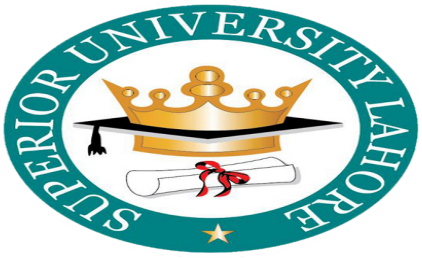
SUPERIOR UNIVERSITY LAHORE



Faculty of Computer Science & IT

Lab Manual

Computer Science for Session 2019 (Semester Fall-2019)

Programing Fundamentals

(Lab 7)

Target: Looping Structure (for, while & do-while)

Problem Set 1

- Write a main() function that gets values from the user to test all of the following functions.

  1. Write a function `abs` that takes a number and returns its absolute value. i.e if parameter value is 8 it should return 8 and if input is -8 it should return 8 as well.

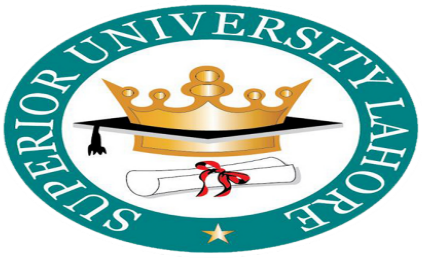
  2. Write a function `isPrime` that takes a number and returns 1 if number is prime else return 0.

  3. Raising a number n to a power p is the same as multiplying n by itself p times. Write a function called `power` that takes a double value for n and an int value for p, and returns the result as a double value.

  4. Write a function `isVowel` that check whether a given character is vowel or not. The function should take a character as an input and return Boolean as True or False.

- Write a function Fact that takes a number as argument and calculate factorial of a number.
- Write a function GDC that two numbers and find Highest Common Factor (HCF)(GCD) of two numbers.
- Write a C function GDC that two numbers and find LCM (Least Common Multiple) of two numbers.

SUPERIOR UNIVERSITY LAHORE



Faculty of Computer Science & IT

Problem Set 3

5. Write a program that takes the input from the user and calculate the factorial of it. Factorial should be calculated by the function `fact`. Then use that function to calculate the following summation uptill n terms.

$$e = \sum_{n=1}^{\infty} \frac{1}{n!} = \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \ldots + \frac{1}{n!}$$

For simplicity assume upper bound of n to be 100.

6. Use the same `fact` function to find e^x which is. Again for computational simplicity let upper bound of n to be 100.

$$e = \sum_{n=1}^{\infty} \frac{x^n}{n!} = \frac{x^1}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \ldots + \frac{x^n}{n!}$$

7. Write a function `max` that takes 2 numbers as an input and then returns the maximum of both values.