Project –Information Visualization

Submission Date: April 17, Wednesday *5pm.*
Poster display and Demo on April 17 at STePS – SoC Term-end Project Show- case.

Type: Team (2 Pairs) work **Weightage: 40%**

This document describes the semester project for the course. Students should work on a project in teams of 4 people. The objective of the project is to use the knowledge and background, that you are learning about Information Visualization, in a new, creative effort.

I. Key steps for developing project

You will have following key steps for developing the project :

1. Form your team
2. Find a topic and a dataset for a clearly identified user.
3. Write a 1-2 page proposal(**Initial project description)**
4. Display and Demonstrate your work at STePS in which you will display your different design ideas to get feedback. You can consider creating video (5 minutes or less) that explains your visualizations.
5. Submit a report that details your design choices.
6. Meeting TA in week 9-12 (optional)

II. Details of the project key steps:

1. Form Team: Sign up for a Team at IVLE under projects by 8 March. If you are unable to form a team, email to your tutor cs5346.tutor@gmail.com.

2. Proposal (3%):
   You can start working on proposal even before you form the team.
   It is extremely important to select an interesting problem with data that some group of people will care deeply about. Find some topic that almost. everyone cares about (e.g., health, education, films) or that some subset of people really care about (e.g.,sports data, environment). Consider combining different data sets to produce a new composite data set of special interest. Such a fusion of data often creates a data set that people want to learn about. Select a topic that you think "user" wants to know more about! You will need to clearly identify a "user" as well. Select a data set(s) that the user you have in mind will find interesting and intriguing. No matter what topic you choose, aim to deliver a high-quality project, showcasing interesting insights. You are encouraged to explore Spatial aspects (involving map visualization), Quantitative aspects, Statistical aspects (e.g. correlation, clusters), Temporal aspects in your selected dataset(s). You are free to choose any software and graphics/visualization support library that you want in order to

help build your system. Consider developing a system that is web-deployable so that your system can be shown to everyone in the world!

Where do you get your data from? Part of your responsibility on the project is to come up with the data needed to drive your visualization. It is a crucial and vital initial step! Ideally, you should start with a problem or domain, find someone who knows more about it, and then look for data from there or find data from public datasets. Be creative! You may have to coalesce multiple different data sources.

Your proposal should list project members and describe topic to be addressed and data sources/formats. You should address the following questions:

- What is the problem being addressed?
- What is the data source and format ? Where is the data coming from and what are its characteristics?
- Who would be interested in understanding this data better?
- What would these people want to know about the data?
- Submit your proposal by Monday, 18 Mar 10pm. *See submission instructions below in Section III point 1 below. This component is not graded. But it is mandatory to submit and will have impact on grading.*

3. Display and Demonstrate your work at STePS on Wednesday April 17 (22-25% of the grade):

This is an opportunity for you to showcase your work and receive feedback on your work. Your work will also be graded at the showcase. Each team will create a poster and demonstrate the project. In addition to producing a poster, you should also illustrate your design ideas sketched out well enough so that other people can understand them and provide feedback and comments. Your poster should show the insights you have for your user through the visualizations you have designed. This is an opportunity for your team to be creative and come up with many alternatives.
Submit Poster by Wednesday 17 April 5pm. *See submission instruction below in Section III point 2.*

Demo: Each team will demo to lecturer/TA at STePS describing what they have done. All members of the team have to attend the demo. If all in your team cannot attend demo on 17 April, write to your lecturer by 30 March, and arrange another day/time with lecturer. You will need to bring **at least three** copies of a short project overview document to the demo session. The document should be a maximum of 3 pages and include the following items: team member names, problem description, dataset description(a snapshot of dataset or a link to dataset can be added), screen shot(s) of the visualizations(choose important ones if you have many), description of any aspect of the dataset/interface/visualization that you feel needs explanation, and a link to your work(if it is deployed). You will also demonstrate your work on your laptop.

4. Report(12-15% of the grade) : You should produce a multi-page document that provides more details about

    a. Team information and how was the work was divided among team members.
    b. The purpose of the visualizations you designed, who the users will be, and what datasets you used to find insights for the users.
    c. Describe the data attributes in detail. Provide a list of analytic questions and queries that user would answer using the visualizations.
    d. Show different design ideas you considered, leveraging the work that you finally did for the poster session.
    e. Briefly explain the process you followed for data processing and visualization
    f. For each visualization provide visual encoding and an image of the visualization.
    g. For any two of the visualizations, provide a step wise process of achieving it.
    h. Chart choice justifications/ Reflections/ references/ any other information you want to add

    Submit Report by Wednesday 17 April 5pm. *See submission instruction below in Section III point 3.*

5. Meet TA in weeks 9-12. Once your topic has been chosen, each team is encouraged to meet 1-1 with one of the TAs at least once before the final submission. Write to cs5346.tutor@gmail.com to arrange a meeting with TA. Provide a few slots. All members need not attend the meeting.
   This can be a very valuable opportunity for you to get feedback about your design and implementation. Of course, you can meet with the professor as well.

III Submission

1. Submit project proposal **Monday, 18 Mar 10pm** in IVLE – Project Proposal folder. *File name should be Team<Number>_Proposal.pdf*

2. Submit Poster by **Wednesday 17 April 5pm** in IVLE – Project Poster folder. *Filename should be Team<Number>_Poster.pdf.*
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3. Submit project report by **Wednesday 17 April 5pm** in IVLE – Project Report folder. *Filename should be Team<Number>_Report.pdf*

4. *Code: A separate instruction will be issued in week 12 for the submission of code files. Submission date will be on or later than Wednesday 17 April.*

5. *Demo*: *bring at least three copies of a short project overview document to the demo session. See point 3 in Section II above.*

IV Grading

To determine your grade for the project, we will evaluate the overall quality of your project, including all milestones and components. The following will be considered during that evaluation process:

> Does the work present an interactive visualization of the data?
> Is the visualization an effective representation of the data?
> Does the visualization support different analytical questions about the data?
> Is the visualization creative and does it illustrate some new/interesting insights?
> Was your demonstration an effective presentation and illustration of your project and work? Does your demo /video illustrate its use well? Does it explain the problem and solution well enough so that a person unfamiliar with the project can appreciate your contribution?

It is each member's responsibility to make a significant contribution in whatever way that best matches his or her abilities. The grade earned for the project will be a team grade, that is, all team members will earn the same score for the project. However, the evaluator(s) reserves the right to adjust individual team member's scores either upward or downward to support especially strong or weak performance and contributions to the group effort, as much as he can objectively determine.

Report template

Team information(*Names and matric numbers as per IVLE record*) :

Name:
Matric Number:

Name:
Matric Number: … . ..

URL : of published visualizations

Readme: if code is submitted or any other information which evaluator should take note of

Organize rest of your report based on the points in point 4 in section II above.
