Paris 2024 Olympic Summer Games Interface: Design Summary

This interactive interface built with R Shiny visualizes data from the Paris 2024 Summer Olympic Games. It allows users to explore key information about participating countries, athletes and events.

Key Features:

1. Global Map with Gender Filter:

A heatmap shows the number of athletes for each country, with darker colors representing more athletes. Users can filter the data by gender (Male, Female, All) to see specific insights for male or female athletes.

2. Country-Specific insights:

Clicking on a country reveals detailed charts, including:

- Events participation pie chart showing the distribution of athletes across various sports for the selected country, providing a clear breakdown of their participation in different events.
- Age distribution histogram showing the age distribution of athletes from the selected country, giving insights into the demographic structure of their Olympic team.
- Time series medals chart showing a timeline of medals won by athletes from the selected country throughout the duration of the Olympics. Each point represents a medal (Gold, Silver, or Bronze).
- Medals distribution heatmap showing a detailed medal distribution by event and medal type, showcasing the events in which athletes from the selected country have excelled.

3. User Interaction:

The interface supports tooltips on all visualizations, providing additional context when hovering over any chart element. For example, the map shows athlete count, the age histogram shows age and density, and medal distribution charts show details about the type of medal and event. Moreover, the "About" section in the bottom-left corner provides users with instructions on how to navigate and use the app. It explains the functionalities of the filter, map, and interactive charts, ensuring that users can easily explore the data.

Design Considerations:

1. Easy to Use: Simple filters and clear visuals make the interface user-friendly for anyone to explore Olympic data.

2. Dynamic Data: Charts update instantly based on the country or gender selected, making the interface interactive.

3. Clear Insights: The design ensures that users can quickly understand the distribution of athletes, their ages, and their performance in the games.

Appendix

Data Reference: https://www.kaggle.com/datasets/piterfm/paris-2024-olympic-summer-games

The interface utilizes two key dataset files, ***athletes.csv*** and ***medals.csv***, which contain detailed information about athletes and the medals won in the Paris 2024 Olympic Games.

1. athletes.csv:

This file includes data such as athlete names, gender, country, events, age, and other personal details. Key columns used in the interface are:

- country_long: Used to identify each country on the map for the heatmap visualization.
- gender: This column is used to enable the gender filter in the interface, allowing users to toggle between Male, Female, and All.
- events: Used in the pie chart to show the distribution of athletes across different events.
- birth_date: Used to calculate the age of athletes for the age distribution histogram.

2. medals.csv:

This file provides data about the medals won in different events, including the type of medal, the event, and the athlete's name. Key columns used are:

- medal_type: Used to display the number of gold, silver, and bronze medals in the medal timeline chart and the medals distribution heatmap.
- medal_date: This column is used to track when medals were won, and it appears in the timeline chart to visualize the progression of medal wins during the Olympic Games.
- event and country_long: These columns help connect the medal information to the specific events and countries, showing where and when athletes won medals.

By utilizing these two files, the interface provides dynamic visualizations and detailed insights into athlete participation and performance during the Paris 2024 Olympic Games.