ECE 175: Computer Programming for Engineering Applications

Lab 1

Topics: Basic C and Branch structure
Demo to TA or ULA your code for each problem by the end of your lab session in order to earn your lab 1 score.

Problem 1 (15 points): Write a C program that accepts three integers, find the maximum and find new numbers by subtracting between the maximum and each integer.

Sample code execution 1: **bold** entered by a user
Enter three integers: **130 50 100**
Maximum is 130
New numbers are 0 80 30

Sample code execution 2: **bold** entered by a user
Enter three integers: **30 175 255**
Maximum is 255
New numbers are 225 80 0

More test cases:
If the inputs are 255, 255, 255, then the maximum is 255 and the new numbers are 0, 0, 0
If the inputs are 100, 190, 65, then the maximum is 190 and the new numbers are 90, 0, 125

Problem 2 (15 points): A water supply company charges the water consumption, as follows:

- Fixed amount of $10
- For the first 30 cubic meters (m^3), $0.6/$m^3$
- For the next 20 cubic meters (m^3), $0.8/$m^3$
- For every additional cubic meter (m^3) r, $1.0/$m^3$

Write a C program that reads the water consumption in cubic meters (m^3) and displays the cost. For example, if a user enters

- 15.7, the cost is 10 + 0.6*15.7 = 19.42 dollars.
- 45.25, the cost is 10 + 0.6*(30) + 0.8*(45.25-30) = 40.20 dollars.
- 85.5, the cost is 10 + 0.6*(30) + 0.8*(20) + 1*(85.5-50) = 79.50 dollars.

Sample code executions: **bold** entered by a user

Enter water consumption in cubic meter (m^3): **-1**
the value canNOT be negative

Enter water consumption in cubic meter (m^3): **15.7**
cost is 19.42 dollars

Enter water consumption in cubic meter (m^3): **45.25**
cost is 40.20 dollars

Enter water consumption in cubic meter (m^3): **85.5**
cost is 79.50 dollars

Enter water consumption in cubic meter (m^3): **30**
cost is 28.00 dollars

Enter water consumption in cubic meter (m^3): **50**
cost is 44.00 dollars