

	Detailed Rubric (Code)	100.00
1	Code Quality and Formatting	10.00
	proper indentation	
	good use of constants	
	good use of comments	
	good variable and constant names	
	no abnormal exits	
	proper and consistent indentation	
	good use of horizontal white space to improve readability	
	line length less than 100 characters	
2	Menu / user interface	20.00
	presents menu with all options as specified in project description	
	menu repeats until valid selection is made	
	outputs prompt for user selection	
	if user requests to display one of the summary reports, but no files have been loaded; then an error message is displayed and the menu is presented again	
	after processing a valid selection, menu is again displayed; unless the user selected to quit in which case the program ends	
	appropriate feedback is presented to user if invalid option is selected	
	menu accepts either upper or lower case for user's selection	
	any extraneous input that the user might have typed after entering their selection is cleared from the input stream	
	prompts are clear and concise and neatly presented on screen	
	user responses are stored in variable(s) of appropriate data type	
3	File processing / data loading	15.00
	input file is opened, and associated with a stream prior to being used	
	test is made to ensure file opened successfully	
	if file fails to open then the user is notified of the problem and the main menu is present again	
	program does not attempt to input data from file or update vectors if errors exist	
	selected data elements for error-free rows are stored in the appropriate parallel vectors (refer to the project description for the list of vectors that need to be in the project)	
4	Functions	35.00
	At least eight (8) user defined functions are added to the program	
	All or most computation shall be moved out of function main() and into one of the eight other functions	
	Function main shall include logic to process the user's menu selection and make the appropriate call to one of the other project functions based on that selection	
	Do not duplicate code, when calculations and other functionality are moved to one of the required functions that code should be removed from its former location with in your file	
	Parameters are passed by reference, value, or const reference as appropriate/specified in the project description	
5	Calculations	10.00
	move calculations for line GC, line GF, and angle theta to the specified functions	
	move calculations for total surface area to the specified function	
	call the getTotalSurfaceArea function as necessary when the cost calculation is required	
	include calculations for running totals and counts	
6	Output	10.00
	includes all specified output	
	output is clear and descriptive	
	output is neatly formatted on screen	
	output column headings similar to example program and are neatly aligned	
	output includes appropriate message for invalid data	
	output includes accurate counts and summary statistics as shown in the sample program	
	the output format does not need to match the sample program exactly, but it should be generally the same and neatly aligned on the screen	