Everest Engineering College
Sanepa-2, Lalitpur

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Subject: Object Oriented Programming in C++

Lab-9

Title: Polymorphism

Objective:

- To be familiar with polymorphism concept

Theory:

- Introduction to polymorphism
- Types of polymorphism
  i. Compile time polymorphism
     - Function overloading
     - Operator overloading
  ii. Runtime polymorphism
     - Virtual function

Lab exercises (please code yourself and show the output to instructor)

1. Write a program finding area of square, rectangle, triangle by using function overloading technique.
2. Write a simple program to overload unary minus(-) operator.
3. Write a program to generate Fibonacci series using operator overloading of ++ operator.
4. WAP to add two complex numbers. Your program should have three objects. Each object contains two attributes (i.e. real and imaginary part) Now add each attribute and save them into third object separately. Use the concept of '+' operator overloading.
5. Write a program to implement vector addition using operator overloading
   i. Using Friend Function
   ii. Without using Friend Function(using member function)
6. Create a base class student. Use the class to store name, dob, rollno and includes the member function getdata(),discount().Derive two classes PG and UG from student.. make dispresult() as virtual function in the derived class to suit the requirement.
7. Create a abstract class shape with two members base and height, a member function for initialization and a pure virtual function to compute area().Derive two specific classes, Triangle and Rectangle which override the function area ().use these classes in main function and display the area of triangle and rectangle.