

CS4250/5250: Visualisation and Exploratory Analysis

Assessed Coursework Assignment 1

This coursework will count for **10%** of the total marks for the course, and half of the total assessed coursework marks for the course.

Learning outcome assessed

- Be able to demonstrate practical experience of using standard graph visualisation methods and evaluation of results.
- Be able to critically assess and evaluate a visualisation.

Instructions

This coursework should be submitted on the course **Moodle** page: there will be a submission place for the assignment. Please combine part 1 and part 2 submissions into one file and do not compress your file before submitting it. **Your submitted file should be in PDF format and clearly indicates each part.**

Note: All the work you submit should be solely your own work. Coursework submissions are routinely checked for this.

The submission deadline is Tuesday 11th February 2020, 17:00. An extension can only be given by the academic advisor (and in some cases by the office, but not by the course lecturer). Feedback will be given within two weeks.

Coursework

The coursework is in two parts, counting for **5%** each.

Part 1: Lab Worksheet

Please submit your worksheet for the practical session “Lab Worksheet 3: Exploratory analysis of the diamonds dataset”. **You only need to consider questions 1 to 5 and question 7 of the lab worksheet.**

You don’t need to write much – only the significant graphs with some **brief** remarks in answer to the questions posed in the text. The point is to show that you have gone through the worksheet and that you understand the significance of the graphs.

Part 2: Assessing and criticizing a visualisation you have found on the web

You should

1. go hunting for an interesting visualisation (on the internet, in newspapers, in blogs, in reddit (/r/dataisbeautiful or /r/dataisugly are good places to start off from, but I hope you will go further.)
2. choose **one** visualisation, and explain it
3. critique the visualisation you have found.

The visualisation can be a graph (or several related graphs), but it does not necessarily have to be a graph. It should show some quantitative data (that is, they should not just be infographics), or some significant amount of data in the form of complex relationships (for example a network of connections).

The visualisation should be a **static** image: that is, it should *not* be a video.

Please submit:

1. The visualisation itself. (Please make sure you **DO** submit an image of the visualisation, even if it is only a screen grab: if only submit a URL, then the URL may break and I might not be able to download it.)
2. A reference to the source of the visualization (probably the URL where you found it, with some description of who produced it).
3. Explain what the intended “story” or “message” of the visualization is. What is it intended to show? What numeric data is represented, and what visual methods are used to represent these numbers?
4. Criticise the visualization. You should address at least some of the following questions:
 - a. Does it achieve what the designer intended? Does the data chosen support the message (if any)? Was the right data chosen? If not, what data should have been chosen?
 - b. Are there unresolved questions that you want to ask? Does the visualisation raise new questions?
 - c. Is the graphical display suitable for the data? Can the user make the necessary readings and comparisons easily and accurately? Would a different method of display be better?
 - **Can you comment on the display in the light of any of the perceptual biases mentioned in the course?**
 - d. Can you **carefully** suggest an alternative way to visualise the data, and explain why your suggested method of visualisation would be better.

Marks will be given for:

- choice of substantial or unusual visualisation and correct description of the visualisation (40%);
- insightful critique of the visualisations (60%).

Typically, you should not write more than *one A4 page* of explanation and criticism.

The visualisation is not within this length limit; it should be included in the same document. Typically, therefore, your document should be about 2 A4 pages. (You can write more, if you really have more to say, or alternative visualisations to sketch or give.)

Please note that the visualisation you choose should not be an example I have used in the course (though it can be similar).