# LAB SHEET 8

## Functions

1. Write a function to find the smallest of three numbers. The function should return the smallest value.
2. Write a function to calculate the area of a triangle.
3. Write a function even() to generate all even numbers between 0 and n, n entered by the user.
4. Write a function which reads a character from the user and prints a message saying which of the following 4 categories the character belongs to:

   An upper case letter: ‘A’ to ‘Z’

   A lower case letter: ‘a’ to ‘z’

   A digit: ‘0’ to ‘9’

   Other – not a letter or digit
5. Write a function which reads in a float from the user, tests if the value is positive, and if so, computes the square root of the value and prints out the result. Use the library function sqrt() to compute the square root.
6. Write a function to calculate x to the power of y.
7. Write a program & include functions to check whether a number is palindrome, prime, Fibonacci, Perfect and/or Amstrong or not.

   i. Palindrome: Every single digit no is palindrome and every number for which the reverse is the same is also Palindrome.

ii. Prime: A number is prime if it is divisible only by that number other than The number 0 and 1 are neither prime nor composite.

iii. Fibonacci - A number is said to be Fibonacci if it belongs to the Fibonacci series 0,1,1,2,3,5,8,13,21 etc

iv. Perfect: An integer number is said to be a perfect number if its factors, including 1 (but not the number itself), sum to the number. For example, 6 is a perfect number, because 6 = 1 + 2 + 3

v. Amstrong: A number is Amstrong if the sum of the cube of the digits becomes that number. 153 = 13 + 53+33

8. Write the following programs using call by value:
    1. to find sum of two numbers
    2. Swap two numbers
9. Write a function limsum() to find the sum of numbers from m to n , m and n entered by the user.
10. Write a function multable(), which prints the multiplication table of a number m to n times, m and n entered by the user.

    Eg: multable (8,13) prints the multiplication table of 8 starting from 0 till 13.
11. Write a function convertcase() that converts the case of the character input by the user.

    Eg : if the user has input k, your function converts it to K.

    if the user has input A, function will convert it to a.
12. Using a function get(), receive a string from the user and print it back.

13. Write a function squareroot() and cuberoot() that reads a positive integer n from the user and then prints square and cube of numbers till user wishes to stop. Use a do-while loop structure.

14. Write a menu driven program to do the following

    a. if choice is 1, function scanvar() should read and display an integer.

    b. If choice is 2, function scanarray() should read and display an integer array. The function should have the number of elements *n* as argument.