

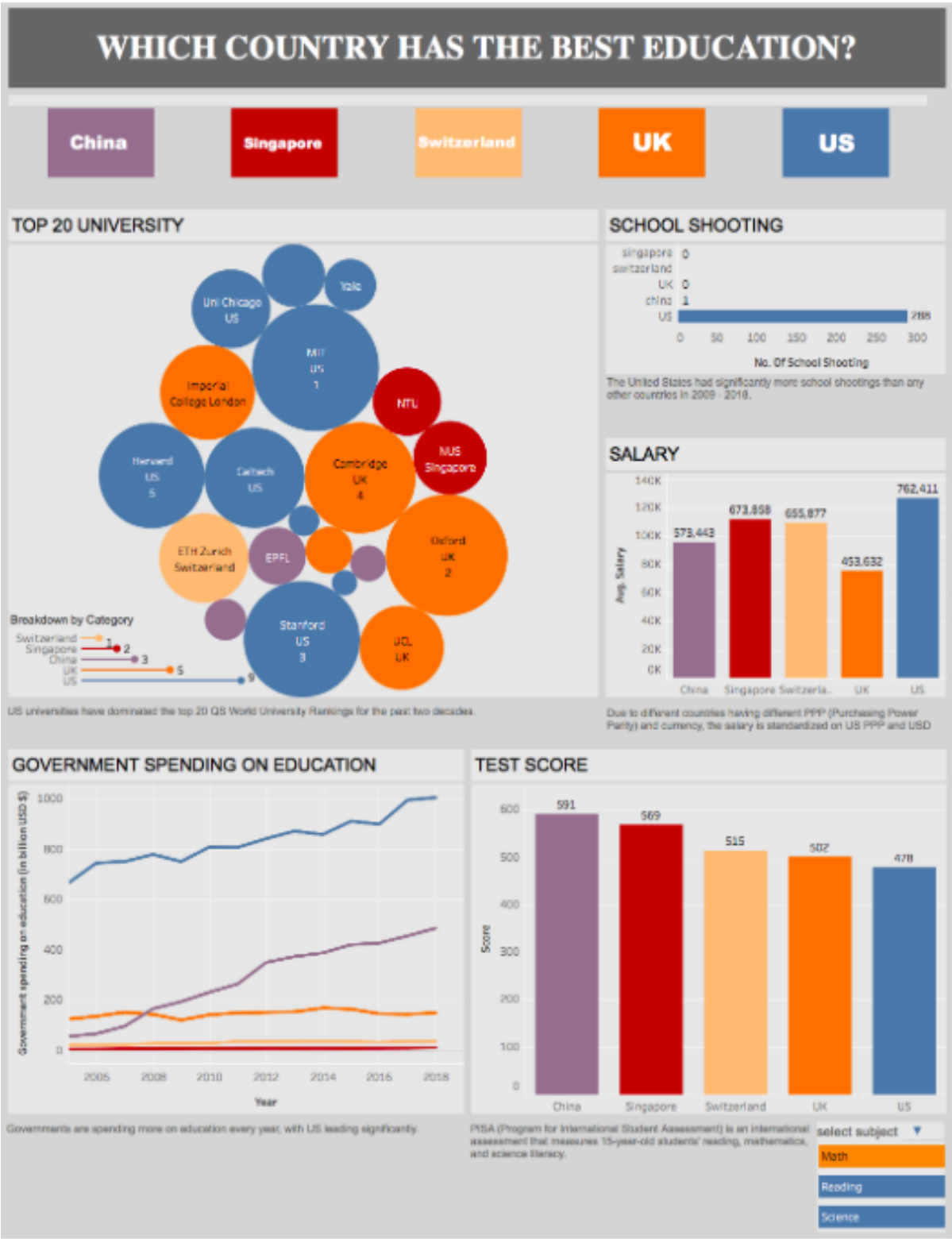
WHICH COUNTRY HAS THE BEST EDUCATION?

<https://public.tableau.com/app/profile/cher1888/viz/FIT3179-ass1/Dashboard22?publish=yes>

Name: Cherline Delfina Tandra

Student number: 31864767

Word count: 1142



AIM

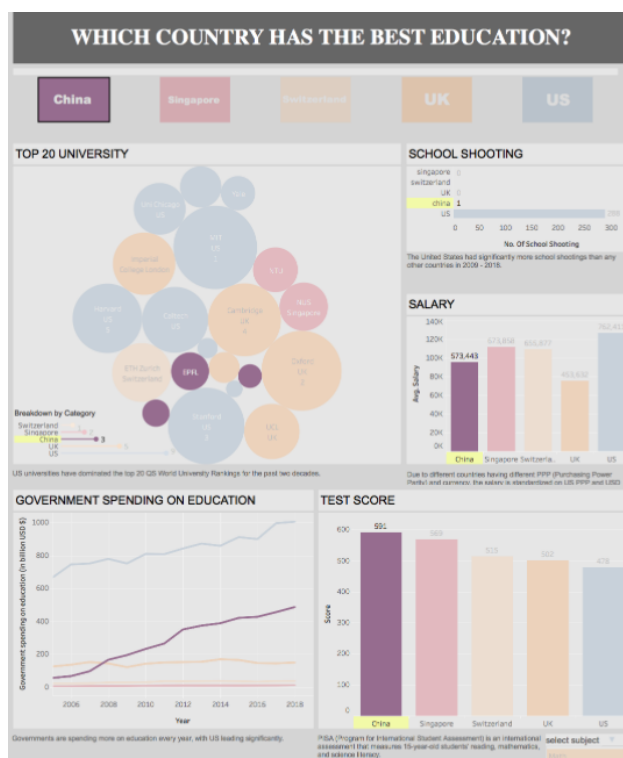
The aim of my visualisation is to help students decide on the best country to continue their education in by showing the country with the best education based on 5 perspectives: university ranking, safety (number of school shootings), salary, test score, and government spending on education.

WHAT

The data is taken from multiple sources: WorldBank, QS Quacquarelli Symonds, and World Population Review. However, none of the datas is Tableau ready. My original plan was to use RStudio to clean the data but since I only analysed 5 countries, there is very minimal data and retyping it on microsoft excel is the most efficient way.

I chose to keep it simple by only having the top 5 countries that have universities in the top 20 so as to not clutter the visualisation. It makes it easier for readers to make a decision on the best country to continue their education in since it is easier to compare a few countries.

WHY & HOW



I added a country filter (figure 2) that allows readers to highlight their desired country. For instance, if readers are interested in pursuing their education in 'China', they can click on the 'China' filter, which highlights 'China' in all of the visualisation and makes it stand out.

Figure 2. Country filter

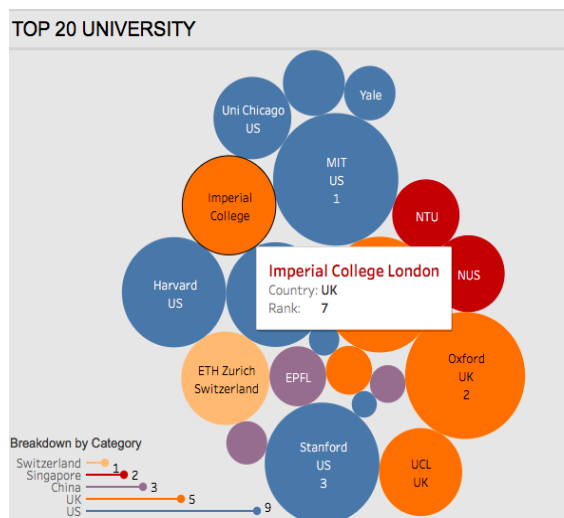


Figure 3. Top 20 universities

I also added a breakdown by category, grouping the universities by country. I used a lollipop chart to show a comparison of the number of top 20 universities between different countries because bar/lollipop chart is best to show comparison between different groups. It allows readers to compare values between different countries, look up value of a country, and find min/max.

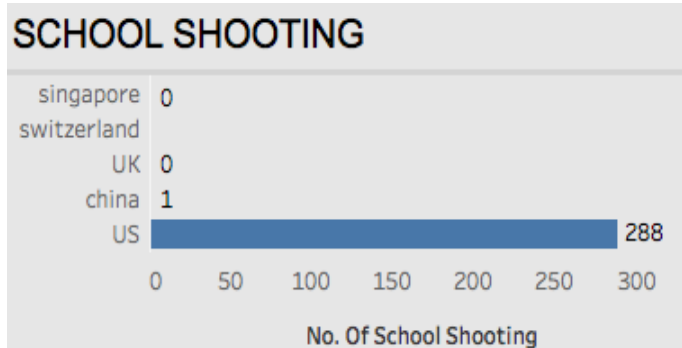


Figure 4. School shooting

I used a line chart to show government spending on education per country overtime (Figure 5) since the line chart is best to show changing values over a time span and readers can compare government spending between countries and within countries of different years.

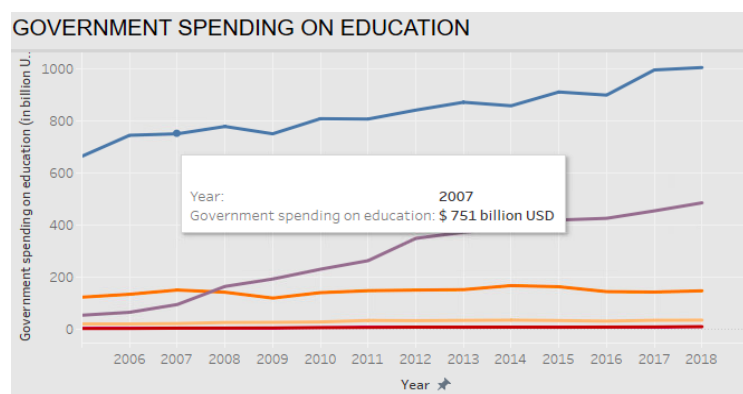


Figure 5. Government spending on education

To show the top 20 universities, I used a packed bubble (figure 3). Rank of different universities is shown with a bubble of different sizes. Since the bubble sizes are relatively similar and some of the bubbles are too small to have labels in it, I used tooltip so readers can see the information when they hover over the bubbles.

To show the number of school shootings, I used a bar chart (Figure 4) because it allows readers to compare values between different countries

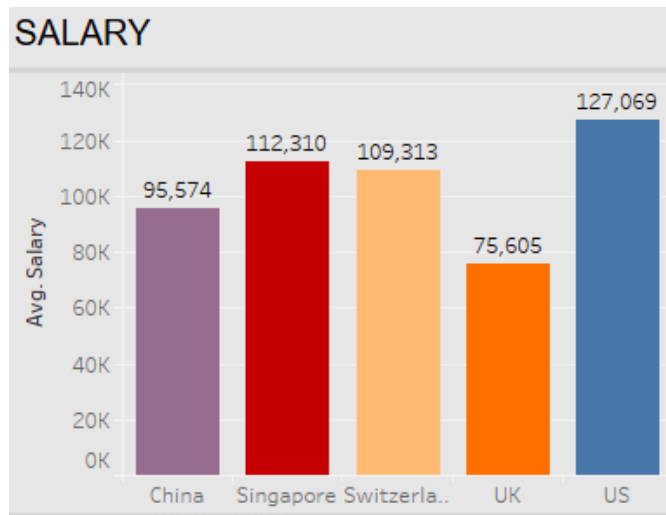


Figure 6. Salary

I used tooltip (Figure 7) to allow readers to hover over each country and see more insights on the salary by different degrees. I used a lollipop chart because it allows readers to compare values between different degrees.

To show the average salary, I used a bar chart (Figure 6) because it allows readers to compare values between different countries, look up the value of a country, and find the min/max.



Figure 7. Salary by degree

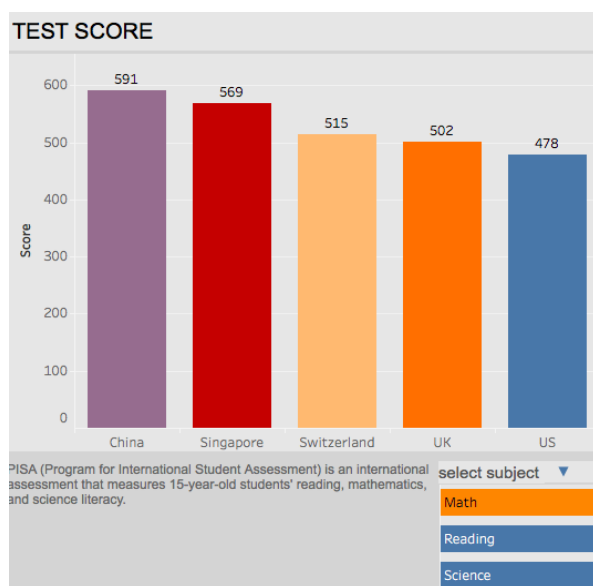


Figure 8. Test score

I used a bar chart (Figure 8) to show the test scores and I also added a drop down menu to select the subjects to show the hierarchy of countries that perform best in certain subjects. It allows readers to compare grades between different countries, find the min/max based on selected subjects.

DESIGN

LAYOUT

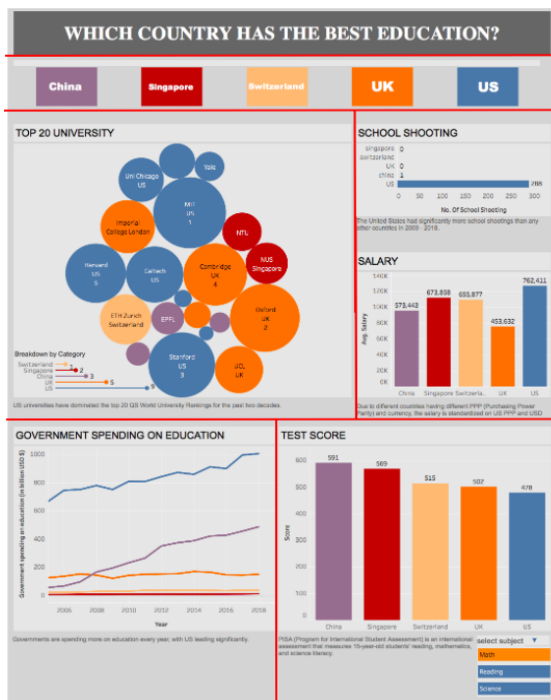


Figure 9. Dashboard layout

COLOUR

I chose grey for the layout because I wanted a mute colour so the colour of the visualisation will stand out. I used light grey as the background colour of the figures so it doesn't blend in with the colour of the visualisations. I used dark grey for the header's background colour as people's first focus will go towards darker colours first since it stands out more.

I used colour hues as a channel for the country category. I used 5 out of the 6 secondary colours to ensure the colours are not very similar to one another and it is easily distinctable, except for green because people who have colour vision deficiency can't distinguish between red and green. Also, I used the same colours for the country category throughout the entire dashboard as to not confuse readers.

For the header, I use white to create a strong visual contrast against the grey background. I also used white for the colour category filter below the header and packed bubble chart annotation to contrast with the colourful background. I used black for the subheading and dark grey for the visualisation caption to set a hierarchy since users read from darker to lighter colour.

I used light grey closure for grouping to give it a clean look and less distracting background colour. The sight lines are minimal (red line in figure 9) to stabilise and enhance the layout, so it looks neat and more pleasing to the eye. The heading and the country filter is centre aligned and the country is evenly spaced out to create symmetry. The visualisation is arranged evenly to ensure it is balanced. Also, I try to fill in the dashboards with enough visualisations and text so it has minimal white space but not too crowded.

FIGURE GROUND

The visualisation is colourful, the heading and country is white, the subheading and the annotation is black, the axis and the visualisation caption is dark grey, and the background colour is light grey to distinguish the figures and text from the background and create hierarchy. The colourful figures attract the eye so it will be the first thing readers see, then darker colour (black) comes second, and lighter colour (grey) comes last.

TYPOGRAPHY

I only used 2 font styles: Arial and Seqoe Print to keep it simple, Seqoe Print for the heading to make it unique and stand out, Arial for the rest of the texts. I create hierarchy by variation in typography. I used a large font size, bold and all capital letters for the heading to emphasise it and make it stand out, first thing readers read. The subheading is in all capital letters and smaller font size than the heading. All the subheadings have the same typography to make it uniform. 'Breakdown by category' has a slightly larger font size than the caption but smaller than the subheading since it is a visualisation that explains the top 20 university packed bubble further, not the main visualisation. The visualisation caption is small and grey. The visualisations have black annotations to emphasise and distinguish it from the axis.

The heading and country is centre aligned while the subheading and visualisation captions are left aligned to create balance and slight variation to make it look more eye-catching.

I try to keep the 10 word per line rule for texts with more than 1 line because If a line is too long, the readers might continue reading on the wrong line.

REFERENCE

The World Bank (2022). Education Statistics (EdStats). Retrieved from <https://datatopics.worldbank.org/education/wDashboard/dqlearningcnty>

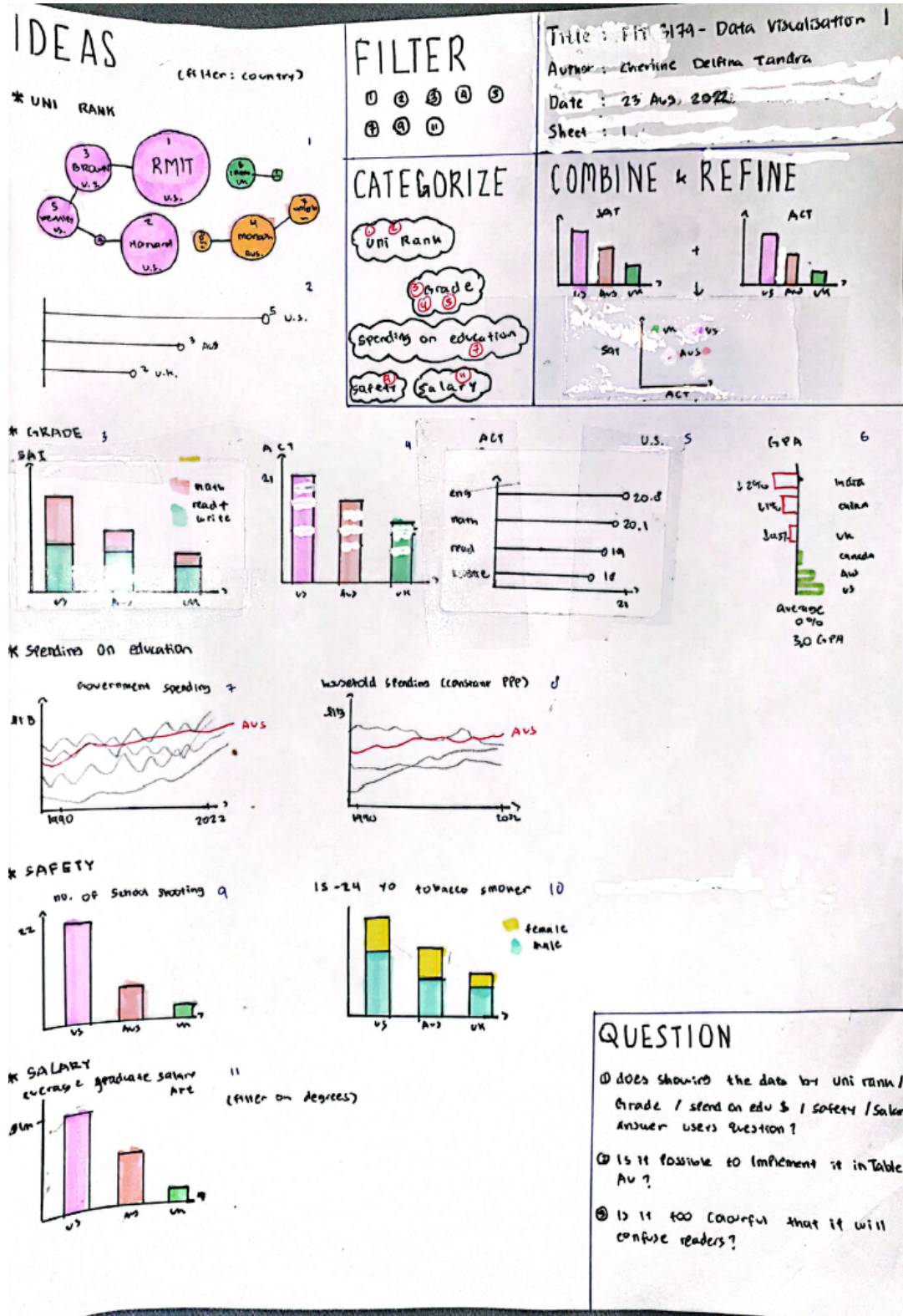
The World Bank (2022). Harmonized Test Scores. Retrieved from https://govdata360.worldbank.org/indicators/hc58163b0?country=BRA&indicator=40961&viz=line_chart&years=2010,2020

The World Bank (2022). Government expenditure on education, total (% of GDP). Retrieved from <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>

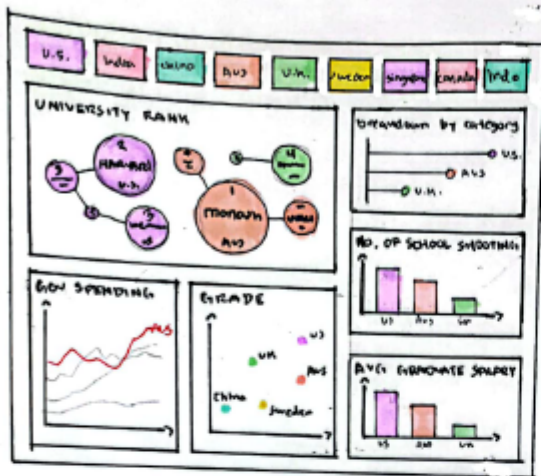
QS Quacquarelli Symonds (2022). World University Ranking. Retrieved from <https://www.topuniversities.com/university-rankings/world-university-rankings/2022>

World Population Review (2022). School Shootings by Country 2022. Retrieved from <https://worldpopulationreview.com/country-rankings/school-shootings-by-country>

APPENDIX



LAYOUT



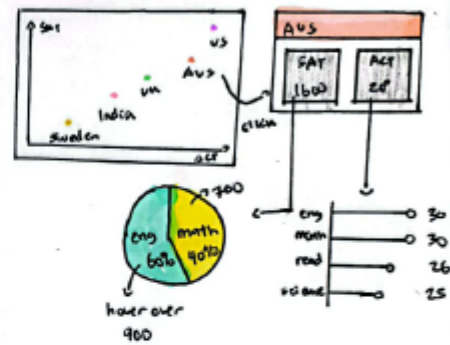
Title : FIT 3179 - data visualisation 1

Author: Cherie Debra Tandra

Date : 23 Aug 2022

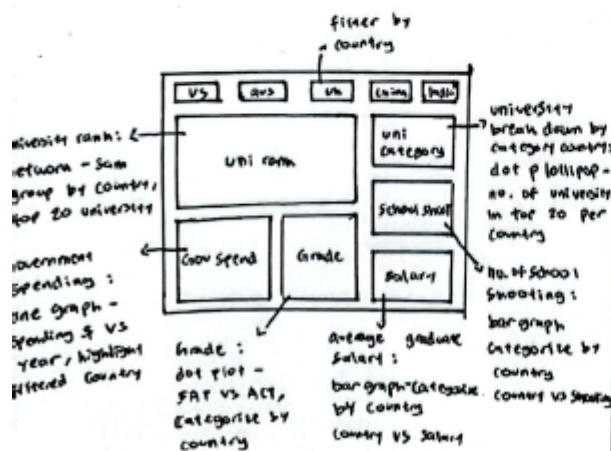
Sheet : 2

OPERATION



FOCUS

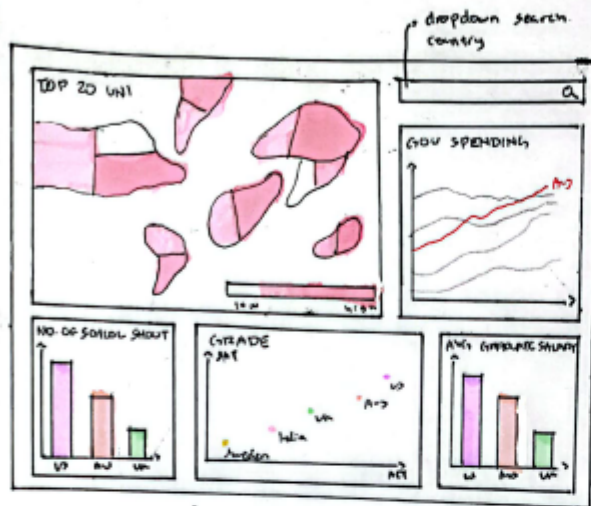
*even focus on everything



DISCUSSION

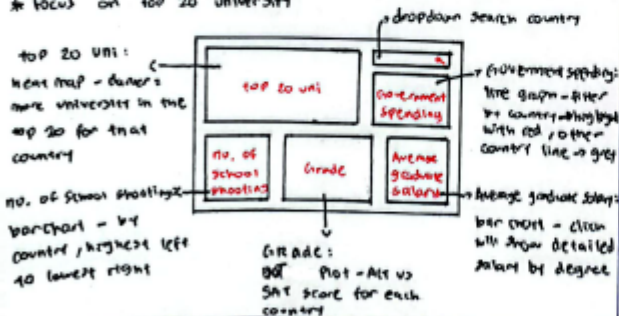
- * lots of interaction for user
- * uniform colours for country
- * neat layout, not too complicated
- * filtered by country to make it easier for user to see

LAYOUT



FOCUS

* Focus on top 20 university



DISCUSSION

- * Is knowing the detailed ACT / SAT score important?
- * Same color used to represent 1 country throughout the visualizations
- * Lots of user interaction
- * Does the visualization answer user question?
- * Too much graphs in small interaction

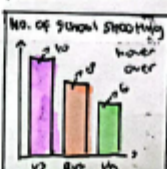
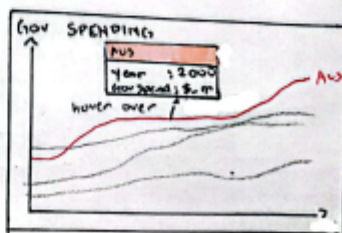
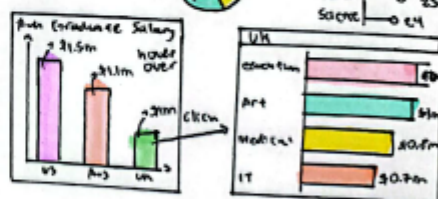
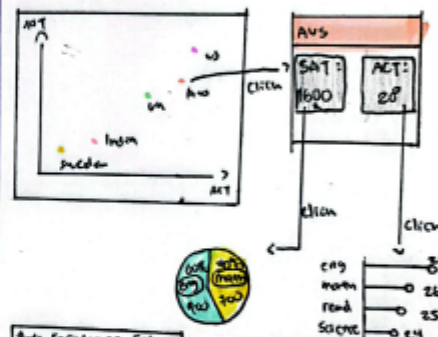
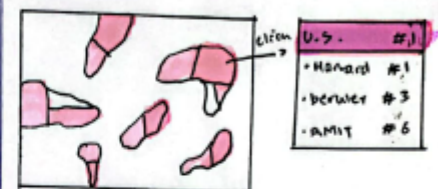
Title : FIT 3179 - Data Visualization 1

Author : Cherline Defina Tandora

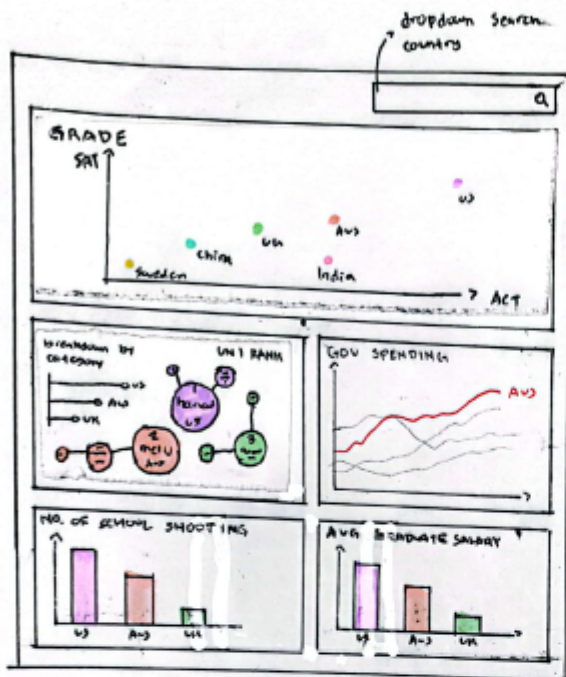
Date : 23 Aug 2022

Sheet : 3

OPERATION

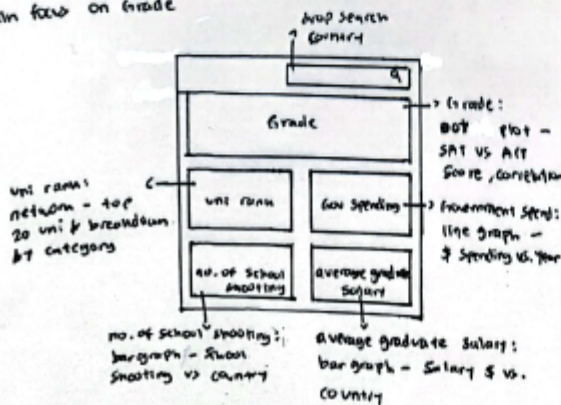


LAYOUT



FOCUS

* main focus on Grade



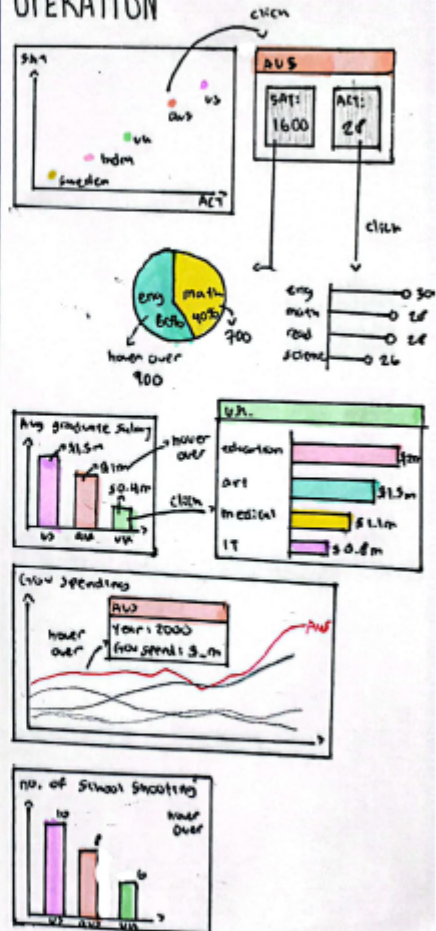
Title : FIT 3179- Data Visualisation I

Author : Cherline Deftan Tandem

Date : 23 Aug 2022

Sheet : 4

OPERATION



DISCUSSION

- * 1043 of Interaction
- * uniform colours
- * too little visualisation?
- * Simple layout
- * Can be filtered by country to location & make it easier for

LAYOUT



DETAILS

Dataset

Combined 'Kaggle' + 'World Bank' on countries:

Countries:	degrees:
- US	- Education
- UK	- ART
- Switzerland	- business
- Singapore	- Medicine
- China	- Law
	- IT
	- Engineering

Imported with excel & cleaned with R-Studio

Estimate Time

- 26 Aug 2020: clean data
- 28 Aug 2020: main layout, visualization
- 01 Sept 2020: inside graph interaction & filter
- 04 Sept 2020: finalize everything

Dependencies

D3

Software used

Tableau

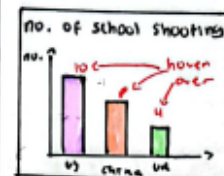
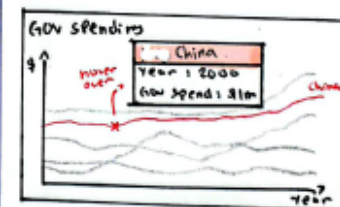
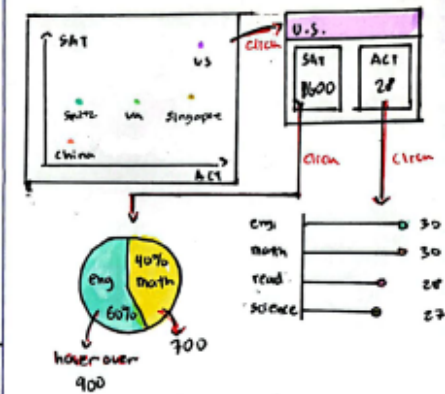
Title: FIT 3179 - Data Visualization 1

Author: Cheriec Bettina Tanden

Date: 23 Aug 2022

Sheet: 5

OPERATION



- * lots of graphs in graph interaction to not overflow dashboard
- dashboard: main info
- interaction: add-much info