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URL: https://duytran1301.github.io/FIT3179_vis2/
GITHUBURL: https://github.com/duytran1301/FIT3179_vis2

Domain: The visualisation targets the situation of crime in Australia. Individuals occurs in this visualisation will find statistic about Australia crime. Also, the visualisation emphasis the crime current information like the most common crime happens in Australia which is drugs. The visualisation also showing the most used drug in Australia by ranking and number of transactions that already happened. This visualisation also shows the difference in gender that have the ratio likely to commit crime by age.

Map Visualisation: The visualisation using map projection to show the crime index of all country around the world. The crime index indicates the risk of likely to encounter a crime activity in location. The less number in crime index over 100 the riskier that to occur in a situation. Therefore, in this case Australia is 43.03 which is average. However, Australia does not list as the safe country to travel. By viewing the visualisation, individuals would be able to identify how the crime index of the map.

The visualisation is using orthographic maps with interaction by rotating in x-axis and y-axis to search for the position of any location on the earth. Tooltip is used with to show the country name, total population over 1000 and crime index number. The grey color of the map is using the brightness color with the grid plays as gratitude of the map to show the dfference from the background. The map color using for this visualisation is red with brightness to identify the domain of the crime index because the less of the value the riskier of the country to engage to crime activities.

Mosaic Chart Visualisation: Since the statistics showing that one of the most common offenses in Australia is drug trafficking. And since the previous visualisation mentioned the pandemic result in more consumption in drug in Australia. Therefore, the visualisation provides information about drug transaction in Australia and from that build a mosaic plot to identify the most purchase illegal drug ranking in Australia. Therefore, in this case ecstasy.

Furthermore, the visualisation uses stack bar chart line channel with modification function to find match the length and the height of each rectangle in for each category. In vega-lite, the mark used is rectangle to create the bar chart shaped rectangular. The size of the rectangular indicates the number of sales or transaction of that record as total to find the most trading illegal drug in Australia. The visualisation colour is in red saturation to indicates the theme of the visualisation and tooltip provides information about the ranking and type of drugs. Finally, the visualisation uses vertical and horizontal channel

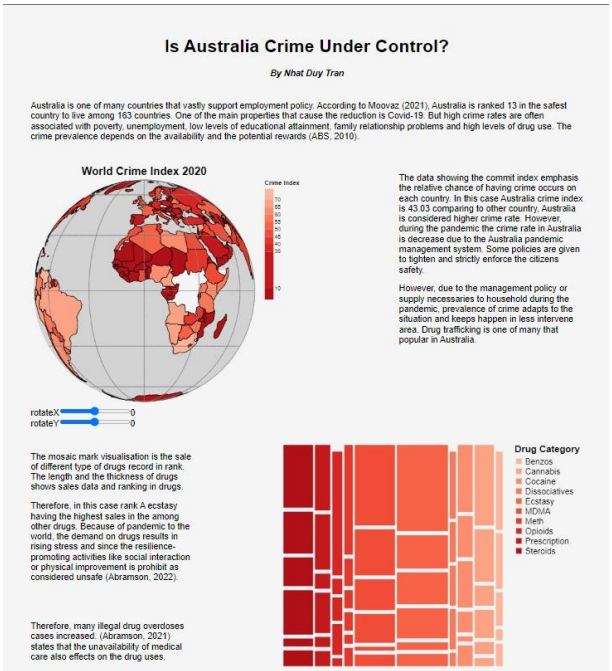
Normalized Stacked Bar Chart Visualisation: The visualisation provides information about the change in of crime rate in Australia for 2 decades. After providing information about drug and Australia crime policy. The visualisation indicates the effectiveness of the policy. Negative values indicate the positive change of crime rates because positive change result in less crime. Each individual view this visualisation will acknowledge the effective progress of crime management. The visualisation mark is lines with the y-axis is in equivalent negative and positive value showing to provides information about both increase and decrease of crime rate. The color using for this visualisation is hue color in red and green indicates that the positive outcome and negative outcome of the crime rate. The visualisation also provide interaction as circle the range of in the chart by left click and hold to other location to focus on the needed value Therefore, this visualisation does not

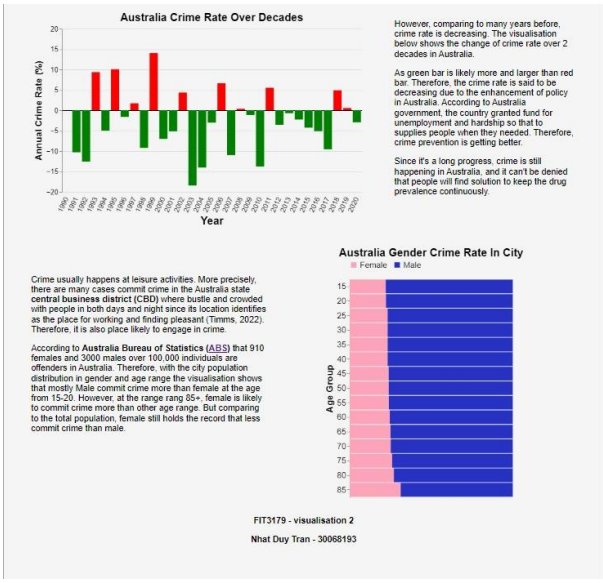
include legend for identification since the data shows properly. The channel of this visualisation using both vertical and horizontal channels.

Horizontal Stack Bar Chart (Gender): After show the crime rate progress in crime rate and the crime still happens. Therefore, this visualisation target on gender distribution in capital city based on crime rate on female and male. The population of city capital in Australia will be distributed into female male and others category but in this case the data visualise male and female. Furthermore, the visualisation perform calculation to find the population from the crime rate percentage. Therefore, individuals read in the visualisation will show that male likely commit crime more than women in any age but at age 15-20 is the highest rate.

The visualisation mark is line in the stack bar chart with both vertical and horizontal channel bar. The color used in this visualisation is hue color of navy-blue stand for male and pink for female indicates the common color the gender.

Image of visualisation(sample):





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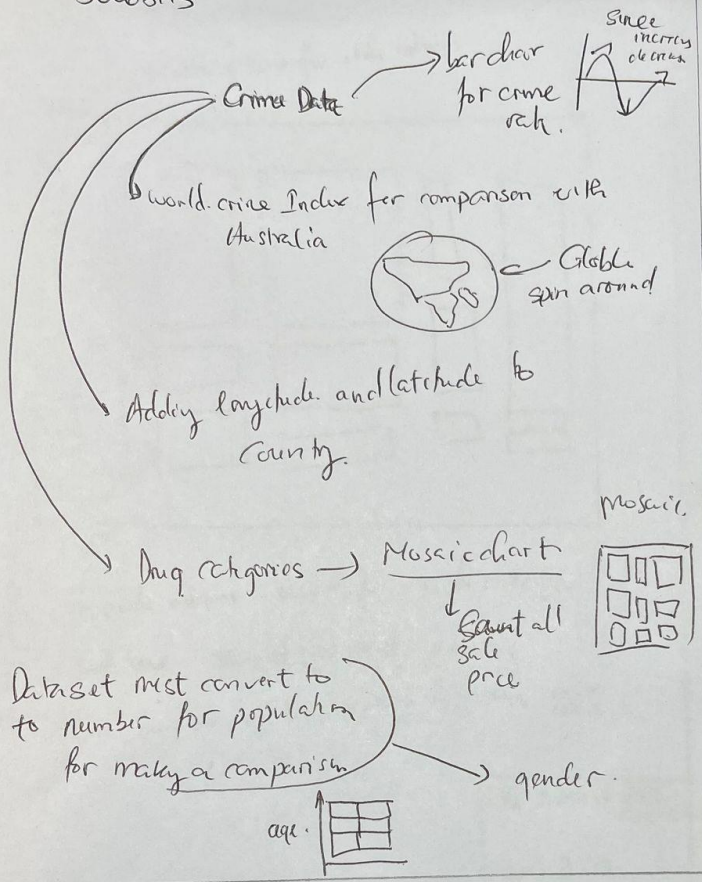


2 filter

- ADD data for lat and long for county
- perform calculation for
- filter all different complex drug category to simple.
- ratio

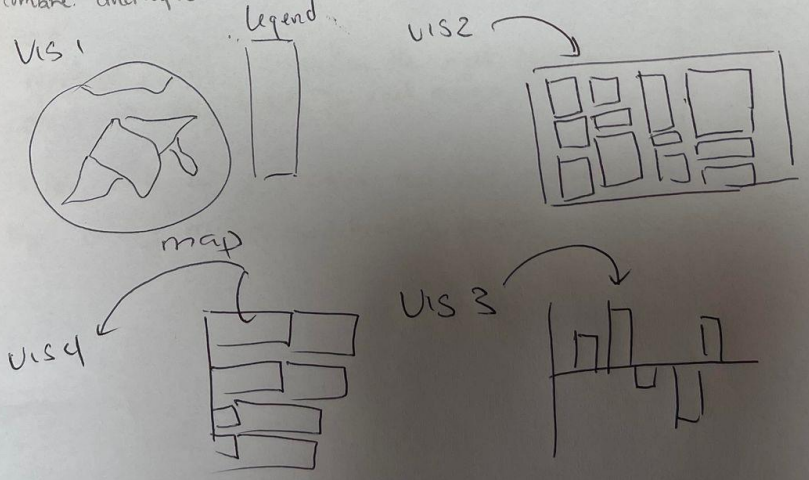
3 categorize

Mark use. mostly → line.

Channel use.: horizontal and vertical.

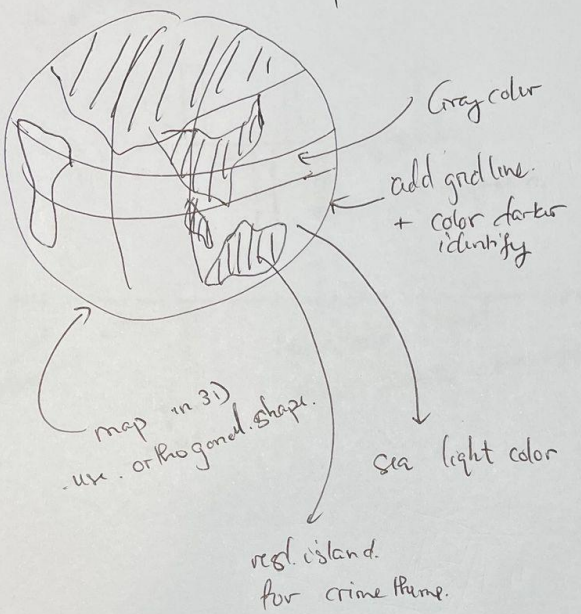
Color: Hue in Redand Grey

4 combine and refine



layout

Map Visualisation



title: orthographic map

Author: Nhat DyTran

Sheet : 1 /4

Operation.

- map showing data about crime index
- Sea is used to have the color of map
- red scale color indicate value

*

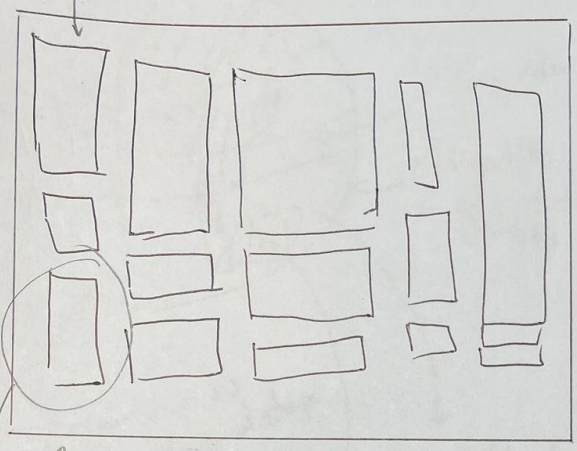
Focus

- the map allow user to interact with
- + tooltip for detail and rotate the map for more detail of other county.
- A function to calculate

Assumption.

- able to see around the map
- space minimize and easy to have an overview of data
- Some data might not appears on map due to unknown data

Layout



Operation

- Data price convert in AUD $
- Data must be simplify to category of drug.
- remove unnecessary column for making data easy to manage and smaller.

title: mosaic ~~plot~~ chart

Sheet 2/4

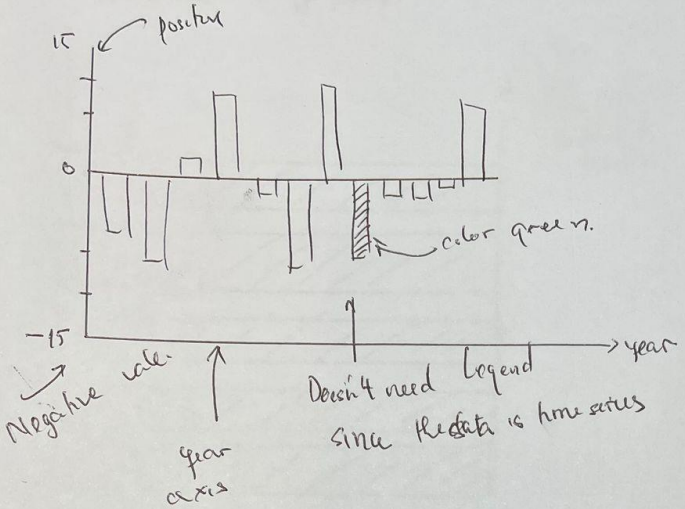
Focus

- The chart includes legend on the right of the chart → easy to identify each category
- color are in saturation red but can be identify by moving mouse and interact with data.

Discussion

- Advantage. Easy to see the sales and the most transaction
- Disadvantage color unable to identify. Since it's in scheme red.

layout



operation

- Generate with negative value will be distributed under 0 on years
- Data provided enough for perform plotting
- 2 decades of years change the angle of x axis when the space is too thick

title: Negative and Positive barchart

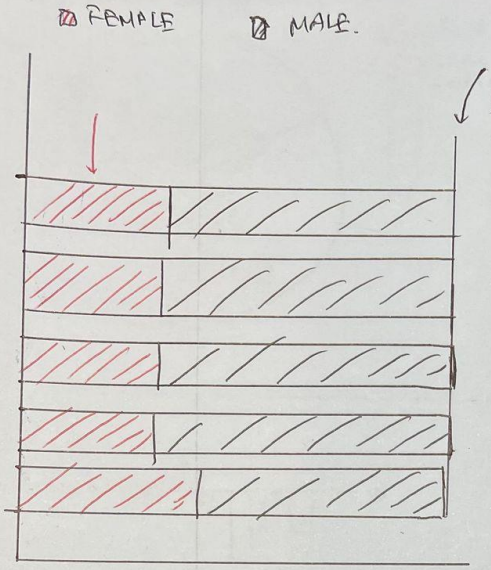
sheet: 3 | 4

Focus

- Interaction: select range of value
- color here format indicates the positive and negative value
- the positive are on negative direction close to the statistic.

Discussion

- advantage: easy to identify the change by looking at the chart
- disadvantage some data too small for comparison



Gender

operation:
- convert population to thousand format
- using other Data source for total population and multiply to find the population in the city
- plot a stack bar chart in horizontal to find the different in gender
- remove the other gender since the data does not included Statistic for others
- remove underfive age to commit crime

Title: Australia Gender + Grimelatte Bar Chart (horizontal)

sheet 4/4

Focus

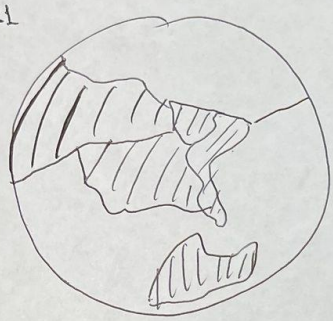
Interaction: ~~color~~ able to search or point mouse in the chart to select specific column.

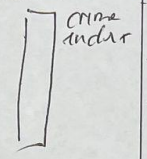
- color hue: pink and blue indicates gender.
- tool tip showing gender and total population at the age.

Discussion:

- advantage: able to identify the chart ratio
- disadvantage: the data difference is depends on population > not accurate

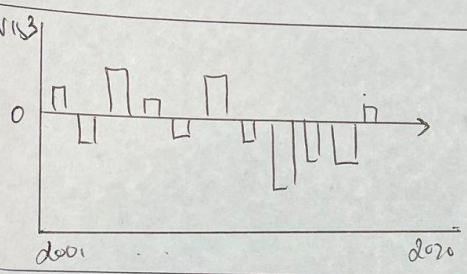
VIS1





vegalite. - for
- using json file for ocean
- using json file. for land
- using json file for graticule
- perform calculation *1000 for population to find exact population
- change un identify data into NaN
- population in unidentify to 0 so that the color remains on map

VIS3

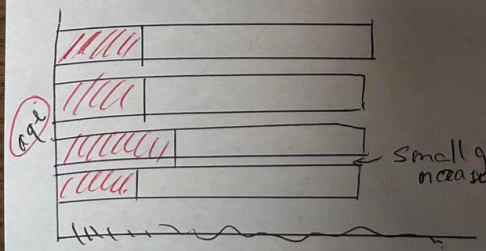


- Vegalite - transform y-axis and axis scale to double for negative and positive.
- adding a brush to select field.
- create. x-axis for year.

VIS2

- vegalite. - create a count ~~filter~~ transform for category and rank
- stack the ~~category~~ count ~~filter~~ transform
- calculate to find the gap by * 0.9/3
- find the rank min and max for top and bottom of the ~~chart~~ chart

VIS4



- calculate the percentage population of male + female commit crime rate.
by * 0.05 (male) and (0.0091) female
- Plot stack bar chart horizontal
- increase the chart width
- x axis applies aggregate total of population

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