

**Lab 3- Interactive Programs in C**  
**Due date: Friday October 7, 2016 at 11.59pm**

**In the following programs:**

**- Name your variables according to the rules**

**- Format your code**

1. Develop a program that will convert from degrees centigrade to degrees Fahrenheit. User input is the temperature in centigrade. The relationship is:  $F = 9/5 * C + 32$

2. Write a complete c program that develops the following mathematical formula:

$$\frac{1}{2} \sqrt{\frac{\pi}{a}} e^{(b^2 - 4ac)/4a}$$

The value of a and b and c will be inputted by the user, the output will be show in scientific format with two decimal places.

**e (neper number) is approximately 2.71828 and pi is approximately 3.1415926.**

3. Write a program in which the user will enter a letter and the output of the program will be two letters after the entered character by user: **user enters D → program outputs F.**
4. Write a program in which the user will enter a lowercase letter and the program will print that value in uppercase: **user enters D → program outputs F.**
5. Write a program that asks the user for the cost of his last purchase and then calculate the HST (13 %) and total amount paid and displays this on the screen. The amounts shown should be in dollars and cents. (two decimals shown). Use \t, \n and %% to produce the output.

Make your result look EXACTLY as shown on the next page. Make sure the decimal points lines up correctly. (Hint: You'll need to use something like %10.2f).

Ask the user to enter the cost of his purchase BEFORE printing what's shown below.

After getting user input CLEAR THE SCREEN using the command system("cls");

This is how the OUTPUT should look

Thank you for patronizing our store.

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Cost of meal -               \$ xxx.xx

HST (13%) -                       \$ xx.xx

Total Cost                       \$ xxx.xx

Please visit us again soon.

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Submission guidelines:

1. Show your programs to your instructor
2. Zip all the .c files and submit them on Blackboard