University of Virginia
SYS 6016: Machine Learning
Programming Assignment Rubric

CRITERIA	RATING				SCORE (PTS)
	Excellent (9–10 pts)	Good (6–8 pts)	Fair (3–5 pts)	Poor (0–2 pts)	
IMPLEMENTATION					
Content Understanding	Demonstrates a sophisticated understanding of the concepts and methods; knows the exact scopes and possible limitations of each technique and shows the capability to use data analytics skills to make the right design decision.	Understands concepts and methods relatively well, analyzes data using acceptable practices although is not perfect, and derives useful information for decision making.	Somewhat understands concepts and methods, analyzes data using questionable methods; not able to derive useful information for decision making.	Demonstrates an inadequate understanding of essential concepts, methods, or applications, e.g., chooses wrong methods, conducts analysis inappropriately, or misinterprets results.	/ 10
Problem Solving	Gathers sufficient relevant data, conducts data analytics using scientific methods, makes appropriate and powerful connections between analysis and real-world problems, and provides constructive guidance in decision making	Collects and documents just enough data, employs proper techniques to retrieve insightful information from data, and makes reasonable recommendations	Data is inadequate or unstructured. Uses inappropriate methods to analyze data. Suggestions are not persuasive.	Data is inadequate or unstructured. No methods are used to analyze data and fails to retrieve useful information. No suggestions for a solution.	/ 10
Model Specification	The model works and meets all of the specifications. The code is exceptionally well-organized and very easy to follow.	The model works and produces the correct results and displays them correctly. It also meets most of the other specifications. The code is reasonably easy to read.	The model produces correct results but does not display them correctly. Delivered on time but in an incorrect format. The code is readable only by someone who knows	The model is producing incorrect results. The code is poorly organized and very difficult to read.	/ 10

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			what it is supposed to be doing.		
Execution & Runtime	Executes without errors. Excellent user prompts and proper use of symbols and spacing in output. Thorough and organized testing has been completed, and output from test cases is included.	Executes without errors. User prompts are understandable, and minimum use of symbols or spacing in output. Thorough testing has been completed.	Execute without errors. User prompts contain little information and are poorly designed. Some testing has been completed.	Does not execute due to syntax errors. Does not execute due to runtime errors (endless loop, crashes, etc.). User prompts are misleading or nonexistent. No testing has been completed.	/ 10
Coding Efficiency	The code is extremely efficient without sacrificing readability and understanding.	The code is reasonably efficient without sacrificing readability and understanding.	A logical solution is presented that is easy to follow, but it is not the most efficient.	A problematic and inefficient solution is presented.	/ 10
COMMUNICATION					
Analysis	All relevant information was obtained, and information sources were valid. Analysis and design considerations were well-supported by the information.	Sufficient information was obtained, and most sources were valid. Analysis and design considerations were mostly supported by the information.	Insufficient information was obtained and/or sources lack validity. The analysis was not supported by the information collected.	No analysis included.	/ 10
Reflection	The reflection is well-organized and insightfully written, includes thorough and thoughtful details. Conclusions are convincing.	The reflection is concise and clearly written. Analyzes problems following scientific strategies; provides useful suggestions with a detailed explanation.	The reflection is inadequately written and poorly organized. Additionally, the analysis is insufficient, and the conclusions are unconvincing.	No reflection included.	/ 10
TOTAL POINTS				minus 10 pts per late day	**/ 70**