Monash University
Faculty of Information Technology

FIT5147 Data Exploration and Visualisation

Assignment 3 | Data Exploration and Visualisation Project Final

Please carefully review all the requirements below to ensure you have a good understanding of what is required for your assessment.

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1. Due Date

11:55pm Wednesday 15 April 2020

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2. Instructions & Brief

This assignment is part of unit-long project where you get a chance to analyse and explore some data of your choice, and develop an interactive web-based visualisation (a web app) to tell your data story.

Assignment 1 was the first part of this process, where you submitted a project proposal.

Assignment 3 outlines the entire project and how to develop and report on your subsequent visualisation.

After collecting and checking the data, you should explore it with R or Tableau or other tools. You will submit your project proposal in week 3 (as Assignment 1), then, develop an interactive web-based visualisation (a standalone web app) in R or D3, and finally as this Assignment 3 communicate your visualisation product and findings in the final report, present your project and demo the developed visualisation product.

This is an individual assignment. The developed visualisations, final report and video demo together are **worth 45%** of your total mark for FIT5147.

Relevant learning outcomes for FIT5147:

- 1. Perform exploratory data analysis using a range of visualisation tools;
- 5. Choose an appropriate data visualisation;
- 6. Implement interactive data visualisations using python, R and other tools.

Details of task:

- **Stage 1:** [Week 1]
  Identify the project (i.e., its purpose and data source). You are encouraged to communicate to your instructors about the questions/problems you want to tackle and the data sources you intended to use. It is important to make sure suitable data is available before you settled on a project.
- **Stage 2**: [Weeks 2-3]
  Collect data and wrangle it into a suitable form for analysis using whatever tools you like.
- **Stage 3:** [Weeks 2-3]
  Explore the data to find something interesting using whatever tools you like and decide what you wish to communicate (such exploration can use both visualisation and statistical tests). **Submit a project proposal as Assignment 1.**
- **Stage 4**: [Weeks 3-4]
  Design an interactive narrative visualisation to communicate your findings, using the five design-sheet methodology.
- **Stage 5:** [Weeks 4-6]
  Implement your visualisation in **R** or **D3** as an interactive web-based visualisation (a standalone web app). Use the most current versions of the language. You cannot use Rmarkdown.
- **Stage 6:** [Week 6]
  Prepare a 3-5 mins video demo presentation on your project and the developed visualisation product. **Submit your final report with video link, and visualisation source code as Assignment 3.** Note that you don't need to publish your app on the web.

We recommend you produce a video by doing a screen capture when showing slides, running the source code and demo functionalities of the developed product, with voice-over entered concurrently via microphone.

Note that

1. videos must upload through YouTube,
2. you'll need to provide a LINK to your YouTube video in your final report,
3. however, DO NOT include your video on Moodle as part of the submission.

You are required to attend a video interview session with instructors between Week 4 and Week 5 to discuss your progress, findings and any difficulties you encounter. Details of this will be posted on Moodle.

Report, Video & Final Product:

At the end of Week 6, you need to submit (through Moodle)

- a zipped directory containing the implementation code for your interactive narrative visualisation
- a written report that contains:

1. Problem description and motivation (including data source used and the research questions)
2. Brief description of the data wrangling process and what cleaning/transformations you will need to do.
3. Description of the data exploration process with details of the tests and visualisations you used and what you discovered.
4. The precise description of what message you want your narrative visualisation to convey and what the intended audience is.
5. Description of the visualisation design process including alternatives you considered and the reasons for choosing your final design. In your report, you should demonstrate the proper use of the five design-sheet methodology.
6. Description of the implementation and reasons for the implementation decisions of your final narrative visualisation.
7. Step-by-step instructions for running your code (e.g., external packages required, version of R), viewing and exploring the narrative visualisation using a standard web browser.
8. A conclusion summarising what you achieved and also a reflection what you learnt in this project and what in hindsight you might have done differently.
9. The URL link to the uploaded video on Youtube. Notice that you have to set the uploaded video as "**unlisted**". Otherwise, we won't be able to access your video.
10. Appropriate references and bibliography

Your report should contain images of visualisations used for exploration, alternative designs for the narrative visualisation as well as the final design.

Content 1-4 could be a brief version of what you submit in Assignment 1. However, if you have changed topic after your Assignment 1, you will have to describe it in more detail and inform us through the private discussion forum.

Video

In the video presentation demo, you can briefly describe what your project is, what questions you are investigating through visualisation, what message you are trying to deliver through the vis product. Then, you should demo your developed vis product in the video, e.g., the

different views, functionalities and interactivities. The demo should be no longer than 5 minutes and needs to include step-by-step instructions of how to run your product along with an explanation what it does and its outcomes.

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3. Assessment Resources

You will need the following resources in order to complete this assessment item.

- You may need to review the FIT citation style tutorial to make sure you're familiar with appropriate citing and referencing for this assessment. Also review the demystifying citing and referencing for help.

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4. Assessment Criteria

4.1 Grading Rubric

Following are the mark allocation for different components of this project:

- Visualization Product [30%]
- Quality of report [10%]
- Quality of video demo [5%]

A detailed marking rubric or guide is available on Moodle.

4.2 Word Count & Penalties

Report: Max of 16 pages.

Video: Max of 5 mins

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5. How to Submit

Once you have completed your work, take the following steps to submit your work.

1. On Moodle, **upload** your **PDF** report via a Turnitin submission link. Please ensure you name the file correctly using the following format:
   LastName_StudentNumber_Assessment#_report.pdf
   e.g., *Finn_21872187_Assessment3_report.pdf*

   Click the **Submit** button to submit your assignment.

2. On Moodle, **upload** a **zipped** file containing your **visualisation source code directory** via a submission link**.** Please ensure you name the file correctly using the following format:
   LastName_StudentNumber_Assessment#_code.zip
   e.g., *Finn_21872187_Assessment3_code.zip*

   Click the **Submit** button to submit your assignment.

   (You will also need to include any data files that are needed to run your code. If the data file is too big, put a share download link via GDrive or Dropbox is fine. You should include this in your instructions in running your code in the report.)

3. **Note that you DO NOT need to publish your app on the web.**
4. **Note that you DO NOT need to submit any video file on Moodle.**

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6. Late Submissions and Special Considerations

Extensions and other individual alterations to the assessment regime will only be considered using the Faculty Special Consideration Policy. Students should carefully read the Special Consideration website, especially the details about what formal documentation is required. You should also contact Monash Online Student Services at <MonashOnline.StudentSuccess@monash.edu> to obtain the special consideration form and information about the necessary documentation you have to submit to support your application.

You need to apply no later than two days after the due date. You should submit your complete application to <MonashOnline.StudentSuccess@monash.edu>.

A late submission **penalty** applies (5% per day). Submissions with more than **4 days delay** will not be marked. No distinction is made between weekdays and weekends