**Lab IV – 04.01.2021**

Practical - Implementing programs using Functions.

1. Write a function that displays “Hello Name”, for any given name passed to it.
2. Write a program using the function C(n, r) to calculate the compound interest for the given principal, rate of interest and number of years.
3. Write a program using a function that returns the surface area and volume of a sphere.
4. Write a function that converts temperature given in Celsius into Fahrenheit.
5. Write a program to swap two variables that are defined as global variables.
6. Write a program that finds the greatest of three given numbers using functions. Pass the numbers as arguments.
7. Write a function that returns the absolute value of a number.
8. Write a function is\_prime() that returns a ‘1’ if the argument passed to it is a prime number and a ‘0’ otherwise.
9. Write a function is\_leap\_year which takes the year as its argument and checks whether the year is a leap year or not and then displays an appropriate message on the screen.

**Lab V – 11.01.2021**

Practical - Implementing programs using Functions.

1. Write a program to read an integer number. Print the reverse of this number using recursion.
2. Write a program that uses lambda function to multiply two numbers.
3. Write a program that passes lambda function as an argument to another function to compute the cube of a number
4. Write a program to compute lambda(n) for all positive values of n where, lambda(n) can be recursively defined as

lambda(n) = lambda (n / 2) +1 if n > 1

1. Write a program to print the Fibonacci series using recursion and without using recursion.
2. Write a function called printStatus that is passed status code ‘S’, ‘M’, ‘D’, or ‘U’ and returns the string ‘Separated’, ‘Married’, ‘Divorced’ or ‘Unmarried’ respectively. In case an inappropriate letter is passed, print an appropriate message. Also include a docstring with your invitation.
3. Write a function that accepts two positive integers n and m where m<=n, and returns numbers between 1 and n that are divisible by m
4. Write a function to calculate x to the power of y, where y can be either negative or positive.
5. Write a program to compute F (x, y) where

F (x, y) = F (x-y, y) + 1 if y < = x

1. Write programs demonstrating
   * 1. Required arguments
     2. Keyword arguments
     3. Default arguments
     4. Variable-length arguments