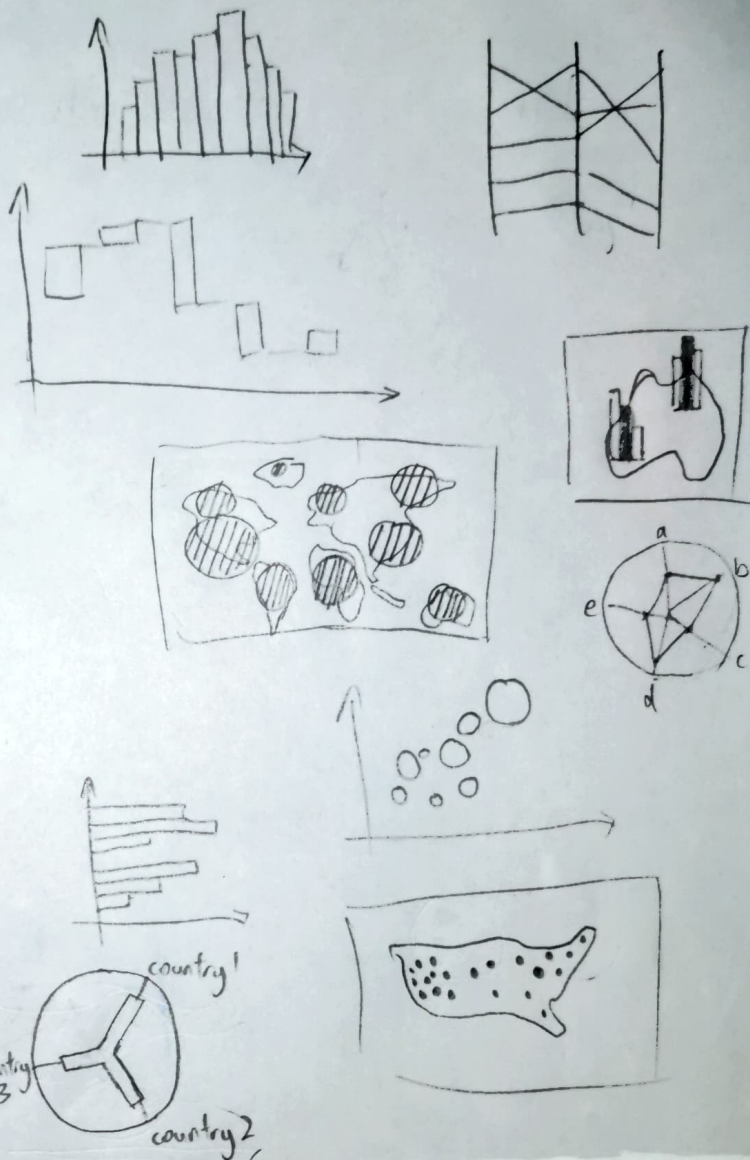


IDEAS

Topic: Factors that potentially correlate to crime rate

Attributes:

- potential factors
- Organized crime rate
 - Drug related crime rate
 - Population
 - Income (GDP per capita)
 - Corruption Index (CPI)
 - Drug related issues
 - ↳ drug use
 - ↳ drug seizures



FILTER

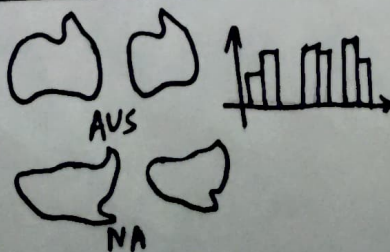
- visualise growth of certain factors over time, comparing with other countries
- visualise potential correlations between factors and crime rate

CATEGORISE

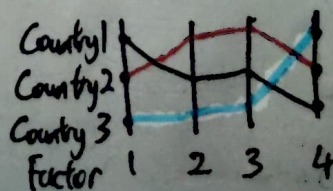
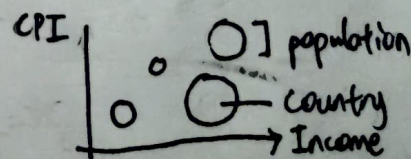
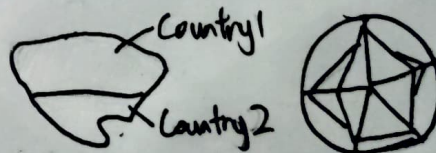
⇒ visualise growth + comparisons

↳ Use choropleth maps +

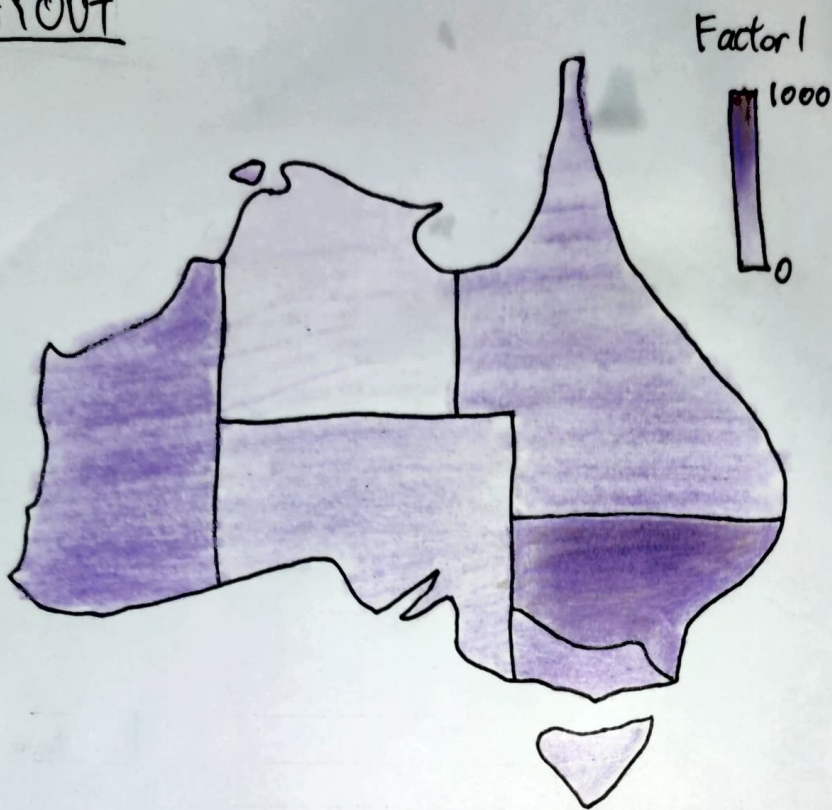
Idioms to visualise growth over time



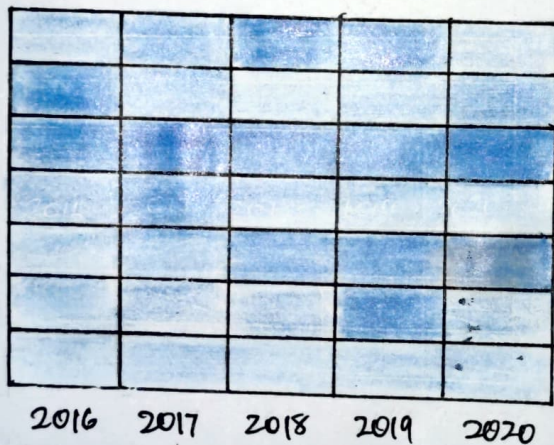
COMBINE & REFINE



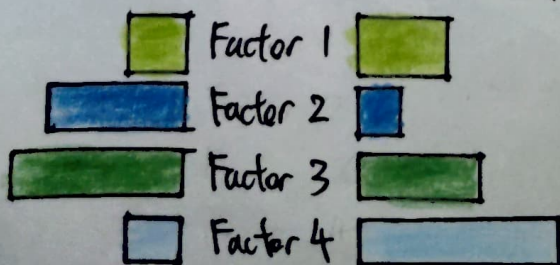
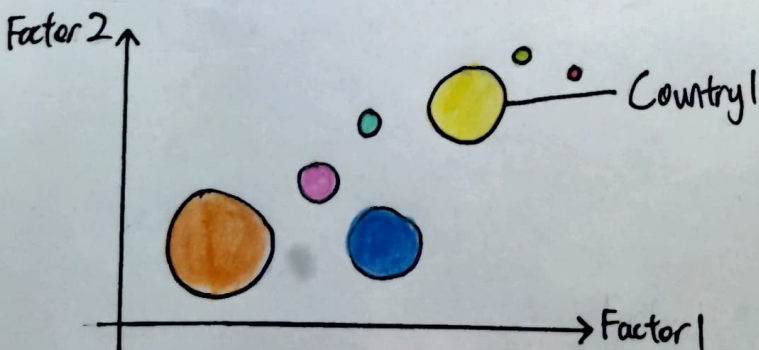
LAYOUT



Northern Territory
Western Australia
South Australia
Queensland
New South Wales
Victoria
Tasmania



FOCUS



Displays these charts as the user picks factors / locations

Title: Factors affecting crime rate internationally

Author: Lucas Ong

Date: 5 Oct 2024

Sheet: 2

Task: Present overview of data, allowing users to choose details.

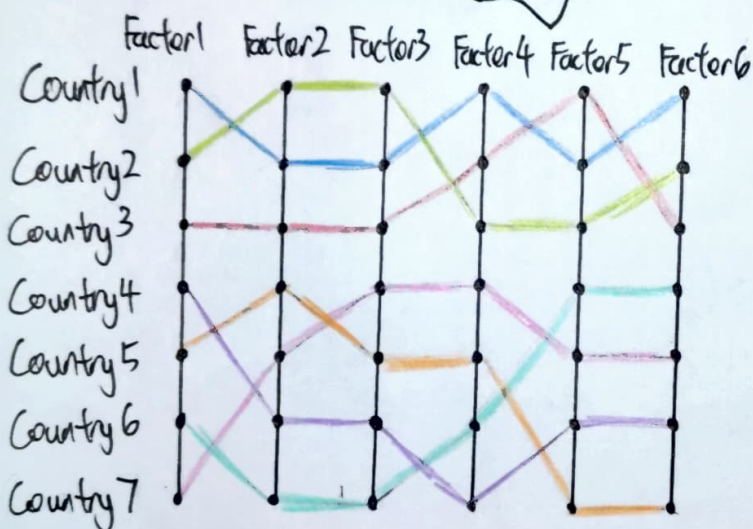
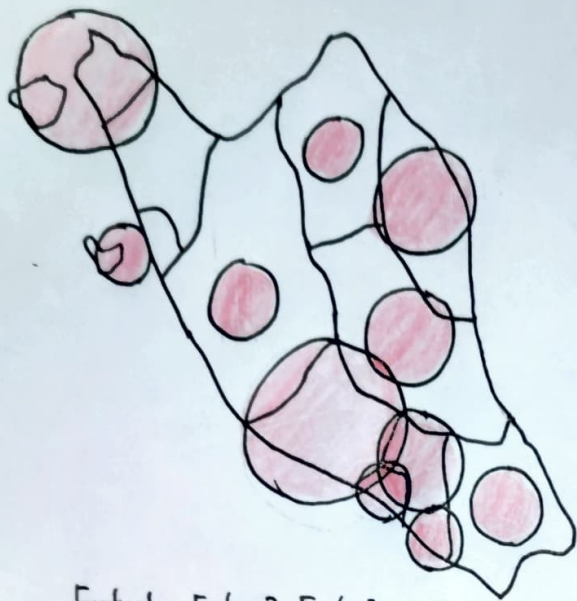
OPERATION

- User views overview using map, while making comparisons across different years easy using the heatmap.
- The user can view multiple factors' relation to each other in the bubble plot
- Selecting 2 countries, the user will be able to compare the multiple factors of the 2 chosen countries in the butterfly chart.

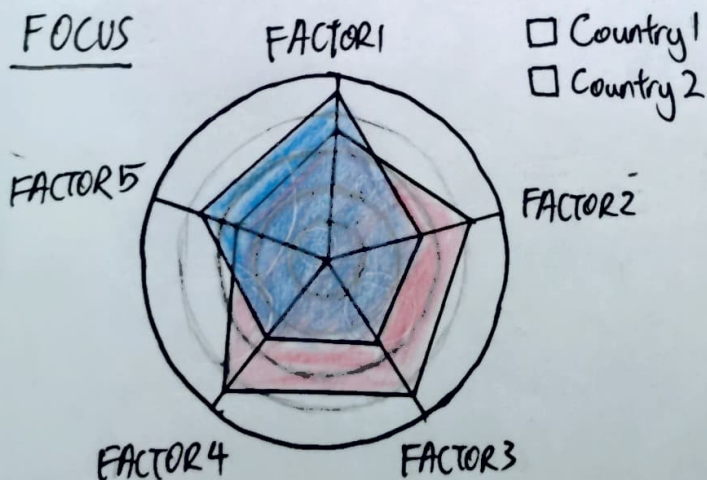
DISCUSSION

- Allows the user to make various types of comparisons between different countries, factors, or time.
- Cons: Without selecting countries/factors/time, the additional charts might not look pleasant due to the many data entries, overwhelming the user.

LAYOUT



FOCUS



Title: Factors affecting crime rate internationally

Author: Lucas Ong

Date: 5 Oct 2024

Sheet: 3

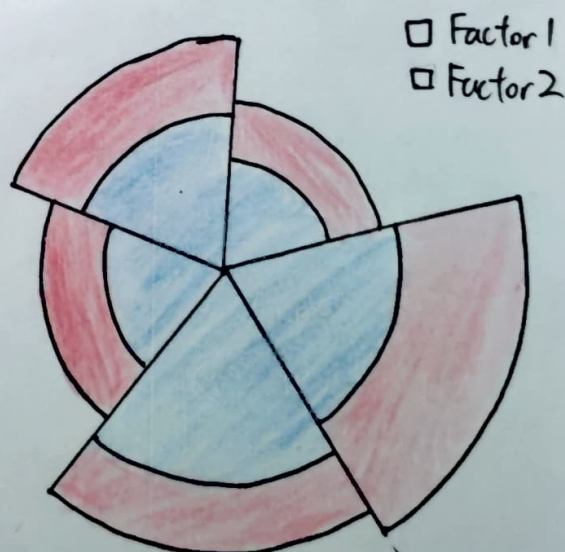
Task: Clearly present data to compare multiple locations in many ways to make it as clear as possible the differences between multiple locations

OPERATION

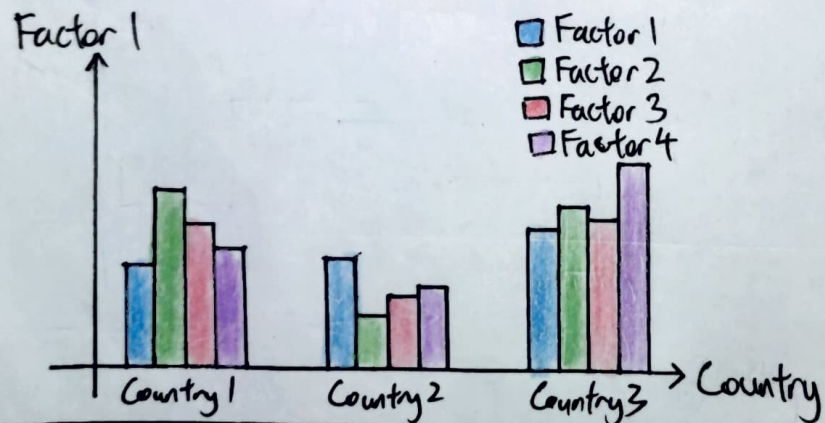
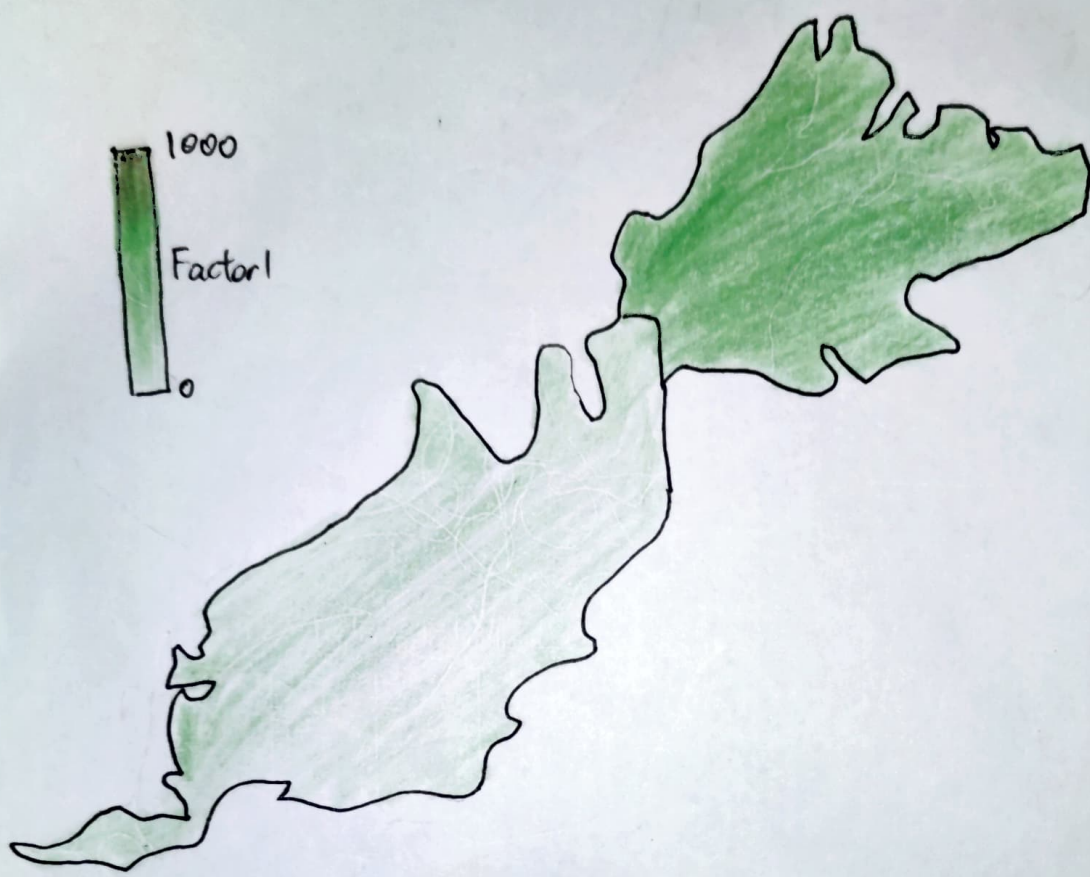
- User view the overview of a predefined chosen factor (chosen by dev).
- Choosing a country adds it to the bump chart, and radar plot
- Choosing only a single country allows it to be plot on a nightingale rose chart

DISCUSSION

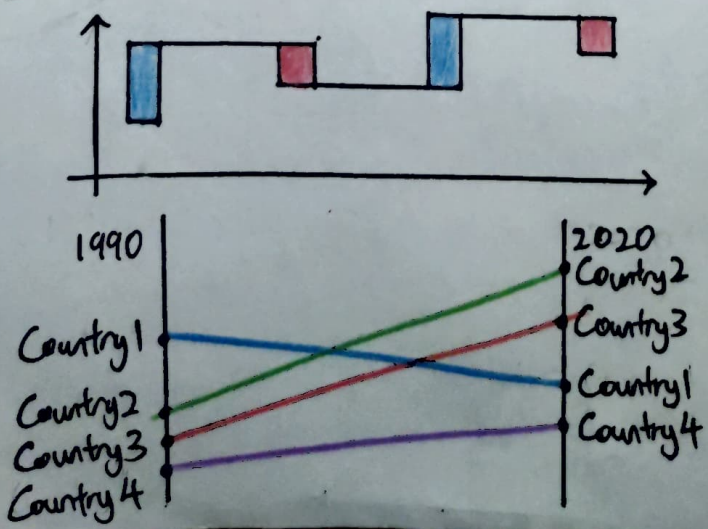
- Users will have many ways to compare different countries and how they compare to each other
- Cons: Interactivity might feel limited



LAYOUT



FOCUS



Title: Factors affecting crime rate internationally

Author: Lucas Ong

Date: 5 Oct 2024

Sheet: 4

Task: Put emphasis on a few user selected countries using additional charts

OPERATION

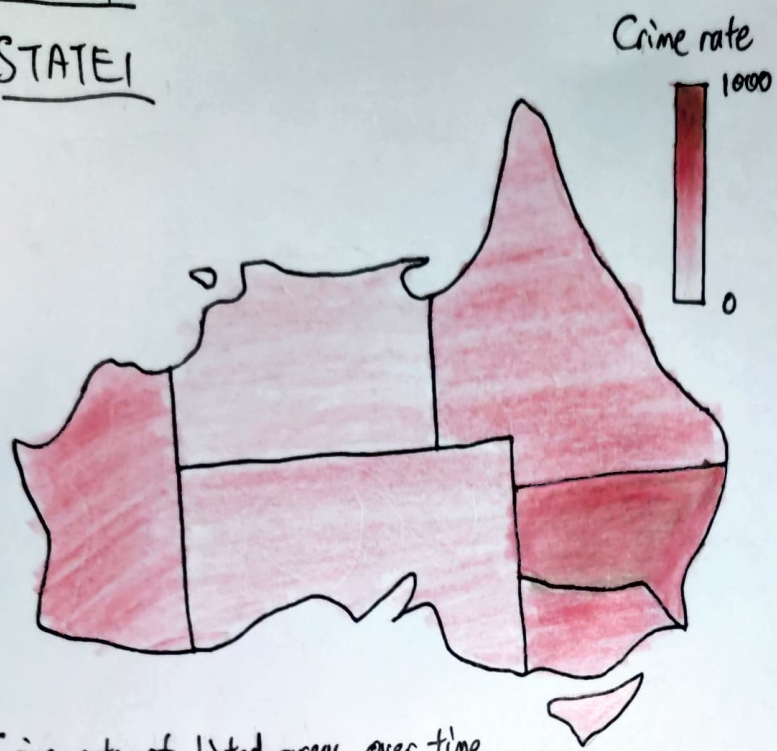
- An overview choropleth map gives users an overview as well as a way to select countries
- Upon selecting a few countries, the user can then compare the various factors in a grouped bar chart
- After choosing a single factor, the user can view the growth of this factor for a chosen country in the connected waterfall chart
- Given 2 years, the user will be able to view the trend of a chosen factor of multiple countries from one year to the other in the slope chart.

DISCUSSION

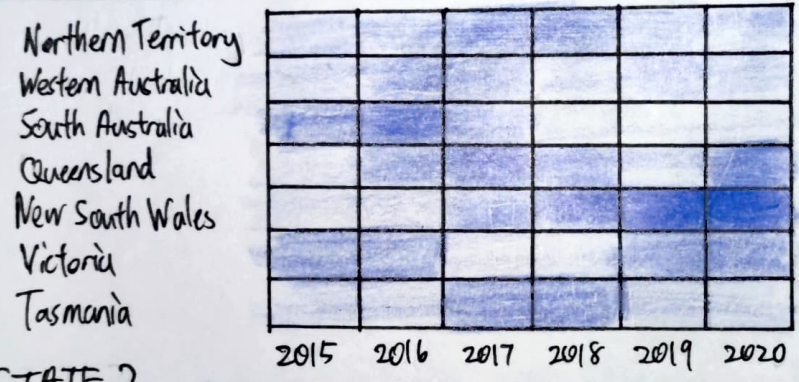
- Users can focus on comparisons between a small number of countries, such that they do not need to be overwhelmed by countries they are not interested in
- Cons: Hard to view a larger number of countries at once without increasing clutter of the charts.

LAYOUT

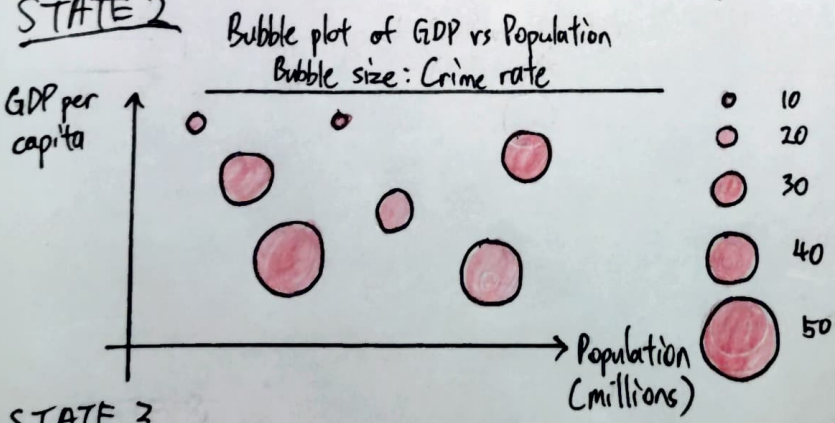
STATE 1



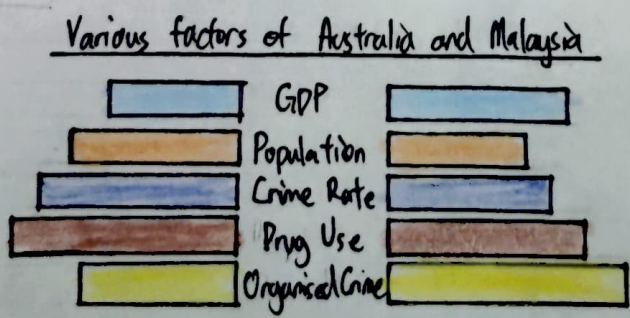
Crime rate of listed areas over time



STATE 2



STATE 3



Title: Factors affecting crime rate internationally

Author: Lucas Ong

Date: 7 Oct 2024

Sheet: 5

Task: Present overview of data, allowing users to choose details.

OPERATION

- A choropleth map is shown first in the dashboard, giving the user an overview of the main topic of the visualization: Crime rate.
- Upon choosing a few locations, a heatmap will be shown to the user to view the growth or trend for each location
- Upon choosing 2 factors, a bubble plot will be shown if possible, comparing the 2 factors as the x-axis / y-axis, with the main focus of Crime Rate fixed as the bubble size
- On choosing 2 locations, a butterfly chart of the 2 locations and their various factors will be displayed, allowing for a more focused comparison.

DETAIL

- Time to build estimated at 10 days
- Effort required: High due to lacking experience in Vega-Lite
- Implemented using Vega-Lite, dataset from worldbank.org, UNODC, UN population estimates, ocindex.net
- Techniques: Layout, Typography, Colour selections, sightlines, etc. taught in lectures.