

ENGINEERING H192
DAILY ASSIGNMENT B07

Selection structures: if – else if – else

For this assignment you are to write a program that asks the user for some information about how far they have driven their car, how many gallons of fuel were used, and how much each gallon of fuel cost. Based on this information you are to determine the number of miles the car gets to a gallon of fuel and use an **if – else if – else** selection structure to evaluate the car's performance.

You are to write a complete C/C++ program that:

1. Executes until the user decides to quit
2. Prompts the user for the number of miles driven (0 or less quits the program)
3. Prompts the user for the number of gallons of fuel consumed
4. Prompts the user for the price paid per gallon.
5. Calculates the miles per gallon delivered by the vehicle
6. Calculates the cost of fuel per mile.
7. Writes to the screen all of the information entered by the user as well as the miles per gallon and cost per mile. Be sure to properly label each value descriptively as well as with the appropriate units (e.g. Cost (\$/mile)).

Based on the mpg calculated for your car, your program is to display the following messages

1. Greater than 0 and less than 20, display "Time to get a new, more efficient car"
2. Greater than or equal to 20 and less than 30, display "You need a tune-up or a better driving technique"
3. Greater than or equal to 30 and less than 35, display "Thanks for being environmentally conscientious"
4. Greater than or equal to 35 and less than 45, display "Where did you get the dollars for the hybrid?"
5. Greater than or equal to 45, display "Quick. Unless you're driving a SMART car, get a patent on this engine!"

How would your **if – else if – else** conditionals be different if you began checking mpg from highest to lowest values rather than from lowest to highest?

Once you have tested your program and it is working correctly, modify it to open an output file, **b07result.txt**, and write everything to the file that is being written to the screen. Test your program so that each mileage and output range is tested and displayed. Print a copy of your source code file, **b07.cpp**, and a copy of **b07result.txt** file and submit them with this sheet.

Name _____ Instructor _____ Seat _____ Hour _____