

## **Programs/Assignments**

### **Lab-2**

#### **Topic: Functions in C++**

##### **Objectives:**

- To learn writing, executing and debugging C++ programs related to call-by value and call-by reference function calls.
- To learn, writing, executing and debugging C++ programs related to the concept of function overloading.

##### **Outcomes:**

- After completing this, the students would be able to develop C++ programs applying function calls with different ways of passing parameters to the functions and function overloading.

##### **Lab Assignments**

1. Write a C++ program to calculate the GCD of two numbers using recursive functions. Use call-by value as a method of passing parameters to the function.
2. Write a C++ program to interchange the largest and the smallest numbers in the array using functions. Use call-by reference as a method of passing parameters to the function.
3. Write a C++ program to calculate the area of a circle, rectangle, triangle and a square using function overloading.

##### **Home Assignments**

1. Write a C++ program to input name, roll number and marks in 5 subjects for n number of students. Write functions to:
  - a. Find total marks and percentage of all n students.
  - b. Display details of a student with a given roll number.
  - c. Display the details for all the students having percentage in a given range.
2. Write a C++ program to enter ID, name, age and basic salary of n number of employees. Calculate the gross salary of all the employees and display it along with all other details in a tabular form, using functions.  
[ Gross salary= Basic salary + DA + HRA,  
DA = 80% of Basic salary  
HRA=10% of Basic salary ]
3. Write a C++ program to calculate the volume of a cube, cylinder and a cuboid using function overloading.