COS30045 Data Visualisation – Assignment 3B: Process Book

# Title Page

Project Title: Exploring Regional Health Inequities in Australia using OECD Data  
Hosted Link: <https://mercury.swin.edu.au/cos30045/s103617694/Assignment3/>Team Name: HealthInsights  
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Teaching Period: TP1, 2025

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# 1. Introduction

## 1.1 Background and Motivation

Australia’s healthcare system exhibits notable disparities between regions. Our motivation stems from the desire to present these inequalities in a way that is accessible and engaging, particularly for audiences like policymakers, public health students, and researchers.

## 1.2 Visualisation Purpose

This project intends to:  
- Highlight infrastructure differences across states  
- Reveal time-based changes in life expectancy  
- Compare latest health spending by state

## 1.3 Research Questions

- How do healthcare resources differ among Australian regions?  
- Are life expectancy trends consistent across states?  
- Which regions invest the most in public healthcare, and how does it compare?

## 1.4 Scope and Limitations

- Limited to Australian states/territories  
- Data granularity may vary  
- Correlation between outcomes and spending excluded due to data issues

# 2. Data

## 2.1 Data Sources

Three OECD datasets were used:  
- data1.csv — Beds, doctors  
- data2.csv — Health spending  
- data3.csv — Life expectancy

## 2.2 Data Cleaning and Preprocessing

- Removed missing values  
- Standardised region names  
- Aggregated latest data for spending chart

## 2.3 Data Dimensions

All datasets include categorical, interval, and ratio data types.

# 3. Requirements

## 3.1 Must-Have Features

- 3 D3.js charts  
- Integration of datasets  
- Mercury hosting  
- Clear labels and scales

## 3.2 Optional Features Implemented

- Dropdown filters  
- Log scale axis in Chart 3  
- Consistent responsive layout

## 3.3 Accessibility and Usability

- Colour contrast ensured  
- Readable axes  
- Text alternatives provided

# 4. Visualisation Design

## 4.1 Overview of Visual Choices

Each chart is suited to a distinct analysis goal:  
- Chart 1: Health Resources (Stacked Bar)  
- Chart 2: Life Expectancy (Line)  
- Chart 3: Health Spending (Bar, log-scale)

## 4.2 Design Justification

- Stacked bars for resource composition  
- Lines for trends  
- Bars for direct comparison

## 4.3 Design Iterations

Initial scatterplots and heatmaps were discarded due to data sparsity or clarity issues.

# 5. Interactivity and Filters

## 5.1 Chart Interactivity

Dropdown filters let users explore:  
- Country (Chart 1)  
- Measure (Chart 2 & 3)

## 5.2 Future Enhancements

- Tooltips  
- Export options  
- Region-specific info cards

# 6. Validation and Feedback

## 6.1 Peer Feedback

- Axis renaming  
- Replacing scatter with bar chart

## 6.2 QA Process

- Cross-browser testing  
- Console data checks  
- Screen size responsiveness

# 7. Deployment & Hosting

## 7.1 Mercury Hosting Details

Site: <https://mercury.swin.edu.au/cos30045/s103617694/Assignment3/>

## 7.2 Folder Structure

/assignment3/  
├── index.html  
├── style.css  
├── data1.csv  
├── data2.csv  
├── data3.csv

## 7.3 Debug Strategy

- Console logs  
- Default filters  
- Fallback for missing data

# 8. Conclusion

The project delivers clear visualisation of Australian regional health inequalities using D3. Future work may include correlation mapping, tooltip interactivity, and broader accessibility features.

# 9. References

* [https://data-explorer.oecd.org/vis?lc=en&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD\_REG\_HEALTH%40DF\_HEALTH&df[ag]=OECD.CFE.EDS&dq=A..AUS%2BAU1%2BAU2%2BAU3%2BAU4%2BAU5%2BAU6%2BAU7%2BAU8%2BAUT%2BAT11%2BAT111%2BAT112%2BAT113%2BAT12%2BAT121%2BAT122%2BAT123%2BAT124%2BAT125%2BAT126%2BAT127%2BAT13%2BAT130%2BAT21%2BAT211%2BAT212%2BAT213%2BAT22%2BAT221%2BAT222%2BAT223%2BAT224%2BAT225%2BAT226%2BAT31%2BAT311%2BAT312%2BAT313%2BAT314%2BAT315%2BAT32%2BAT321%2BAT322%2BAT323%2BAT33%2BAT331%2BAT332%2BAT333%2BAT334%2BAT335%2BAT34%2BAT341%2BAT342.....&lom=LASTNPERIODS&lo=5&to[TIME\_PERIOD]=false](https://data-explorer.oecd.org/vis?lc=en&df%5bds%5d=dsDisseminateFinalDMZ&df%5bid%5d=DSD_REG_HEALTH%40DF_HEALTH&df%5bag%5d=OECD.CFE.EDS&dq=A..AUS%2BAU1%2BAU2%2BAU3%2BAU4%2BAU5%2BAU6%2BAU7%2BAU8%2BAUT%2BAT11%2BAT111%2BAT112%2BAT113%2BAT12%2BAT121%2BAT122%2BAT123%2BAT124%2BAT125%2BAT126%2BAT127%2BAT13%2BAT130%2BAT21%2BAT211%2BAT212%2BAT213%2BAT22%2BAT221%2BAT222%2BAT223%2BAT224%2BAT225%2BAT226%2BAT31%2BAT311%2BAT312%2BAT313%2BAT314%2BAT315%2BAT32%2BAT321%2BAT322%2BAT323%2BAT33%2BAT331%2BAT332%2BAT333%2BAT334%2BAT335%2BAT34%2BAT341%2BAT342.....&lom=LASTNPERIODS&lo=5&to%5bTIME_PERIOD%5d=false)
* [https://data-explorer.oecd.org/vis?lc=en&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD\_REG\_HEALTH%40DF\_CARE&df[ag]=OECD.CFE.EDS&dq=A..AUS%2BAU1%2BAU2%2BAU3%2BAU4%2BAU5%2BAU6%2BAU7%2BAU8%2BAUT%2BAT11%2BAT111%2BAT112%2BAT113%2BAT12%2BAT121%2BAT122%2BAT123%2BAT124%2BAT125%2BAT126%2BAT127%2BAT13%2BAT130%2BAT21%2BAT211%2BAT212%2BAT213%2BAT22%2BAT221%2BAT222%2BAT223%2BAT224%2BAT225%2BAT226%2BAT31%2BAT311%2BAT312%2BAT313%2BAT314%2BAT315%2BAT32%2BAT321%2BAT322%2BAT323%2BAT33%2BAT331%2BAT332%2BAT333%2BAT334%2BAT335%2BAT34%2BAT341%2BAT342.....&lom=LASTNPERIODS&lo=5&to[TIME\_PERIOD]=false](https://data-explorer.oecd.org/vis?lc=en&df%5bds%5d=dsDisseminateFinalDMZ&df%5bid%5d=DSD_REG_HEALTH%40DF_CARE&df%5bag%5d=OECD.CFE.EDS&dq=A..AUS%2BAU1%2BAU2%2BAU3%2BAU4%2BAU5%2BAU6%2BAU7%2BAU8%2BAUT%2BAT11%2BAT111%2BAT112%2BAT113%2BAT12%2BAT121%2BAT122%2BAT123%2BAT124%2BAT125%2BAT126%2BAT127%2BAT13%2BAT130%2BAT21%2BAT211%2BAT212%2BAT213%2BAT22%2BAT221%2BAT222%2BAT223%2BAT224%2BAT225%2BAT226%2BAT31%2BAT311%2BAT312%2BAT313%2BAT314%2BAT315%2BAT32%2BAT321%2BAT322%2BAT323%2BAT33%2BAT331%2BAT332%2BAT333%2BAT334%2BAT335%2BAT34%2BAT341%2BAT342.....&lom=LASTNPERIODS&lo=5&to%5bTIME_PERIOD%5d=false)
* [https://data-explorer.oecd.org/vis?lc=en&df[ds]=dsDisseminateFinalDMZ&df[id]=DSD\_REG\_HEALTH%40DF\_STATUS&df[ag]=OECD.CFE.EDS&dq=A..AUS%2BAU1%2BAU2%2BAU3%2BAU4%2BAU5%2BAU6%2BAU7%2BAU8%2BAUT%2BAT11%2BAT111%2BAT112%2BAT113%2BAT12%2BAT121%2BAT122%2BAT123%2BAT124%2BAT125%2BAT126%2BAT127%2BAT13%2BAT130%2BAT21%2BAT211%2BAT212%2BAT213%2BAT22%2BAT221%2BAT222%2BAT223%2BAT224%2BAT225%2BAT226%2BAT31%2BAT311%2BAT312%2BAT313%2BAT314%2BAT315%2BAT32%2BAT321%2BAT322%2BAT323%2BAT33%2BAT331%2BAT332%2BAT333%2BAT334%2BAT335%2BAT34%2BAT341%2BAT342.....&lom=LASTNPERIODS&lo=5&to[TIME\_PERIOD]=false](https://data-explorer.oecd.org/vis?lc=en&df%5bds%5d=dsDisseminateFinalDMZ&df%5bid%5d=DSD_REG_HEALTH%40DF_STATUS&df%5bag%5d=OECD.CFE.EDS&dq=A..AUS%2BAU1%2BAU2%2BAU3%2BAU4%2BAU5%2BAU6%2BAU7%2BAU8%2BAUT%2BAT11%2BAT111%2BAT112%2BAT113%2BAT12%2BAT121%2BAT122%2BAT123%2BAT124%2BAT125%2BAT126%2BAT127%2BAT13%2BAT130%2BAT21%2BAT211%2BAT212%2BAT213%2BAT22%2BAT221%2BAT222%2BAT223%2BAT224%2BAT225%2BAT226%2BAT31%2BAT311%2BAT312%2BAT313%2BAT314%2BAT315%2BAT32%2BAT321%2BAT322%2BAT323%2BAT33%2BAT331%2BAT332%2BAT333%2BAT334%2BAT335%2BAT34%2BAT341%2BAT342.....&lom=LASTNPERIODS&lo=5&to%5bTIME_PERIOD%5d=false)