

Exploratory Data Analysis of 120 Years Of Olympic History

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1.0. Introduction:

The Kaggle dataset that we have selected can be found in https://www.kaggle.com/heesoo37/120-years-of-olympic-history-athletes-and-results?select=athlete_events.csv Within this page you can find the .csv file of `athlete_events.csv`.

2.0. Analyses:

2.1. Summer and Winter Seasons of Olympics:

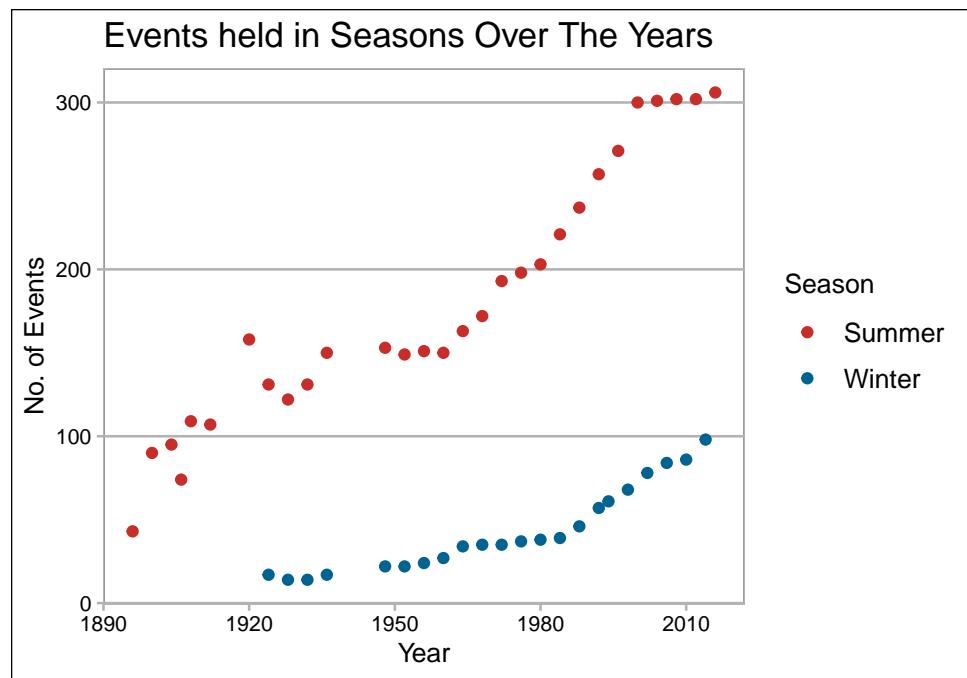
- Till 1992 , Summer and Winter games were held in same year.After that seasons were divided such that it will occur on a four year cycle.
- Total 29 Summer Olympics and 22 Winter olympics were held during 1896-2016.

Following are the 5 most participated sports in *Winter Season* and *Summer Season* :

Winter	Count	Summer	Count
Cross Country Skiing	9133	Athletics	38624
Alpine Skiing	8829	Gymnastics	26707
Speed Skating	5613	Swimming	23195
Ice Hockey	5456	Shooting	11448
Biathlon	4893	Cycling	10859

2.2. Variation Of Events in Summer and Winter Seasons Over The Years:

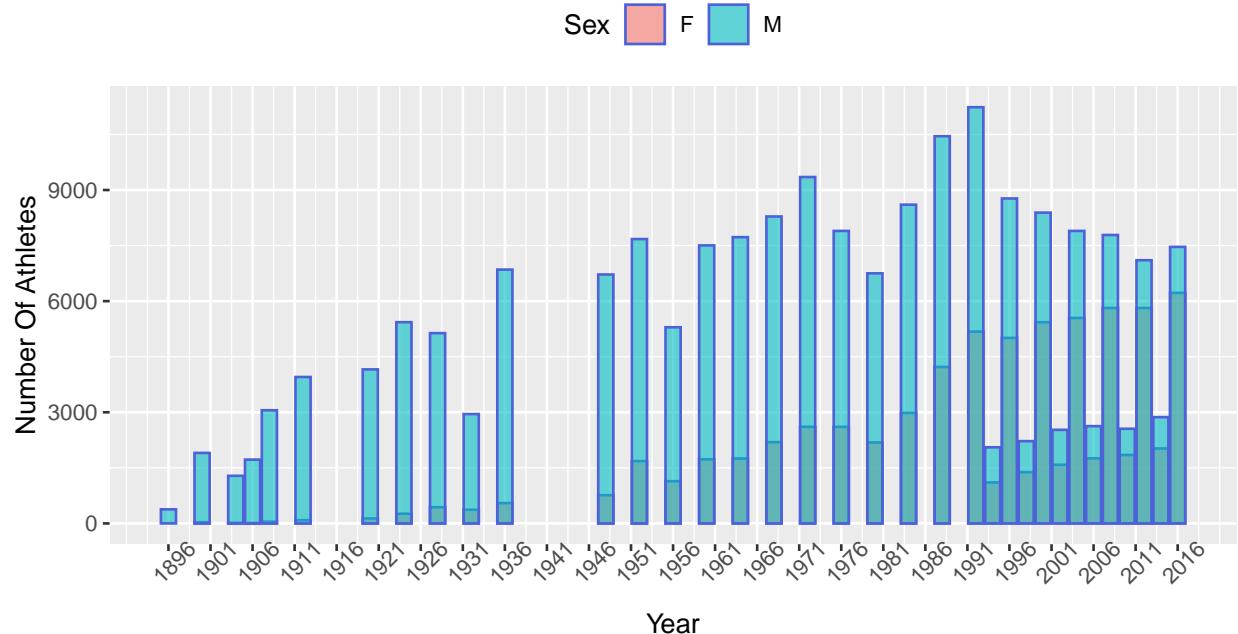
- First Summer Olympic was held in 1896 with 9 sports with 43 events. Count reached to 34 sports with 306 events in 2016.
- Winter Olympic started in 1924 with 10 sports with 17 events and in 2014 15 sports with 98 events were played.



2.3. Number of Athletes Over The Years:

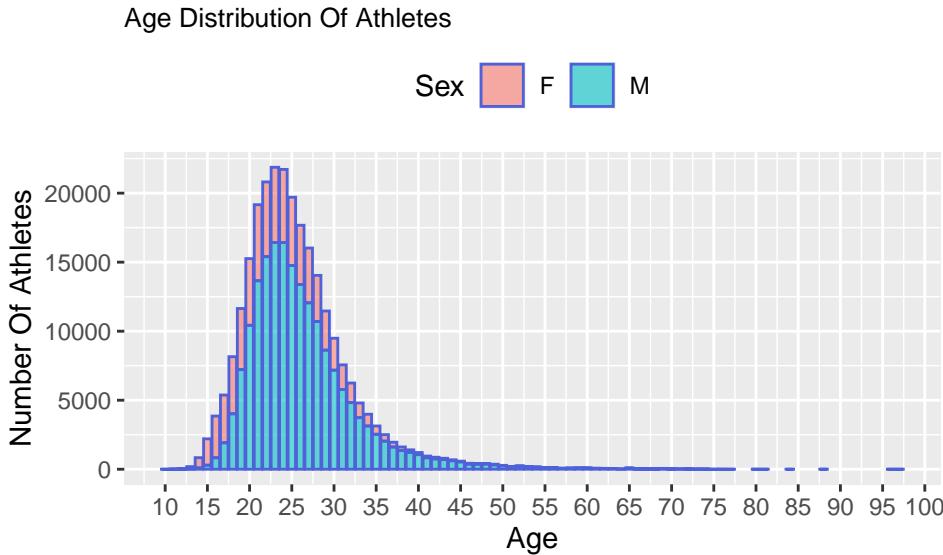
The bar chart depicts the count of male and female athletes throughout the Olympics. It shows that the number of athletes *increased* over the years, however, Male rate had very notable growth than female. From beginning to 1940, Female athletic had very lower rate at that time but over the years this data reached a remarkable value.

Olympic Years and Number of Athletes



2.4. Age Distribution Of Athletes:

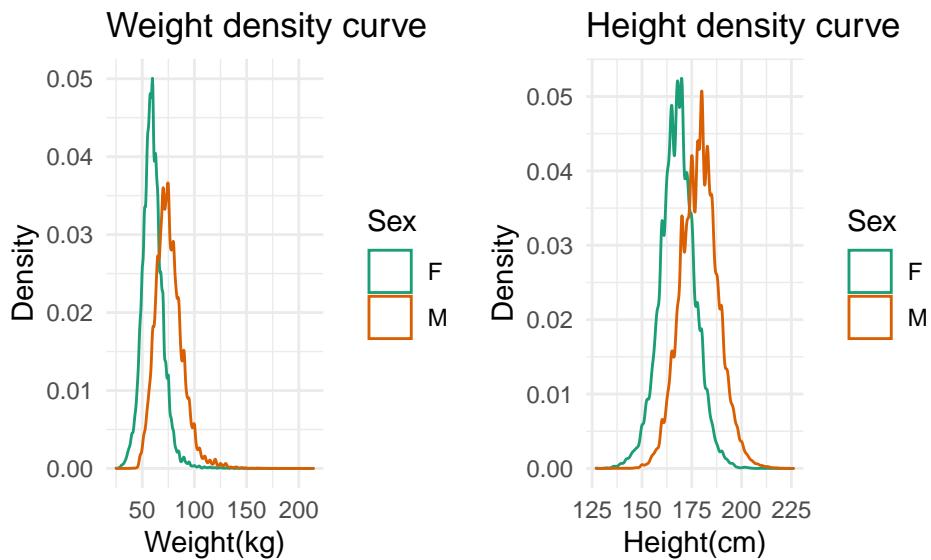
The histogram illustrates the count of male and female athletes according to their age in Olympic history. It is quite clear from the graph that majority of the participants were between age group 20 to 30 years , with greater proportion of men then women. Athletes below 18 years had more females than males.



2.5. Weight & Height Distribution Among Genders:

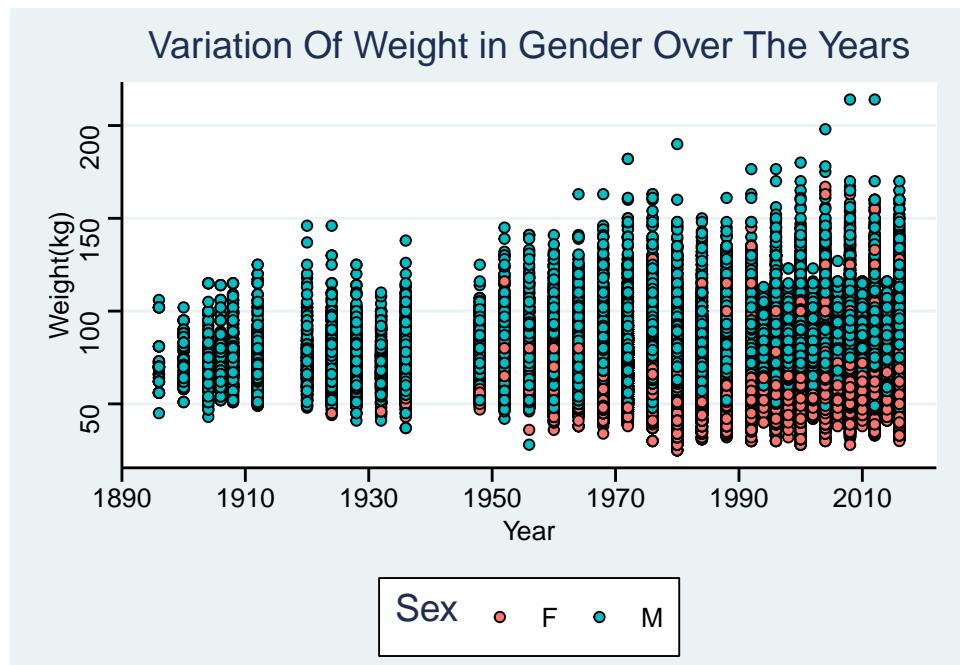
- The mean height for male athletes is 178.86 and for female athletes it is 167.84.

- The *maximum height* of 226 has been for *Basketball*.
- The *mean weight* for *female athlete's* is 60.02 while that of *male athlete's* is 75.74.
- The *maximum weight* for male athlete was 214 and it turned out to be for *Ricardo Blas, Jr.* who played *Judo* in *Judo Men's Heavyweight* Event twice in Olympics.



2.6. Variation Of Weight in Athletes Over The Years:

The maximum Weight of athletes remained below 150kg before 1964, after 1964 many outliers can be seen for their weight and those Sports are *Athletics, Basketball, Judo, Weightlifting, Wrestling* which is again justified.

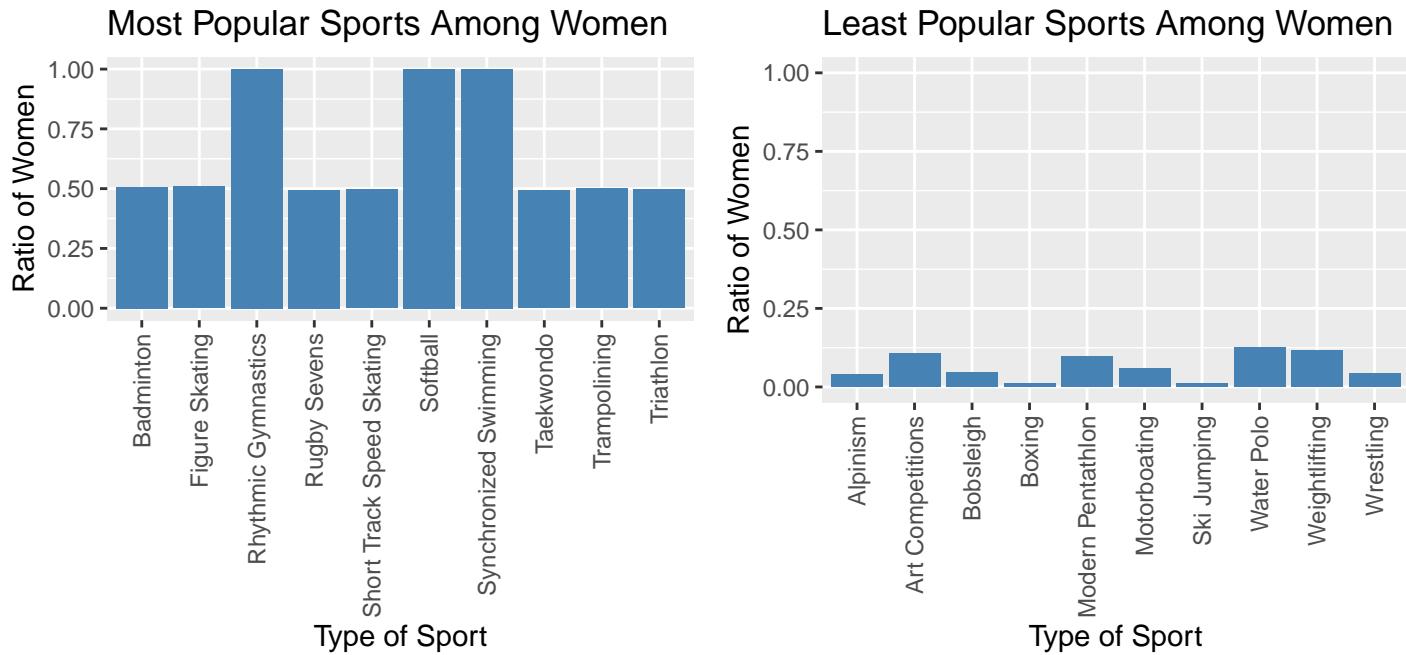


2.7. Team & Gender Distribution of Athletes:

1920 was the first year in Olympics that both genders were allowed to participate for different sports, and over the years the number of female participants grew. *2012 London Olympics* was the first time every participating team had a female athlete representing their country.

2.8. Women In Sports:

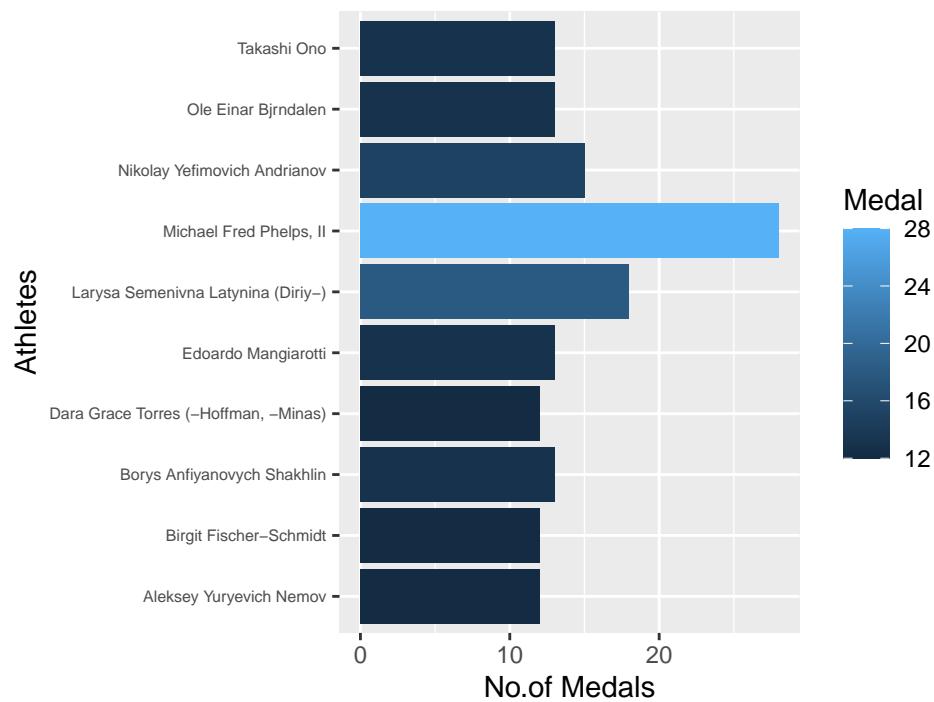
The following graphs take a deeper dive into the participation *percentage of female athletes* in the Olympics by sports. The first graph shows the *top ten* sports in which female athletes participated in at the Olympics. While, the second graph shows the *bottom* or least number of female participants in sports at the Olympics. The sports with zero female athletes was omitted from this graph.



2.9. Greatest Olympic Athlete Of All Time:

There were many athletes who took part in more than one Olympic events and won many medals. From the below plot its evident that *Michael Fred Phelps, II* is the all time greatest athlete with 28 medals.

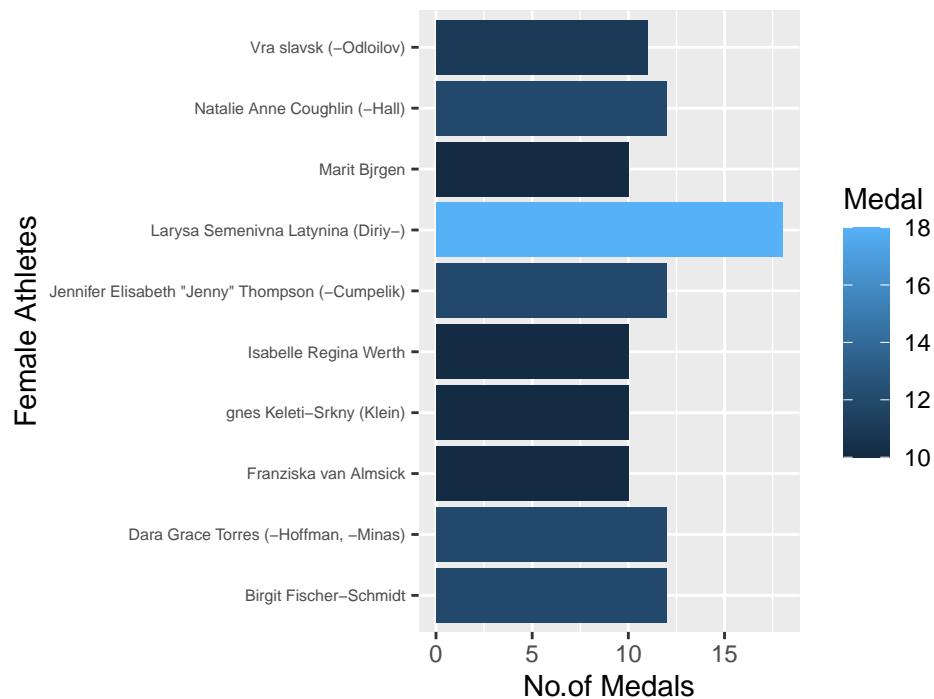
The Greatest Olympic Athletes



2.10. Greatest Female Olympic Athletes Of All Time:

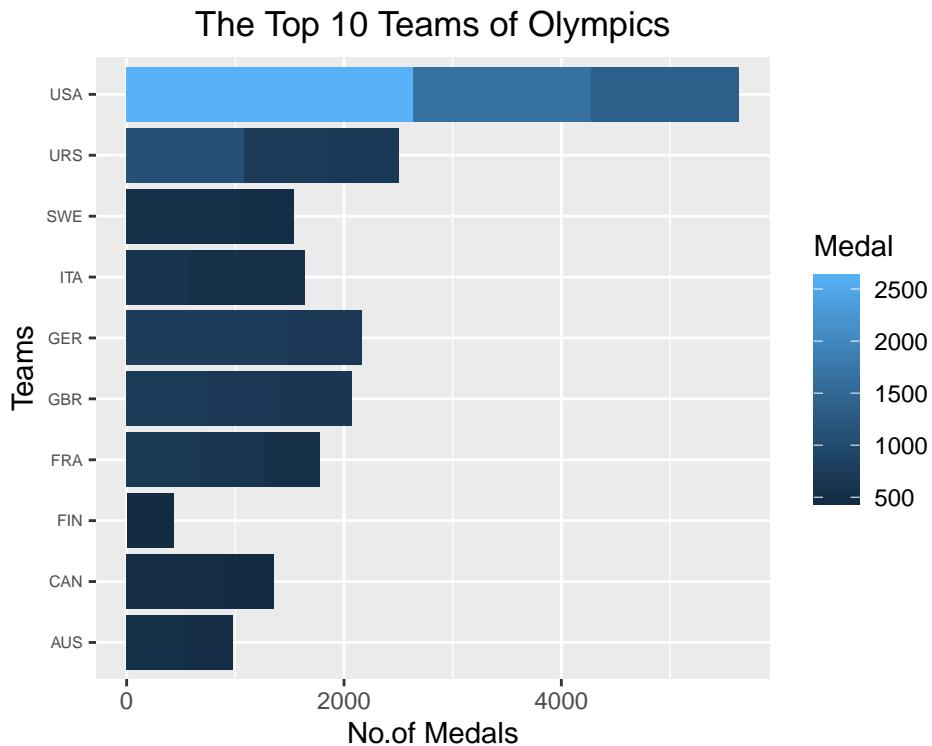
From the below plot its evident that *Larysa Semenivna Latynina (Diriy-)* is the all time greatest female athlete with 18 medals.

The Greatest Female Olympic Athletes



2.11. Top 10 Teams of Olympics:

From the below plot its evident that *USA, URS and GER* being the 1st,2nd and 3rd teams who won maximum number of medals.Followed by *GBR,FRA,ITA* being on 4th,5th and 6th position.*SWE,CAN,AUS,FIN* were on 7th,8th,9th and 10th positions respectively.



3.0. Conclusion:

In conclusion the Olympic data set was used for the following key findings -

- The top five most participated sports during the Summer olympics are *Athletics, Gymnastics, Swimming, Shooting and Cycling*. The top five most participated sports during the Winter season are *Cross Country Skiing, Alpine Skiing, Speed Skating, Ice Hockey and Biathlon*.
- Over the years the number of events have increased for both summer and winter session but the increase in events in summer Olympics are way greater than winter Olympics.
- Over the years the participation of female athletes in Olympics has increased dramatically.
- Highest number of athletes participating in the Olympic games belong to the age bracket of 20 - 30 years.
- Average height for male athletes is 178.86cm and for female athletes is 167.84cm in Olympics and it has been seen that Basketball athletes are the tallest.
- Average weight for female athletes is 60.02Kgs while that of male athletes is 75.74Kgs.Till 1964 the max weight of athletes were below 150kgs after that it have be seen that the athletes are becomes heavier and reached a highest weight of 214 kgs.
- The most popular sports among female athletes are Rhythmic Gymnastics,Synchronized Swimming, softball whereas Boxing and Ski jumping are the least popular sports.

- *Michael Fred Phelps*, II is the greatest male athlete with total 28 medals in Swimming. And *Larysa Semenivna Latynina* is the greatest female athlete with total 18 medals in Gymnastics.
- United States of America, Union of Soviet Socialist Republics and Germany are the top three country with most medals won in the Olympics.

4.0. References:

- Dataset: [https://www.kaggle.com/heesoo37/120-years-of-olympic-history-athletes-and-results?
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