

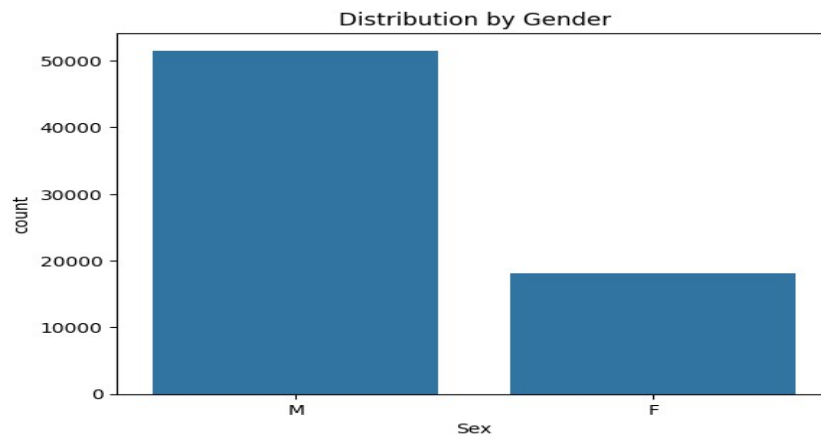
Olympic Dataset EDA - Summary of Findings

1. Dataset Overview

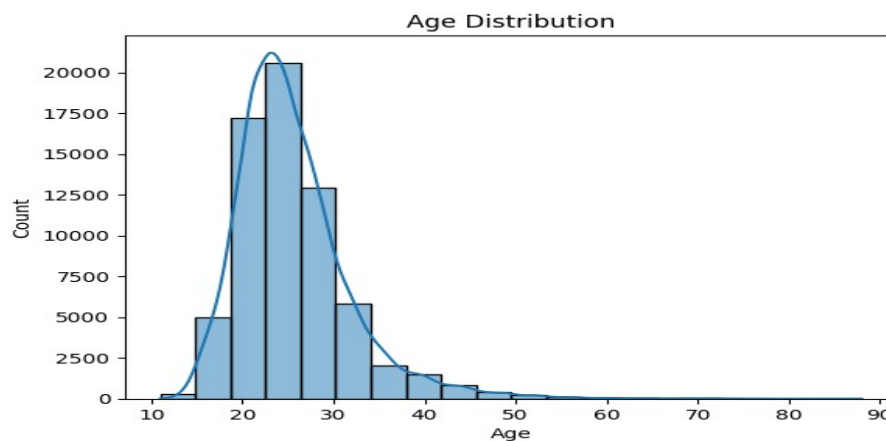
- Explored columns like Name, Age, Sex, Height, Weight, NOC, Year, Season, Sport, Event, and Medal.
- Identified and dropped rows with missing values in crucial columns like `Medal` and `Height`.
- Removed duplicate rows for cleaner data.

2. Univariate Analysis

- **Gender Distribution:** Count plot showed more male athletes than female.



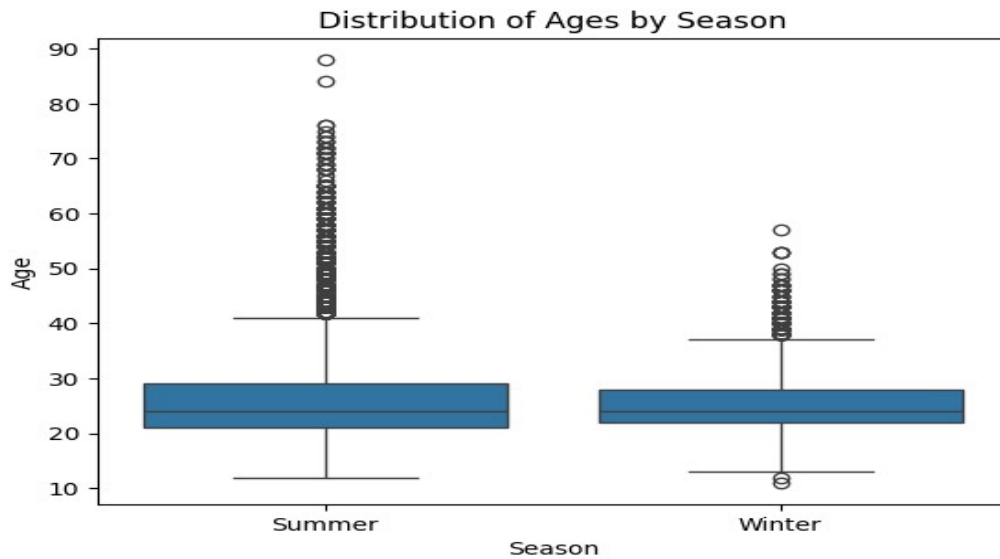
- **Age Distribution:** Histogram revealed that most athletes were aged between 20–30.



- **Distribution of Ages by Season**

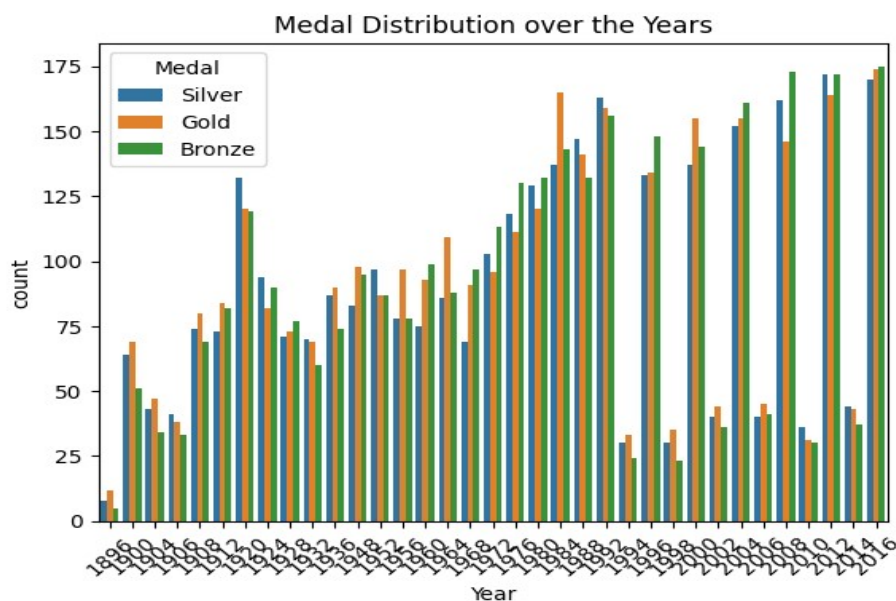
A boxplot was used to compare the age distribution of athletes in the **Summer** and **Winter** Olympics.

The **Summer season** shows a **wider age range**, while the **Winter season** participants tend to be slightly younger and more tightly grouped in age.



Bivariate & Multivariate Analysis

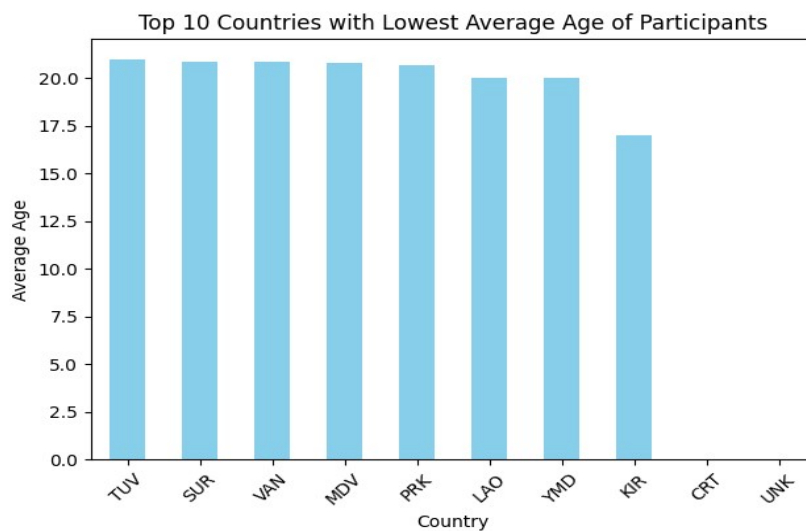
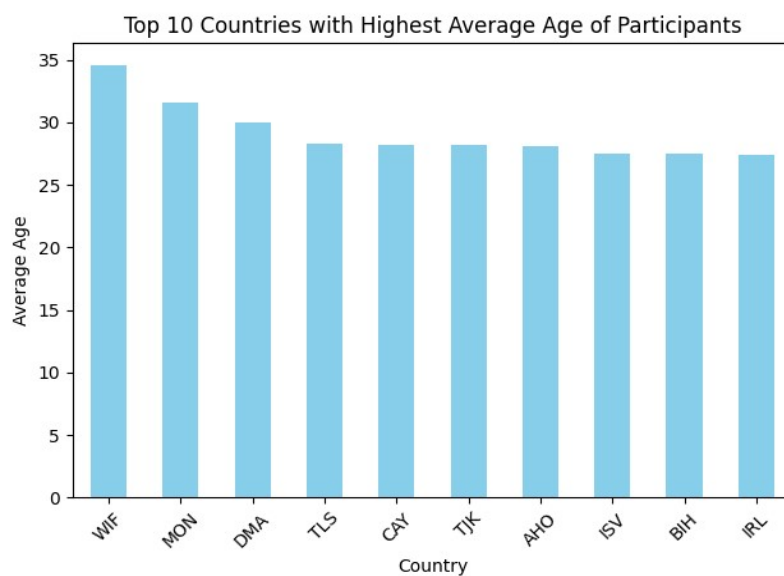
- **Medal Distribution Over Years:** Count plot showed USA dominated in medal counts.



- **Average Age Per Year:** Line graph showed average age trends across Olympics.
- **Height Median by Sport:** Basketball had the tallest athletes (median = 190 cm).
- **Average Weight by Sport & Gender:** Weight varied significantly by sport and gender.

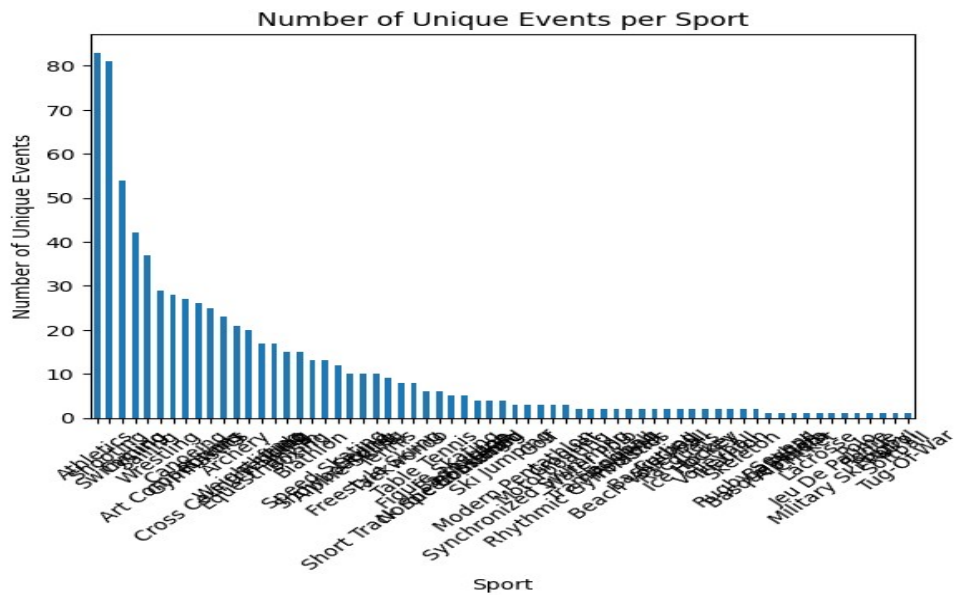
4. Country-wise Insights

- **Most Gold Medals:** USA won the highest number of gold medals (747).
- **Participant Gender Count:** Grouped by NOC and Sex.
- **Average Age by Country:** Highlighted countries with oldest and youngest participants.

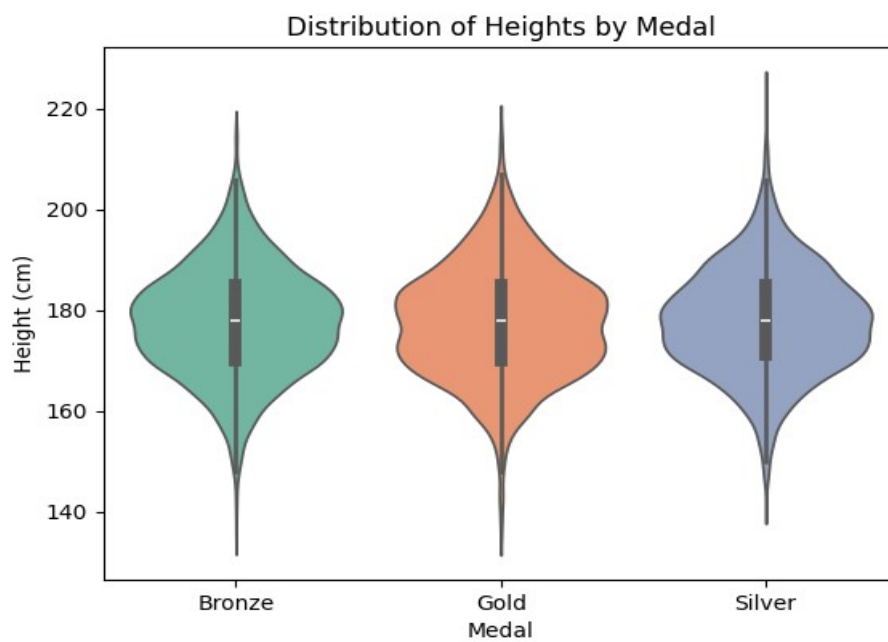


5. Sports-wise Trends

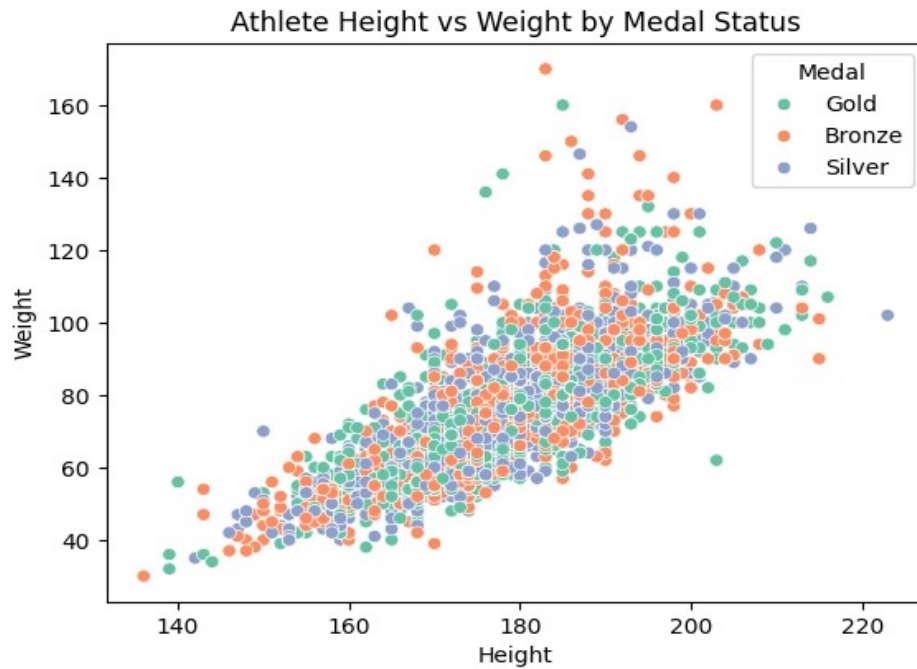
- **Unique Events per Sport:** Athletics had the most number of unique events.



- **Violin Plot by Medal:** Height distribution per medal type.

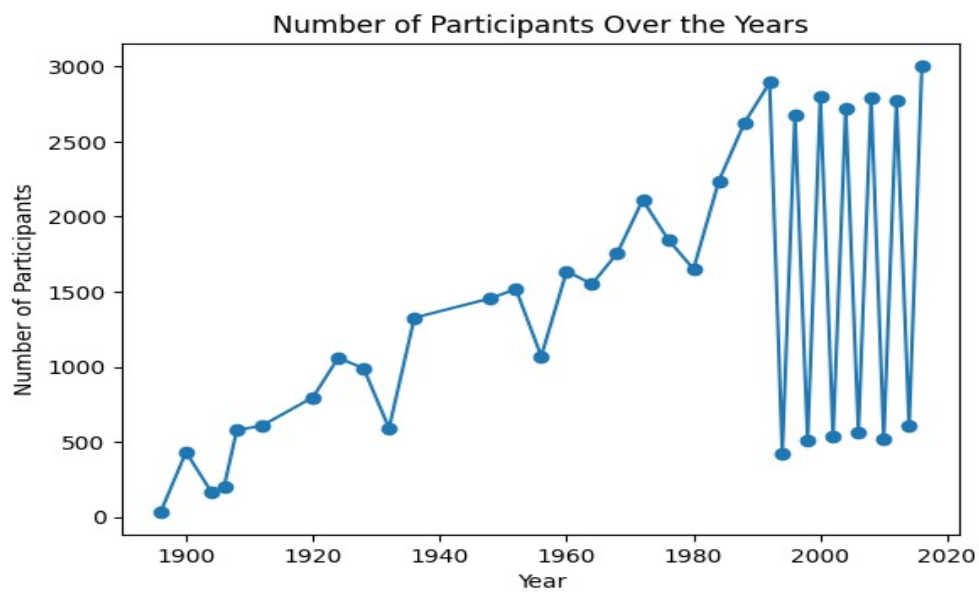


- **Scatter Plot of Height vs Weight:** Colored by medal type.

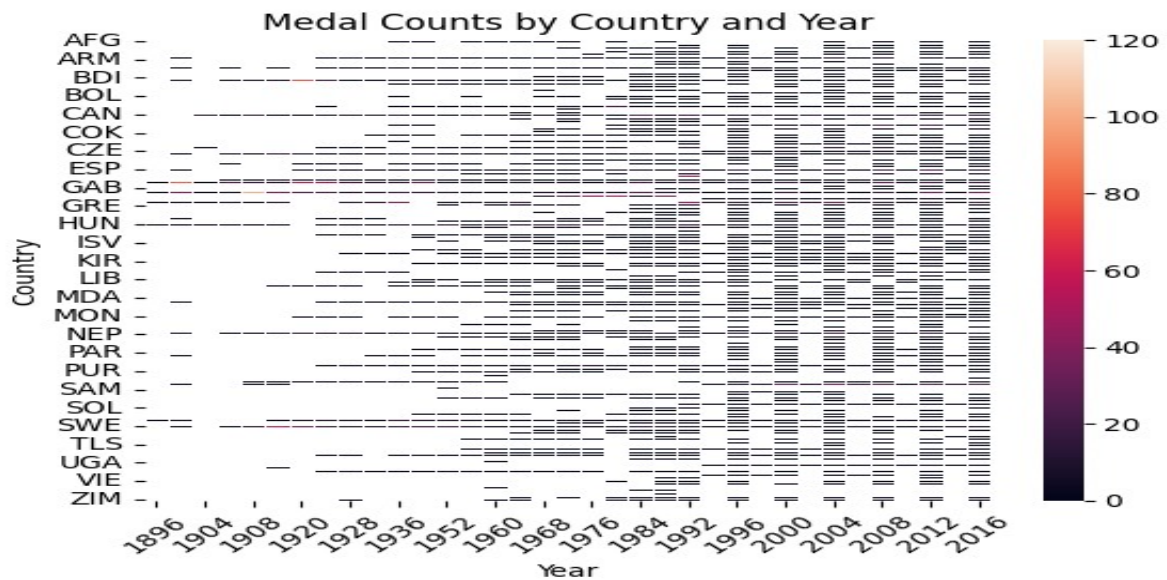


6. Trends Over Time

- **Line Plot of Participants:** Showed rising trend in number of athletes.



- **Heatmap of Medals by Country & Year:** Highlighted medal dominance by top countries.



7. Conclusion

- Male athletes dominate in participation.
- Age and physical attributes vary by sport and medal status.
- USA, Russia, and Germany lead in medals historically.