MS4S08 Assignment 1: 2019/20

Submission deadline: **9pm 24th November 2020**
Contribution to module: **50%**

Your report should be submitted via Blackboard, as a pdf file containing the assessment cover sheet. You are also required to send a copy of your dashboard to penny.holborn@southwales.ac.uk before the deadline. The subject of the email must be: "MS4S08 CW1".

World Car Free Day 2020

Car Free Day is an annual global movement that encourages people to avoid using their cars for one day on 22nd September. All around the world towns and cities allow people to experience stress free of motor traffic. It is a great chance to re-imagine our streets around people. https://www.livingstreets.org.uk/about-us/our-work-in-action/world-car-free-day

A local Environmental Group have submitted a proposal asking the Council to introduce a Car Free day in your local area. The Leader of the Council would like to have more statistical evidence provided around the benefits and the impact of introducing this day.

You have been asked to provide statistical evidence to the leader of the Council outlining what impact a car free would have in your local area. This will be in the form of a formal report along with a Data Dashboard highlighting key visualisations outlined in Tasks A-D.

For information, the ONS have provided statistics on pollution.

https://www.ons.gov.uk/economy/environmentalaccounts

But you do not have to be restricted to these statistics you can research other statistics and articles that will aid your presentation.

During your analysis, please explore the following points:

- The current pollution issue, both across the world, the UK and in a localised area.
- Why you think a car free day will be ideal for your area and the impact on pollution.
- What benefits of a car free day would there be? This could include health and climate change statistics.
- Would a one car free day have an impact on pollution?
- Conclude whether, based on the evidence a car free day would benefit your local area.

You can add additional points if you feel this is appropriate. Use statistical analysis from SAS Studio to put your case forward, outlining the pros and cons of initiating a car free day in your area.

Task A – Data Acquisition and Exploratory Data Analysis (30%)

You are required to find at least 3 datasets from different sources relevant to this topic. The data sets need not be merged but must each provide a different source of information and provide meaningful insights. You are required to produce an exploratory data analysis of your datasets, including tables and graphs in your report.

Task B – Statistical Analysis (30%)

Using the datasets you have selected in Task A, produce statistical analyses using the methods discussed in class. You should use at least 3 different statistical tests. State clearly the tests/methods you use, the assumptions you make, the results you produce and your conclusions.

Task C - Report (20%)

You are required to produce a formal report summarising your results for Task A and B. The main outcome of this task is to introduce your data, display your understanding of the techniques and interpretation of the results.

A suggested structure for the reporting for **each technique** would be:

- Outline the purpose of the analysis
- Describe the methods used to look at the data
- Summarise the key results obtained; marks are awarded for both the suitability and correctness of the approach
- Make overall conclusions based on the output obtained

The report must be well structured, well written and grammatically correct. Titles, headings and figures should be correct and labelled in a meaningful way and referenced accordingly.

An important skill of statistical reporting is to be clear and concise; therefore, a word limit has been set at 1,500 words with a 12pt font. This does not include tables, captions or references.

Task D - Dashboard (20%)

You are also required to utilise a data visualisation tool to produce a dashboard of the main findings from Task B. You should create one overall dashboard presenting key information.

Your dashboard should use clear and consistent naming conventions, display icons and colour schemes. Data should be selected intelligently, with values filtered/truncated as required. Stick to a single format to make information easy to process. Add text/captions to highlight key information.

Marking Guidelines

	80-100	70-79	60-69	50-59	40-49	30-39	0-29
	Exceptional First	**First**	**Upper 2nd**	**Lower 2nd**	**Third**	**Narrow Fail**	**Fail**
Analysis outline	Professional outline of analysis presented.	Detailed purpose of analysis provided.	Adequate outline of analysis provided.	Outline of analysis provided but with some flaws.	Simple outline of analysis provided, but lacking key detail.	Inadequate outline of analysis provided.	No outline of analysis provided.
Methods used and assumptions made	Sophisticated investigation of assumptions and description of methods used.	Comprehensive investigation of assumptions and description of methods used.	Adequate and correct investigation of assumptions and description of methods used.	Investigation of assumptions and description of methods used is provided but with some flaws.	Limited investigation of assumptions and description of methods used.	Inadequate investigation of assumptions and description of methods used.	No investigation into assumption and no description of methods used.
Key results and correctness of content	Unanticipated results and implementations presented. Appropriate, substantial, correct and sophisticated nature.	Comprehensive results and implementations, presented and employed well. Appropriate, substantial and correct.	Expected results and implementations presented. All appropriate, largely correct, with few flaws.	Not all expected results and implementations presented. All appropriate, largely correct, with few flaws	Few or simple results and implementations presented. Much appropriate material, but flawed.	Seriously flawed results or no implementation. Appropriate but seriously flawed material.	No results or implementation. Incorrect or inappropriate content.
Conclusions	Deep and critical understanding provided.	Thorough understanding shown.	Good understanding shown.	Key concepts generally understood.	Some evidence of understanding.	Little of superficial understanding shown.	No evidence of understanding.
Report	Like a publishable report, virtually error-free.	Like a publishable report with isolated minor errors.	Can be followed easily with very few errors.	Can be followed easily with some weaknesses.	Can be followed with difficulty.	Poor structure or containing significant errors.	Unstructured and with many errors.
Dashboard	Professional visualisation of key results and appropriate use of icons.	Comprehensive visualisation of key results and appropriate use of icons.	Adequate visualisation of key results and largely appropriate icons.	Not all expected results presented in visualisation. Some flaws.	Few or simple results presented in visualisation, largely flawed.	Inadequate display of information in visualisations, seriously flawed.	No results presented, multiple errors.