

The background of the slide is a collage of Olympic-related imagery. At the top, a blue banner with the text 'ATHENS 2004' is visible. Below it, the Olympic rings logo is centered. In the foreground, three Olympic medals are displayed: a silver medal on the left, a gold medal in the center, and a bronze medal on the right. Each medal features the profile of a winged figure and the text 'ATHENS 2004'.

# **Analyzing the Trends of Medal Winners from the Summer Olympics (1976 - 2008)**

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# Motivations and Summary

Identify trends that may have appeared between 1976 to 2008

Categories include:

- Gender
- Country
- Location
- Political regime change
- Individual athletes

# Questions and Data

Questions asked:

- Find the medal points of countries of interest by sport /and year
- Did they perform as expected/ where there any areas that sparked interest for further investigation?
- Was there any noticeable change in performance among the top 4 countries?
- Find the distribution of genders of athlete, and the most decorated Athlete
- Is there a correlation between a country's performance as the host country vs as a visiting country?

We needed a CSV file that contained medalist data from 1976 to 2008

We found a CSV that fit this description on Kaggle

We grabbed an additional CSV to add the host nation

# Data Clean Up

```
In [13]: #import dependencies
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import scipy as sp
import requests
import json
```

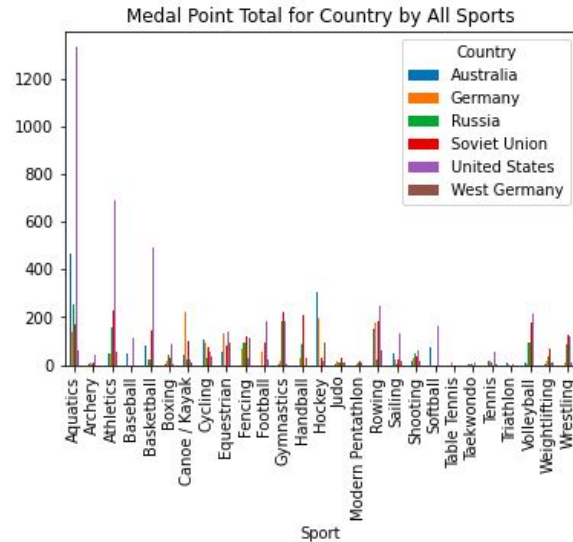
```
In [14]: #load in csv
olympics_data = pd.read_csv("Summer-Olympic-medals-1976-to-2008.csv", encoding="latin-1")
olympics_data.head()
```

```
Out[14]:
```

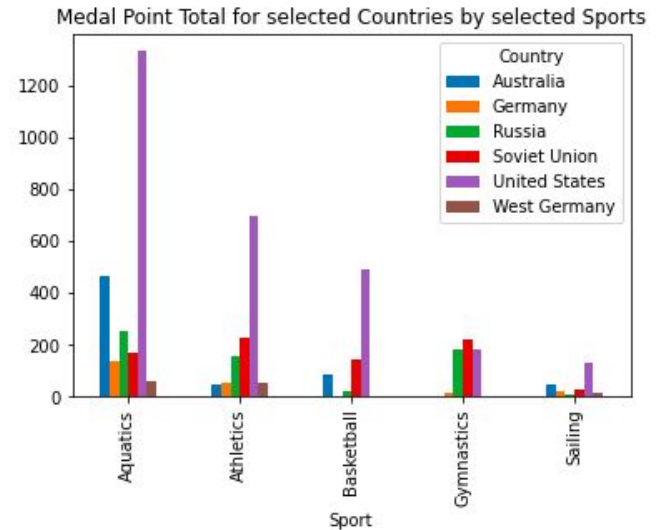
	City	Year	Sport	Discipline	Event	Athlete	Gender	Country_Code	Country	Event_gender	Medal
0	Montreal	1976.0	Aquatics	Diving	3m springboard	KÖHLER, Christa	Women	GDR	East Germany	W	Silver
1	Montreal	1976.0	Aquatics	Diving	3m springboard	KOSENKOV, Aleksandr	Men	URS	Soviet Union	M	Bronze
2	Montreal	1976.0	Aquatics	Diving	3m springboard	BOGGS, Philip George	Men	USA	United States	M	Gold
3	Montreal	1976.0	Aquatics	Diving	3m springboard	CAGNOTTO, Giorgio Franco	Men	ITA	Italy	M	Silver
4	Montreal	1976.0	Aquatics	Diving	10m platform	WILSON, Deborah Keplar	Women	USA	United States	W	Bronze

# Country Performance (Weighted by Medal)

These graphs show the Medal Point total  
for Country by Sport



Plot A)  
Initial plot to find sports of interest



Plot B)  
Deeper dive into sports of interest

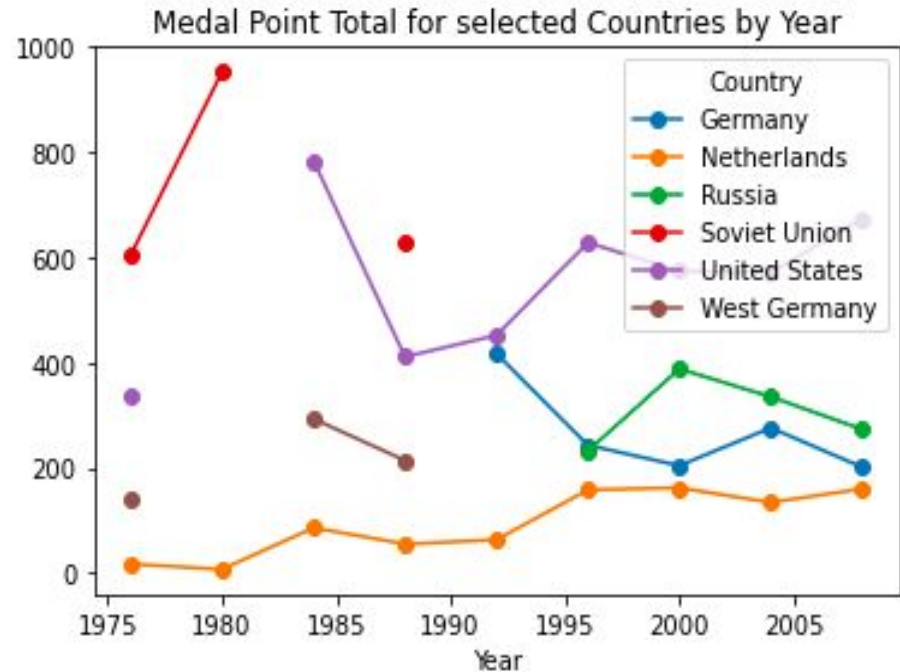
# Country Performance (Weighted by Medal)

These lines show the Medal Point totals for Country by the Year

Interests peaked: United States 1980, Soviet Union 1984 & 1992

Unexpected finds: Netherlands is most consistent country with having a medalist in every Olympic games included in the dataset

We also realized here that changes in political landscape may have an effect on our analysis over time.



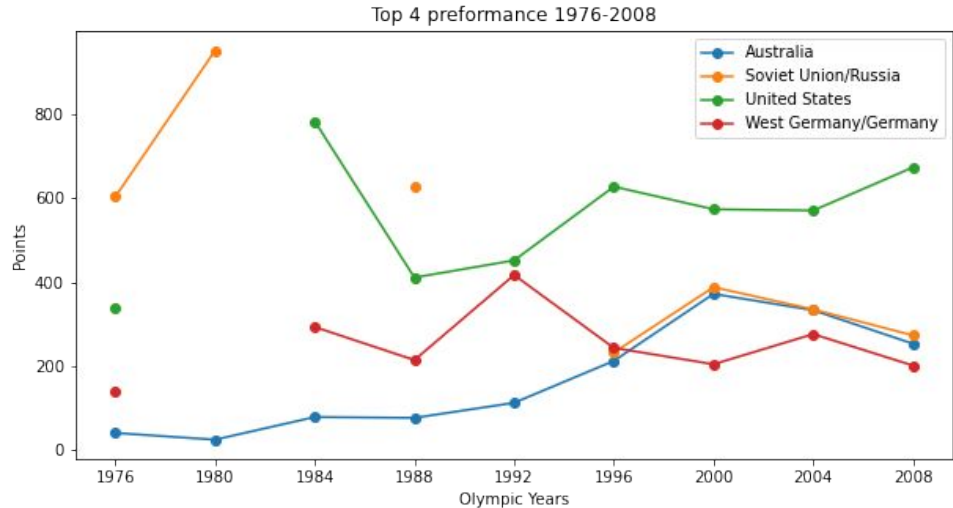
# Change in Performance of Top Four by Olympic Year

Largest increase: Soviet Union(1976-1980)  
+349 points

Largest decrease: United States(1984-1988)  
-373 points

Largest increase over entire period: United States +337 points

Largest decrease over entire period: Soviet Union/Russia -331 points

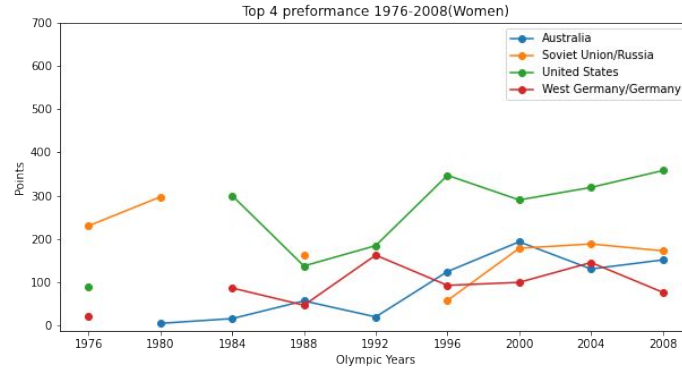
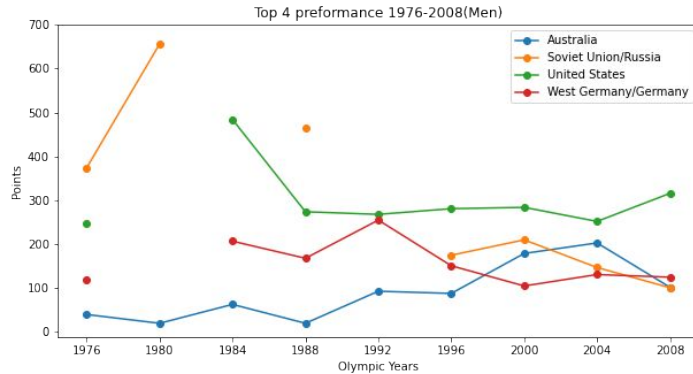


# Top 4 Performances by Men and Women Events

The United States after 1988 stabilized in men's events while Women's performances saw improvement of 221 points

Soviet Union/Russia decline 273 points in Men's and 58 points in Women's

West Germany/Germany both sets of events experience similar change performances

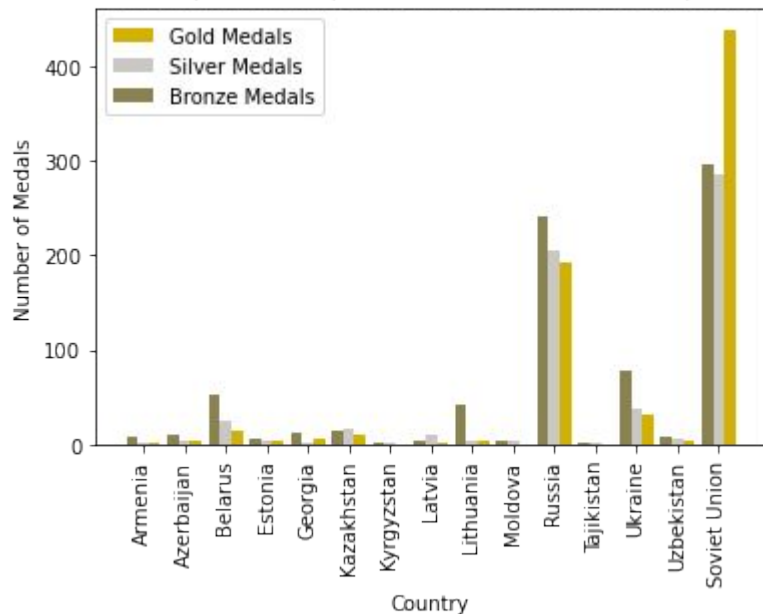




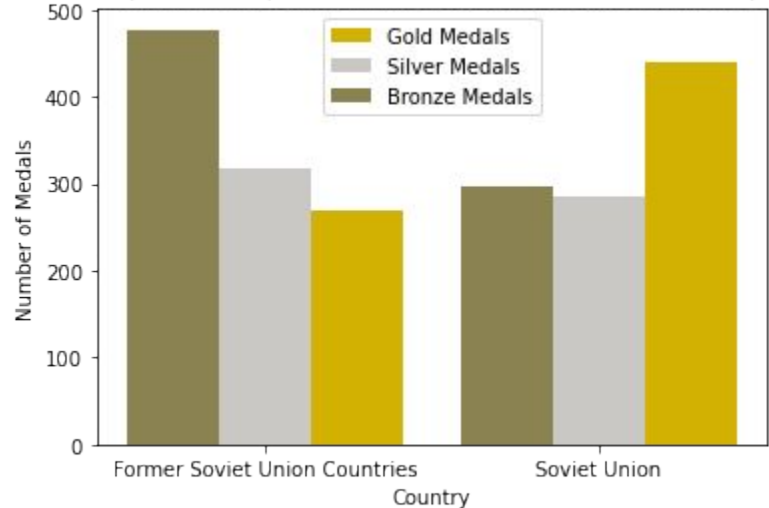
# Comparing the Results of Countries Pre- and Post- Extreme Regime Changes - Soviet Union

This section compares medal wins of the 15 former Soviet countries when they competed as individual countries to those of the Soviet Union as a whole (before the Soviet Union collapsed). Note: Turkmenistan is not pictured since as of 2008, they have not won any medals at the olympics.

Soviet Union (1976-1992) vs Former Soviet Countries (1996-2008)

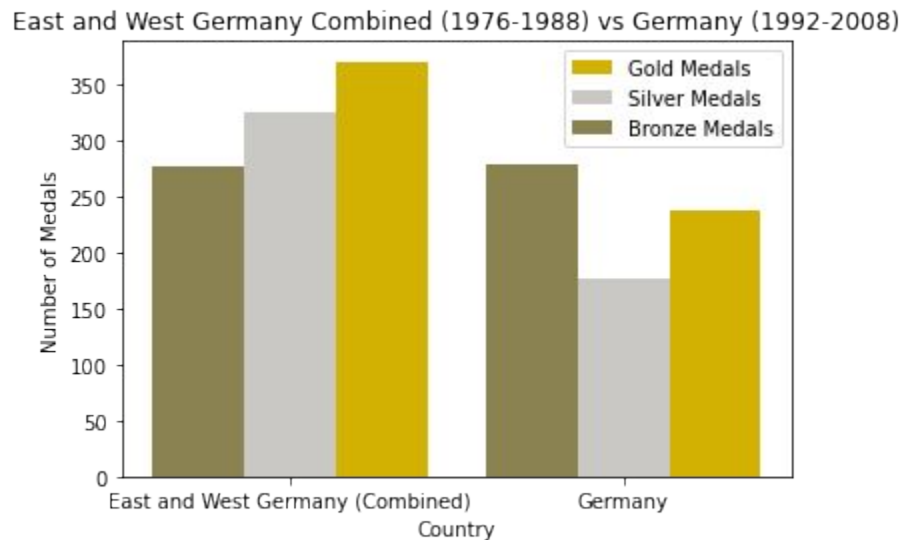
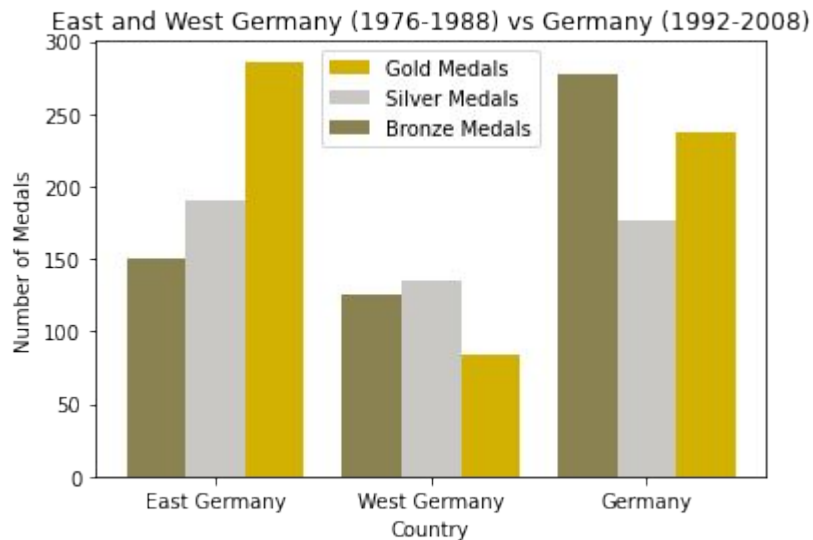


Soviet Union (1976-1992) vs Former Soviet Countries Combined (1996-2008)



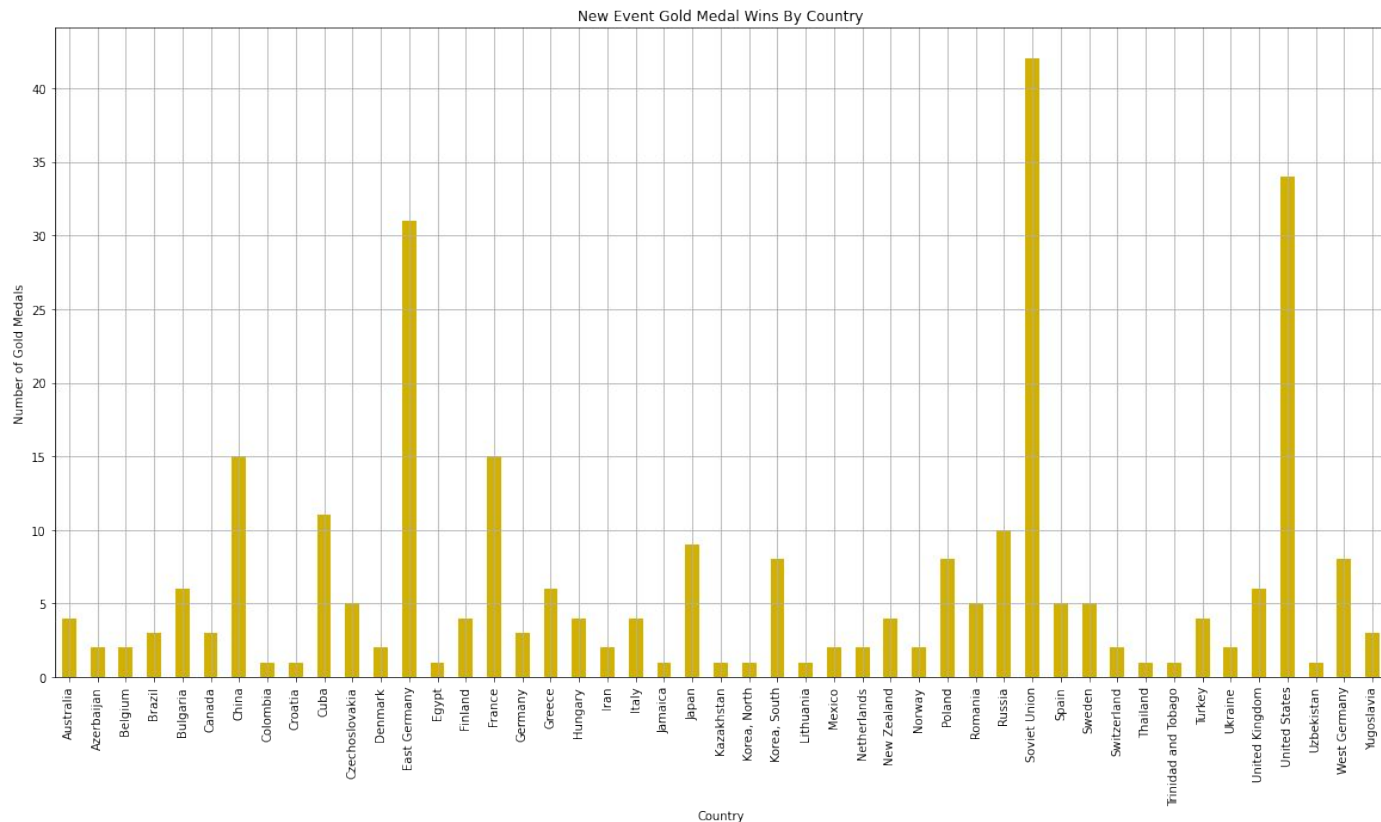
# Comparing the Results of Countries Pre- and Post- Extreme Regime Changes - Germany

This section compares medal wins of East and West Germany when they competed as individual countries to those of Germany as a whole after unification in 1990. East Germany was the smaller of the two pre-soviet collapse Germanys, but they won more medals overall than the larger West Germany.



# Top Performers the Year the Event is Introduced

This section looks at every event the year it was introduced (counting existing events as 1976) and returns the country that won the gold medal for that event. It then compares the countries to each other to see which countries do the best when the event is new to the olympics.



# Gender Comparison

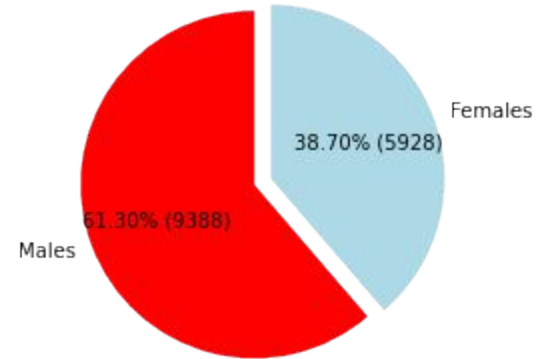
These pie charts show the gender distribution for all participants. Males make up around 60% of all the contenders and females make up the rest of the 40%.

The second charts show only the first time participant for each gender.

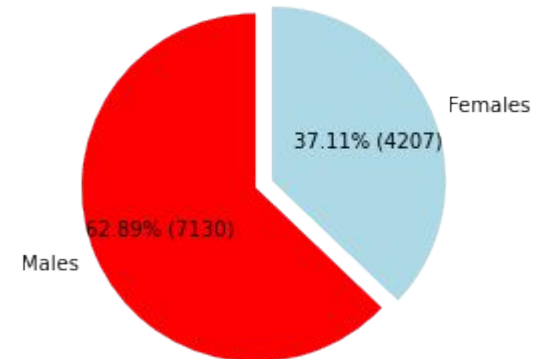
Around 30% of the females participated only once.

Around 25% of the males participated only once.

Gender Comparison (15316)



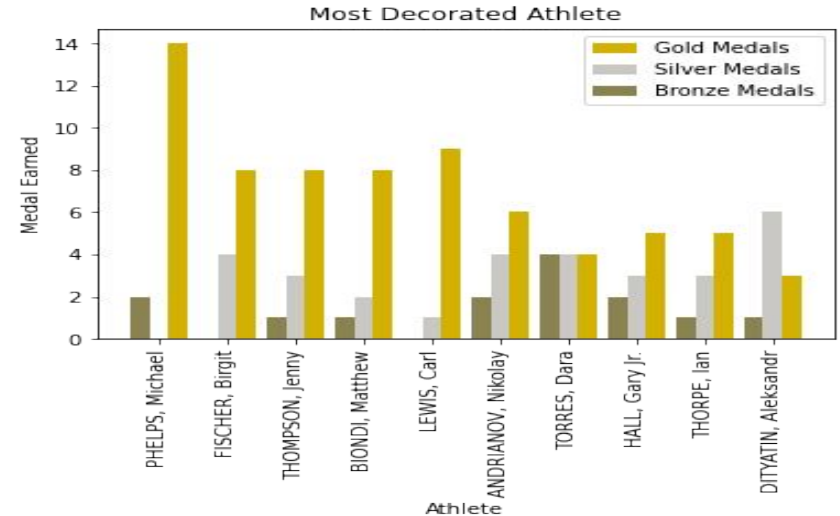
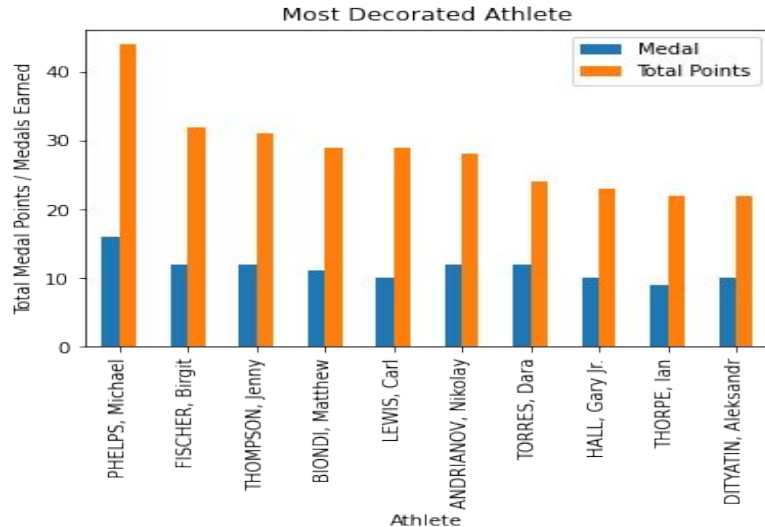
Gender Comparison (11337)



# Most Decorated Athlete

These graphs shows the most decorated athlete for all participant across all sports

Getting more medals doesn't always equal to more points(Lewis vs Andrianov)

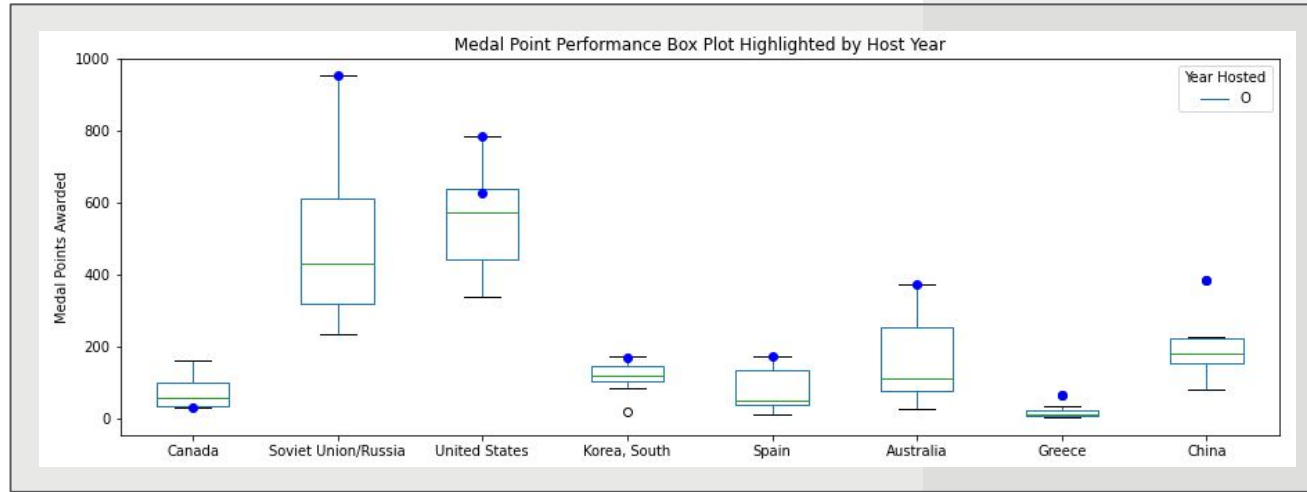


# Home-Field Advantage

How do countries perform when they are hosting the Olympics?

With the exception of Canada (Montreal - 1976), every Host country had their highest medal point total the \*year/s they hosted.

\*The United States had their second highest point total when they hosted again in 1996.



Country	Year	Vs Avg
Canada	1976	-60%
Soviet Union/Russia	1980	96%
United States	1984	42%
Korea, South	1988	48%
Spain	1992	135%
United States	1996	13%
Australia	2000	123%
Greece	2004	261%
China	2008	93%

# Using Geolocation to Visualize Medal Performance



# Post Mortem (initial thoughts)

- While the dataset only included 9 Olympic games, the data set was extremely detailed. In retrospect we could have grouped the dataset by event/sport categories and still been able to provide the same analysis. In a way our original dataset was too detailed.
- Our dataset only included Medal Winners. Further insight can be gained when considering a country's overall participant count. (eg. Medal Count vs Participants)
- Using the results for 2016 and 2020 Olympic Medalists, we have a potential test set to compare with our insights.



## Open-Floor Q&A

