ESS101 : Programming 1 (C Programming)
LAB - 1

Due: 12th August, 2019 @ 17:00

Problem 1: Write a (C) program to calculate and print the area of a circle on reading the radius from the input in a `float` variable. (Assume π = 3.14). *Example*: If the input is 1, the output should be 3.14 (up to two decimal places).
Note: If the input is a negative number, then the output should be "Invalid input" (case sensitive).

Sample Input 1: 10
Output 1: 314.00
Sample Input 2: 1
Output 2: 3.14

Problem 2: Given two positive integers (read from the input), write a program to print the remainder when the greater number of the two is divided by the other. *Note*: if one of the numbers is ≤ 0, then the output should be "Invalid input" (case sensitive).

Sample Input 1: 23 5
Output 1: 3
Sample Input 2: 8 41
Output 2: 1
Sample Input 3: 5 -6
Output 3: Invalid input

Problem 3: Write a program that takes a temperature reading in Centigrade scale and outputs its equivalent value in the Fahrenheit scale (use `double` variables) (output should be printed up to two decimal places).

Sample Input 1: 0
Output 1: 32.00
Sample Input 2: -10
Output 2: -4.00

Problem 4: Write a program to output the roots of a quadratic equation of the form $ax^2+bx+c = 0$, given the coefficients a, b, c (use `double` variables). In every case, print both the roots, even if they are equal or imaginary. Imaginary roots to be printed in the form $\alpha + i\beta$ (please print α and β as floating point numbers up to two decimal places).
Sample Input 1: 1 -0.1 -3
Output 1: 1.78 -1.68
Sample Input 2: 1 1 1
Output 2: $-0.50 + i0.87$ $-0.50 - i0.87$