

# Olympic Medals Data Analysis Project Report

## 1. Objective

The objective of this project is to analyze historical **Olympic medal data** to uncover patterns and insights related to:

- Growth of the Olympics over time.
- Country-level medal dominance.
- Gender distribution in events.
- Country specialization in specific sports.
- Identification of top athletes and sports through tooltip drill-downs.

This project was implemented in **Power BI**, with interactive visuals and filters for deep exploration.

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## 2. Data

- **Source:** Publicly available historical Olympic dataset.
  - **Key Fields:**
    - Year, Season, Country, Sport, Event Gender, Athlete, Medal.
  - **Size:** Over **20,000 medals** across **168 countries**.
  - **Granularity:** Each row represents a medal awarded in a specific event, linked to country and athlete.
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## 3. Dashboard Design

### a) KPIs (Bottom Cards)

- **Total Medals (20K)**
- **Total Countries (168)**
- **Year Filter** → to drill into any Olympic edition.

### b) Medal Growth Over Time (Top Left – Line Chart)

- Shows **count of medals by year**.
- Reveals Olympic growth, cancellations during **World Wars**, and recent expansions with over 1,000 medals per Games.

### c) Global Medal Distribution (Top Right – Map)

- **Total medals by country**, sized by medal count.
- Highlights traditional powerhouses: **USA, USSR, China, Great Britain, Germany**.
- Allows **Season filter** (Summer/Winter) to compare dominance.

### d) Country vs. Sport Specialization (Bottom Left – Matrix)

- A **matrix table** showing medal counts per sport by country.
- Example:
  - **USA**: Archery (35), Artistic Swimming (10), etc.
  - **France**: Archery (27), Alpine Skiing (51).
  - **China**: Strength in Artistic Swimming.

### e) Gender Trends (Bottom Right – Stacked Bar Chart)

- **Count of medals by year and event\_gender**.
- Early Olympics dominated by men's events.
- Significant rise in **women's participation after 1950s**.
- By 2000s, **women's medal counts nearly equal men's**.
- Mixed events appear in modern editions, promoting inclusivity.

### f) Tooltip Pages (Drill-Down Insights)

- **Top 3 Sports Tooltip**: Hovering over a country shows its most successful sports.
  - Example:
    - **USA**: Athletics (836 medals), Gymnastics, Swimming.
    - **USSR**: Athletics (193 medals), Gymnastics, Weightlifting.
    - **Australia**: Athletics (80 medals), Swimming.

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## 4. Insights

From the dashboard, several key insights emerge:

1. **Olympic Growth**
  - Medal counts steadily increased as more events and nations joined.
  - Drops in 1916, 1940, 1944 correspond to World War cancellations.
2. **Country Dominance**
  - **USA** is the overall leader in Summer Games.
  - **Norway, Germany, USSR/Russia** dominate Winter Games.
  - **China**'s surge in recent decades shows modern Olympic growth in Asia.
3. **Sport Specialization**
  - USA → Athletics & Swimming.

- USSR/Russia → Gymnastics & Athletics.
  - Great Britain → Rowing & Cycling.
  - Australia → Swimming dominance.
4. **Gender Trends**
- Women's participation has expanded dramatically since the 1950s.
  - Recent Games show near gender balance in medal counts.
  - Mixed events are now a growing category.
5. **Athlete-Level Insights (via Tooltip)**
- Tooltip enables quick drill-downs to identify **star athletes** and **specialist sports** for each nation.
  - Enhances storytelling by connecting countries to their athletic heroes.
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## 5. Conclusion

This project demonstrates how **Power BI** can transform raw historical Olympic data into an **interactive storytelling dashboard**.

- Users can move from **macro trends** (global medal growth) to **micro insights** (top sports/athletes for a country).
- Findings highlight not just who dominates, but **how and where they dominate**.
- The dashboard also reflects **social change**, showcasing the rise of women's participation and new inclusive event types.