Tableau Public URL to Visualisation: https://public.tableau.com/views/AustralianAthletes-1900-2024/FIT3179AustralianAthletesDashboard?:language=en-US&:sid=&:redirect=auth&:display\_count=n&:origin=viz\_share\_link

Domain:

The domain of the visualisation will be sports and fitness.

This visualisation focuses on the Olympics, and in particular, the Australian Olympic Athletes performance.

Why:

The visualisation allows viewers to compare athletes' physical metrics with those of the general Australian population and with themselves, highlighting differences and informing discussions on fitness and health benchmarks.

The visualisation also allows viewers to view some interesting stats about who our best Australian athletes are.

The visualisation also helps guide the viewer to see historical trends, such as when Australia hosted the Olympics or when Australian Olympians consisted of females, which may be of interest to the viewer.

Finally, the visualisation also allows viewers to see what our top 5 most participated sports are, what the distribution of male and females are for that, and how many medals we have won consequently and whether there is any correlation.

Who:

With the 2024 Paris Olympics on this year, the target viewers for this visualisation would be the general public who are interested in the Olympics and patriotic about Australia's performance. Anyone interested in Australian athletes, the Olympics and the distribution and performance of males and females in the different sports.

What:

1. Australian Bureau of Statistics (2023). National Health Survey, 2022 | Australian Bureau of Statistics. [online] www.abs.gov.au. Available at: https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey/2022#data-downloads [Accessed 20 August 2024].

Data was tidied and manipulated in order to determine the average weight and height of males and female Australians.

2. Australian Olympic Committee. (2023). Australian Olympic Team Statistics. [online] Available at: https://www.olympics.com.au/olympians/australian-olympic-team-statisticstrivia/ [Accessed 20 August 2024].

Data was scrapped off this website using R to determine who our top four best performing Australian athletes are, what their medal break down is, what sport they were a part of and what their gender is. It also helped corroborate that the data from Source 3 was correct.

3. Griffin, R. (2018). 120 Years of Olympic history: Athletes and Results. [online] www.kaggle.com. Available at: https://www.kaggle.com/datasets/heesoo37/120-years-of-olympic-history-athletes-and-results [Accessed 20 August 2024].

This data had 120 years of Olympic data from all countries, tied up using excel filters to focus just on Australia, to determine historical trends of the number of medals won, the participation-gender distribution and also illustrate the average weight, weight and age of Olympian Australian athletes.

How:

1. Radar Charts:

Radar charts were used to help illustrate and compare the height, weight and age of Australian male and female Olympians in the top 10 most participated sports. A Did you know bubble was also provided to provide insights on the average Australian male and female weight and height.

These Radar Charts are good as they are aesthetically pleasing to viewers and allow viewers to interact with them to compare their own health stats and see whether they are better or worse than the Athletes. If the viewer does not know their own health stats, they can use the average Australian information provided to help compare and get a better understand of what makes an Athlete in each respective sport so good.

The three radar charts created were custom-built elements in the visualisation. They were quite complex and took hours to make. I had to create calculation fields and merge plots and data and overlay them in the visualisation. I had to insert images to help guide the viewer and make it more readable.

2. Lollipop Chart (with Embedded Stacked Bar Chart):

A horizontal lollipop chart was used to help illustrate the top four Australian athletes that have the most number of medals. When the viewer hovers over each lollipop, the tooltip not only provides information but also has an embedded stacked bar chart so that the viewer can easily understand and see what their medal types were (i.e. number of gold, silver or bronze medals)

The lollipop chart allows the viewer to learn some new and interesting facts about the Australia's best performing athletes. The embedded graph is also a great way to give the viewer more information in a visual manner to keep them engaged, if they seek to know more about each athlete's performance.

The embedded stacked bar chart was a special feature I had to make in the visualisation. Similarly, lollipop charts are also not straight forward in Tableau. I did have to follow a tutorial to understand and create the custom-built lollipop chart.

3. Stacked Area (Line) Chart:

The stacked area chart was used to illustrate the running total of the number of medals Australia has won in the Olympics between 1900 and 2016.

The historical stacked area chart lets the viewer see how special events in history (i.e. Australia hosting the games, or it being announced) have seen spikes in Medals won. It also helps the viewer see how much Australia's Medal Tally has grown in the last few years alone. The tilt/gradient of the lines help to really drive the point across, which would not have been possible with another idiom type.

The stacked area chart was a special feature of the visualisation, whereby I had managed to also overlay the total number of medals in a black bold line, to show the accumulation better. I added a lot of nice annotations to also help guide the viewer to better understand what they are seeing.

4. Historical Data Stacked Bar Chart:

The historical data stacked bar chart was used to illustrate the change in the amount of participation in the Olympics in the last 120 years.

The stacked bar chart lets the viewer see the involvement of females (i.e. not participating before 1948 to now being the bigger majority of participants) and see trends such as allowing the viewer to see how special events in history (i.e. Australia hosting the games, or it being announced) have caused spikes in participation. The stacked bars is the best way to help illustrate the distribution of males and females for each Olympic game over the years.

The historical data stacked bar chart was not too difficult to implement. I was deciding whether or not to make this an animation instead, but believe that this would not be as informative as a historical timeline stacked bar chart.

5. Sankey Diagram combined with Horizontal Stacked Bar Chart (with Embedded Stacked Bar Chart):

The Sankey diagram combined with the horizontal stacked bar chart was used to illustrate the sex distribution in Australia's Top 5 Most Participated Sports and how many medals we have won in these sports as a result.

The Sankey part of the diagram lets the viewer see the distribution of males and which sports they are involved in, and similarly with females. It helps indicate to the viewer, in regards to the Top 5 Sports we participate in, what the distribution is. In regards to the horizontal bar chart combined, that helps to illustrate the total number of medals won for each sport. This lets the viewer see whether there is a relationship between the number of participants and the number of medals (which there is NOT). It also lets the viewer see how sports with more equal distribution of males and females may perform. If you hover over the Horizontal bar chart, there is then an embedded bar chart that illustrates a further break down of the first bar chart, this time in regards to males and females. It helps to illustrate how many males and females helped contributed to the bronze, silver or gold medals collected for each sport, which would be interesting for the viewer, especially when they try to see the distribution of each gender in each sport.

The Sankey Diagram was a custom -built element, that I had to make. Originally, I was going to use a Sankey Extension, but it did not let me customise the colour or order, as such, I decided to do it myself, which took me an extensive amount of time to do. I had to duplicate and union the data, create calculated fields, use the Sigmoid function etc. as well as filters. I had to create a few visualisations and overlay them to make it work. Similarly, combining the horizontal stacked bar chart was difficult and also took an extensive amount of time.

Images, Colour Scheme and Typography:

Images of Australian athletes are used to keep the viewers interested. All images used had to have their background removed. Did you know facts as well as annotations, filters and interactive features also help with this.

A consistent colour scheme of Green and Yellow was used throughout to represent Males and Females respectively. The green and yellow colour scheme is common colour scheme for Australian athletes/Olympians. Brown, Silver and gold colours were also used to make any values regards medal types more intuitive for the viewer.

A Serif Font Type was used for titles, as Australians who used to read about the Sports section in the Newspaper, may be drawn to recall the Herald Sun font type. Meanwhile, a custom san serif font type is used for the body and annotations to keep the text as clearly legible as possible.

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Domain:

The visualisation focus on the performance of Australian Olympic athletes in sports and fitness.

Why:

The visualisation lets viewers compare athletes' physical metrics with those of the general Australian population and themselves, highlighting differences and sparking discussions on fitness benchmarks. It also provides insights into top Australian athletes, historical trends like Olympic host years and gender representation, and details on the top 5 sports, including gender distribution and medal counts, exploring potential correlations.

Who:

With the 2024 Paris Olympics this year, the visualisation targets the general public interested in Australia's Olympic performance and those curious about Australian athletes, as well as the distribution and performance of males and females in various sports.

What:

1. Australian Bureau of Statistics (2023). National Health Survey

The data was cleaned and processed to determine the average weight and height of Australian males and females.

2. Australian Olympic Committee. (2023). Australian Olympic Team Statistics.

Data was scraped from the website using R to identify the top four Australian athletes, their medal breakdown, sport, and gender. This process also verified the accuracy of Source 3.

3. Griffin, R. (2018). 120 Years of Olympic history: Athletes and Results

The data, covering 120 years of Olympic records from all countries, was filtered in Excel to focus on Australia. This revealed historical trends in medal counts, participation gender distribution, and the average weight, height, and age of Australian Olympians.

How:

1. Radar Charts: Radar charts compare the height, weight, and age of Australian Olympians in the top 10 sports, with a "Did you know?" bubble offering average Australian stats. These interactive charts help users compare their health data with athletes' and understand athlete performance. Customisation included complex calculations and plot overlaying, with added images for clarity.

2. Lollipop Chart with Embedded Stacked Bar Chart: The lollipop chart highlights the top four Australian athletes by medal count. Hovering reveals a tooltip with a stacked bar chart detailing gold, silver, and bronze medals. This feature engages users by providing detailed medal breakdowns. Customisation involved creating the chart and embedded bar from scratch.

3. Stacked Area Chart: This chart displays Australia's total Olympic medals from 1900 to 2016, highlighting growth and spikes due to major events. A bold black line overlay and annotations improve trend visibility. The gradient lines effectively show medal count changes over time, which other chart types might not convey as clearly.

4. Historical Data Stacked Bar Chart: Illustrating Olympic participation over 120 years, this chart shows the increase in female involvement and participation spikes linked to major events. The static format provides a clear historical timeline, more informative than an animation.

5. Sankey Diagram with Horizontal Stacked Bar Chart: The Sankey diagram and horizontal stacked bar chart show sex distribution in Australia's Top 5 sports and their medal counts. The Sankey diagram visualises participant distribution, while the stacked bar chart reveals total medals won. Hovering over the bar chart displays a gender-specific medal breakdown. Extensive customisation, including data handling and visual layering, was required to create these elements.