CASE STUDY REPORT

DATA ANALYTICS WITH POWER BI

“GLOBAL OLYMPICS DATASET ANALYSIS”

“SIVANTHI ARTS AND SCIENCE COLLEGE FOR WOMEN”

NM ID	NAME
23B59F58BC40665BAFC409BF61249359	J.SWETHA

R.UMAMAGESWARI
Trainer Name

R.UMAMAGESWARI
Master Trainer

INDEX

ABSTRACT

The Olympic games represent the pinnacle of athletic achievement and serve as a platform for countries to showcase their sporting prowess on a global stage. This project utilizes power BI to analyze various facts of the Olympics, including historical trends,medal distributions,athlete demographics, and performance metrics. By harnessing the power of data visualization and analytic,this analysis provides insights into patterns, disparities,and evolution across different Olympics editions and participating nations. Through interactive dashboards and visualizations, stakeholders can gain a comprehensive understanding understanding of the dynamic shaping the Olympics, enabling informed decision-making and strategic planning for athletes,coaches,national committees, and sports enthusiast alike.

CHAPTER 1

1.INTRODUCTION

1.1 Problem Statement

A potential problem statement for global Olympics data analysis in power BI could be “Analyze historical Olympic data across various countries, sports and events to identify trends,performance patterns, and key insights that can inform strategy decision for future Olympic participation and resource reallocate. Utilize power BI to analyze global Olympic data,uncovering performance and trends country ranking, and medal distribution to enhance strategic decision-making and performance optimization for future Olympic campaigns.comprehensive analysis of global Olympic data, including athlete performance , medal counts,and event trend to provide actionable insights for stakeholders,optimize resource allocation and enhance strategic and planning for future Olympic games and for athletes in the Olympics.

1.2 Proposed Solution

Proposed Approach An Approach is referred as a systematic path to reach a solution.Ever problem whether technical or non technical requires and proper approach so that we can get a proper path on which we have proceed to get the required result. This Research paper aims to analyze the vast history of Olympics games and determined the evolution Olympic games over the time. There are various factor which contributes in the evolution of the Olympics. To determined these factors and perform a comparative study on these factors we need to follow and approach which will take us to our destination and make us to understand easily the factors.

1.3 ADVANTAGE

- The Olympics bring together nations from around the world in a spirit of friendly competition, fostering international understanding and co operation.
- The Olympics showcase a highest level of athletic performance,inspiring athletics to push their limits and achieve greatness and became a famous due to hard work.
- Hosting the Olympics can provide significant economic benefits to host cities and countries, including infrastructure development and tourism revenue .
- The Olympics encourage anticipation in sports and physical activity,promoting health and fitness and maintain their body physically and mentally active.
- The Olympics receive extensive media coverage worldwide providing a platform to showcase host cities and countries to a global audience

1.4 Feature

Data integration: Importing historical Olympics data from various sources including official Olympic website, sports databases, and other relevant datasets.

Data Modelling: Designing a comprehensive data model that captures information about athletes countries sports events medals and historical trends.

Predictive analysis: Implementing predictive models to forecast medal counts, identify potential medal-winning countries or athletes, and analyze factors influencing Olympic success.

Performance Analysis: Analyze the performance of specific countries or athletes across different Olympics editions, identifying patterns,strengths, and weakness.

1.5 Scope

The scope of this project is to visualize medal counts by country overtime and across different Olympic games.Analyze trends in athlete performance, including individual and team performances,across different sports and countries.Explore demographic data of athletes such as age, gender, nationality, and compare them across different games.Break down data by specific events,such as track and field, swimming, gymnastic.Identifying patterns and trends over time ,such as changes in medal distribution,emergence of new sports or shift in dominant countries. Explore the social and economic impact of hosting the Olympics,including infrastructure development,tourism, and public sentiment.we can create interactive dashboards and reports to gain actionable insights from global Olympics data,by leveraging power BI.

CHAPTER 2
2. SERVICE AND TOOLS REQUIRED

2.1 SERVICES USED

Azure SQL database:

Allows you to store and analysis large volumes of data in the cloud.

Azure Analysis Service:

Provide enterprise grade analytic with the scale , flexibility and management benefits of cloud and manage cloud in different ways.

Power query:

Enables you to connect to and transform data from various source, including databases, files and web services , to prepare it for analysis

Power pivot:

Allows you to create data models that can handle large volumes data and perform complex calculation and solve the problems.

Power maps:

Helps visualize geographic and temporal data on interactive.

2.2 TOOLS AND SOFTWARE USED

Tools:

✧ Power-BI:

The main tool for this project is power-BI, which will be used to create interactive dashboards for real-time data visualization.

✧ Power Query:

This is a data connection technology that enables you to discover, connect, combine and refine data across a wide variety of source.

SOFTWARE REQUIREMENTS:

✧ Power-BI Desktop:

This is a windows application that you can use to create reports and publish them to power-BI.

✧ Power-BI Services:

This is an online SaaS(software as a service)service that you use to publish reports,create new dash boards,and share insights.

✧ Power-BI Mobile:

This is a mobile application that you can use to access your reports and dashboards on the go.

CHAPTER 3

3.PROJECT ARCHITECTURE

3.1 Architecture

Olympic architecture has a great impact on the celebration of the games and on the host city legacy and has become a Olympic studies during the last decades. There are high level architecture they are listed below in this page;

1.Data Sources:

External Databases:

Access supplementary data from external databases or data providers, such as demographic information, weather or historical context.

2. Data Ingestion:

Power Query:

Use power query to ingest data from the Olympics API and other sources. Power Query provides a user-friendly interface for data-extraction,transformation, and loading(ELT) operations.

3.Data Modelling:

Power Pivot:

Creates a data model within power BI using power pivot.define relationship between different data tables,optimize data types, and create calculated columns to derive meaningful matrices and KPIs.

CHAPTER 4

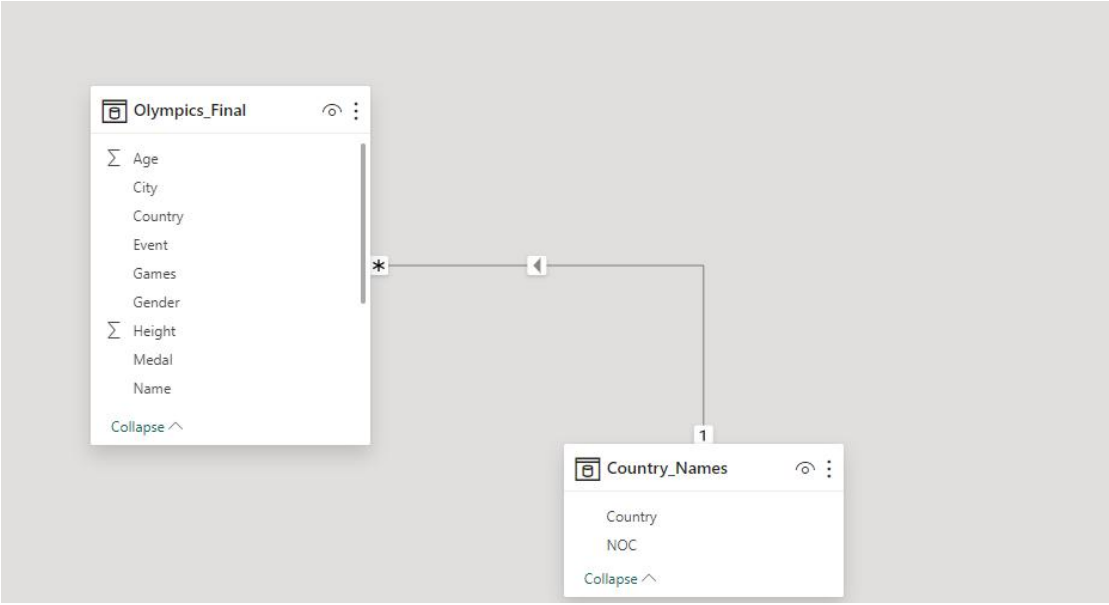
4.MODELLING AND RESULT

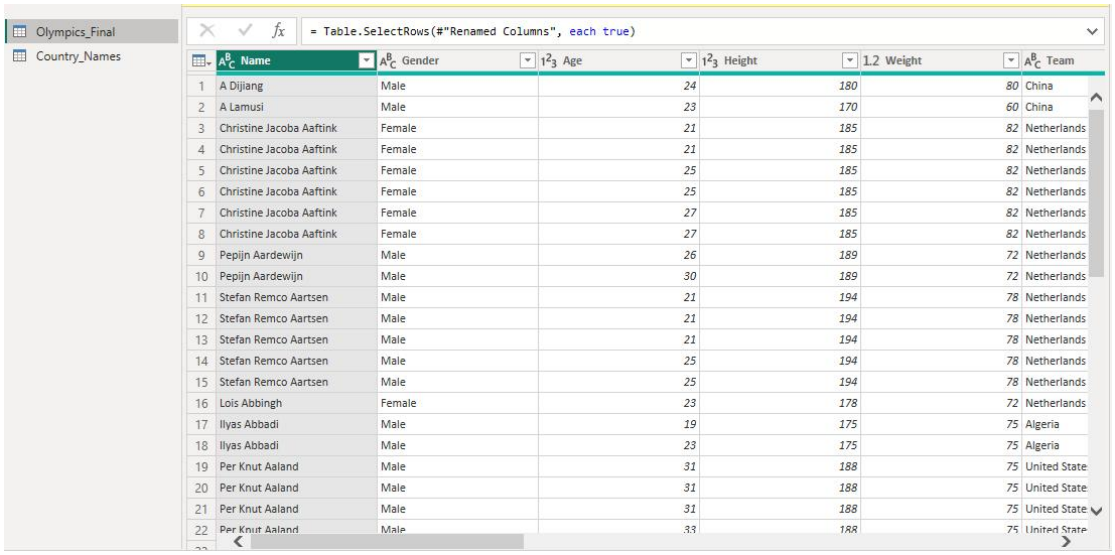
4.1 MODELLING:

To model global Olympics data analysis in power bi,you would follow these steps;

Import the Olympics data set into power BI, These data set should include information such as athletes,countries,sports,events,medals counts,and historical data.Define relationship between different table in your data set.for example, you would create relationship between tables for athletes, countries, sports and events based on shared keys like athlete ID,country code,sports ID, and event ID.Build interactive dashboards that enable users to explore the data dynamically.Incorporate slices and filters and book mark to facilitate data exploration and analysis .

4.2 DASHBOARD

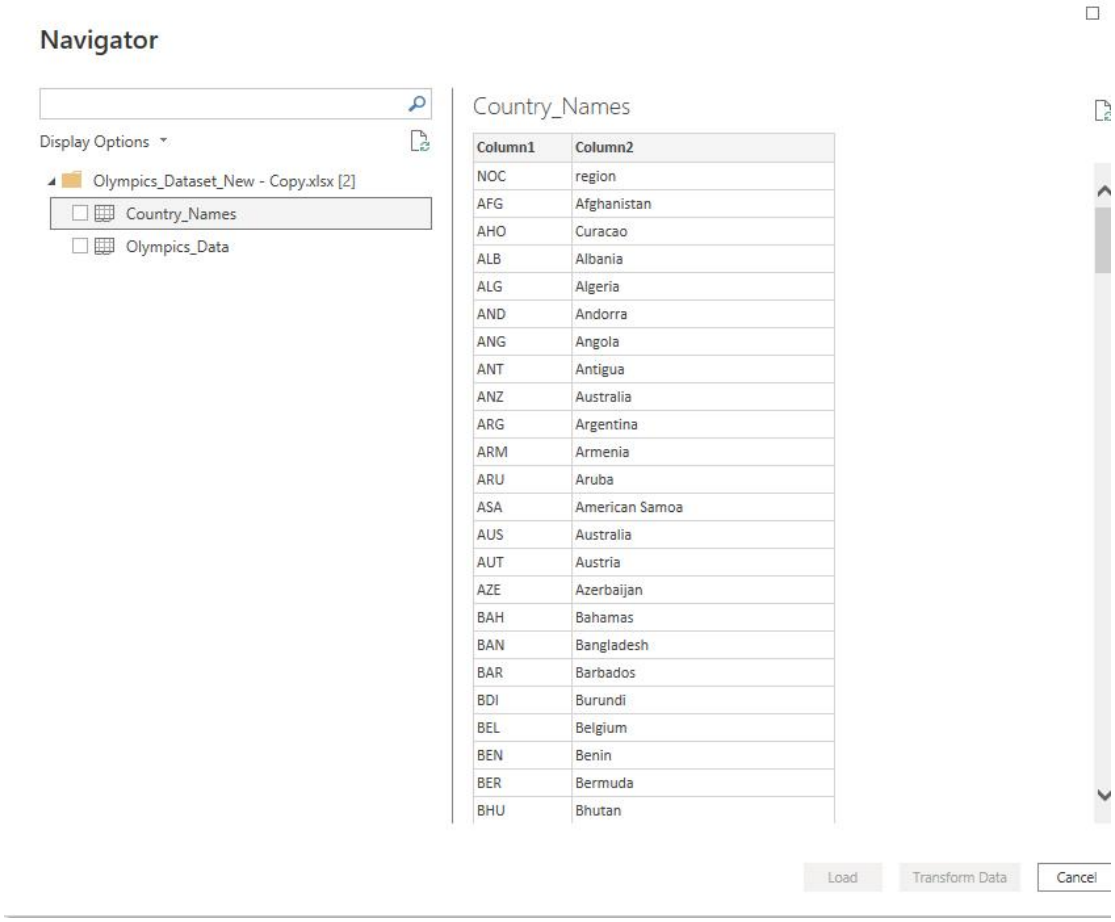




Olympics_Final
Country_Names

= Table.SelectRows(#"Renamed Columns", each true)

	Name	Gender	Age	Height	Weight	Team
1	A Dijiang	Male	24	180	80	China
2	A Lamusi	Male	23	170	60	China
3	Christine Jacoba Aaftink	Female	21	185	82	Netherlands
4	Christine Jacoba Aaftink	Female	21	185	82	Netherlands
5	Christine Jacoba Aaftink	Female	25	185	82	Netherlands
6	Christine Jacoba Aaftink	Female	25	185	82	Netherlands
7	Christine Jacoba Aaftink	Female	27	185	82	Netherlands
8	Christine Jacoba Aaftink	Female	27	185	82	Netherlands
9	Pepijn Aardewijn	Male	26	189	72	Netherlands
10	Pepijn Aardewijn	Male	30	189	72	Netherlands
11	Stefan Remco Aartsen	Male	21	194	78	Netherlands
12	Stefan Remco Aartsen	Male	21	194	78	Netherlands
13	Stefan Remco Aartsen	Male	21	194	78	Netherlands
14	Stefan Remco Aartsen	Male	25	194	78	Netherlands
15	Stefan Remco Aartsen	Male	25	194	78	Netherlands
16	Lois Abbingh	Female	23	178	72	Netherlands
17	Ilyas Abbadi	Male	19	175	75	Algeria
18	Ilyas Abbadi	Male	23	175	75	Algeria
19	Per Knut Aaland	Male	31	188	75	United State
20	Per Knut Aaland	Male	31	188	75	United State
21	Per Knut Aaland	Male	31	188	75	United State
22	Per Knut Aaland	Male	33	188	75	United State



Navigator

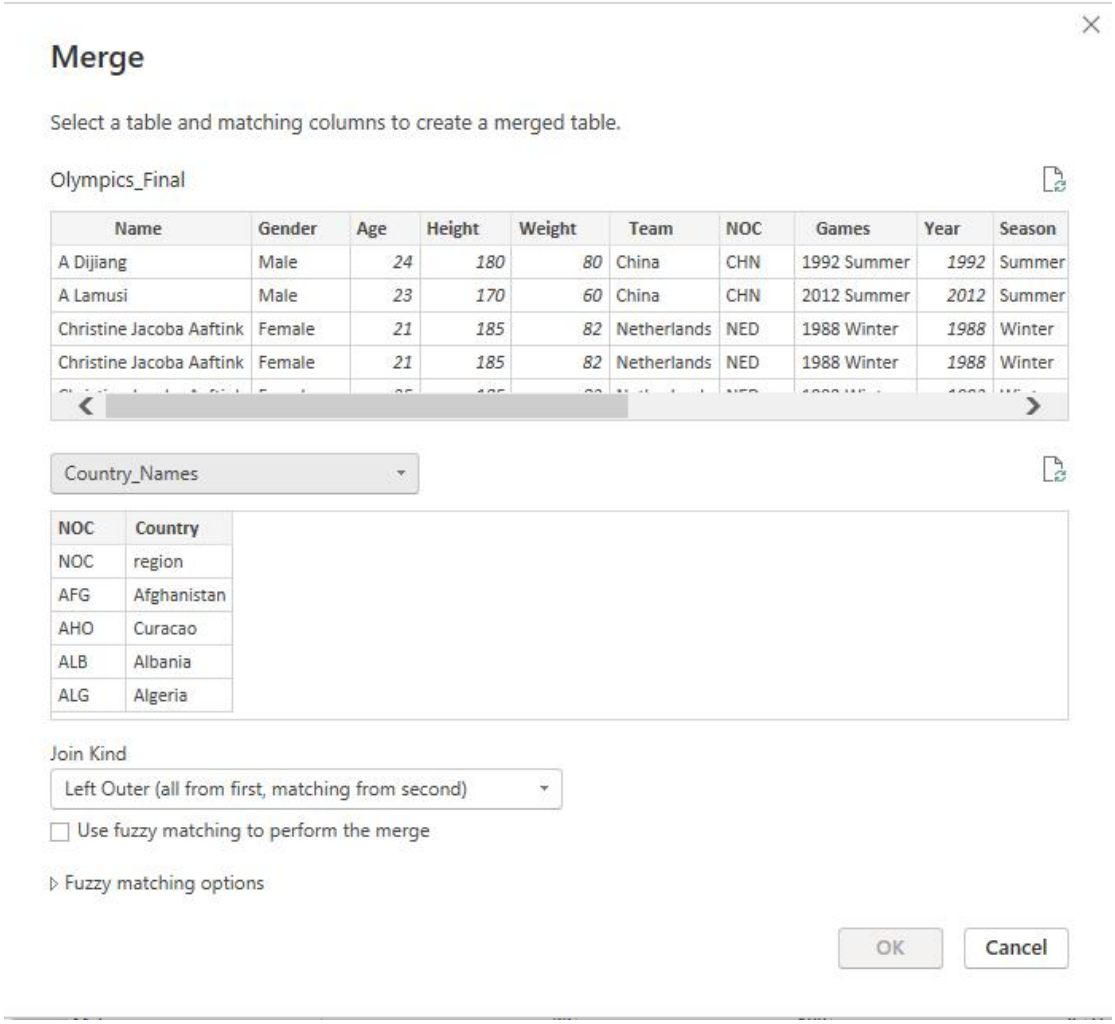
Display Options

Olympics_Dataset_New - Copy.xlsx [2]
Country_Names
Olympics_Data

Country_Names

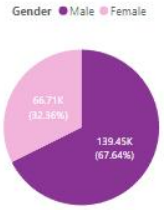
Column1	Column2
NOC	region
AFG	Afghanistan
AHO	Curacao
ALB	Albania
ALG	Algeria
AND	Andorra
ANG	Angola
ANT	Antigua
ANZ	Australia
ARG	Argentina
ARM	Armenia
ARU	Aruba
ASA	American Samoa
AUS	Australia
AUT	Austria
AZE	Azerbaijan
BAH	Bahamas
BAN	Bangladesh
BAR	Barbados
BDI	Burundi
BEL	Belgium
BEN	Benin
BER	Bermuda
BHU	Bhutan

Load Transform Data Cancel


Merge
Select a table and matching columns to create a merged table.
Olympics_Final
Name Gender Age Height Weight Team NOC Games Year Season
A Dijiang Male 24 180 80 China CHN 1992 Summer 1992 Summer
A Lamusi Male 23 170 60 China CHN 2012 Summer 2012 Summer
Christine Jacoba Aaftink Female 21 185 82 Netherlands NED 1988 Winter 1988 Winter
Christine Jacoba Aaftink Female 21 185 82 Netherlands NED 1988 Winter 1988 Winter
Country_Names
NOC Country
NOC region
AFG Afghanistan
AHO Curacao
ALB Albania
ALG Algeria
Join Kind
Left Outer (all from first, matching from second)
Use fuzzy matching to perform the merge
Fuzzy matching options
OK
Cancel

GLOBAL OLYMPICS DATASET ANALYSIS

Distribution of Medal by Gender

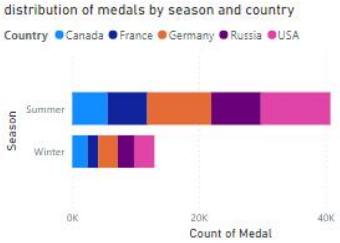


Country	Bronze	Gold	Silver	Total
USA	982	2115	1286	4383
Russia	1083	1465	1062	3610
Germany	1072	1102	1015	3189
Australia	477	319	414	1210
Canada	355	362	343	1060
Italy	387	315	358	1060
UK	351	330	350	1031
China	291	351	347	989
France	375	285	327	987
Total	5718	6870	5774	18362

distribution of medal by sports

distribution of medal among 10 players

distribution of medals by season and country



5. CONCLUSION

In conclusion,the global Olympics data analysis conducted in power BI provides valuable insights into various aspects of the Olympics,including participation trends,medal distribution and performances metrics across different countries and sports.through interactive visualization and comprehensive data exploration,the analysis highlights pattern,correlation,and outliers,aiding in strategic decision-making,resources allocation,and future planning for athletes,teams,and organizers. The findings underscore the significance of data-drive approaches in understanding and optimizing performance in the world’s premier sporting event.

6. FUTURE SCOPE

We all know that any analysis is not perfect and it consists of some limitations which define the future scope of the research work. These project work also contains some limitations which we are considering as the future scope of the project we can also describe the data in other format like geographical format where we can despite the countries on the world map. We can also apply various machine learning algorithms to the data set after analysis and can create a predictive model which can predict the statistics of the future Olympic games.

7. REFERENCES

1. https://www.google.com/search?q=global+olympics+data+analysis+in+power+bi+report&oq=&gs_lcrp=EgZjaHJvbWUqCQgBECMYJxjqAjIJCAAQIxgnGOoCMgkIARAjGCcY6gIyCQgCECMYJxjqAjIJCAMQIxgnGOoCMgkIBBAjGCcY6gIyCQgFECMYJxjqAjIJCAYQIxgnGOoCMgkIBxAjGCcY6gLSAQw3NDQ0Njk3OGowajeoAgiwAgE&sourceid=chrome&ie=UTF-8

2. https://www.novypro.com/project/power-bi-30

8. LINK

https://github.com/swethajeyam/J-SWETHA