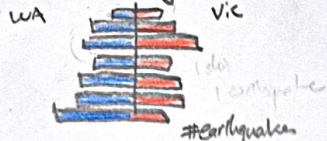
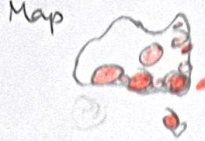


# 1. IDEAS

## ① Population Pyramid



## ② Proportional Symbol Map



## ③ Choropleth Map



## ④ Bin Map



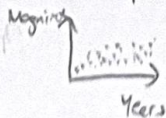
## ⑥ Bar Plot



## ⑦ Radial Plot



## ⑩ Scatterplot



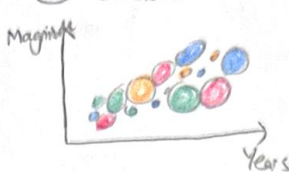
## ⑪ Lollipop Chart



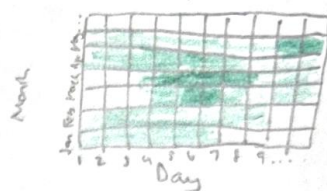
## ⑤ Donut Chart



## ⑧ Bubble Plot



## ⑨ Heat Map Calendar



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Sheet: 1/5

Task: FIT3179 Assignment 2

# 2. FILTER

⑩ Although scatterplot can be useful, I think a bubble plot would be more informative

⑪ Similarly, lollipop chart is good but this can also be seen in a bar chart

# 3. CATEGORISE

⑤ and ⑦ can show earthquakes in different states

⑥, ⑧, ⑨ can show earthquakes over the years

①, ②, ③, ④ can help show which areas in Australia are most effected by earthquakes

① can be used to show and compare two different rates of different ones using normalised data

# 4. COMBINE & REFINE

Donut Chart & radial chart can show similar things, therefore, donut chart may be better as radial chart is a bit deceptive and the radial positions don't matter as we care about states in Aus

Maybe combine bar plot w/ donut chart  
⇒ sunburst diagram



Maybe combine bar plot w/ map

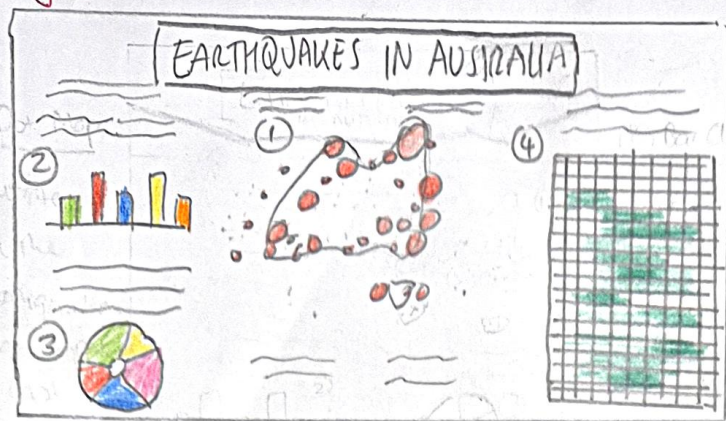


# 5. QUESTIONS

- What image resolution scheme will be optimal?
- Is combining the graphs possible in Vega Lite and not too messy?
- What additional stuff to include to keep user interested?



Layout:



### ① Proportional Symbol Map:

Illustrate all the earthquakes that happened in last 10 years around Australia

### ② Bar chart:

Illustrate no. of earthquakes per year in Australia

### ③ Donut Chart

Illustrate the number of earthquakes per state in the last 10 years

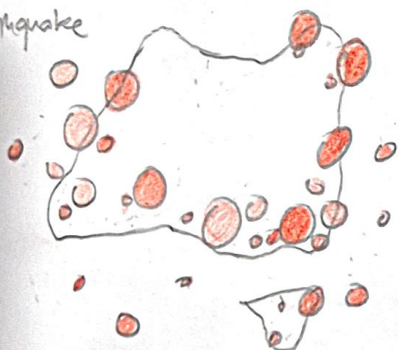
### ④ Heat Map Calendar

Illustrate which months and days have the most amount of earthquakes and worst type in 2023

Focus:

Two main focuses: proportional map and heat map calendar

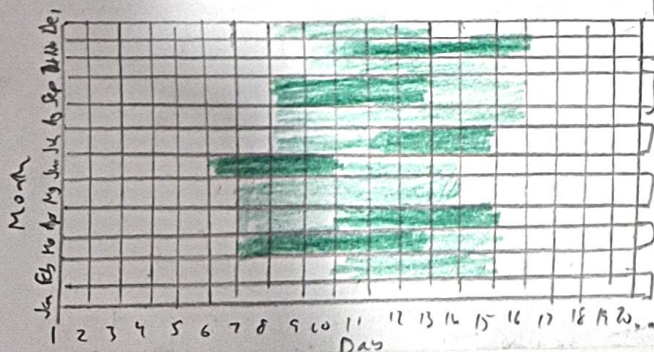
1 dot = 1 earthquake



Year ▾
2018
2019
2020
2021

□ overlay tectonics plate option

Year ▾
2018
2019
2020
Total



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Task: F03179 ASSIGNMENT 2

Operations:

①, ④, ③ should have a dropdown filter to select the different years

Year ▾
2018
2019
2020
Total

① may let us overlay tectonic plate image!

①, ②, ③, ④ should have a tooltip such as:

Year: 2022
Time: --
Location: --
Magnitude: --

Discussion:

Pros:

- Factual, great display of information
- Heat map calendar is complex but could provide interesting insights
- Proportional Symbol map is great way to also show depth and magnitude

Cons and questions:

- Instead of filtering by year maybe we can filter by magnitude?
- Bar plot is too basic? Need more complex visualisations
- No photos or anything to keep the reader engaged?
- More idioms??

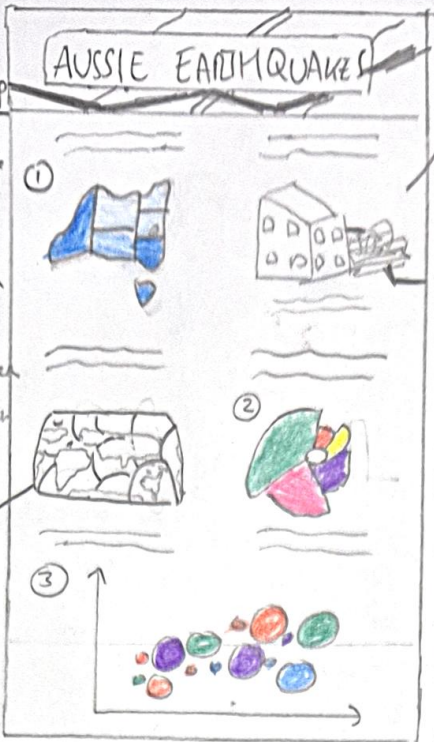


Layout:

# ① Choropleth Map

Normalised data to be # of earthquakes per area for each state, shown as a choropleth over the last 10 years

Static image showing all the tectonic plates in and around Aus and the world



Static image showing the world earthquake damage Australia has experienced

## ② Radial Plot

Illustrate the number of earthquakes per state in the last 10 years

## ③ Bubble Plot

Illustrate years vs earthquake magnitude with depth of earthquakes representing size and state representing colour

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Task: FIT3179 ASSIGNMENT 2

Operations: ③ Maybe have bubble chart animation?

① and ② should have a dropdown filter to select the different years

Year
2018
2019
Total

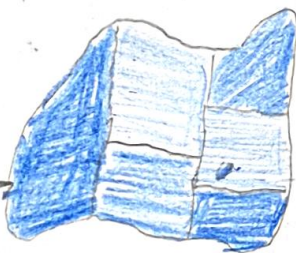
③ should have a tooltip:

State:	_____
Date/time:	_____
Magnitude:	_____
Depth:	_____

① and ② should have tooltip:

State:	_____
Year:	_____
# earthquakes:	_____
Earthquake per m <sup>2</sup> :	_____

Focus: Two main focuses; choropleth map and bubble plot



Normalised data to get # earthquakes per area

Earthquake in ocean are ignored

Year
2018
2019
...



different size for different depth

different colour for different state

min magnitude line to show when it gets bad

Discussion:

Pros: • good incorporation of images!

• Choropleth map is complex and interesting, so are the other visualisation

• Bubble chart will be good to show historical data

Cons and Discussion:

• Map should be bigger

• Radial plot is nice but may be hard to read?

• Maybe overlay tectonic plate image over the map? if not too hard

• More idioms?



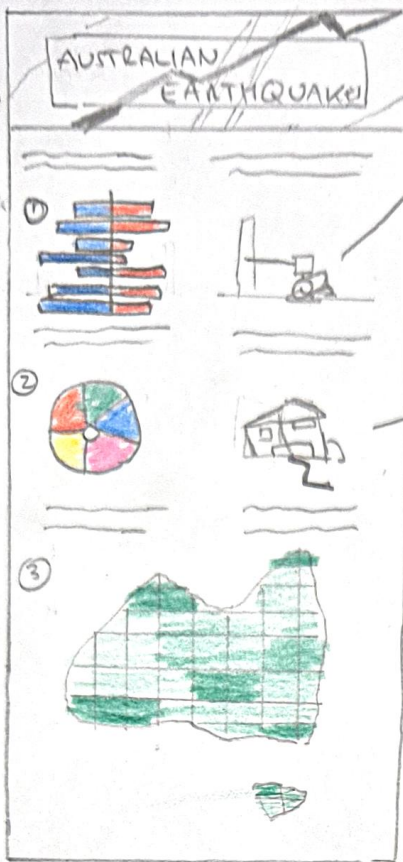
Layout:

## ① Population Pyramid:

Compare no. of earthquakes per area between two states of different size

## ② Donut Chart

Illustrate the number of earthquakes per state in the last 10 years



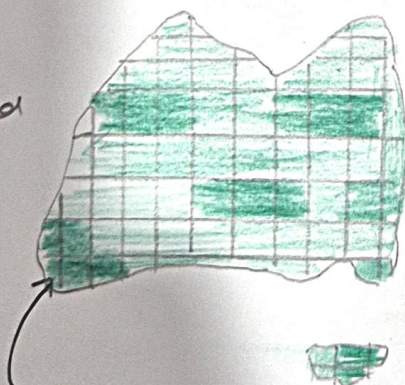
## ③ Bin Map

Normalise data, showing the # earthquakes per area using a conventional bin mark

Focus:

One main focus; bin map

Earthquakes in ocean are ignored



Normalise data  
to get # earthquakes per area

Year ▾
2018
2019
...

☐ Overlay tectonic plate option

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Task: F13179 Assignment 2

Operations:

②, ③ should have a dropdown filter to select the different years

Year ▾
2018
2019...
Total

③ should have a checkbox to select to overlay tectonic plates or not!

①, ②, ③ should have a tooltip:

Year: _____
# earthquakes: _____
Location: _____

Discussion:

Pros:

- population pyramid is good idea
- good incorporation of image
- good incorporation of overlap of tectonic plates

Cons and Discussion:

- Bin map may be confusing and hard to read.
- not enough complex visualisation (bar plot is too basic)
- Need more visualisations



## AUSTRALIAN EARTHQUAKES 2018-2024

**Static Image**

Showing the worst earthquake damage Australia has ever experienced

**Static Table**

outlining what different magnitudes mean

**Static Image**

showing the tectonic plates around the world

- Bar Chart**  
Number of Earthquakes per year in Australia
- Proportional Symbol Map**  
Showing location of different earthquakes, their magnitude and depth
- Donut Chart**  
Number of earthquakes per state in the last 16 years
- Choropleth Map**  
Normalised data of no. of earthquakes per state
- Population Pyramid**  
Comparing no. of earthquakes per area between 2 states of diff size

**Operations:**

- Shouldn't have a tooltip
- have two sliders one for min mag and one for max mag.
- should let you select a year
- should also let you select a state and avg. mag. of interest

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 Sheet: 5/5  
 Task: Assignment 2, FIT3179

Year: \_\_\_\_\_  
 State: \_\_\_\_\_  
 Total: \_\_\_\_\_

② have two sliders one for min mag. and one for max mag.  
 Min Mag: \_\_\_\_\_  
 Max Mag: \_\_\_\_\_

④ and ⑥ should let you select a year  
 Year: Year ▾  
2024

⑥ should also let you select a state and avg. mag. of interest  
 State ▾  
 VIC  
 WA  
 Avg. Mag. \_\_\_\_\_

**Focus:** There are three focuses, proportional symbol map, choropleth map, bubble plot

**Proportional Symbol Map**

**Choropleth Map**

**Bubble Plot:**

**Details:**

**Dependencies:**

- GitHub
- VS code (html, css, js)
- Vega-Lite
- excel manipulating
- getting json and projection files

**Estimated Time and Effort:**

⑦ ④ ⑤ ⑥ will take the longest → estimate 2 day for each  
 Embedding and annotations will take a day  
 Formatting and city will take a day

**Specific Requirements:**

- no horizontal scroll
- Design for small screen laptop view