**Visual Analytics Coursework Specification**

**Spring 2021**

# Overview

The goal of this coursework is to give you experience of the whole lifecycle of carrying out a full visual analytics project.

Your goals are:

* To follow a sound visual analytics process
* To develop a visualisation that displays important features of a dataset
* To write a clear report on your findings.

The outputs from this work should be

1. a Tableau dashboard and associate worksheets;
2. a written report with sections as defined below.

The submission deadline is **5pm on Friday 14th May** through Blackboard: create a single zip file for all the files in your submission. This coursework is worth 80% of the marks for the unit.

# Task Details

The task you are asked to carry out for the coursework is to design, construct, and evaluate an exploratory analysis of a complex dataset using visualisation and data projection.

The data you should work with is taken from the 2011 census in England and Waleswhich is indexed by the Excel file 2011CensusIndexofTablesandTopics\_v11\_4\_2.xlsx The tab labelled ‘All Tables’ provides a list of tables and links to the underlying data. (I have found that the Excel file links are fine, the NESS links don’t work as the server can’t be found, and the links to NOMIS take you to a website where additional data can be downloaded.) You may find Tableau’s Data Interpreter useful, and you may also need to edit some files to create usable datasets.

There are more than 1600 tables in total: clearly this is far too many to create an interesting report. You should focus on a limited number of tables (probably around three) that allow you to explore a particular aspect of socio-economic life in England and Wales: for example, health and links to nationality or occupation.

Your report should contain the following sections:

* Abstract. A brief description of the key points in the report.
* Introduction. The background of the problem.
* Data Preparation and Abstraction. What data manipulation was necessary to create a dataset for analysis and the principal data types and semantics that you have analysed.
* Task Definition. A description of the tasks for which you have created the visualisations.
* Visualisation Justification. Which visualization techniques you used and a justification for your choices. You should refer to the principles of info vis, relevant aspects of human perception and cognition, and the scientific literature where appropriate.
* Evaluation. Using appropriate levels and types of validation (as in Chapter 4 of Munzner and the lectures from week 2), assess the quality of your visualization by making appropriate measurements and observations of the other students in your discussion group in an analytic task using your visualisation. (The list of discussion groups is also available on Blackboard).
* Conclusion. What you have learned about the problem and information visualisation from doing the coursework.

I am expecting the report to be about six pages in length.

The assessment criteria are:

* Problem understanding: how well you have explained the goals of the tasks, taking account end-user requirements. (10 marks)
* Data preparation and task analysis: care taken over extracting and manipulating the data; insights gained through the task analysis. (15 marks)
* Data visualisation: appropriateness of visualization and modelling approaches; systematic use of statistical and visualisation methods; justification of visualization approach used. (50 marks)
* Conclusions: effectiveness and insight of the evaluation; what the user should learn from your analysis. (15 marks)
* Presentation: fluency and coherence of the written text; quality of images and graphics used. (10 marks)