Paper	**Exemplary**	**Good**	**Acceptable**	**Needs Work**	**Inadequate**
Introduction	**15**	**12**	**9**	**6**	**3**
	Clearly and concisely describes the data, and why it is of interest. Sets up a clear roadmap for the rest of the paper.	Good introduction to data, but roadmap for rest of paper lacking.	Introduction and roadmap unclear and missing important details.	Rote description of data. No context provided for data or questions.	Fails to introduce data and questions of interest.
Main Body	**15**	**12**	**9**	**6**	**3**
Rigor	Intense exploration and evidence of many trials and failures. You have looked at the data in many different ways before coming to your final answer. You have gone beyond what was asked: additional research from other sources used to help understand/explain findings. Your explanation and presentation is creative.	Plenty of exploration and investigation. Some additional research helps explain findings, and some of your ideas are creatively presented and explained.	Some exploration, but little evidence that you have selected the best of many ideas. Little or no additional research beyond your initial data set.	You have done the bare minimum that was asked. There is no evidence to suggest that you tried multiple approaches (tables, graphics, or wrangling) before coming to your final conclusion.	Questions are simple, and there is no evidence of exploration. You merely present the data as-is with no clear narrative in mind.
Organization	Findings very well organized. Clear headings demarcate separate sections. Excellent flow from one section to the next. The paper is easy to scan. An abstract or summary at the start of the paper briefly summarizes your approach and findings. Conclusions at the end present further questions and suggestions for deeper investigation. Tables and graphics carefully tuned and placed for desired purpose.	Findings well organized and sections clearly separated, but flow is lacking. Each section has clear purpose. Tables and graphics clear and well chosen.	Generally well-organized, but some sections don't have a clear purpose. Tables or graphics appropriate, but some are poorly presented. E.g. too many decimal places, poorly chosen aspect ratio etc.	Sections unclear and no attempt to flow from one topic to the next. Graphics and tables poorly chosen to support questions. Some have fundamental flaws.	It is hard to read your paper. There are no headings, figures are far away from where they are referenced in the text. There is no summary or conclusion.
Conclusion	**15**	**12**	**9**	**6**	**3**
	Conclusions follows logically from results and findings. Includes interesting further questions and ideas for future research.	Good summary, but doesn't pull pieces together into cohesive whole. Interesting ideas for future research	Summary patchy, but some attempt at synthesis and development of ideas for future work.	Repeats findings with no synthesis. No proposals for future work.	Fails to summarise findings or ask more questions.
Presentation	**5**	**4**	**3**	**2**	**1**
Text	English is polished, concise and clear. No grammar or spelling mistakes.	Clear and concise, but not elegant. A few spelling and grammatical errors.	Readable, but excessively verbose, or lacking in detail. A number of errors in text.	Marginally readable. Many errors.	Barely readable. Many spelling and grammar errors. No evidence of proofreading.
Graphs	Graphs carefully tuned for desired purpose. Evidence that many graphs were created before choosing one for presentation. Each graph illustrates one point.	Graphs well chosen, but a few have minor problems: inappropriate aspect ratios, poor labels, poor quality when printed.	Most graphs appropriate. Many graphs have minor problems.	Graphs poorly chosen to support questions. Some redundant or fundamentally flawed.	Graphs do not support questions and findings. Major presentation problems.
Tables	All tables carefully constructed to make it easy to perform important comparisons. Careful styling highlights important features.	Tables generally well constructed, but some have minor flaws: too many decimal places, tables too large.	Most tables appropriate. Many tables have minor problems.	Tables badly arranged to support comparisons of interest. Too many, or inconsistent number of decimal places.	Tables do not support questions and findings. Major display problems.

Coding	**Exemplary**	**Good**	**Acceptable**	**Needs Work**	**Inadequate**
Project Files	**15**	**12**	**9**	**6**	**3**
Organization	Project is clearly organized on GitHub with folders for the raw data, pre-processing scripts, exploratory analysis, formal analysis, functions, images, presentation, and paper. File names make purpose of each script clear. A readme file accompanies the code, explaining the contents of the project folder and details how to run all the code. The execution is straightforward and requires that the reader only run a few lines of code to reproduce the final document.	Most of the project is clearly organized. The distinction between exploratory work and formal analysis may be muddled. A detailed readme accompanies the project, but the user may be required to modify the code a little to produce the final document.	Some organization of the code into folders. Some scripts to download or process the data are missing. The readme describes the process of reproducing the document, but the user must modify the code in several files to get the project to run.	Files are barely organized. File names are poorly chosen. Scripts are in too many different places or are lumped into a few megafiles. The readme is skeletal and hard to follow. Execution requires that the reader heavily modify the code.	No organization was attempted. Running the code requires that the user basically modify every single file.
Documentation	Scripts have informative headers describing their purpose. Nontrivial comments detail places where the goal of the code may not be intuitive to a human reader. User-defined functions are clearly documented with purpose, expected input, and expected output.		Headers provide some indication of the purpose of the script. Comments are lacking or are too verbose, detailing what is being done rather than why. Function documentation describes basic use, but leaves out important technical details.		Little or no documentation of the project files is provided.
Coding Style	**10**		**5**		**0**
Naming Convention	Code follows a uniform naming convention. For example, all functions are in camelcase while other objects are in undercase with underscores separating words. Names are informative.		Naming convention is fairly consistent with some minor inconsistencies (1-3 occurrences). Names are generally informative.		No clear naming convention followed or is inconsistent in more than 3 places. Names are not carefully chosen.
Formatting	Code is always within the 80 character limit with the exception of long URLs. Functions and expressions are always under 15 lines. Effective use of whitespace to make code readable.		Code occasionally deviates away from the length limits (1-3 occurrences). Whitespace conventions broken in 1-3 places.		Code breaks the width and length style restriction in more than 3 places. Whitespace conventions broken in 3+ places.
Technical Mastery	**25**	**20**	**15**	**10**	**5**
	Code is compact and efficient (in terms of verbosity, not computation time). No unnecessary copy-paste when a suitable vectorization, wrangling, or apply function could take care of the task. Looping patterns are handled with apply functions when possible. The code clearly demonstrates mastery of topics covered in this class rather than “hacks” used to patch problems.	Code demonstrates competence of major topics covered in this class. Some loops used could have been more elegantly done with an apply construction. Presence of 1-2 “hacky” solutions that could have been solved with some tools covered in class such as wrangling/tidying.	Code shows a basic understanding of topics covered in this class. Presence of copy-paste when a looping construction would have sufficed. The code works, but is inelegant in more than 2 places.	Code reveals holes in basic understanding of topics covered in class. Solutions to problems are often “hacky” and do not make use of techniques that make the code more readable. Code doesn’t work in 1-3 places.	Code only demonstrates very basic functionalities of R. Solutions make no use of packages covered in class. Code doesn’t work in more than 3 places.

Oral Presentation

	Exemplary	Acceptable	Inadequate
	10	**5-9**	**0-4**
Exposition	Data source clearly described, variables of interest well-defined. Purpose and value of the project is made obvious.	Some confusion regarding the data source or variable definitions. Purpose and value of the project is nebulous.	Data not described, misrepresented or misunderstood. Purpose and value of project unstated or unclear.
Visuals	Graphics are appropriately chosen to answer the questions asked. There is clear evidence that many iterations were used to get to the final form and once there a lot of effort was used to polish an exploratory graphics into an artefact of communication. Text is readable from a distance.	Incomplete iteration or polishing. Quality inconsistent and some plots either display too much data or too little. Some text is hard to read from a distance.	Graphics don't answer relevant questions and are hard to read. Plots feature overplotting or are over-summarized. Most text is either too small or comically large.
Organization	Clear flow from introduction to findings to conclusions. Important findings are eyecatching. Less important findings are less prominent. Least important findings are omitted. Evidence of rigorous editing: only the best plots made it on to the presentation.	Presentation flows pretty well, but not always obvious how one point leads to the next. Importance of findings and amount of time spent presenting the idea not well-matched.	Confusing and hard to follow; no obvious flow. Importance of findings not obvious from presentation.
Knowledgeability during Q&A	Response is well-informed, drawing on a deep understanding of the project and external sources. Questions are answered with definitive references to work or possible places to explore in the data. If something cannot be answered by the work done during the project, then a reasonable "I don't know" response is issued.	Response expands upon what was already presented, but mainly is within the confines of the main data used in the project. Questions are answered definitively, but are sometimes too vague or overextrapolate.	Responses to questions barely go beyond what was already presented. Knowledge about the project seems patchy.

Team Evaluation

	Exemplary	Good	Acceptable	Needs Work	Inadequate
	10	**7.5**	**5.0**	**2.5***	**0****
	Team member contributed heavily to the project without commandeering too much of the work away from others. They offered insight to other members' work and communicated effectively throughout the entire project.	Team member contributed much to the overall success of the project. Sometimes, it seemed as if they didn't effectively communicate what they were doing or tried to take too much upon themselves while leaving others with nothing to do.	Team member contributed what was asked of them and not much more. Another team member had to synthesize parts of their work for the presentation and/or paper, and their code had to be cleaned up. Communication seemed lopsided.	Team member contributed a little to the project, doing some of the coding or just preparing the slides/paper. Communication was hard, and division of labor was unfair.	Team member did nothing.

The teamwork score will be an average of all your team members' evaluations.

* If all other members of the team vote this score or lower, then the team member will receive a 50% deduction.

** If the score here is unanimous, then that team member will receive a 0.