Programming Assignment Marking Rubric

Data Storytelling (20%)

F - Fail [0-39]	• Research question is not present. • No introduction or conclusion. • No key results are presented.
D – Pass [40 - 49]	• Research question is unclear, unjustified or makes little sense. • Introduction, key results and conclusion lacks structure. • The arguments and conclusions are weak or lack clarity with unsubstantiated statements.
C – Good [50-59]	• Research question is clear, but it is not justified. • Introduction, key results and conclusion are structured in a clear and coherent way. • The arguments and conclusions are sound and justified.
B – Very Good [60-69]	• Research question is justified and demonstrates very good understanding of the data and their context. • Introduction, key results and conclusion are clear and coherent showing logical, ordered thought. • The arguments and conclusions show initiative, the ability to think clearly, critically evaluate ideas and draw sound conclusions.
A3 – Excellent [70-79]	• Research question is highly original, ambitious, and demonstrates deep understanding of the data and their context. • Clear justification provided for the chosen question with relevant references. • Narrative is compelling, insightful and shows evidence of critical thinking. • Multiple data sources are used where appropriate. • All recommendations and conclusions are grounded in the data. • Limitations of the dataset are discussed, and “next steps” suggested, particularly in terms of data that would

	allow for further analysis.
A2 – Excellent [80-89]	• A truly professional piece of work, with an absence of errors. As 'A3' but shows significant personal insight, extra depth and academic maturity.
A1 – Exceptional [90-100]	• Faultless storytelling. The work is well beyond that expected at this level of study.

Data Wrangling (25%)

F - Fail [0-39]	• Data are uncleaned or improperly transformed, resulting in unusable or incorrect results. • Indicates a serious lack of data wrangling knowledge. • The submitted code is of limited size and cannot be executed.
D – Pass [40 - 49]	• There is an attempt to clean and transform the data, but with major inaccuracies. • Indicates basic data wrangling knowledge. • Code is difficult to read, repetitive in places or is poorly structured. • There are several unused variables and/or dead code. • There are no joins to other data. • Code executes without errors but with some warnings.
C – Good [50-59]	• Data have been cleaned and are properly transformed with minor inaccuracies. • Indicates sound but limited data wrangling knowledge. • Code is not DRY with lots of repetition. • Few or no unused variables or dead code. • Joins have been handled adequately. • Code executes without errors or warnings.

B – Very Good [60-69]	• Data have been cleaned and are properly transformed with few inaccuracies. • Indicates a firm grasp of data wrangling knowledge. • Code is DRY with little repetition. • No unused variables or dead code. • Joins have been handled well. • Code executes without errors or warnings.
A3 – Excellent [70-79]	• Data have been cleaned and are properly transformed with no inaccuracies. • Indicates an excellent command of data wrangling. • Code is DRY with no repetition and likely to support re-use. • No unused variables or dead code. • Joins have been handled well. • Code executes without errors or warnings and is easily readable.
A2 – Excellent [80-89]	• A truly professional piece of work, with an absence of errors. As 'A3' but shows extra depth and use of advanced techniques not taught in the course.
A1 – Exceptional [90-100]	• The code is faultless. The work is well beyond that expected at the appropriate level of study.

Plots and Tables (25%)

F - Fail [0-39]	• There are no plots or tables.
D – Pass [40 - 49]	• Plots and tables show flaws and are basic. • Labels and titles have not been used. • No use of settings other than default.

C – Good [50-59]	• There are more than 4 plots and/or tables. • No use of settings other than default. • Plots and tables presented well but with some minor issues (e.g., too much or too little spacing, inconsistent number formats).
B – Very Good [60-69]	• Well labeled and titled plots. • Well labeled and titled tables. • Appropriate and thoughtful data visualisation with some use of non-default settings.
A3 – Excellent [70-79]	• Plots and tables are highly effective, communicate well and go beyond default settings. • Techniques such as faceting, multi-layered plots, or interactive visualizations have been used.
A2 – Excellent [80-89]	• Truly professional data visualisation. As 'A3' but shows significant creativity and advanced visualisation skills.
A1 – Exceptional [90-100]	• Faultless visualisations. The work is well beyond that expected at this level of study.

Reporting (20%)

F - Fail [0-39]	• Report is poor, difficult to follow, or is not in the format (Github Page) required.

D – Pass [40 - 49]	• Presentation is inadequate and uses no R Markdown features. It is readable but could be improved for better flow and clarity. • Shows flaws in the overall standard of presentation or in specific areas such as figures, referencing techniques. • Unnecessary output has not been suppressed.
C – Good [50-59]	• Presentation is reasonable but uses no R Markdown features. • Generally well presented but there may be some flaws, for example in figures, tables, referencing technique. • Unnecessary output has been suppressed.
B – Very Good [60-69]	• Very good presentation. Clear and well structured. Good use of R Markdown features (e.g. YAML title, date, headings, sub-headings, table of contents). • Clear and well presented with relatively minor flaws. Accurate referencing. • Unnecessary output has been suppressed.
A3 – Excellent [70-79]	• Very high standard of style and presentation, using appropriate features of R Markdown (beyond those in B). • Clear and well presented with no flaws. Accurate referencing. • Unnecessary output has been suppressed.
A2 – Excellent [80-89]	• A truly professional piece of work, often with no errors. As 'A3' but shows advanced features of R Markdown effectively. It is easy to follow and visually appealing.
A1 – Exceptional [90-100]	• Faultless reporting. The work is well beyond that expected at this level of study.

Reproducibility (10%)

F - Fail [0-39]	• R markdown has not been used. • Report is not reproducible. • There are no comments. • Code readability and object naming is poor.
D – Pass [40 - 49]	• Reproduction of the report is difficult or impossible. • Comments are limited or unclear. • Code is difficult to read in places. • Object naming is satisfactory in most cases.
C – Good [50-59]	• Reproduction of the report is possible, but requires some effort. • Comments are clear. • Code is mostly readable. • Object naming is satisfactory.
B – Very Good [60-69]	• The report can be easily reproduced. • Comments are clear and explain 'why' code was written in a particular way. • Object naming is very good, e.g. human readable and meaningful variable names.
A3 – Excellent [70-79]	• The report can be easily reproduced by others. • Comments are very clear and explain 'why' code was written in a particular way. • Object names are meaningful, consistent and human readable. • The structure of the repo is immediately clear and follows convention.
A2 – Excellent [80-89]	• A truly professional piece of work, often no errors. As 'A3' but shows significant empathy for other people reading and editing your code in the future.

A1 – Exceptional [90-100]	• Faultless reproducibility. The work is well beyond that expected at this level of study.