



126 Years of Historical Olympic Evolution

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Table of Contents

EXECUTIVE SUMMARY.....	3
INTRODUCTION	3
DATA GATHERING AND CLEANING	4
DATA ANALYSIS	5
RESULTS AND FINDINGS	8

EXECUTIVE SUMMARY

Covering the most recent games in 2024, this report presents a thorough analysis of the Summer Olympic Games from their revival in 1896. Drawing on vast historical data, we have examined major trends in the evolution of the Olympics including gender participation, national accomplishments, medal distribution, and the growth of sports and events over 128 years. Our analysis reveals the Olympic movement from a simple European competition with only 43 events and 241 athletes to a worldwide celebration featuring more than 11,000 athletes from 206 countries competing in over 300 events. Although certain sports still show inequality, we noted notable improvement in gender equity as female participation hit its highest level of 7,312 athletes in 2024. While nations like Uzbekistan have demonstrated unexpected results in relation to their size, traditional sporting powers like Great Britain, Italy, and Australia keep historical dominance in medal counts. From 9 sports in 1896 to a projected 50 by 2028, the Olympic program itself has grown significantly; Shooting has become the sport with the most events (137) across Olympic history. This work highlights not only athletic achievements but also the larger narrative of an institution that has evolved to be a platform for social advancement, cultural exchange, and international cooperation.

INTRODUCTION

The Olympic Games are the best sports event of mankind, transcending simple athletic rivalry to become a worldwide celebration of human potential, international unity, and cultural exchange. From their humble revival in Athens in 1896, the Games have changed dramatically:

- From 241 athletes representing 14 countries to over 11,000 athletes from more than 200 sovereign nations and territories
- From primarily European participation to global representation from nearly every country worldwide
- From excluding women entirely to approaching gender parity in participation
- From 9 sports and 43 events to a projected 50 sports and over 300 events by 2028

Today's Olympics represent not just athletic excellence but serve as a quadrennial moment when the world comes together in peaceful competition.

Our research explores this evolution through several key lenses:

1. **Gender-Based Analysis:** Examining how gender representation and performance have changed across Olympic sports over time
2. **National Achievements Analysis:** Identifying patterns in countries' Olympic performances and medal acquisition
3. **Medal Distribution Analysis:** Studying the distribution of medals across participating nations
4. **Olympic Program Development:** Analyzing the growth and diversification of sports and events over 126 years
5. **Historical Development:** Tracking the Games' expansion from a modest European competition to a global mega-event

Through this analysis, this project seeks to tell the comprehensive story of the Olympic Games' transformation and impact on global sport and society.

DATA GATHERING AND CLEANING

Data Sources

To ensure comprehensive coverage of Olympic history, our project relied on two primary data sources:

1. **Pre-2024 Data:** We utilized Kaggle's "Olympics 124 years Dataset," which covers Olympic history from 1896 through 2020
2. **2024 Data:** We incorporated Kaggle's "Paris 2024 Olympic Summer Games" dataset to include the most recent Olympic Games

These two datasets were merged to create a complete historical record spanning 128 years of Olympic competition, from the first modern Games in Athens to the recent Paris Olympics in 2024.

Data Cleaning Process

The raw datasets required several cleaning steps to ensure accuracy and usability:

1. **Date Formatting:** We standardized all date columns to a consistent datetime format to facilitate chronological analysis
2. **Duplicate Removal:** We identified and eliminated duplicate entries that could skew our analysis
3. **Missing Value Handling:** We developed protocols for handling missing values, particularly in early Olympic records where documentation was less comprehensive
4. **Standardization:** We standardized country names and codes to account for geopolitical changes over the 128-year period
5. **Dataset Validation:** We performed validation checks to verify the integrity of the cleaned data before proceeding with analysis

This cleaned and consolidated dataset provided the foundation for all visualizations and findings presented in this report.

Dataset Overview

Spanning 128 years of competition, our extensive Olympic database tracks the performances of thousands of athletes in the Summer Olympic Games from 1896 through 2024.

Key Features

The dataset includes the following key variables:

- **player_id:** Unique identifier for each Olympic athlete
- **Name:** Full name of the athlete
- **Sex:** Gender of the athlete (Male (M) /Female (F))
- **Team:** Country the athlete represented
- **NOC:** National Olympic Committee code for the country
- **Year:** Year of the Olympic Games
- **Season:** Season of the Olympic Games (Summer)
- **City:** Host city of the Olympic Games
- **Sport:** Sport category in which the athlete competed

126 Years of Historical Olympic Evolution

- Event: Specific event within the sport
- Medal: Type of medal awarded (Gold, Silver, Bronze) or "No medal" if not awarded

This rich dataset enables examination of:

- The progression of sports disciplines over time
- Gender participation trends across sports and eras
- Country-specific achievements and historical performance patterns
- The evolution of the Olympic program in terms of events and sports
- Medal distribution patterns across nations and time periods

Platform & Tools

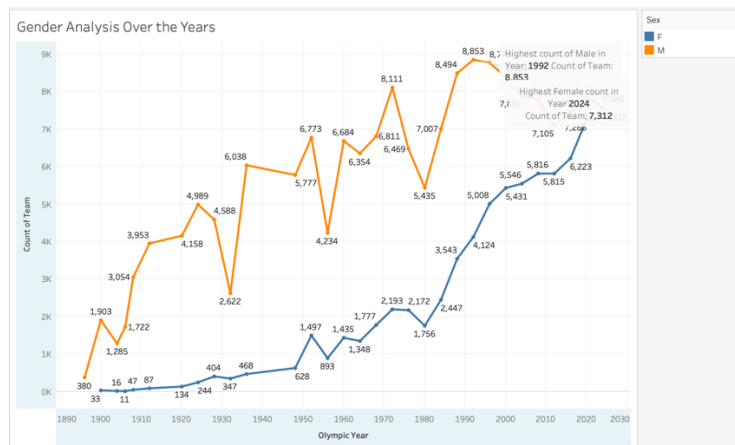
For our analytical work, we leveraged Tableau as our primary visualization platform due to its robust capabilities:

- Data Integration: Tableau enabled seamless importing and merging of our multiple Olympic data sources
- Processing Capacity: The platform efficiently handled our large historical dataset spanning 128 years
- Visualization Versatility: We utilized various chart types (line graphs, bar charts, heat maps) to represent different aspects of Olympic evolution
- Interactive Features: We created dashboards with interactive elements including:
 - Filters for timeframes, countries, and sports
 - Annotations highlighting key Olympic milestones
 - Dynamic charts showing changing patterns over time
 - KPIs for tracking gender participation, sports evolution, and country comparisons

Tableau's capabilities allowed us to transform raw Olympic data into informative visualizations that reveal meaningful patterns and trends throughout Olympic history.

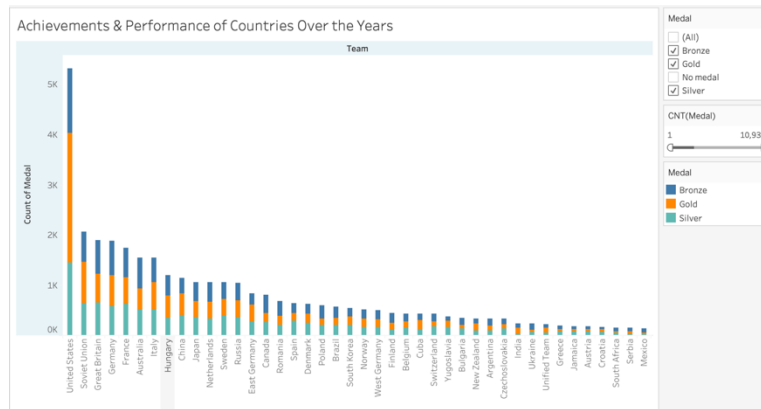
DATA ANALYSIS

Gender Based Analysis

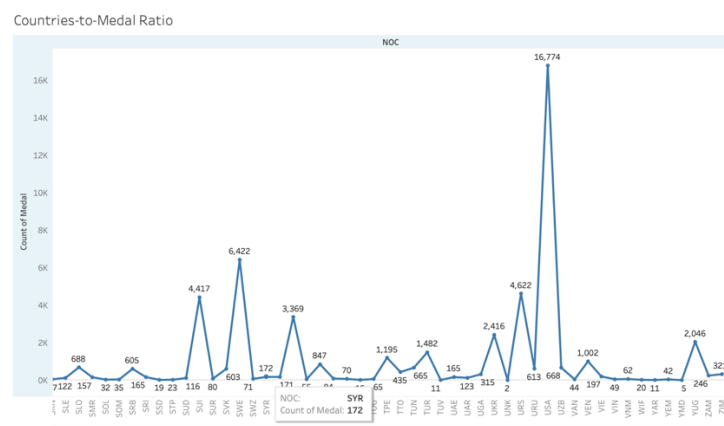


Comparison and Analysis of Countries' Achievement

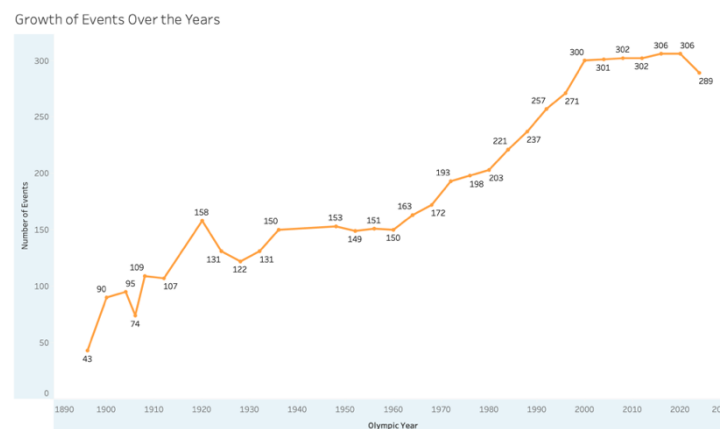
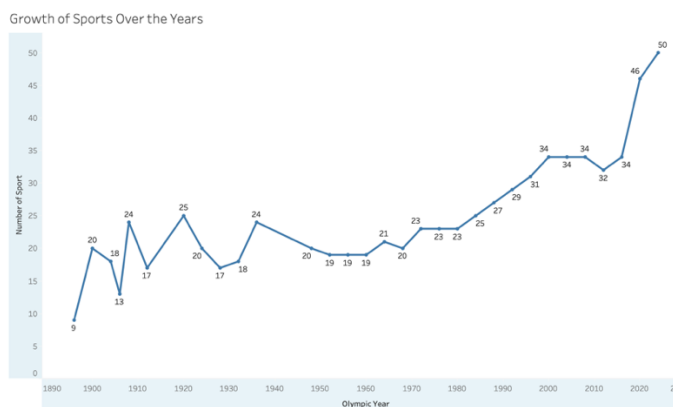
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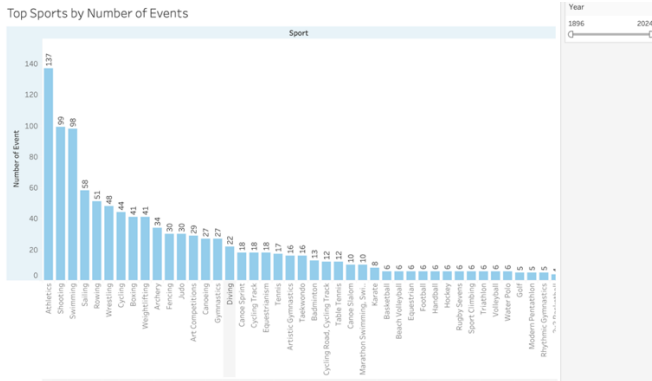
Countries-to-Medal Ratio



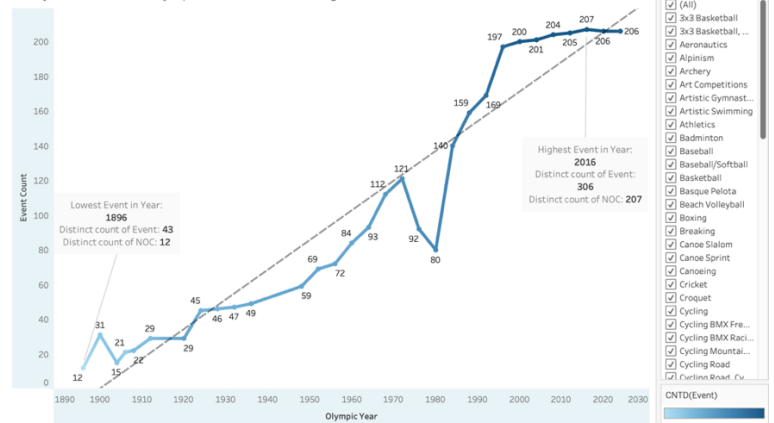
Understanding the Olympics Through Events



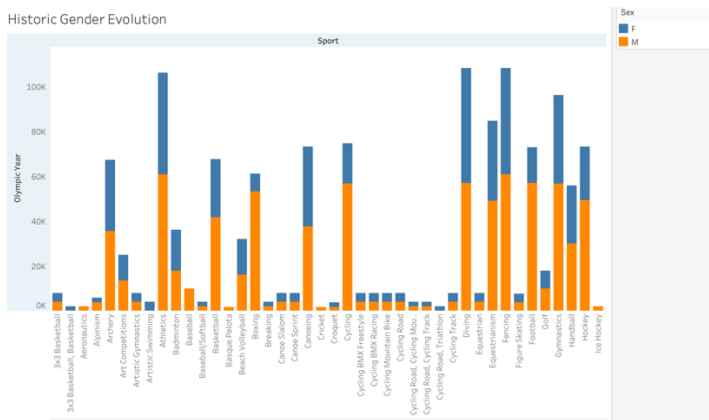
Historical Development of Olympic Games



Analysis shows how Olympics has become more global



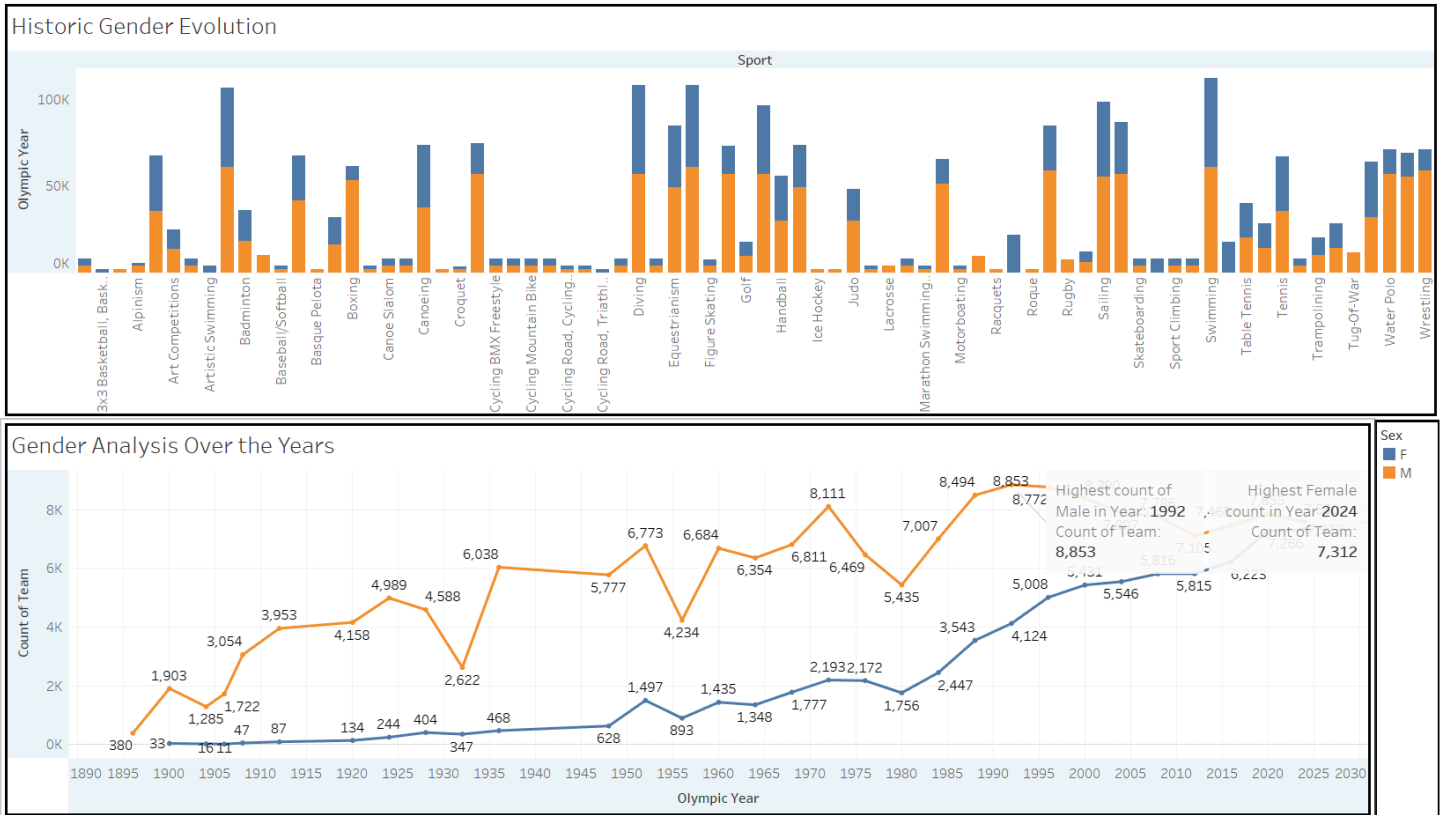
Historic Gender Evolution



RESULTS AND FINDINGS

Dashboard 1: Gender Representation in Olympic History

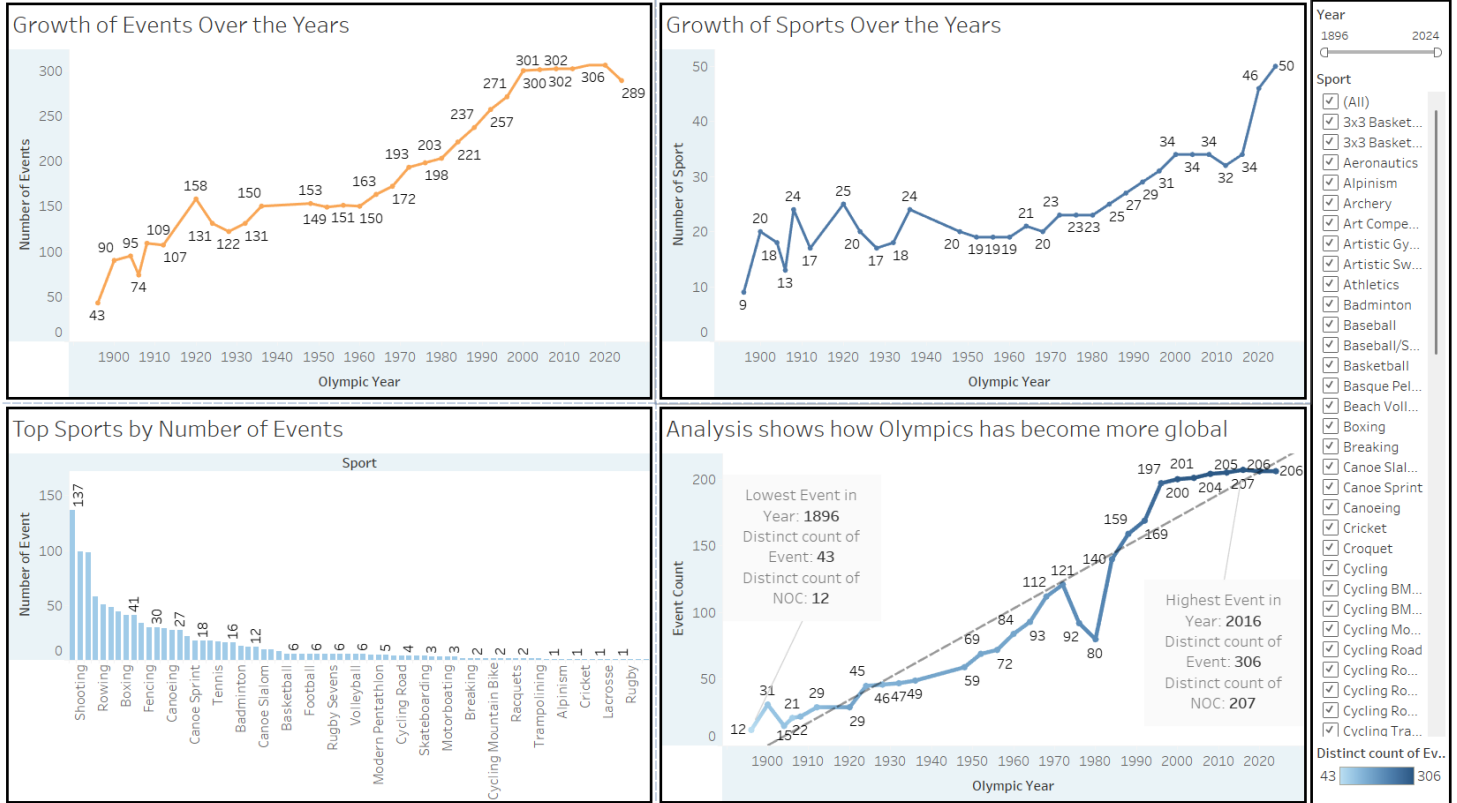
Gender Representation in Olympic History



This dashboard provides a clear visualization of how gender participation in the Olympics has evolved over time. The top chart displays sport-wise participation, revealing that while events like Athletics, Swimming, and Gymnastics have seen significant involvement from both genders, others such as Baseball and Wrestling remain predominantly male. The bottom-line chart showcases the growth in gender representation over the years, highlighting a steady rise in female participation, which reached its highest in 2024 with 7,312 athletes. In contrast, male participation peaked in 1992 with 8,853 athletes but has slightly declined or stabilized since. Overall, the gap between male and female athletes has narrowed considerably, reflecting a positive trend toward gender equality in Olympic sports.

Dashboard 2: Olympics Through Sports and Events

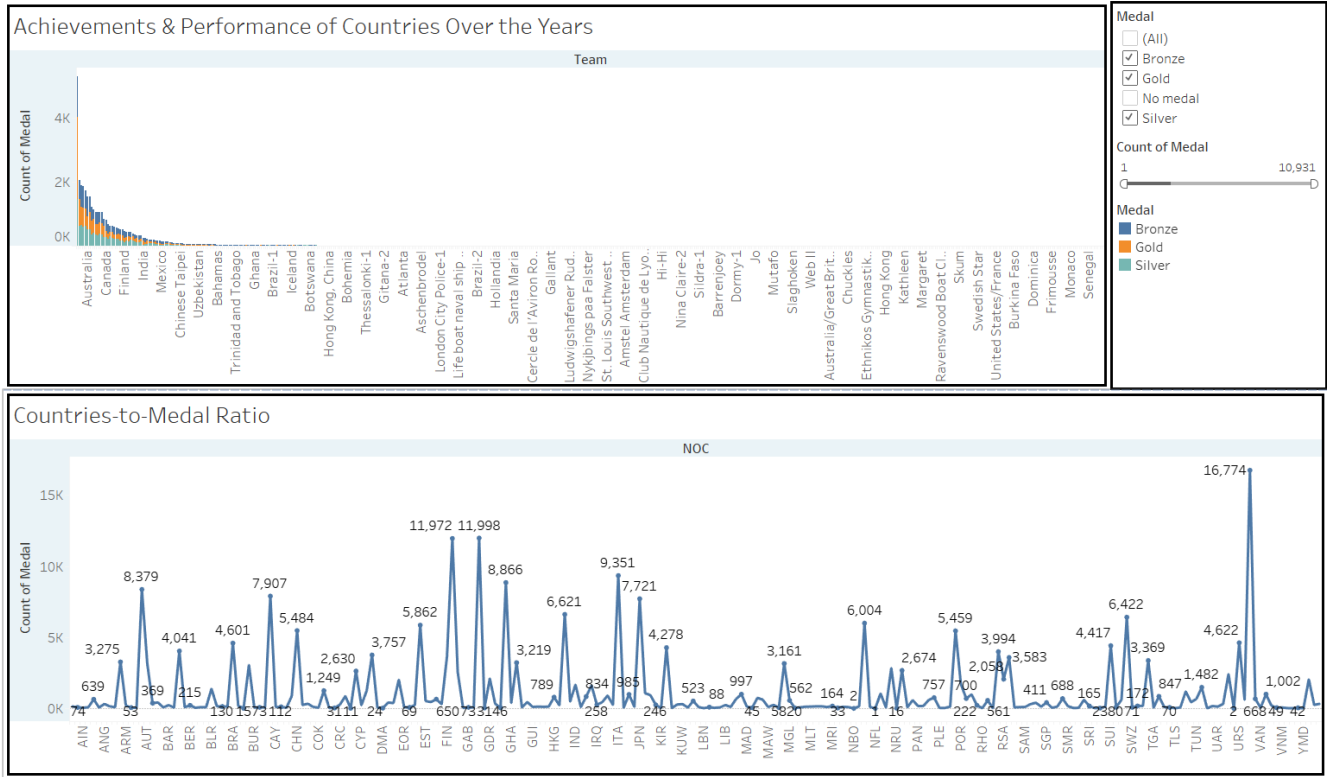
Olympics Through Sports and Events



This dashboard provides insights into the expansion and globalization of the Olympic Games. The top-left chart shows a steady increase in the number of Olympic events, growing from just 43 in 1896 to a peak of 306 in 2016, before a slight dip in 2024. Similarly, the top-right chart illustrates the growth in the number of sports, rising from 9 in 1896 to 50 in 2024, reflecting the Olympics' adaptation to modern and diverse athletic disciplines. The bottom-left chart reveals that Shooting, Rowing, and Boxing are among the top sports by number of events, indicating their consistent presence and variety. The bottom-right chart demonstrates how the Olympics have become more global, with the number of participating National Olympic Committees (NOCs) growing alongside events, reaching 207 NOCs by 2016. Overall, the data highlights the Olympics' evolution into a more inclusive and expansive international sporting event.

Dashboard 3: Tracking Olympic Success by Country and Medal

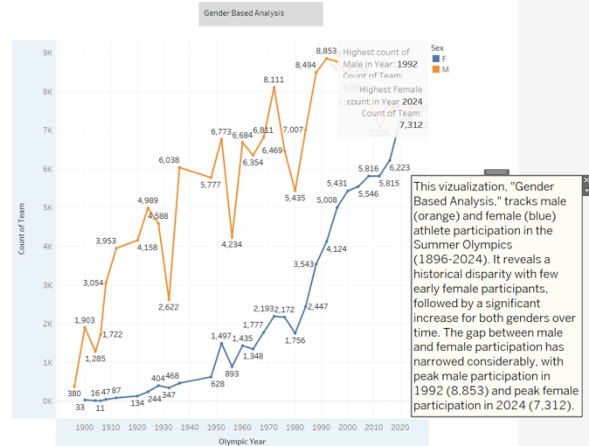
Tracking Olympic Success by Country & Medal



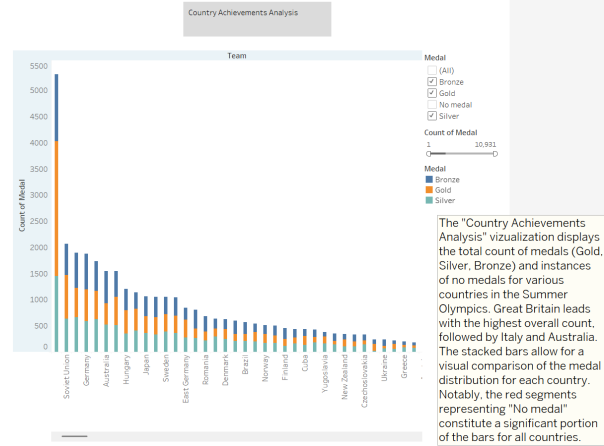
This dashboard highlights Olympic success by country through total medal counts and medal efficiency. The top chart shows the United States leading with over 10,000 medals, followed by countries like Australia and Canada. A steep drop is observed after the top nations, with many countries earning significantly fewer medals. The bottom chart reveals medal-to-country ratios, showing some nations with high efficiency in winning medals despite limited participation. Notable spikes suggest dominance by a few countries and disparities in global Olympic performance.

Story Boards:

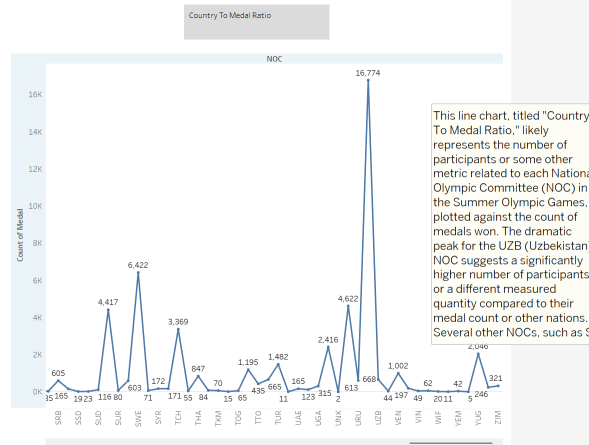
Story 1



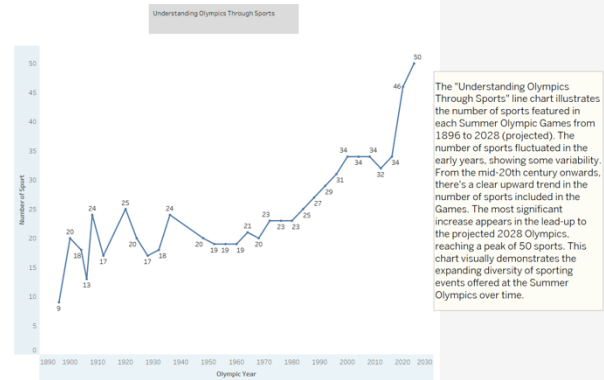
Story 2



Story 3



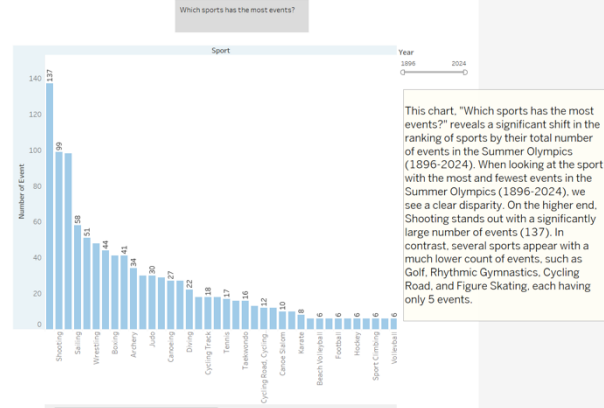
Story 4



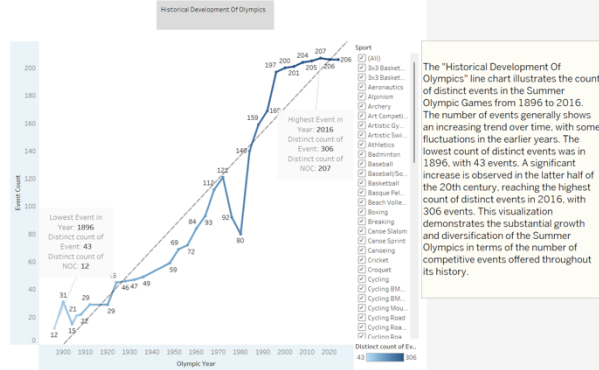
Story 5



Story 6



Story 7



Story 8

