

North South University

Department of Electrical and Computer Engineering

CSE 215L: Programming Language II Lab

Lab – 10: Practice Class on Labs 7, 8, 9

Lab Task:

1. Suppose, you are giving a coding test in a renowned IT company. They asked you to design a class named 'Member' and its two subclasses 'Employee' and 'Manager'.

- 'Member' class has name, age, hourly rate and total hours data fields
- 'Employee' and 'Manager' classes have specialization and department data fields respectively

Write a test program that creates an instance for Employee and Manager classes respectively. Then print their basic salary and bonus amount for November month.

[Hint: basic salary = (hourly rate * total hours), bonus salary = (10% * basic salary) if the age of an employee is more than 30 years.]

2. Design a class named Triangle to represent a triangle . The class contains:

- Three double data fields named s1, s2 and s3 that specify the three sides of a triangle. The default values are 1 for all sides.
- A no-arg constructor that creates a default triangle.
- A constructor that creates a triangle with the specified side values.
- A method named getArea() that returns the area.
- A method named getPerimeter() that returns the perimeter.

Write a test program that creates an array of two Triangle instances by taking side values from the user and displays the three side values, area and perimeter of each triangle in this order. You must create a user-defined method to print the information of each triangle using the following header.

void printTriangleInfo(Triangle t)

[Hint: If the length of three sides of a triangle is given, then we use Heron's formula to calculate the area of the triangle. Area of triangle = $\sqrt{s(s-a)(s-b)(s-c)}$, where s is the semi-perimeter of the triangle, and a, b, c are lengths of the three sides of the triangle.]