



Northeastern University

**COMMUNICATION AND VISUALIZATION FOR DATA ANALYTICS
ALY 6070 - CRN 21600**

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TITLE: Winter Olympics Analysis (R Shiny)

TABLE OF CONTENTS

CONTENT	PAGE NUMBER
BUSINESS QUESTIONS & INTERPRETATIONS	3 - 8
REFERENCES	9

Business Question –

- **What are the demographics of the Winter Olympic Athletes?**

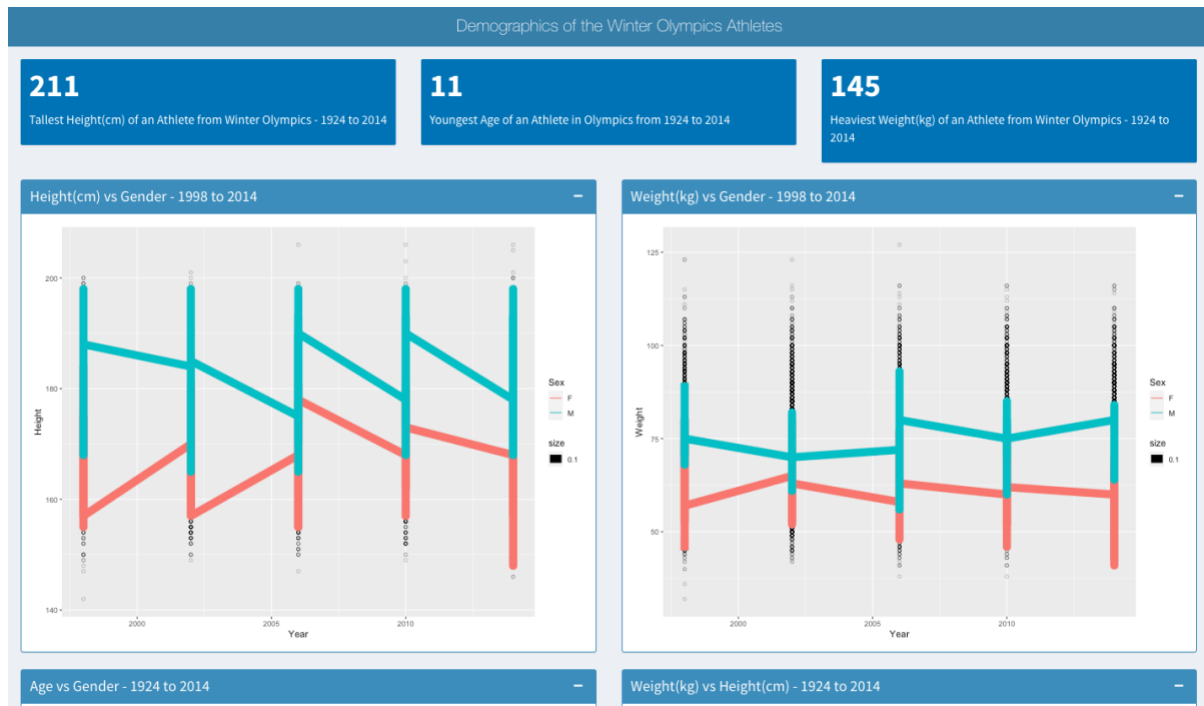


Figure 1.1 – Demographics of the Winter Olympics Athletes

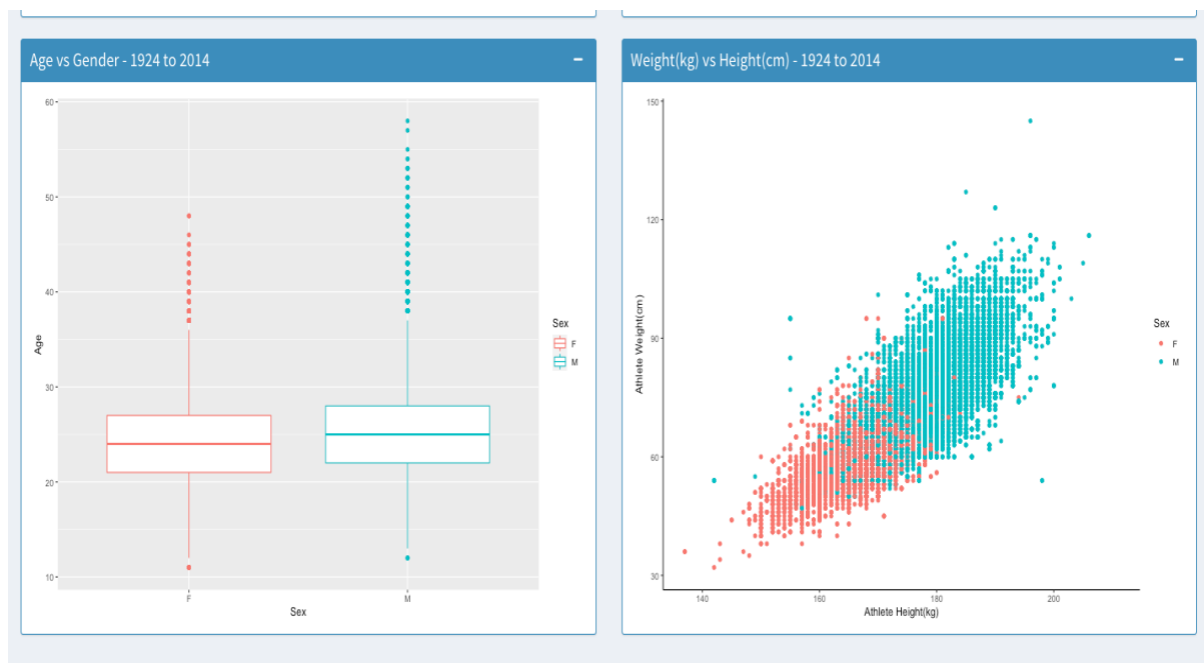


Figure 1.2 – Demographics of the Winter Olympics Athletes

The **Winter Olympics 1924 to 2014** dataset was picked from Kaggle. There were multiple findings from this data set that were as follows:

- The tallest athlete from the Winter Olympics from 1924 to 2014 was of the height 211cms.
- The youngest athlete that participated in the Winter Olympics between 1924 to 2014 was 11 years old.
- The athlete that weighed the heaviest from Winter Olympics from 1924 to 2014 was of 145kgs.
- From the Height(cm) vs Gender (1998 to 2014) graph, we find that the male athletes were taller than female athletes and the male athletes heights were almost similar for the 5 quadrennially Winter Olympics events whereas the female athlete heights fluctuated in the 5 Winter Olympics events when the year 2014 had the shortest female athlete.
- From the Weight(kg) vs Gender (1998 to 2014) graph, we find that the male athletes were heavier than the female athletes. Both male and female athletes' weights fluctuated in the 5 quadrennially Winter Olympics events. Comparing the male athlete weights, the year 2006 had the heaviest athlete and the year 2002 had the lightest athlete. Comparing the female athlete weights, the year 2014 had the heaviest athlete and the year 2002 had the lightest athlete.
- From the Age vs Gender (1924 to 2014) graph, we observe that the average male athletes' age were higher than the average female athletes' age.
- From the Weight(kg) vs Height(cm) for the years between 1924 and 2014, we observe that the female athletes' height and weight were lesser compared to that of the male athletes' height and weight.

Business Question –

- **How many athletes participated in different disciplines?**
- **How many events take place in each discipline of Winter Olympics 2022?**
- **List down top 10 countries who won the highest number of medals in Winter Olympics 2022?**



Figure 2.1 – Discipline vs Events

The **Winter Olympics 2022** dataset was picked from Kaggle. There were multiple findings from this data set that were as follows:

- The first bar chart displays the total number of athletes who have participated in all the disciplines that took place in the Winter Olympics 2022. We can clearly observe that Ice hockey has the highest number of participants as compared to all other sports as this game is quite popular in most of the countries whereas skeleton has the lowest number of participants.
- The second bar chart illustrates the total number of events that took place in each discipline, and it is clearly seen that highest games were played in the Curling discipline whereas the lowest number of events took place in Badminton.
- The scatterplot displays the data of top 10 countries who won the highest number of medals in the Winter Olympics 2022. In this Norway is leading the charts with 37 medals followed by ROC and Germany.

Business Question –

- Which country has won the most medals while referring to the gender in order to introduce sports apparel advertisements accordingly?

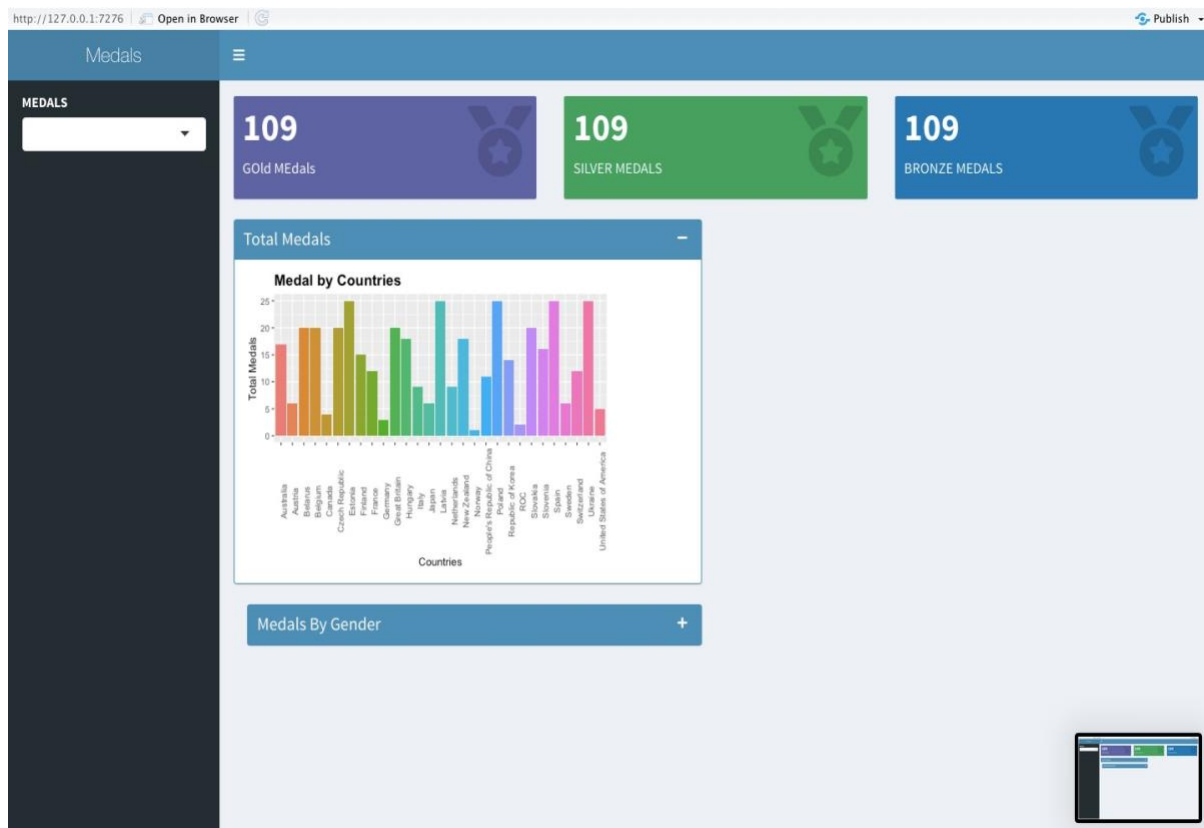


Figure 3.1 – Medals Information

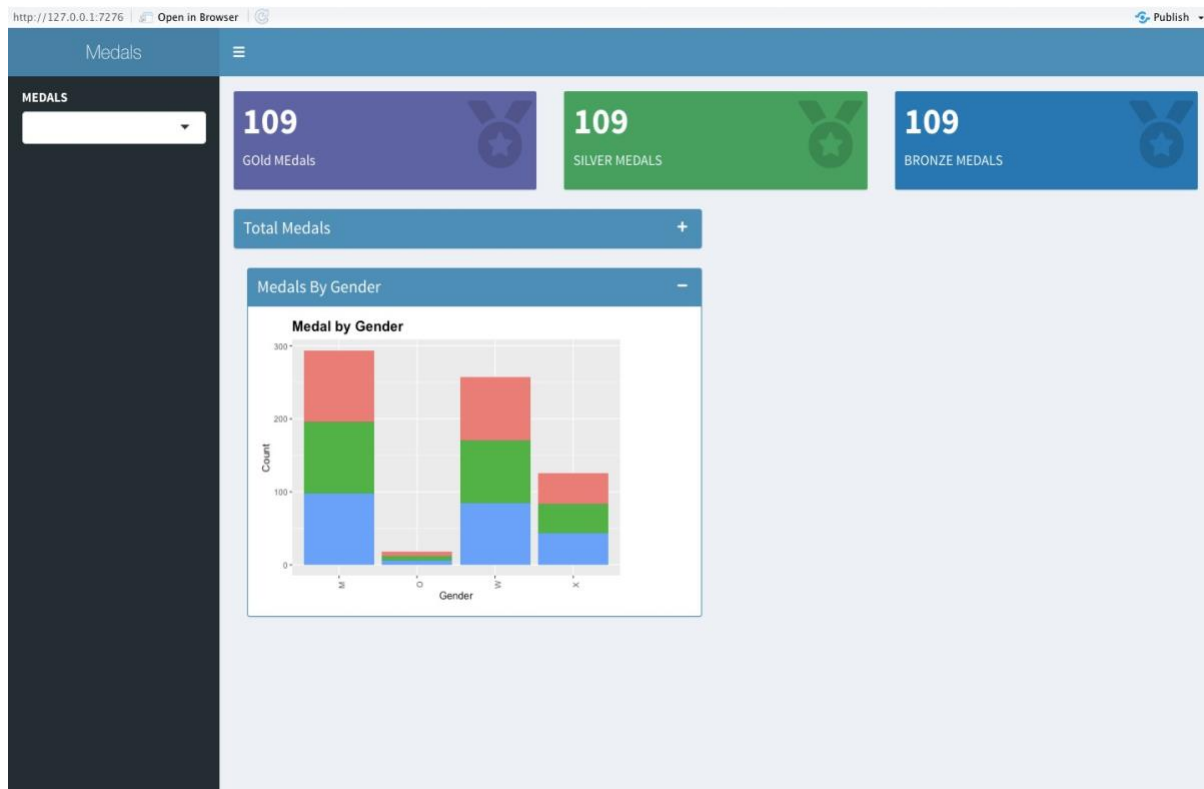


Figure 3.2 – Medals Information

The **Winter Olympics 2022** dataset was picked from Kaggle. There were multiple findings from this data set that were as follows:

- Looking at the visualizations, we can see that Norway has won the most medal in winter Olympics 2022, followed by ROC, Germany, Canada and USA.
- Thereby, these will be the target countries for our apparel advertisements for the next 4 years.
- As to look for the gender allocation of medals won, we can see that men won more medals than women and mix-doubles played in the Olympics. Since there is not a huge difference between men and women. We must focus on advertisements that have both men and women to make the maximum sales of our products.

Business Question –

- **How many athletes won each medal on each day for several fields such as medal type, athletes' sex, nation, and discipline?**

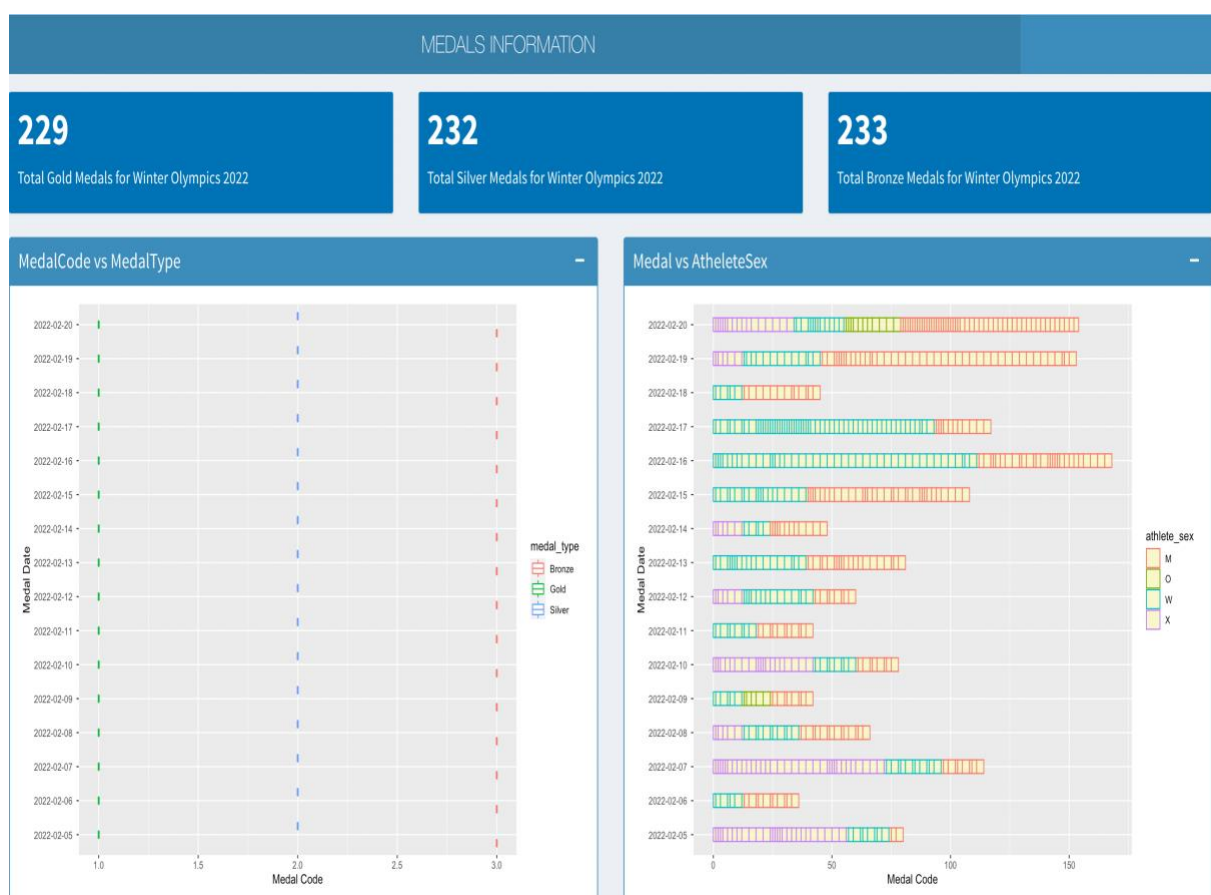


Figure 4.1 – Deeper understanding of the medal's information



Figure 4.2 – Deeper understanding of the medal's information

The **Winter Olympics 2022** dataset was picked from Kaggle. There were multiple findings from this data set that were as follows:

- I used medal type to fill the field in the first plot between medal date and medal code, showing the medal (gold, silver, or bronze) awarded each day. According to my calculations, athletes earned all three types of citations every day from February 5th to February 20th, 2022. Every day, all three kinds of medals are won.
- The second plot is about medal date and medal code, with athlete sex filling in the color, and it shows that on February 16th, 2022, both women and men earned more medals.
- The countries that won medals each day are represented in the third plot. Norway earned more gold medals between February 5th and February 20th, while ROC won Silver Canada earned more bronze medals than silver.
- Canada won more bronze medals than silver.
- The fourth plot depicts the day's medal-winning sports, such as Ski Jumping, Speed Skating, Short Track Speed Skating, etc.

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