Information Visualisation

Visual Exploration Tool Assignment (50% of grade)

The goal of this assignment is to design and create an interactive visualisation tool that enables the exploration and analysis of a complex quantitative dataset. The visualisation should make use of **at least two distinct charts** and have some interactive functionality. The visualisation must be implemented in Vega-Lite. You can use other tools, e.g. Tableau, to do initial analysis or develop preliminary visualisations but **your submission must be implemented in Vega-Lite.**

You must use a dataset from the 2019 Tidy Tuesday Collection. I recommend that you choose a dataset that has multiple quantitative and categorical (nominal) attributes as this will lend itself to multiple visualisation approaches. You may perform data manipulation outside of the Vega-Lite environment, e.g. using Python, but you must make clear what transformations / filtering you have performed and make the processed data set available.

Your submission should include three files:

1. A video demonstrating the use of your interactive visualisation. This should demonstrate the functionality of your visualisation and highlight examples of the insights that can be gained using it. Audio explanation is highly recommended. This should be no longer than 5 minutes – anything after the 5 minute mark will not be watched.
2. A design document that discusses the charts you have created and the interaction approaches. This should outline why you chose particular encodings and interactions, what alternatives you considered, and what the pros and cons are of the alternatives. See the sample solution for an example of what is expected in these sections.
3. A json file containing the Vega-Lite implementation of your tool.

You may complete this assignment in pairs (groups of no more than two).

The following will be considered when grading the assignment:

- Design considerations. What encodings have you used and are they appropriate for the task? Are they effective and expressive? What alternative designs have you considered? What are the advantages and disadvantages of the design you have submitted over the alternatives? What interaction dynamics have you used? Do they support exploration and analysis of the dataset in question?
- Small touches (titles, axis labels, legend placement etc)
- Appropriate data filtering, aggregation, transformation
- Insight – what insight can be gained from your visualisations? Does the video support these observations?

Grade breakdown

- 50% Encodings: What encodings have you used and are they appropriate for the task? Are they effective and expressive? Do the interactions facilitate useful exploration of the dataset?
- 20% Design considerations: Is there a clear rationale for the encodings you have used? What alternative designs have you considered? What are the advantages and disadvantages of the design you have submitted over the alternatives?
- 20% Insight: What can we learn about the dataset from your visualisation? Does the visualisation support your observations?
- 10% Overall quality: small touches & attention to detail (titles, axis labels, legend placement etc); appropriate data filtering, aggregation, transformation

Submission

The key submission details for the assignment are as follows:

Submission date: Friday 21st April before 23:55

Submission format: Submissions should be a zip file containing three files (video, design document, implementation)

Late submissions: Submissions up to one day late will be docked 5%. Later submissions will be docked 10% per week or part thereof. Submissions will only be accepted until Friday 5th May at 23:55.