LALITPUR ENGINEERING COLLEGE

DEPARTMENT OF COMPUTER ENGINEERING

SUBJECT: OBJECT ORIENTED PROGRAMMING IN C++

LABSHEET-5

Objective: To familiarize students with polymorphism concepts.

Polymorphism is the ability to use an operator or function in different ways. It gives different meanings or functions to the operators or functions.

Varieties of Polymorphism (Types)

1. Compile time (Function overloading and operator overloading)
2. Run time (virtual function)

Function Overloading: Defining multiple functions with same name is known as function overloading. Arguments in the overloaded functions must not be same in number i.e. same function name different number of arguments.

Operator Overloading:

It is a mechanism that provides the operators a special meaning certain usage

Syntax:

return-type operator symbol (arguments)

{

Define Task of operator

}

Programs:

1. Write a program to generate Fibonacci series using operator overloading of ++ operator
   a) for pre increment
   b) for post increment

2. Write a program to implement vector addition using operator overloading
   a) using friend function
   b) without using friend function

3. Write a program finding area of square, rectangle, triangle. Use function overloading technique.

4. Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called triangle and rectangle from the base shape. Add to the base class, a member function get_data() to initialize base class data members and another member function display_area() to compute and display the area of figures. Make display_area() as virtual function and redefine this function in the derived class to suit their requirements.