

# VIII. MINI PROJECT — SUMMER OLYMPICS MEDAL ANALYSIS (1896–2024)

## Aim :

To clean, process, analyze and visualize the Summer Olympics medals dataset (1896–2024) using Python (Matplotlib + Plotly) and to build interactive dashboards in Power BI and Tableau that reveal trends across countries, sports, athletes, and time.

## Domain :

Sports Analytics / Historical Data Analysis

## Problem Statement :

Researchers, sports analysts, and sports fans need an integrated visualization and analysis system that summarizes Olympic medal distributions across countries, years, sports, and athletes. The goal is to enable insights such as which countries dominate which sports, medal trends over time, gender participation, and top athletes — all through interactive dashboards and reproducible Python visualizations.

## Objectives :

1. Preprocess and clean the Olympics dataset (handle missing values, consistent country codes, data types).
2. Produce static visualizations (Matplotlib/Seaborn) for reporting.
3. Produce interactive visualizations (Plotly) for exploration.
4. Build an interactive Power BI dashboard with filters/slicers and drill-downs.
5. Build an interactive Tableau dashboard replicating the same analytical views.
6. Document key insights and suggest future extensions.

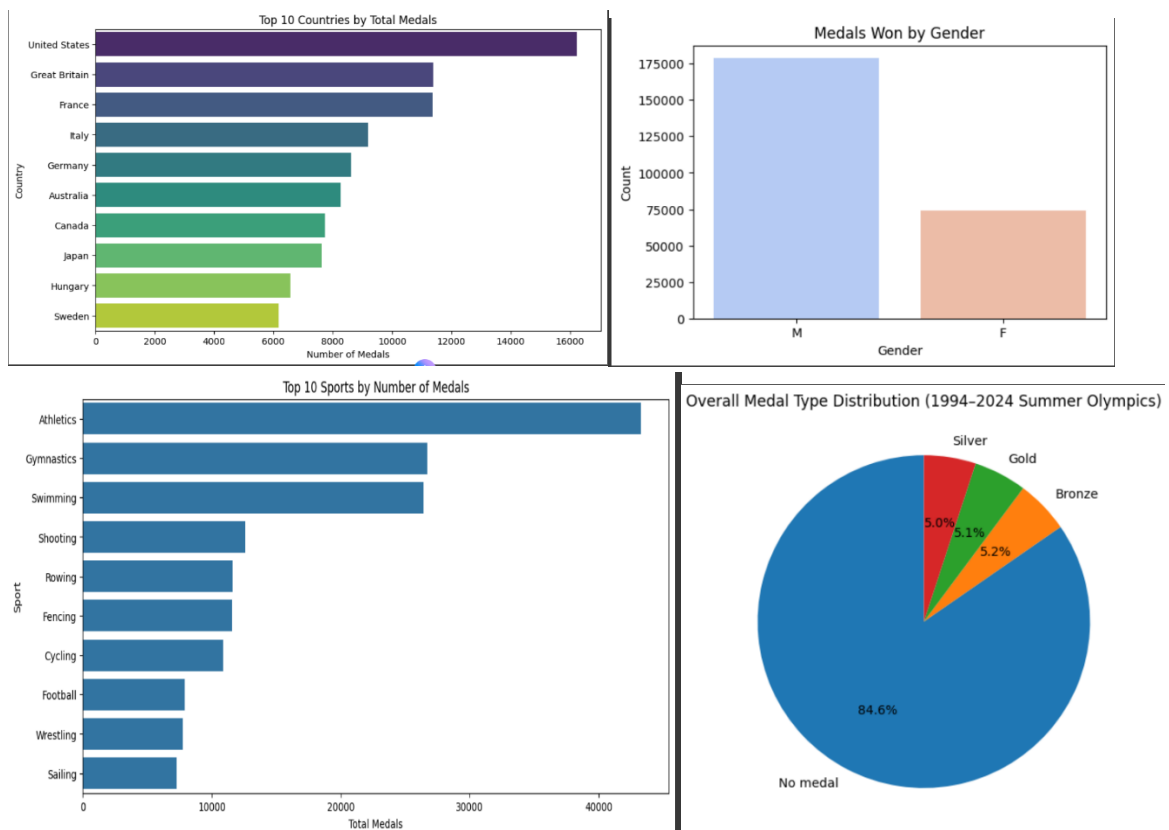
## Dataset Description

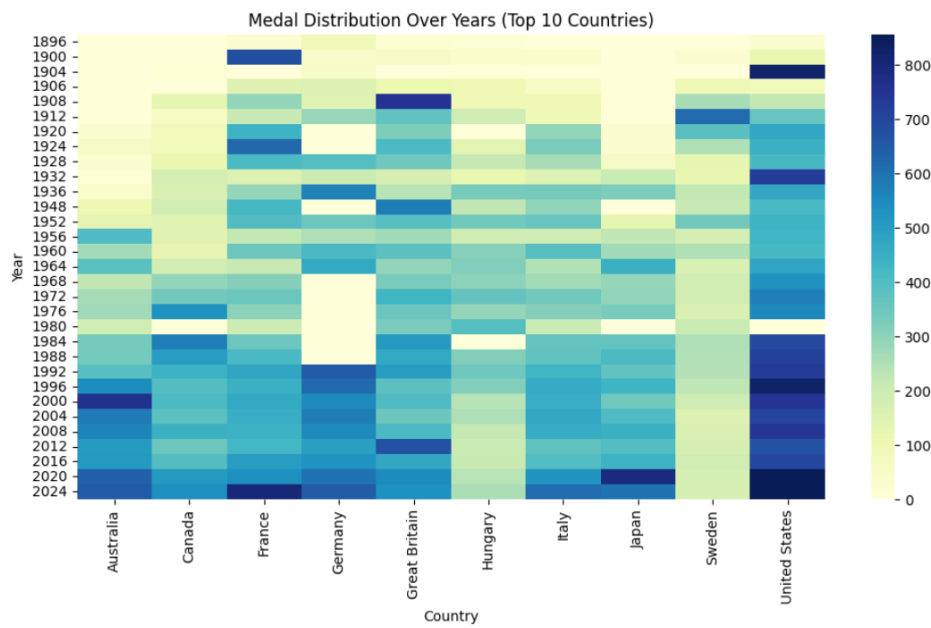
### Columns available :

- Year — Olympic year (numeric).
- City — Host city (string).
- Event — Specific event name (string).
- Medal — Medal type (Gold, Silver, Bronze) (string).
- Name — Athlete name (string).
- NOC — Country code / National Olympic Committee (string).
- Player Id — Unique athlete identifier (numeric).
- Season — Season (Summer/Winter) — filter to Summer.
- Sex — Athlete gender (M/F) (string).
- Sport — Sport category (string).
- Team — Team name (string).

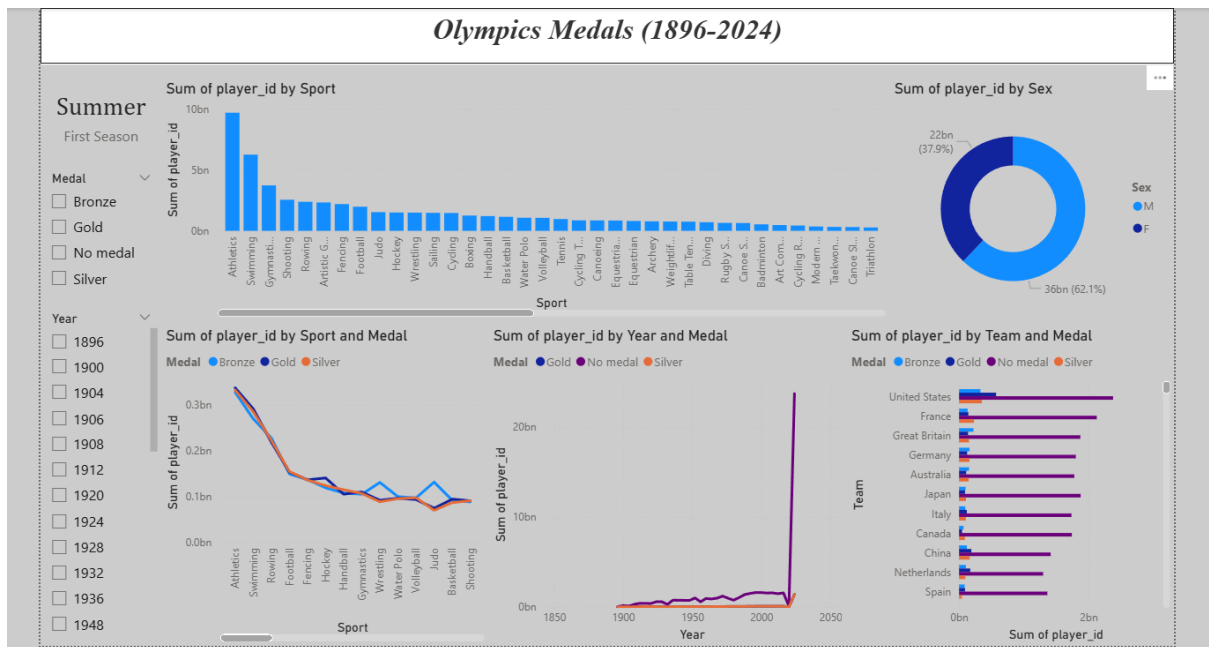
## Output

### Python:



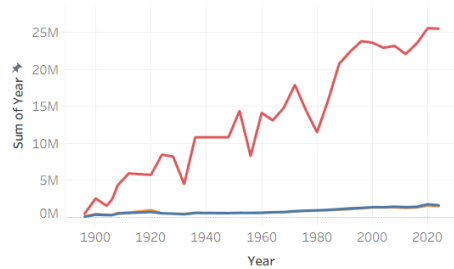


## Power BI

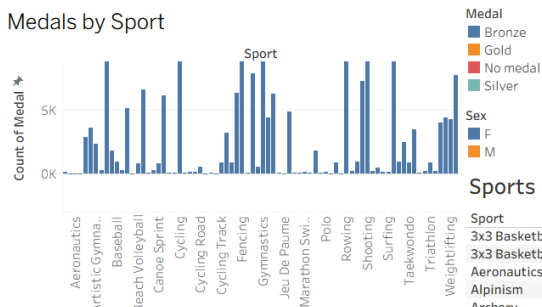


# Tableau

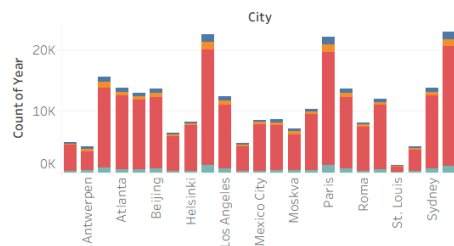
Medals Over Time



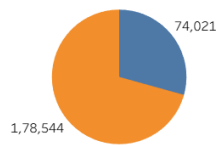
Medals by Sport



Medals by Country



Gender Distribution



Sports

Sport	
3x3 Basketball	128
3x3 Basketball, Bas..	1
Aeronautics	1
Alpinism	4
Archery	2,846
Art Competitions	3,578
Artistic Gymnastics	2,297
Artistic Swimming	257
Athletics	####
Badminton	1,816
Baseball	894
Baseball/Softball	234
Basketball	5,111
Beach Volleyball	756
Boxing	6,584
Breaking	33
Canoe Slalom	256
Canoe Sprint	756
Canoeing	6,171
Cricket	24
Croquet	19
Cycling	####
Cycling BMX Freestyle	42

## Result :

Thus, the given program was written and executed successfully.