MONASH University
Information Technology

ASSESSMENT COVER SHEET

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Given Name	Germaine Yi Min
Family name	POK

Unit Name and Code:	FIT 3179 Data Visualisation		
Campus:	Malaysia		
Assignment Title:	Data Visualisation 1		
Name of Lecturer:	Miss Grace Ting		
Name of Tutor:	Miss Grace Ting		
Tutorial Day and Time:	Wednesday 10am - 12pm		
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Email Address:	gpok0001@student.monash.edu		
Has any part of this assignment been previously submitted as part of another unit/course? ☐ Yes ☑ No			
Due Date:	13 September 2020	Date Submitted:	13 September 2020

All work must be submitted by the due date. If an extension of work is granted this must be specified with the signature of the lecturer/tutor.

Extension granted until (date)_____ Signature of lecturer/tutor _____

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URL:
https://public.tableau.com/views/Assignment1_15990042268670/Dashboard2?:language=en&:display_count=y&publish=yes&:origin=viz_share_link (please copy paste the link to access visualisation)

Word Count: 698

The domain of this visualisation is related to insurance, specifically car insurance. This visualisation is meant for viewers that wish to investigate the estimate prices offered by different insurance companies in Australia.

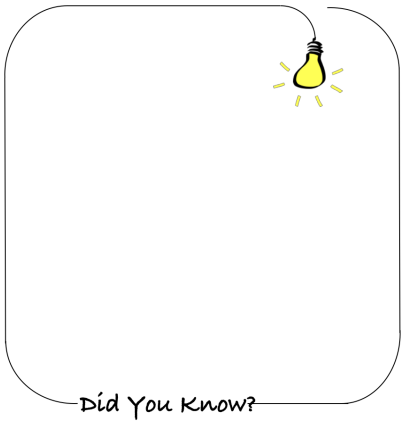
What: A brief description of the data

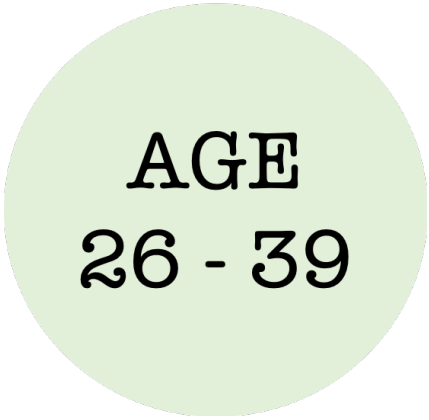
The main dataset[1] used was obtained from the official website of the Australian Government, Department of Transport. It is a dataset about Australian Road Deaths.

A second dataset was also used, but it was created by myself as the pricing data needed to be extracted individually from different insurance website [11][12][13][14] as the driver's data needed to be keyed in individually 12 times on 4 different websites. Not only that, the prices of insurance premium is subjected to change and is not always constant hence, with the same exact profile the offer received today may not be the same as the offer received tomorrow.

The purpose of this visualisation is to investigate whether the insurance premium offered to young driver is justified or not. The main dataset is used to compare among drivers of different age and whether it is justified for young drivers to be offered high insurance premium than older drivers. The second dataset is used to prove that young drivers indeed get charged higher insurance premium. Car Accident Statistics 2020[3] website was used to provide mini facts for viewers

For this visualisation, I have also taken in the creative liberty to design the 'Did You Know' box and also the interactive tooltip Age Icon using Microsoft PowerPoint.





Why and How: Give a rationale for choosing the specific idioms and explain how they help the users to achieve their tasks

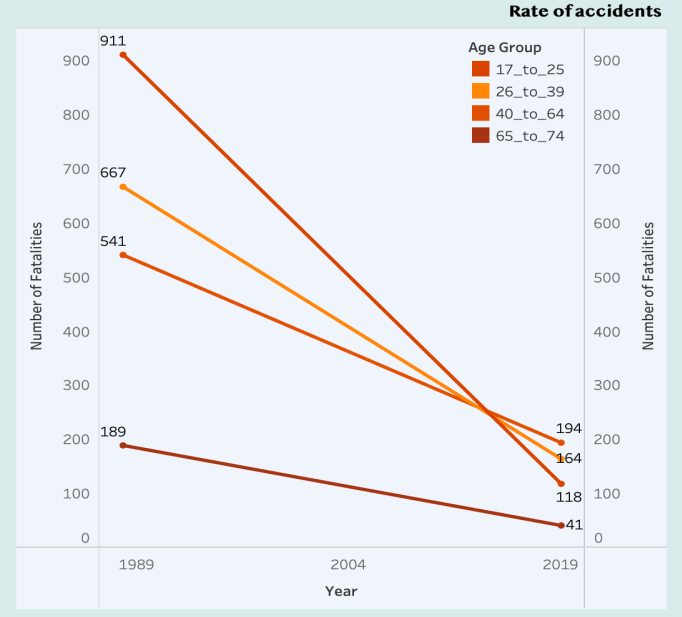


Figure 1.1 – Slope Chart

<u>Slope chart</u>

What?

Quantitative attribute – Number of fatalities

Ordinal attribute - Years

Dataset Type – table

How?

Marks – Point

- Lines

Channel – Length (indicates how much change has occurred over time)

– Position (vertical position)

- Tilt (indicates angles vary on how much change in fatalities occurs in 1989 - 2020)

- Colour (Luminance)

Why?

This slope chart helps the users to see the rate of change of accidents over time and helps to justify the claim that young drivers are becoming safer. **Each line contains an interactive tooltip that helps user to clarify the information provided.**

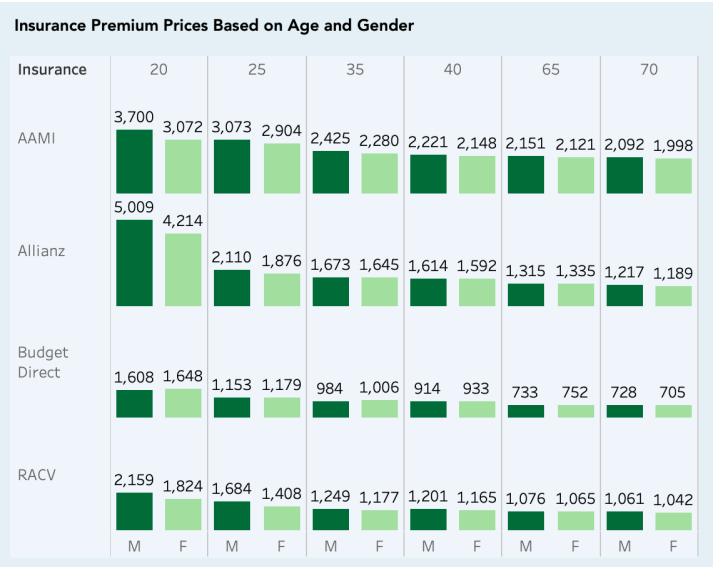


Figure 1.2 – Bar Chart

Bar chart

What?

Quantitative attribute – Insurance Price

Categorical attribute – Gender
- Age

Dataset Type – table

How?

Marks – Lines

Channels – Length (to differentiate values in the bar chart)
- Colour (luminance)

Why?

This bar chart is to help user understand the difference in insurance price quotation among drivers of different age and gender. This helps to prove that young drivers are indeed charged a higher insurance premium compared to older drivers.

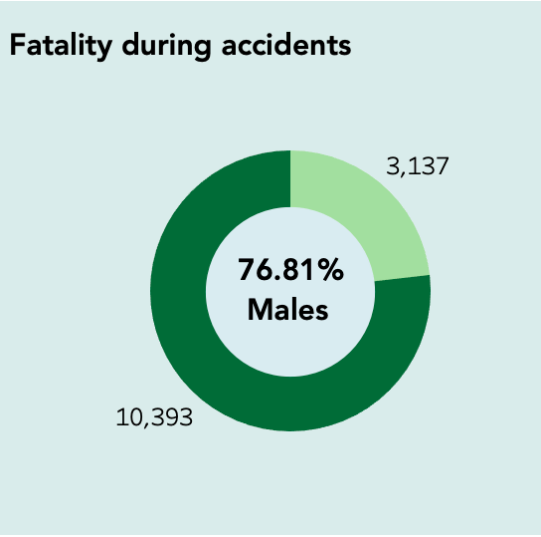


Figure 1.3 – Donut Chart

Donut chart

What?

Quantitative attribute – Number of fatalities (depending on what age we are looking at)

Categorical attribute – Gender

Dataset Type – table

How?

Marks – Area

Channels – Angle
- Colour (Luminance)

Why?

In this visualisation, there are 3 donut charts for 3 different age group that display the similar information but it is dependent on which age group the viewer is looking at. The purpose of this idiom to show that which gender of the particular age group is involved in accidents the most frequent and allows the viewer to compare among the age group.

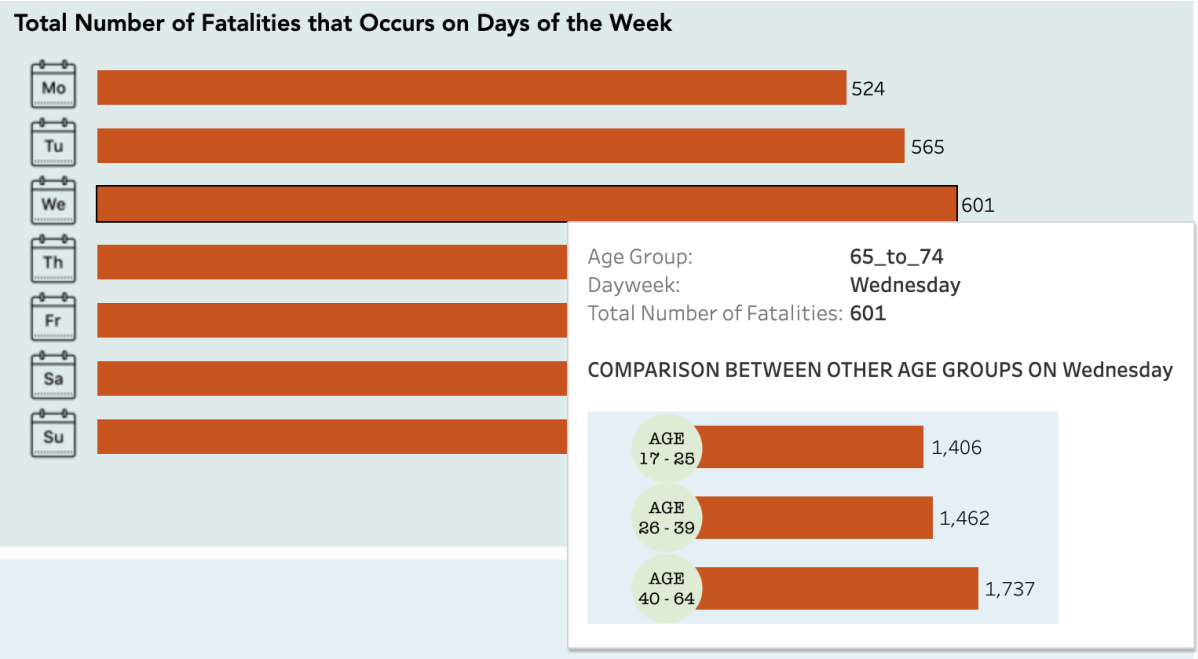


Figure 1.4 – Horizontal Bar Chart

Horizontal Bar chart

What?

Quantitative attribute – Number of fatalities (depending on what age we are looking at)

Categorical attribute – Day of the Week

- Age Group

Dataset Type – table

How?

Marks – Lines

Channels – Length (to differentiate values in the bar chart)

- Colour (Hue)

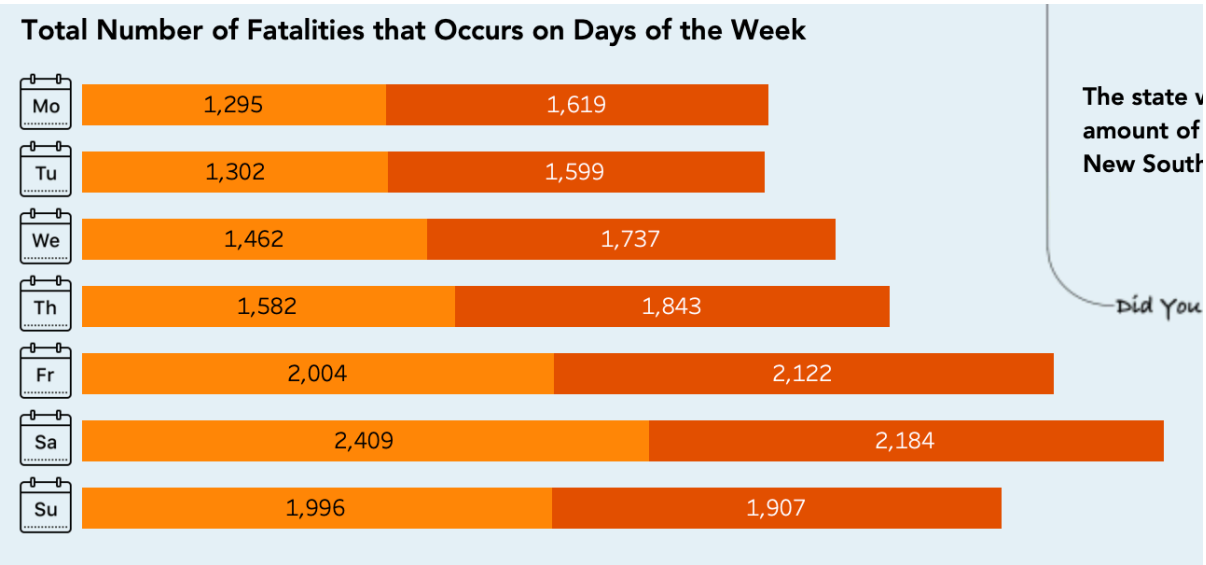


Figure 1.5 – Stacked Horizontal Bar Chart

Stacked Horizontal Bar chart

What?

Quantitative attribute – Number of fatalities (depending on what age we are looking at)

Categorical attribute – Day of the Week

- Age Group

Dataset Type – table

How?

Marks – Lines

Channels – Length (to differentiate values in the bar chart)

- Colour (Luminance)

Why?

The purpose of **both** idiom is to show the viewers the number of accidents that occur within each day of the week for different age group. This allows the viewers to compare among which day has the highest fatality count. **There is also an interactive tooltip that allows users to compare each day between different ages and see if the number of fatalities is similar to other age group.**

Screenshot of Visualisation

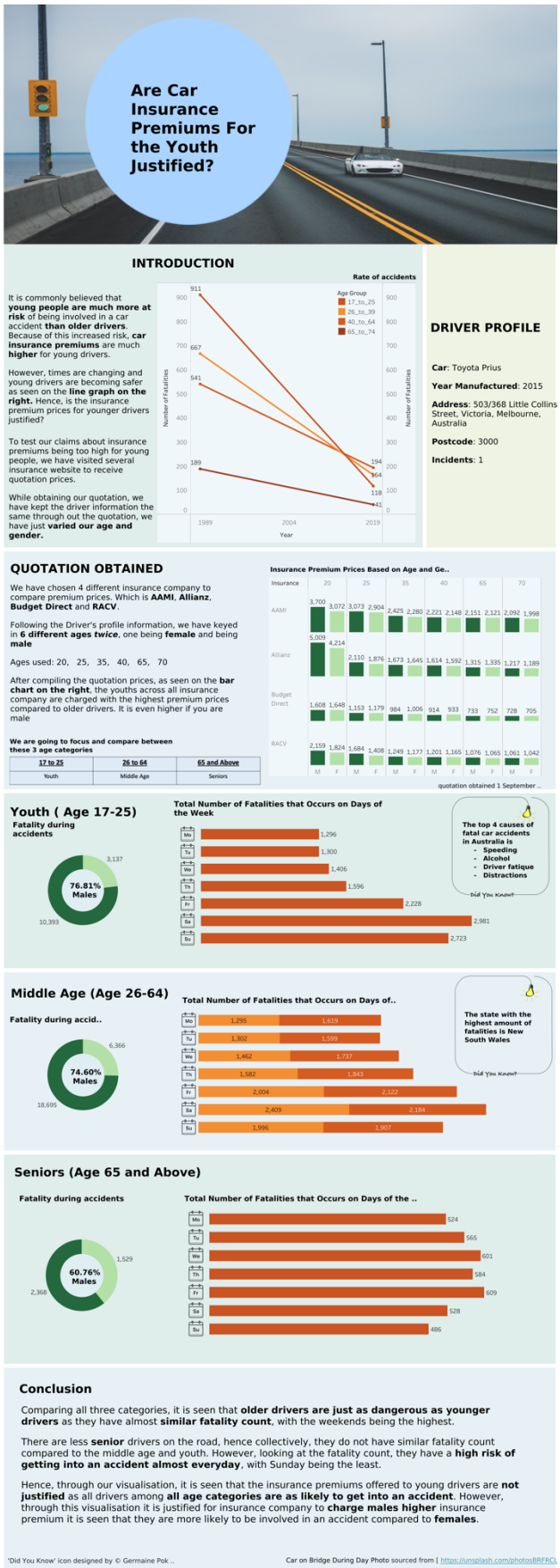


Figure 1.6 – Visualization

Bibliography

1. Australian Bureau of Infrastructure, Transport and Regional Economics. (2020, August 14). Australian Road Deaths Database, Fatalities.xlsx. Retrieved September 6, 2020, from https://www.bitre.gov.au/statistics/safety/fatal_road_crash_database

2. Mclean, E. (2019, July 26). Car on Bridge During Day Photo [Digital image]. Retrieved September 7, 2020, from https://unsplash.com/photos/BRFRCLCsg0k

3. Budget Direct. (2019, October 01). Car Accident Statistics 2020: Car Research & Statistics - Budget Direct™. Retrieved September 13, 2020, from https://www.budgetdirect.com.au/car-insurance/research/car-accident-statistics.html

4. Monday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58657/monday

5. Tuesday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58674/tuesday

6. Wednesday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58675/wednesday

7. Thursday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58672/thursday

8. Friday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58656/friday

9. Saturday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58671/saturday

10. Sunday Icon [Digital image]. (n.d.). Retrieved from https://icons8.com/icon/58670/sunday

11. AAMI. (2020, September 01). Retrieved from https://www.aami.com.au/

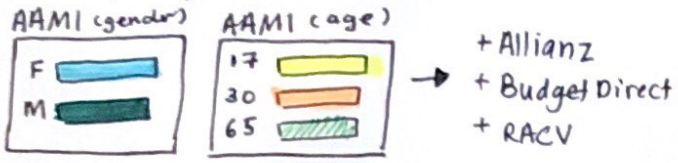
12. Allianz. (2020, September 01). Retrieved from https://www.allianz.com.au/

13. Budget Direct. (2020, September 01). Retrieved from https://www.budgetdirect.com.au/

14. RACV. (2020, September 01). Retrieved from https://www.racv.com.au/

① IDEAS

→ comparing prices (insurance)



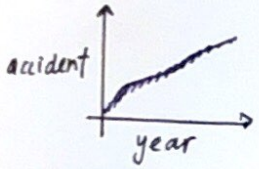
→ which state has the most accidents?

→ compare between age and gender.

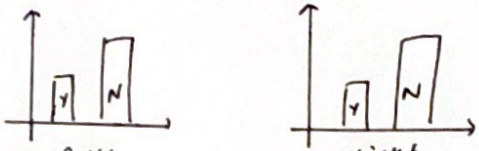
Bar Chart

Pie chart

→ rate of change of fatalities

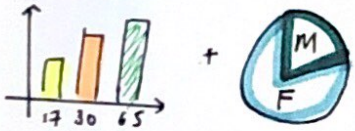


→ Trucks that are involved in accident during the day and night



② FILTER

→ comparing age and gender



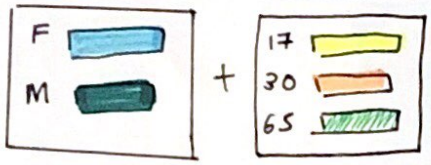
→ compare prices

→ rate of change of fatalities

→ state with most accidents

③ CATEGORISE

④ COMBINE & REFINE



combining prices

insurance	gender	
AAMI	⊓⊓⊓	⊓⊓
BD	⊓⊓⊓	⊓⊓⊓
⋮	⊓⊓⊓	⊓⊓⊓

⑤ QUESTIONS

1) Is the cost of insurance fair to young drivers?

2) Are younger drivers more likely to die in accidents than older people?

3) Are males more likely to die in accidents than female?

LAYOUT

Title : Dashboard view

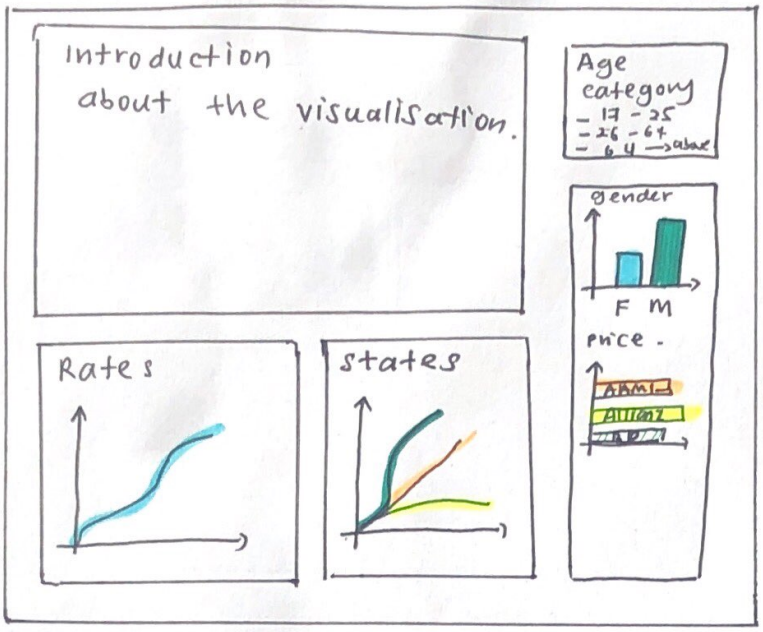
Author : Germaine Pok

Date : 7/09/2020

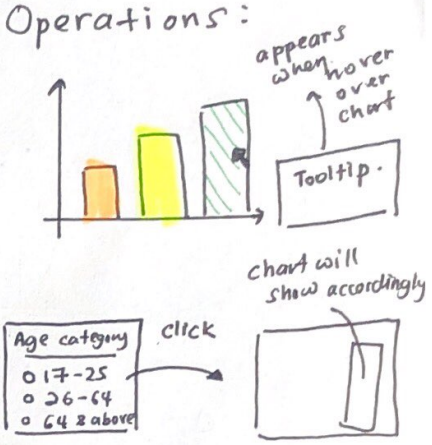
Sheet : 2

Task
- Are car insurance premiums for Youth Justified?

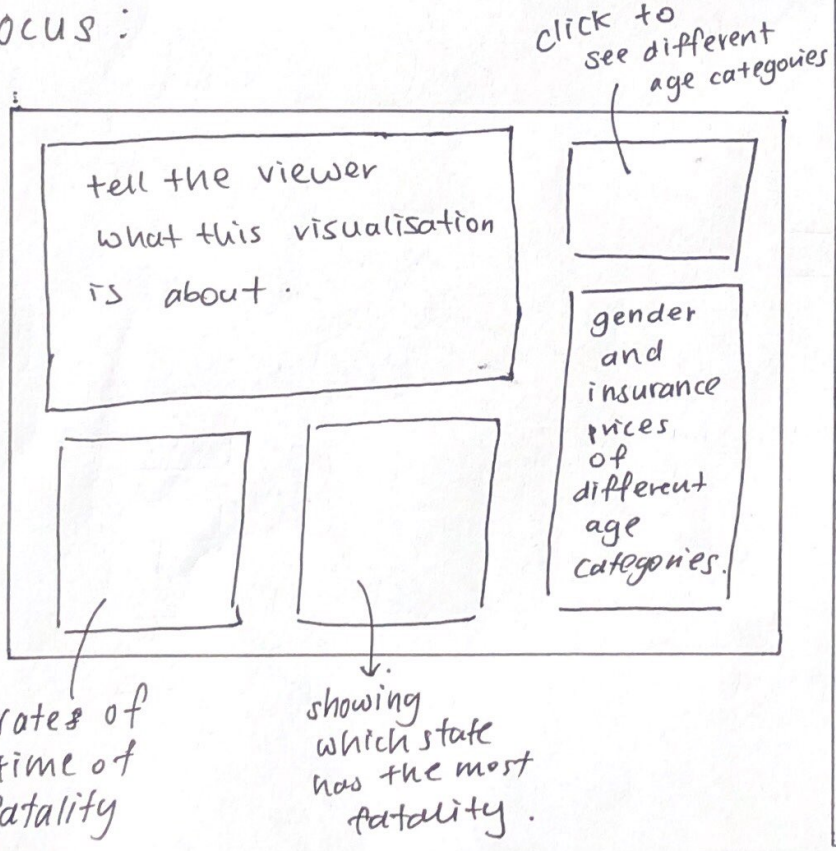
Dashboard View:



Operations:



Focus:

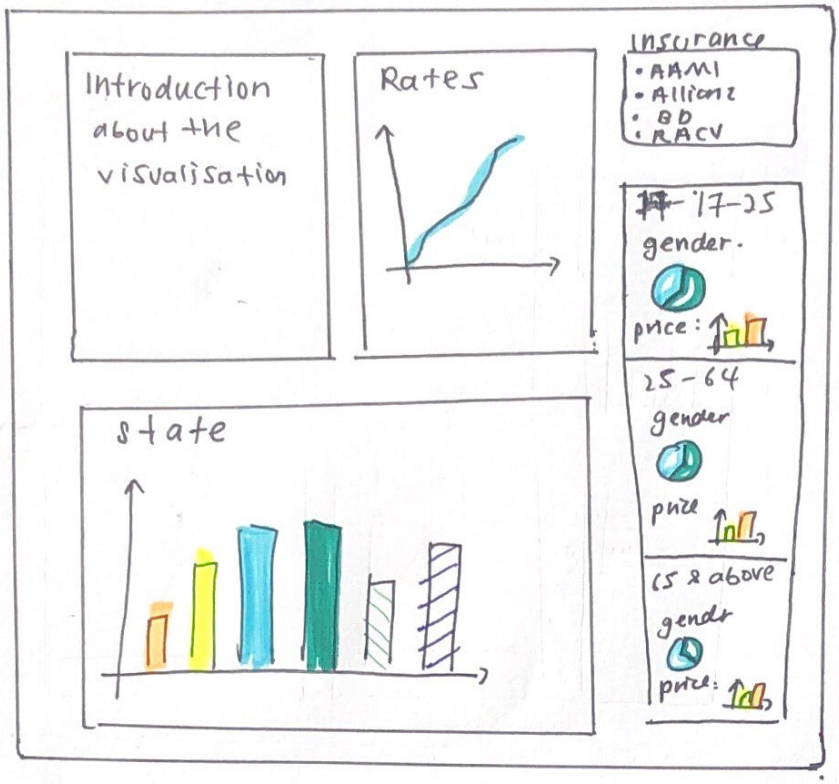


Discussion:

- too much information?
- too cluttered?
- is information necessary?
- landscape? or horizontal view?

LAYOUT

Dashboard View



Title : Revised Dashboard view

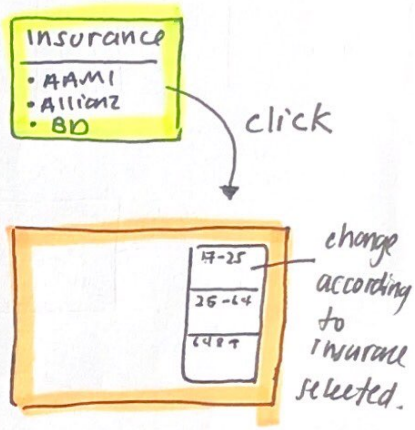
Author : Germaine Pok

Date : 8/09/2020

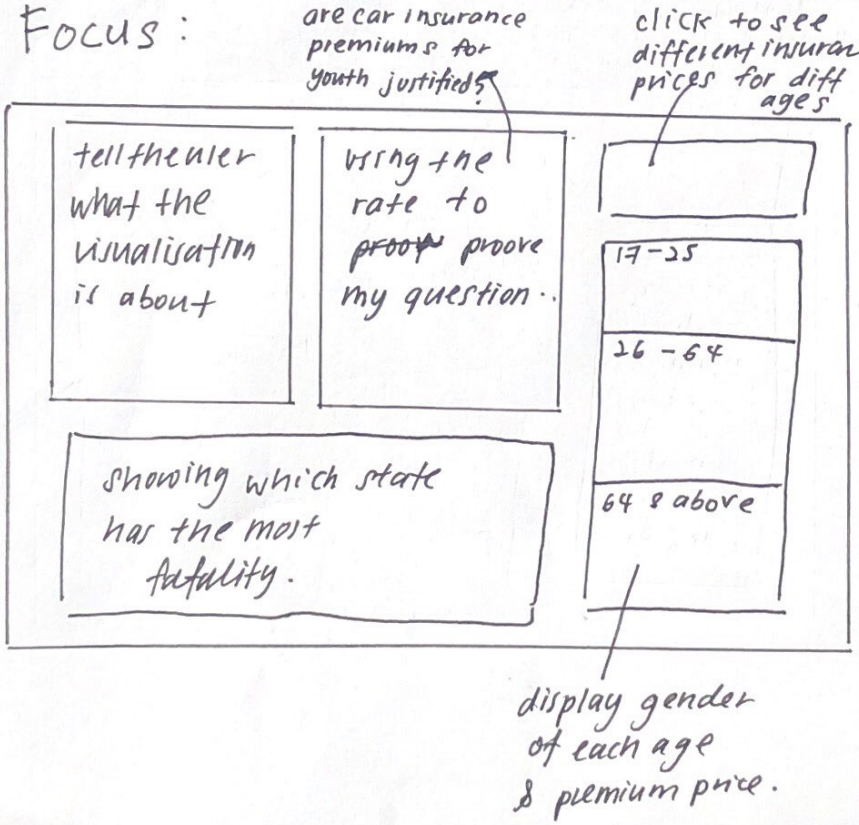
Sheet : 3

Task : Revising the visualisation.

Operations:



Focus:

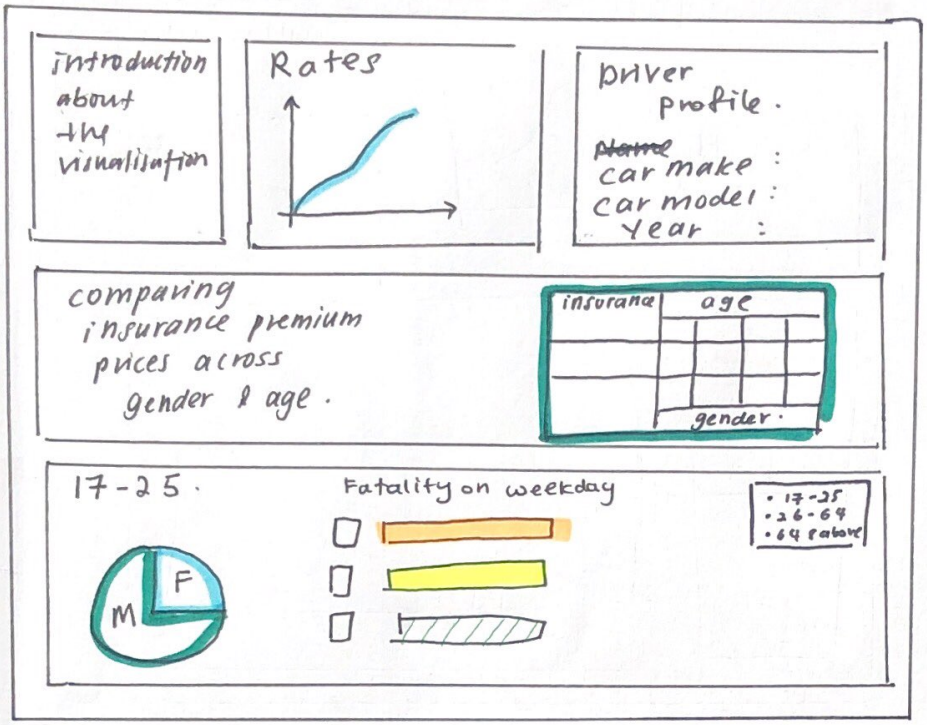


Discussion:

- is the interaction practical?
- Debating on which information is unnecessary.
  - ↳ states?
- Is the interaction Doable?

LAYOUT

Dashboard view



Title : improve Dashboard view

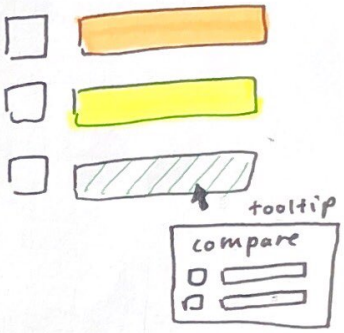
Author : Germaine Pok

Date : 9/09/2020

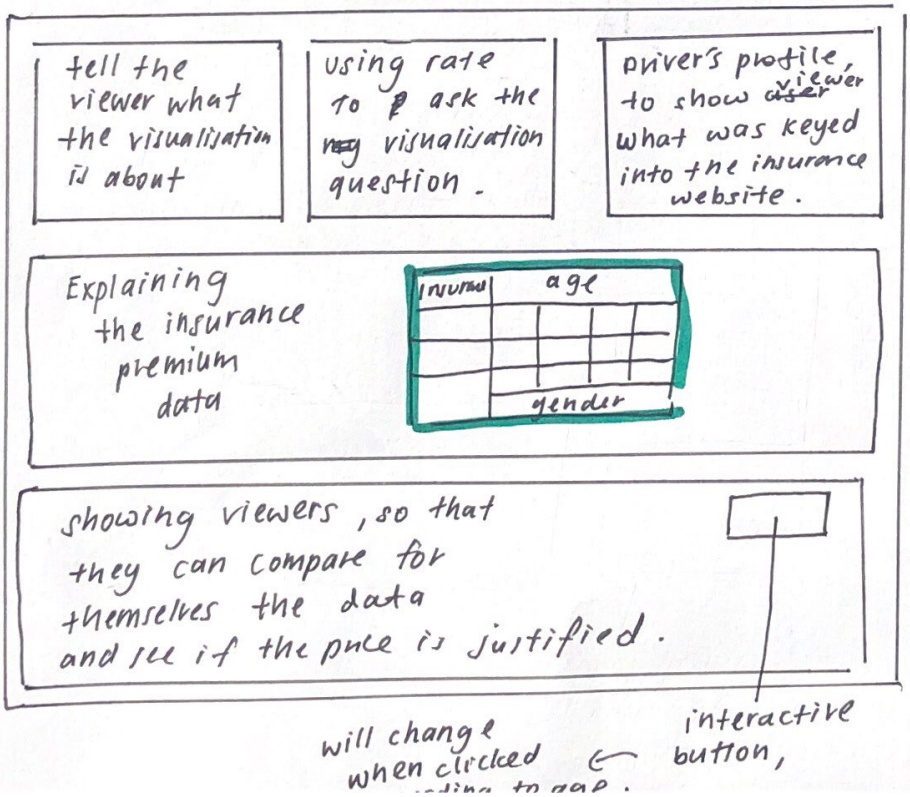
Sheet : 4

Task : improving the visualisation

Operations :



FOCUS :



Discussion :

- able to compare properly with interactive button?
- any better way to deliver visualisation?

LAYOUT

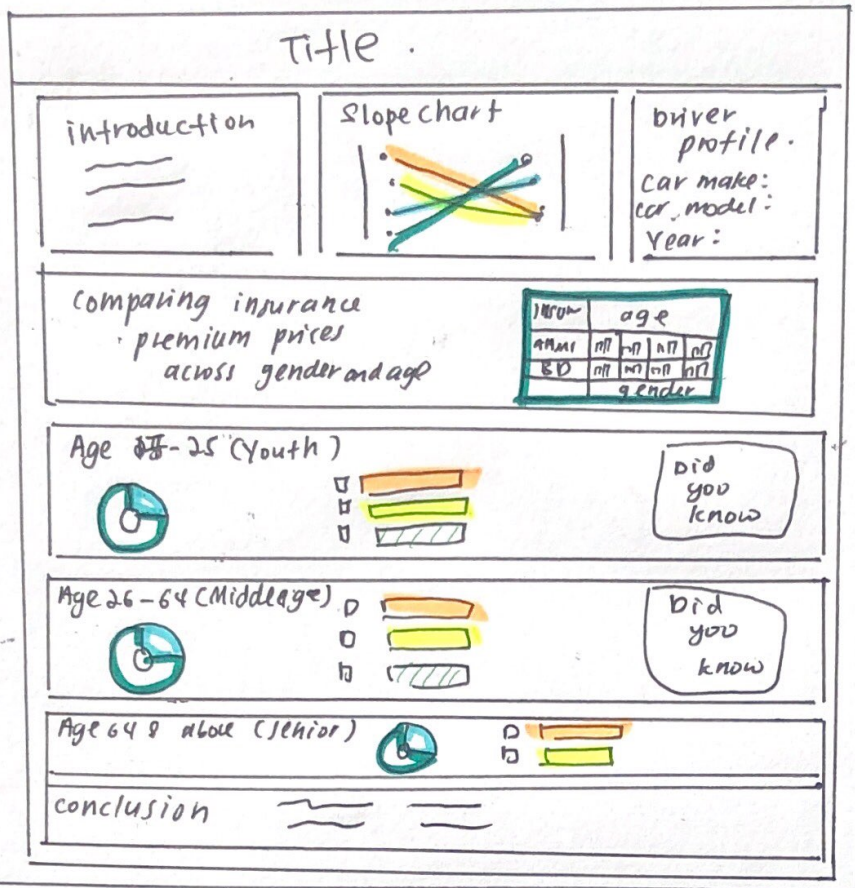
Title : Final Design sheet

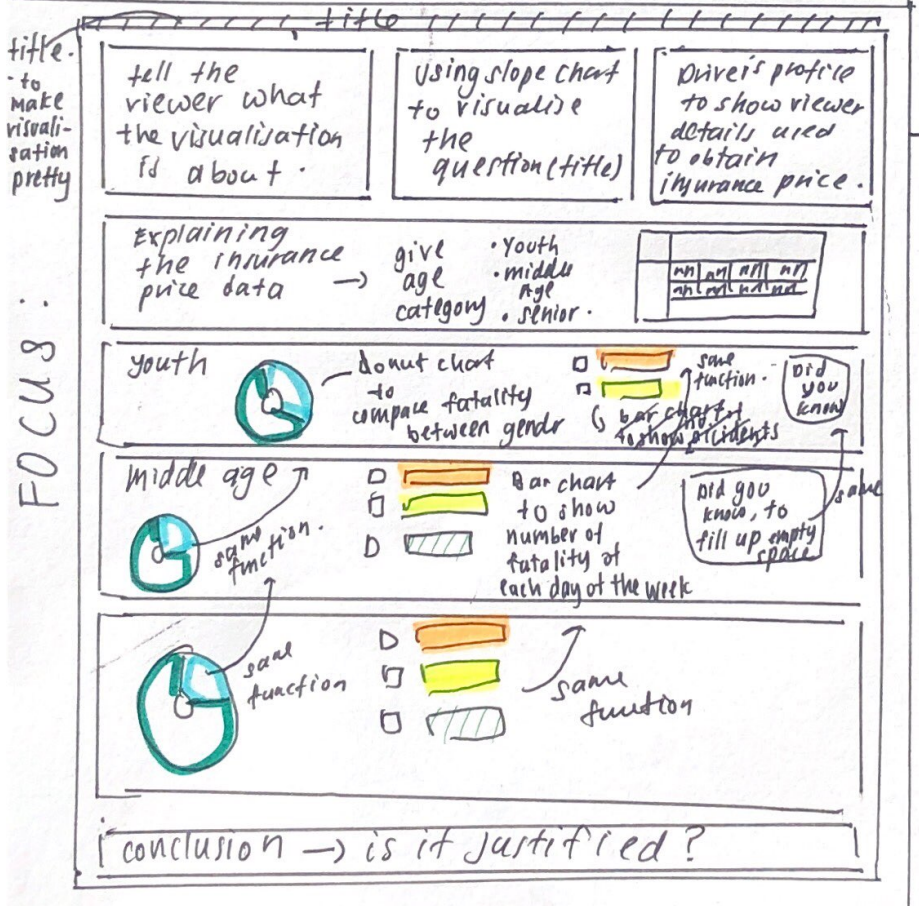
Author : Germaine Pok

Date : 11/09/2020

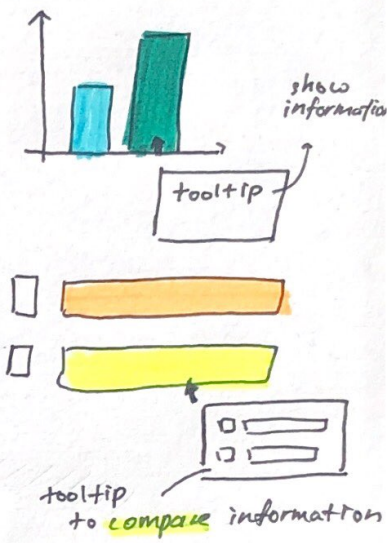
Sheet : 5

Task : Final Implementation Design





Operations



Detail

* Database implemented using excel files.
  → xlsx
* Time to build visualisation
  → 1 week.
* Insurance data obtained by key-ing in data one-by-one and compiling it.