Design Summary

The interactive data visualization interface I designed is an Olympics data analysis page based on the dataset "**120 years of Olympic history: athletes and results"** on Kaggle. The interface includes a main Page

Main Dashboard

The main page is used to display the overall data analysis. The top filters can be used to allow users to select their interested parts of data (Olympic seasons, athlete gender, region and year) for further visualization and analysis. The year filter is specifically set to a slider range filter so the user can visualize data in different time periods (eg. 1970 – 1990) for better analysis.

A choropleth map with specific color bin is presented for a clear overview of the medal distribution across the globe. This design is beneficial for user to explore countries with more winning medals directly. They can interact with the map by clicking those countries to view their' medal counts by type (gold, silver & bronze). Then, the user can further click on a link of the pop-up window to automatically trigger the top region filter.

The last part of the dashboard includes the total athlete counts to visualize the of athletes' gender proportion over the years. It also includes the total event counts on different Olympic seasons for user to understand the increasing complexity of Olympic events. Moreover, the top medalists and sports events by medal count are displayed for user to explore competent athletes and sport events of certain countries.

Athlete Data Overview

On click of the athlete count plot, the user will be navigated to view a series of athletes' data including their average age, height, weight and gender distribution. This design is to give a clear visualization for user to analysis how these physical factors can affect the athletes' performances. Furthermore, there is a filter for user to choose between displaying all athlete's data and medalists' data only. This design is to better visualize the medalists' physicals condition among all athletes.

Olympic Result by Sport / by Medalist

The main dashboard only has limited space to display the top Olympic result by sport events and medalists. Therefore, the users can further explore the data on click of these plots, and they will be automatically navigated to another tab that shows the complete data and allows data searching.

All plots (excluding pie chart and choropleth map) are available for users to zoom in/out, compare values, and download by just a click on the top right menu.

Appendix

1. Olympic dataset source: https://www.kaggle.com/datasets/heesoo37/120-years-of-olympic-history-athletes-and-results/data
   This source is found on Kaggle and I used all two datasets provided in this source to achieve my data dashboard.

2. Medal icon: https://fontawesome.com/
   I use the medal image on this website as the icon of the Olympic medal when I generate the total medal count in my dashboard.

3. Dark-themed map background: https://carto.com/basemaps
   I refer to the basemaps provided by CARTO to generate my dark-themed world map using Leaflet.

4. Convert country names to iso3c : https://www.rdocumentation.org/packages/countrycode/versions/1.6.0/topics/countrycode
   Country data: https://r-spatial.org/r/2018/10/25/ggplot2-sf.html
   As my dataset doesn't contain longitude and latitude to plot a world map, I use
5. Flex component as content filter: https://developer.mozilla.org/en-US/docs/Web/CSS/flex
   There are multiple filters in my dashboard and I structure them by using flex component.
6. Adding action button to switch tab: https://stackoverflow.com/questions/37304599/align-actionbutton-in-shiny-app
   I refer to this page and design an action button to switch between tab
7. Convert ggplot2 to plotly: https://www.rdocumentation.org/packages/plotly/versions/4.10.4/topics/ggplotly
   I change all ggplot2 graphs to plotly for better interaction features such as zoom in/out and download function