**CS 271 Computer Architecture and Assembly Language**

**- Assignment 3 -**

**This assignment is designed to give you practice working with the floating-point unit (FPU) using MASM. Please submit your .asm file on CANVAS.**

**MASM Assembly Programming Section**

**Objectives:**

1. Initialize FPU
2. Perform floating point operations using reverse polish notation (RPN)

**Problem Definition:**

Write a program to convert miles to kilometers and Fahrenheit to Celcious.

* Display the program title and programmer’s name. Then get the user’s name and greet the user.
* Prompt the user to enter the distance in miles that they want to convert and then prompt them to enter the temperature that they want to convert in Fahrenheit.
* Convert and display the user values and the converted values.
* Display a parting message that includes the user’s name and terminate the program.

**Requirements:**

1. The programmer’s name and the user’s name must appear in the output.
2. The *main* procedure must be modularized into at least the following sections (using labels):
   1. introduction
   2. getUserData
   3. convertToKM
   4. convertToCelcious
   5. displayConvertedData
   6. farewell
3. The program must be fully documented. This includes a complete header block for identification, description, etc., and a comment outline to explain each section of code.

**Notes:**

1. For the conversions assume that 1 mile = 1.60934 kilometers, and the formula to convert the temperature from Fahrenheit to calcious is C = 5/9 x (F-32)

**Example** (user input in ***italics***):

Distance & Temperature Unit Conversion

Programmed by Leonardo Pisano

Hi, what’s your name? ***Joanne***

Hello, Joanne

Enter the distance in miles that you want to convert in kilometers: ***50***

Now enter the temperature in Fahrenheit that you want to convert in Celsius: ***14***

The conversion of 50 miles in kilometers is: +8.0467000E+001

The conversion of 14 degrees Fahrenheit in Celsius is: -9.9999000E+000

Results certified by Leonardo Pisano.

Goodbye, Joanne.

**Extra-credit options** (original definition must be fulfilled):

1. Implement more conversions.
2. Do something incredible.

To ensure you receive credit for any extra credit options you did, you must add one print statement to your program output PER EXTRA CREDIT which describes the extra credit you chose to work on. You will not receive extra credit points unless you do this. The statement must be formatted as follows...

--Program Intro--

\*\*EC: DESCRIPTION

--Program prompts, etc—