olympics	169
22	1988 Summer Olympics	159
21	1984 Summer Olympics	140

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Hosting cities report

Olympics Games Hosting Cities Report! This comprehensive report provides valuable insights into the cities that have had the honor of hosting the prestigious Olympic Games throughout history. By determining specific range of years for time intervals, this report allows you to explore and analyze the hosting cities based on specific time periods. Whether you are an avid sports enthusiast, a historian, or simply curious about the evolution of the Olympic Games, this report is designed to meet your needs.

year1	2010		year2	2016

|◁ ⟨ 1 of 1 ⟩ ▷| ↻ 100% ▾ 🖫 ⌄ 🖶

Cities Hosting the Olympics between 2010 and 2016

Cities Hosting the Olympics

edition id	edition	year	city
54	2012 Summer Olympics	2012	London
57	2010 Winter Olympics	2010	Vancouver
58	2014 Winter Olympics	2014	Sochi
59	2016 Summer Olympics	2016	Rio de Janeiro

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Power Bi Dashboards

Dashboard Link:
https://app.powerbi.com/view?r=eyJrIjoiOGI5MWE3N2QtY2IwZi00ZWYxLTk3Y2EtZjA4YTg5OTg0MjIIiwidCI6ImRmODY3OWNkLWE4MGUtNDVkOC05OWFjLWM4M2VkN2ZmOTVhMCJ9
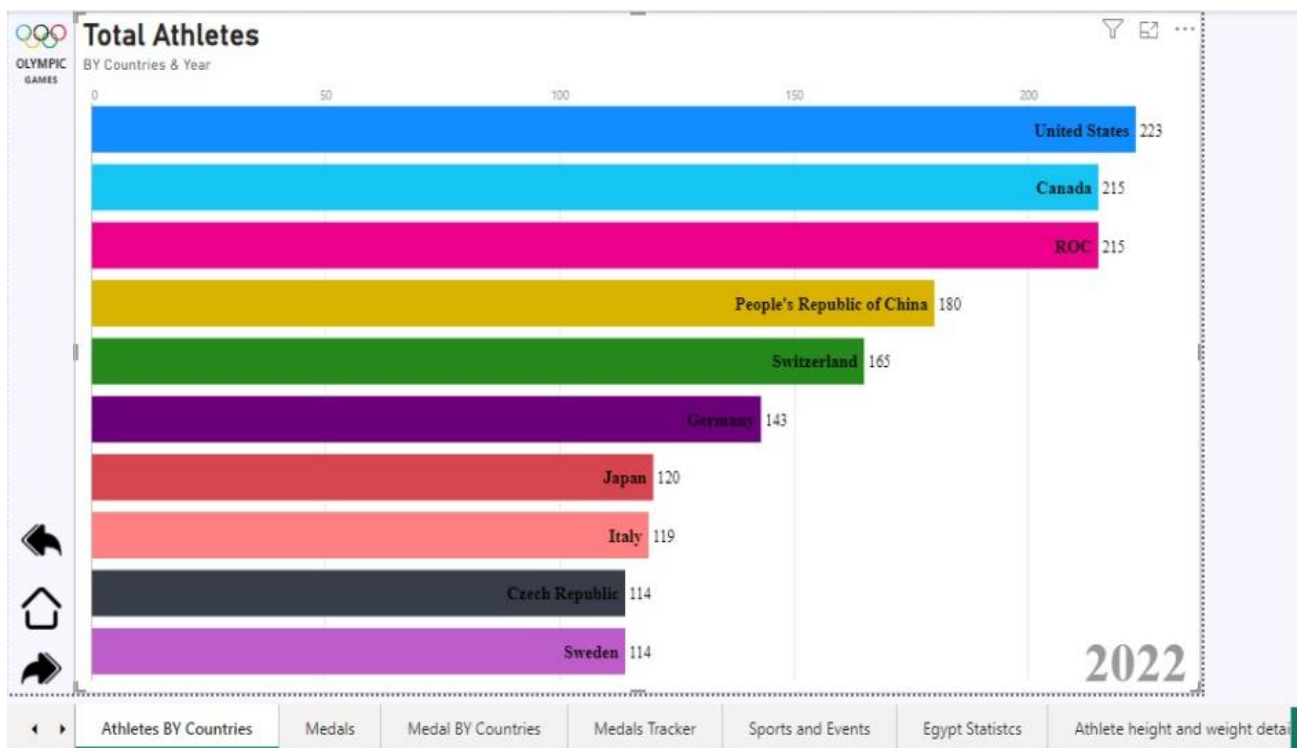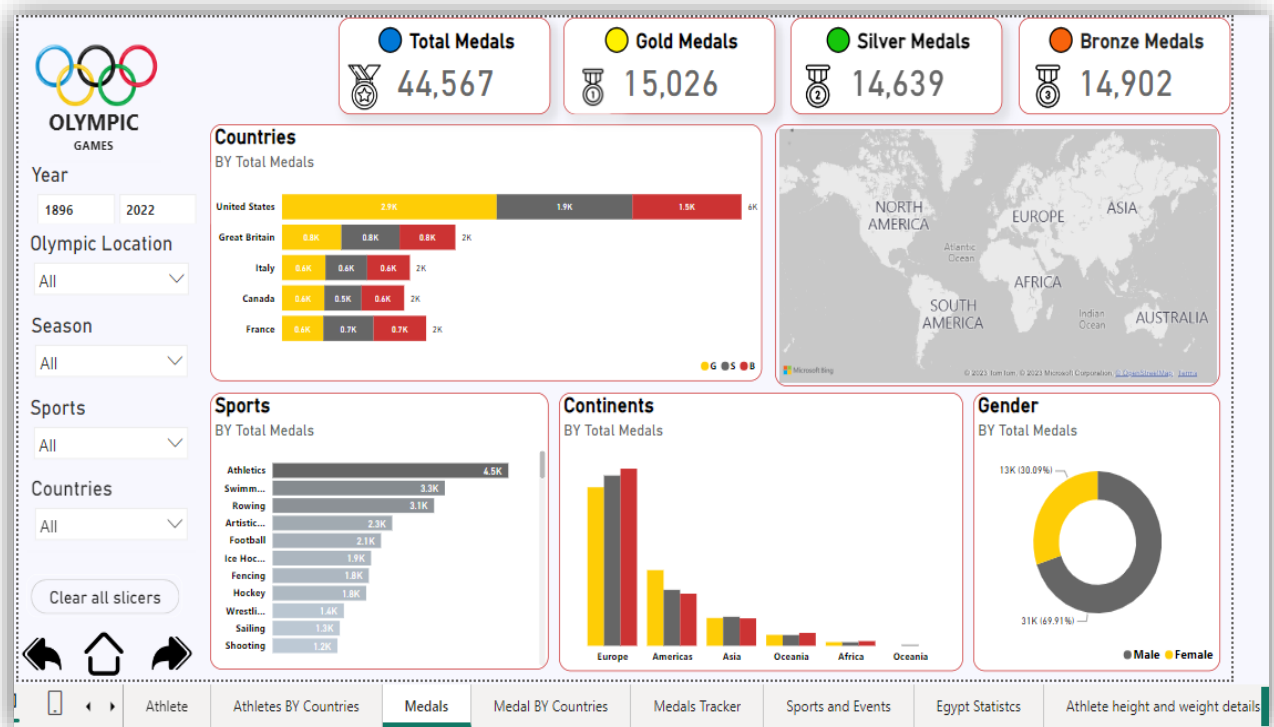
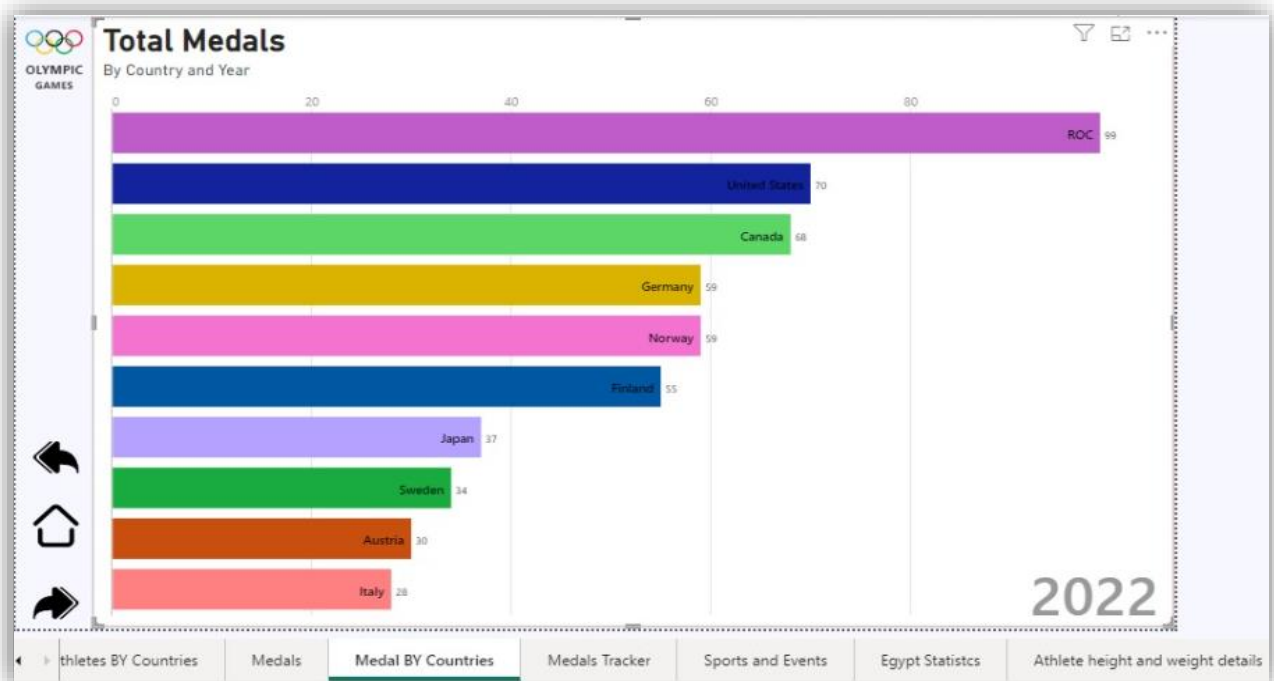## 1- Athletes Details Dashboard

>> Athlete height and weight details
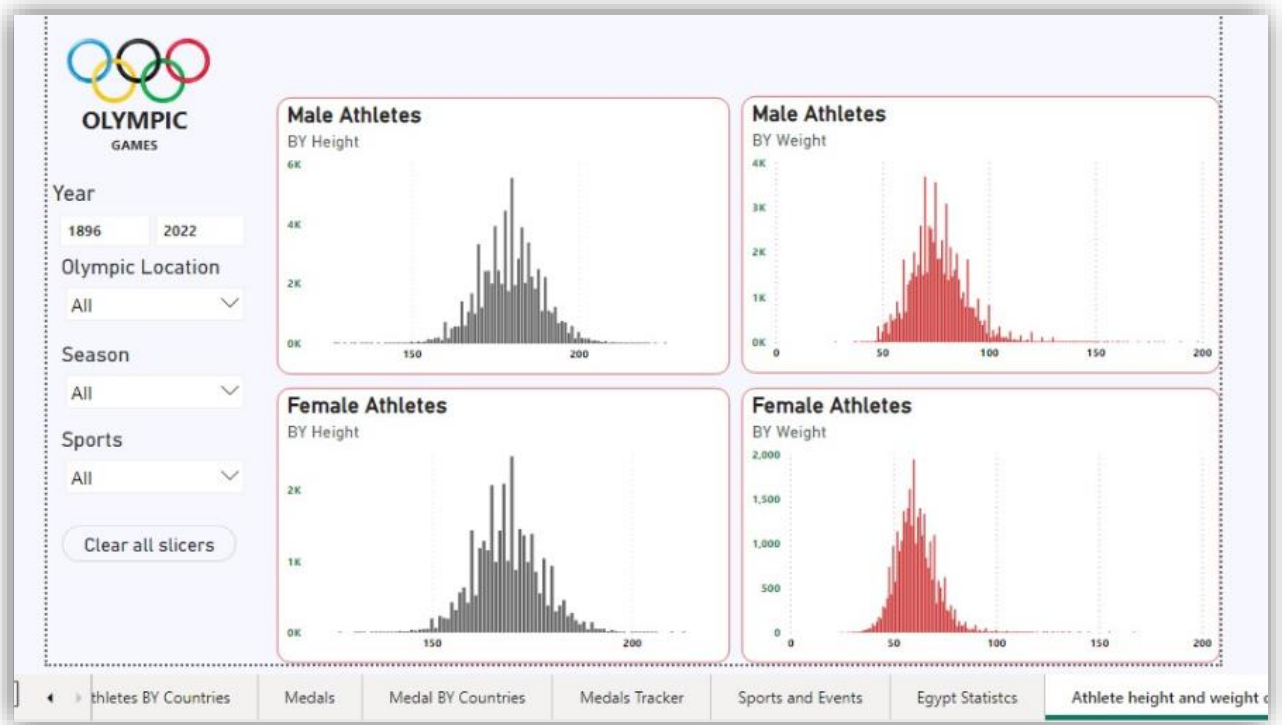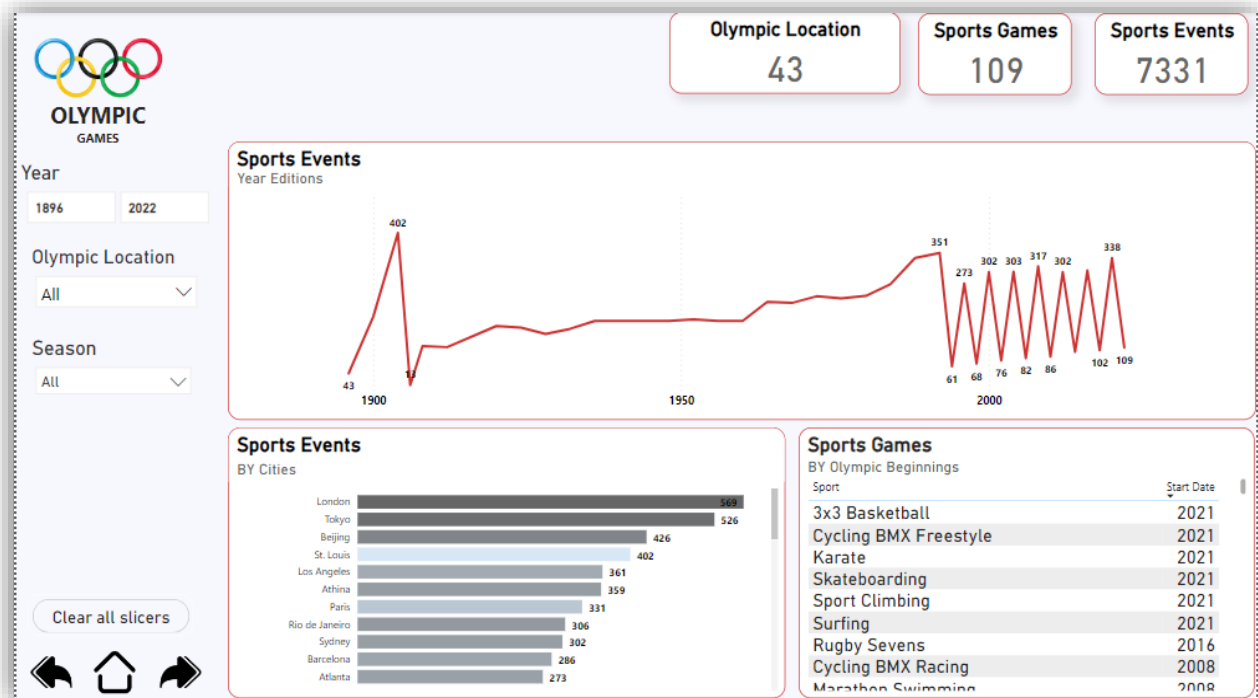

>> Total Athletes
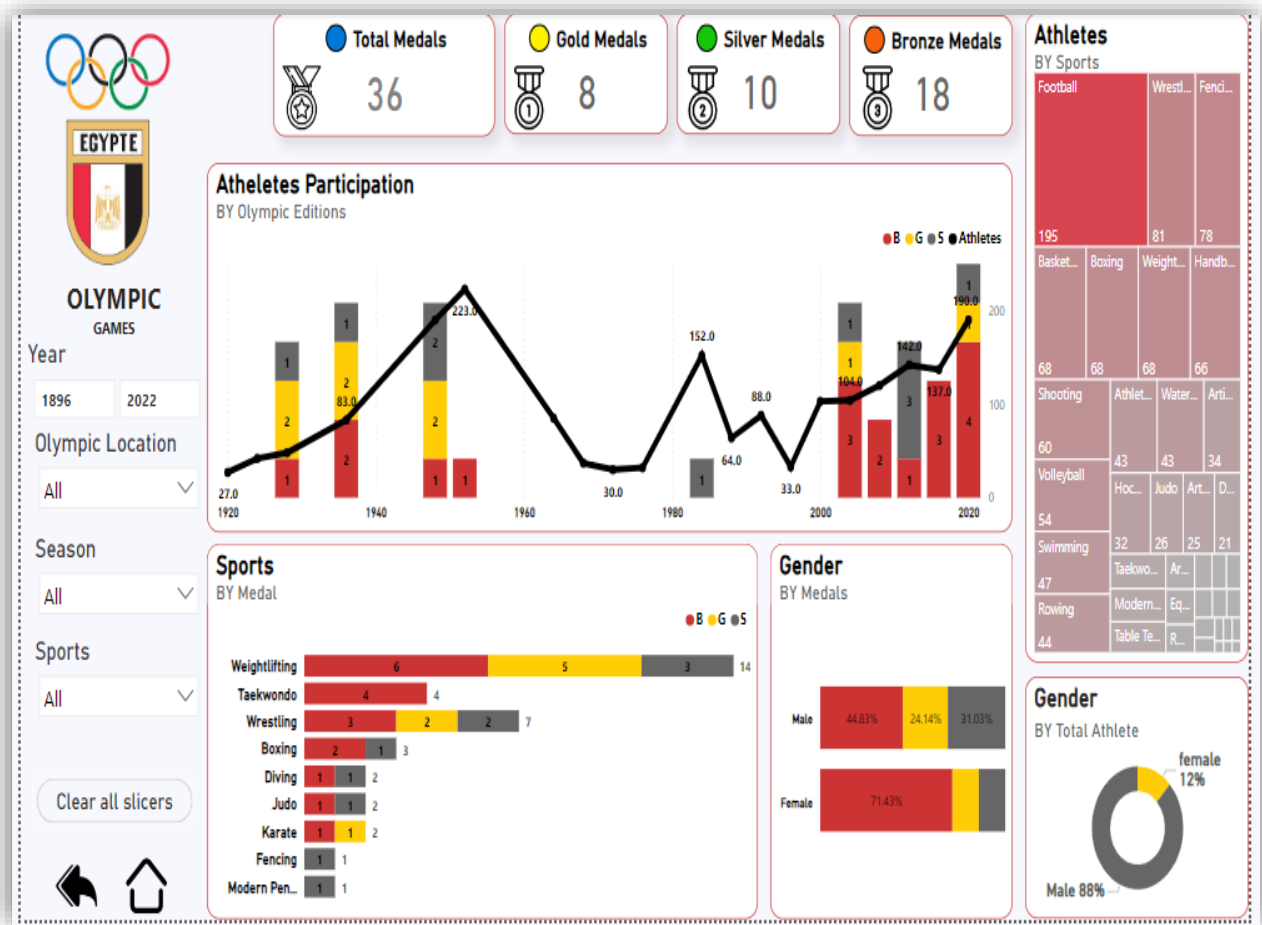
2- Medals Dashboard

>> Medals by Country

>> Medals Tracker

3- Events and Games

4- Egypt Dashboard

Tableau

Tableau link:

https://public.tableau.com/app/profile/mohamed.ellaban/viz/Book120_16977375952150/OLYDASHBORD#1

Arab World in the Olympic Games Dashboard