

## **Data Visualisation 1 Proposal**

### **1. Domain**

- The domain of the visualisation will be sports and fitness.
- The visualisation will focus on comparing various metrics of Australian athletes - integrate data from Australian Olympians, examining their physical attributes over time and performance in events.
- Additionally, the visualization will also consider current national health statistics from the National Australian Health Survey 2022, providing a potential view into how different Australian athletes are physically, compared to the average Australia.

### **2. Why?**

- Users can see how Australian athletes' physical attributes like height, weight, and BMI have changed over time, revealing trends in athlete physiology.
- Users can explore how physical attributes relate to Olympic performance, offering insights into factors that influence athletic success.
- The visualization allows users to compare athletes' physical metrics with those of the general Australian population, highlighting differences and informing discussions on fitness and health benchmarks.

### **3. Datasets**

#### **Dataset 1 - Australian Athletes**

*Link:* <https://www.kaggle.com/datasets/vikashrajuhaniwal/australian-athletes-data-set>

#### *Description:*

- The dataset contains 202 observations of 13 different features.
  - This dataset contains Australian athlete's heights, lean body mass, percentage of body fat, BMI, white blood cell count, red blood cell count, hemoglobin concentration and more.
- The dataset is taken from DAAG package of R language which is taken from a study done in 1991.
- These data were collected in a study of how data on various characteristics of the blood varied with sport, body size, and sex of the athlete.
- The data is from 1991 – it's quite old but I am sure some truths still hold

## Dataset 2 – 120 Years of Olympic History: Athletes and Results

**Link:** <https://www.kaggle.com/datasets/heesoo37/120-years-of-olympic-history-athletes-and-results>

### *Description:*

- The dataset contains 271,117 observations of 15 different features.
  - This dataset contains Australian Olympians sex, age, height, weight, games year (from 1896-2016), sport, event, medal.
- The data set contains 120 years of Olympics History of all the nations, but I will only focus on the datasets from Australia.

## Dataset 3 - National Australian Health Survey 2022

**Link:** <https://www.abs.gov.au/statistics/health/health-conditions-and-risks/national-health-survey/2022#data-downloads>

### *Description:*

- There are a few datasets that be obtained from here, including individual state level as well as the whole of Australia data.
  - This can be done by downloading the datasets from Title '28' to '35' and tidying the data
- The data of interest would be the average height, weight, BMI, waist circumference, for the different age groups in Australia in the different states.

TABLE 28 New South Wales	<a href="#">↓ Download XLSX</a> [889.32 KB]
TABLE 29 Victoria	<a href="#">↓ Download XLSX</a> [1007.33 KB]
TABLE 30 Queensland	<a href="#">↓ Download XLSX</a> [855.93 KB]
TABLE 31 South Australia	<a href="#">↓ Download XLSX</a> [821.54 KB]
TABLE 32 Western Australia	<a href="#">↓ Download XLSX</a> [823.96 KB]
TABLE 33 Tasmania	<a href="#">↓ Download XLSX</a> [722.78 KB]
TABLE 34 Northern Territory	<a href="#">↓ Download XLSX</a> [682.68 KB]
TABLE 35 Australian Capital Territory	<a href="#">↓ Download XLSX</a> [862.93 KB]

## **4. Design ideas**

### Historical Trends Visualization:

- Changes over time using interactive charts that maybe let you select a timeframe. Additionally, can include event-specific performance for a specific timeframe.
- *Potential Idioms:* bubble plots, Ridge Lines, Stacked Area, Violin Plot, Heatmap

- *Existing Inspirational Visualisation:* [Gapminder](#)

Comparative Health Statistics:

- Comparison of Athletes' to average humans
- *Potential Idioms:* Bar Chart, Density Plot, Scatter plot, Radar Chart, Sankey, Parallel Coordinates or Scatter Plot Matrix
- *Existing Inspirational Visualisation:* [WHO Health Dashboards](#)

Medal Tally:

- View tally over the years (maybe a interactive feature that lets you select the year) of gold, silver and bronze and whether it was male or female who achieve it
- *Potential Idioms:* Stacked Bar Graph, Donut Chart, Sunburst Diagram
- *Existing Inspirational Visualisation:* [Gender in Parliament House Visualisation](#)

Maybe also incorporate some interesting Olympic facts such as these:

<https://www.olympics.com.au/olympians/australian-olympic-team-statisticstrivia/>

- Australia's Best Medal Tally Home vs Away
- Athletes Who Have Competed In Two Or More Sports At The Games
- Youngest Olympians, Oldest Olympians
- Most Olympic Games
- Most Medals
- Winter Olympics vs Summer Olympics [maybe correlate it with some facts about the weather?]