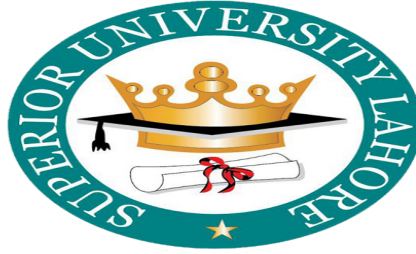


SUPERIOR UNIVERSITY LAHORE



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

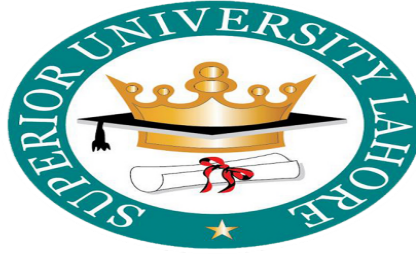
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Write a `main()` function that gets values from the user to test all of the following functions.

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.

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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.

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

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.

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

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