Data Visualisation 1

Semester 2, 2020

Submission

Due date: Sunday of week 6 (13 September), 10 pm.

The submission of a report through the unit website is required.

In addition, **publish your visualisation on Tableau Public and include the URL on the coversheet of your report**.

Introduction

In this assignment you design and build an effective visualisation for data of a specific domain. This will require you to critically evaluate information in a domain of your choice and develop your own visualisation. The domain can be broad or specific depending on availability of datasets. If you have difficulty finding an interesting dataset or domain, have a look at https://www.kaggle.com/datasets.

The aim of the assignment is to apply the data visualisation techniques examined during the first 6 weeks of the semester and demonstrate their use in an innovative context. As such, the visualisation should satisfy the following:

- Why: It should address a particular need within a specific domain of your choosing. It must be targeted to the domain, its needs, and its users. This does not mean the visualisation has to solve an existing problem, but it must be a visualisation that is useful or interesting to people within the chosen domain.
- What: It should use a data source relevant to the domain. The data source does not have to come from within the domain, however the data itself must obviously be relevant. Data can be of any kind.
- Who: Design your visualisation for the average Australian or Malaysian.
- It must turn data into something meaningful and provide insight that would otherwise be difficult without the visualisation.
- It must provide interactive exploration.
- It needs to show some innovation. It does not have to be wholly original but cannot be a replica of a visualisation that already exists. It could be an innovative visualisation, or the use of a known visualisation with a new kind of data.
- It must demonstrate the use of the Five Design Sheet methodology for sketching and planning the design of your visualisation.

- It must demonstrate the use of the Munzer What/Why/How framework discussed in lectures for correctly assessing the type of data, the goals of the visualisation and the design of the visualisation.
- It must apply design principles discussed throughout the unit, such as data-ink ratio, storytelling, layout, and visualisation idioms with appropriate use of marks and channels.

Task Description

1. Choose a **domain** that you would like to explore.
2. Find relevant **datasets** that are publicly available.
3. Present your domain, design ideas, and datasets to your tutor to obtain **approval** in the Week 3 lab. This is a hurdle requirement for this assignment: You must obtain formal approval from your tutor.
4. Design a narrative visualisation using the **5 Design Sheet Methodology**.
5. Implement your design with **Tableau**
6. Make your visualisation publicly viewable and ensure your Tableau file cannot be downloaded:
   https://kb.tableau.com/articles/howto/preventing-workbook-downloads
7. Write a **report with a maximum length of 700 words** covering the following:
   a. A cover sheet with the number of words and a **URL** of your visualisation.
   b. A brief description of the **domain, Why** and **Who**.
   c. **What**: A brief description of the **data** (sources, authors, relevance, creation process, etc.).
   d. **Why and How**: Give a rationale for choosing the specific idioms and explain how they help the users to achieve their tasks. Include at least one screen capture of your entire visualisation, and a description of features that are special to your visualisation.
   e. **Bibliography**.
   f. Appendix with scans of your **5 Design Sheet Methodology** outcome.

Expectations

Format: The entire visualisation must be accessible through a single URL. The entire visualisation must be visible on a single web page that can be scrolled. There should be no buttons (or other web links) that swap the major section of the web page, but you can use buttons to show and hide individual page elements.

Presentation not exploration: The goal of this assignment is to create a visualisation that communicates interesting information in an easily accessible and graphically engaging way using storytelling elements, layout principles, typography and graphical design. The goal is not to create an expert tool for exploring a dataset.

Quality not quantity: Your visualisation will likely contain between 3 and 10 charts or diagrams that you create. However, there are no minimum or maximum numbers of charts. Instead, we are looking for carefully designed and annotated charts that – in

combination with text and possibly icons and pictures – guide the user through an interesting story.

Interactivity: Interactive features are easy to add in Tableau. Integrate interactivity where it makes sense, but do not just add interactive elements for their own sake.

Maps: Maps will be required for the second visualisation assignment (due in week 11). For this first visualisation assignment, it is recommended to use non-geographic idioms.

Copyright: You are encouraged to use icons and other simple graphical elements where appropriate. When using such elements, it is your responsibility to ensure you have the right to use them. Consult with your tutor if in doubt. You need to indicate the source and URL (if available online) in your report of any external element that you use. There is no need to indicate the source and URL for simple icons (emojis, coats of arms, trademarks, traffic signs, etc.).

Authorship: Because your visualisation is publicly accessible, you should indicate your authorship and the license under which you make your work accessible.

Plagiarism: We will follow up on any kind of academic misconduct. For this particular assignment, you cannot integrate non-trivial graphics (such as diagrams, charts, etc.) created by others.

Marking

This assignment is worth 25% of the final unit mark. A detailed marking rubric is on the next page. **Late penalty of 10% per day and one-week cut off days are applied.**

	HD (80–100)	D (70–79)	C (60–69)	P (50–59)	N (0–49)
5 Design Sheet 2%	All 5 stages completed, large variety of sketches, creative and useful outcome.	All major stages completed, large variety of sketches, useful outcome.	All major stages completed, some variety of sketches, useful outcome.	Not all stages completed, limited variety of sketches, useful outcome.	Most stages not completed, small variety of sketches, outcome not applicable.
Visualisation (a) Idioms and complexity 10%	A substantial number of appropriate standard or custom-built idioms.	A substantial number of appropriate idioms.	A number of standard idioms (e.g. bar chart, line graph).	Small number of standard idioms (e.g. bar chart, line graph), or inappropriate use of idioms.	Inappropriate selection or use of idioms, very small number of standard idioms, incomplete visualisation.
Visualisation (b) Layout, colour, figure-ground 4%	Balanced and symmetric layout clearly structured in columns/rows with good use of white space. All elements aligned with sight lines. Very clear visual hierarchy by using colour and figure-ground.	Balanced and symmetric layout mostly structured in columns/rows with use of white space. Most elements aligned with sight lines. Visual hierarchy by using colour and figure-ground.	Somewhat balanced and symmetric layout not consistently structured in columns/rows. No use of white space. Some elements aligned with sight lines. Some visual hierarchy.	Layout not balanced or not symmetric, no apparent layout structure. Some elements aligned with sight lines. Limited visual hierarchy.	Layout not balanced and not symmetric, no apparent layout structure. Most elements randomly placed. No visual hierarchy by using colour and figure-ground.
Visualisation (c) Typography, storytelling, annotations 4%	Use of non-standard and appropriate typeface. Clear guidance of reader through visualisation. Extensive use of high-quality annotations on diagrams and text outside of diagrams.	Use of appropriate typeface. Guidance of reader through visualisation. Use of high-quality annotations on diagrams and text outside of diagrams.	Use of appropriate typeface. Some guidance of reader through visualisation. Use of annotations on diagrams and text outside of diagrams.	Use of appropriate typeface. Limited guidance of reader through visualisation. Limited number of annotations on diagrams and text outside of diagrams with grammar or content issues.	Use of inappropriate typeface. No guidance of reader through visualisation. Small number of annotations on diagrams and text outside of diagrams with grammar or content issues.
Report (a) Structure and content 3%	Clear report structure. Why, Who, What, How are appropriately and succinctly described. Bibliography included.	Clear report structure. Why, Who, What, How are described. Bibliography included.	Mostly clear report structure, some content is misaligned. Why, Who, What, How are mostly described. No bibliography included.	Report structure not clear, some content is misaligned. Why, Who, What, How are partially described. No bibliography included.	Report structure confusing. Substantial aspects of Why, Who, What, How missing. No bibliography included.
Report (b) Writing and figures 1%	Correct grammar. Writing easy to follow and understand. Figures carefully designed, with numbered caption, and referenced in text.	Correct grammar. Writing mostly easy to follow and understand. Figures carefully designed, with numbered caption, and referenced in text.	Some grammar issues. Writing not always easy to follow and understand. Figures without numbered caption or not referenced in text.	Grammar issues throughout. Writing not easy to follow and understand. Figures without numbered caption or not referenced in text.	Major grammar issues throughout. Writing difficult to follow and understand. No figures.
Report (c) Word limit and URL 1%	URL and number of words indicated on the cover sheet, less than 700 words total.	As HD	As HD	URL or number of words not indicated on the cover sheet *or* **more than 700 words total.**	URL or number of words not indicated on the cover sheet *and* **more than 700 words total**.