

320146 Assessment Task 2:

Advanced Data Visualisation

Sample Dataset:

The dataset you will be using for this assessment task is **Australia Open Championship** match record, which contains 118 years of championship matches for both men and women between 1905 and 2023. Dataset has various data types and forms, including year, gender, champion's name, nationality, champion seed, match time, runner-up's name, nationality, and score. Students have to use the required method to analyse and visualise, which needs to convert into a different format for comparison. Dataset can be downloaded from Canvas .

Data Preparation:

Task 1. Understand and prepare the sample dataset and its characters.

Task 2. Understand data behaviours, styles, and its patterns.

Task 3. Convert the score to numeric formats (done by the lecturer) and create a new measurement as the **winning rate** for each champion.

Visualisation Method 1. Parallel Coordinate:

Task 4. Create a **parallel coordinate graph** to analyse the relationship between champion, score, win rate, 1st win, 2nd win, and champion's nationality, and **write a summary** of the parallel coordinate graph telling the story of uncovering the player's performance and highlighting the story you find.

Visualisation Method 2. Treemaps:

Task 5. Create **treemaps** by using different visualisation tools – treemap to analyse players' performance based on the player's nationality, gender, win rate, 1st win and 2nd win. And **write a summary** of the treemap graph for analysing and uncovering any story you find.

Visualisation Method 3. Geographic Map:

Task 6. Convert the player's nationality code to the country's name (done by the lecturer), then **create a geographic map** combining the champion's nationality, score, win rate, 1st win

and 2nd win. And **write a summary** of the player's performance based geographic map for analysing the player's nationality and score.

Visual Analytics: Champion performance

Task 7. Find the players who have won 5 and more times championships for both men and women, **then create visual patterns** to analyse the champion's winning rate, which involves runner-up, score, and year.

Task 8. Write a summary of the visual patterns for extracting each player's performance and its performance patterns.

Task 9. Write a report to explain how you dealt with high-dimensional data in your data visualisation, particularly in combining multi-dimensional data. **Describe** the graphic attribute designs and labelling techniques used in your data visualisation and how they enhanced the readability and storytelling of the visualisation. **Highlight** any trends and breakthrough analysis you have discovered through the data visualisation process, particularly the top player's performance patterns in the visual comparison chart. **Conclude and summarise** the advantages of Tableau or other visualisation apps you have used.