# Cardiff School of Computer Science and Informatics

## Coursework Assessment Pro-forma

**Module Code:** CMT218

**Module Title:** Data Visualisation

**Lecturer:** Dr Martin Chorley

**Assessment Title:** Data Analysis and Visualisation Creation

**Assessment Number:** 2

**Date Set:** 20th April 2021

**Submission Date and Time**: *by* 26th May 2021at 9:30am

**Return Date:** 21st June 2021

This assignment is worth 70% of the total marks available for this module. If coursework is submitted late (and where there are no extenuating circumstances):

1 If the assessment is submitted no later than 24 hours after the deadline, the mark for the assessment will be capped at the minimum pass mark;

2 If the assessment is submitted more than 24 hours after the deadline, a mark of 0 will be given for the assessment.

Your submission must include the official Coursework Submission Cover sheet, which can be found here:

<https://docs.cs.cf.ac.uk/downloads/coursework/Coversheet.pdf>

## Submission Instructions

The coursework submission should consist of two items: a coursework coversheet, and your submission for the coursework in your chosen format, as explained in the next section

|  |  |  |  |
| --- | --- | --- | --- |
| Description | | Type | Name |
| Cover sheet | **Compulsory** | One PDF (.pdf) file | [student number].pdf |
| Data Analysis and Visualisation | **Compulsory** | One zip archive (.zip) containing all code/outputs used to analyse and visualise data, and the final visualisation | DAV\_[student number].zip |
| Visualisation Evaluation | **Compulsory** | One PDF (.pdf) or Word file (.doc or .docx) | PR\_[student\_number]  .pdf/.doc/.docx |

Any deviation from the submission instructions above (including the number and types of files submitted) will result a reduction in marks for that assessment or question part of 10%.

Submission will be via upload to Learning Central.

Staff reserve the right to invite students to a meeting to discuss coursework submissions

## Assignment

You are asked to carry out an analysis of a dataset and to present your findings in the form of a **maximum** of **two (2)** **visualisations**, along with a record and evaluation of your work.

You should find one or more freely available dataset(s) on any topic, from a reliable source. You may wish to choose something from data.gov.uk or ons.gov.uk for example.

You should carry out an analysis of this data to determine what the data tells you about its particular topic and should visualise this data in a way that allows a user to understand the data and what the data shows. You should create a **maximum** of **two** **visualisations** of this data that efficiently and effectively convey the key message from your chosen data.

You can use any language or tool you like to carry out both the analysis and the visualisation, but all code used must be submitted as part of the coursework, and it must include enough instructions/information to be able to run the code and reproduce the analysis/visualisations. For example, you may wish to extract, transform and analyse the data using Python, and then create visualisations using d3.js. You would submit all the Python code, along with a link to (or copy of) the raw data source, and all the HTML, CSS and JavaScript files necessary to produce a visualisation of the processed data, along with instructions on how to run all code.

You should create a **very short (2 page, ~800 words)** evaluation of the success (or not!) of your completed visualisation(s).

**Important!** It is expected that each student will choose a different dataset. Once you have chosen your dataset(s) for analysis, you should complete the form linked below with your selection to confirm it is a unique choice. Dataset allocation will be done on a first-come, first-served basis, so do not delay, as another student may ‘claim’ the dataset first! Data selection should be completed by **27th April** at **5PM**. Any data redistribution as part of your submission must abide by the licence under which the data was obtained.

**Dataset Selection form:**

<https://forms.office.com/Pages/ResponsePage.aspx?id=MEu3vWiVVki9vwZ1l3j8vBOfLE1pikVOra_03FfJWJhUQVJRMFdVMEk0NkRPVlFHNkxBTVFJV1dZWi4u>

## Learning Outcomes Assessed

1. Examine and explore data to find the best way it can be visually represented
2. Create static, animated and interactive visualisations of data
3. Critically reflect upon and discuss the merits and shortcomings of their own visualisation work

# Criteria for assessment

Credit will be awarded against the following criteria.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Component & Contribution** | **Fail (<50)** | **Pass (50-59)** | **Merit (60-69)** | **Distinction (70+)** |
| Dataset selection and analysis  **(10%)** | No real data used, or dataset ‘fake’  No/basic analysis of data | Real-world data selected  Cursory high-level analysis of data | Real-world data selected  Data analysed in detail | Multiple real-world datasets on similar theme selected |
| Visualisation and Data Presentation  **(60%)** | None/poor visualisation of data  Poor data presentation  No story conveyed to user, story/findings unclear | Rudimentary or basic visualisation of data  Message/story clear to end user | Appropriate visualisations  End user able to explore/interpret data and affect display  Message/story clear | Appropriate visualisations with interaction and/or appropriate animation  End user able to explore/interpret data and/or affect display  Message/story clear |
| Visualisation Evaluation  **(30%)** | Little to no evaluation | Some effort at evaluation | Reasonable evaluation | Insightful evaluation |

# Feedback and suggestion for future learning

Feedback on your coursework will address the above criteria. Individual feedback and marks will be returned on **21st June 2021** via email, with further cohort feedback given by video.

Feedback from this assignment will be useful your dissertation.

# Questions

Questions about the assignment can be posted to the COMSC StackOverflow site:

<https://stackoverflow.com/c/comsc> using the tag cmt218-cw