THIRD PRACTICAL ASSIGNMENT
(OOP)
Inheritance and Virtual function

1. Write a program to prepare mark-sheet for students, where inherited classes follow following structure :

    Student Class
    Roll_no, Name, Standard
    |
    Marks class
    m1,m2,m3 |

    Result class
    Show_result method

    This show_result method of result class displays result of student using information of student and, marks classes. Also display additional information like marks, percentage and class (1st, 2nd, pass and fail).

2. Imagine a publishing company that markets both book and audiocassette versions of its works. Create a class publication that stores the title (a string) and price (type float) of a publication. From this class derive two classes: book, which adds a page_count   (type int); and tape, which adds a playing time in minutes (type float). Each of these three classes should have a getdata()function to get its data from the user at the keyboard, and a putdata() function to display its data.

3. 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 getdata() to initialize base class data members and another member function disp_area() to compute and display the area of figures. Make disp_area() as a virtual function and redefine this function in the derived classes to suit their requirements.

Using these three classes, design a program that will accept dimension of a triangle or rectangle interactively, and display the area

Area of rectangle = x * y

Area of triangle = ½ * x * y

4.   Create a SHAPE class which has no_of_sides data member. Derive two classes CIRCLE and RECTANGLE from SHAPE class. CIRCLE class has one data member radius. RECTANGLE class has two data members length and width. Now using technique of virtual function get data for both class and display data for both class.