Lab Assignment 6

Q1. Consider a publishing company that markets both book and audio cassette version to its works. Create a class Publication that stores the title (a string) and price (type float) of a publication. Derive the following two classes from the above Publication class: Book which adds a page count (int) and Tape which adds a playing time in minutes(float). Each class should have get_data() function to get its data from the user at the keyboard. Write the main() function to test the Book and Tape classes by creating instances of them asking the user to fill in data with get_data() and then displaying it using put_data().

Q2. Consider an example of declaring the examination result. Design three classes student, exam and result. The student has data members such as rollno, name. Create the lass exam by inheriting the student class. The exam class adds data members representing the marks scored in 5 subjects. Derive the result from exam-class and it has own data members like total, avg. write the interactive program into model this relationship.

Q3 (i). 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 tp the base class, a member function getdata() to initialize base class data members and another member function display_area() to compute and display area of figures. Make display_area() as a virtual function and redefine the function in the derived class to suit their requirements. Using these three classes, design a program that will accept dimensions of a triangle or a rectangle interactively and display area.
(ii). Run the above program with following modification

a)Make shape class as abstract class with display_area() as pure virtual function

b) Use constructor function to initialize the data members of base class not through the getdata().

Q4. Write a C++ program for matrix multiplication with following specifications.

a)Use constructor dynamic memory allocation for matrix

b)Use getdata() function to input values for matrix

c) Use show( ) to display the matrix

d)Use mul() to multiply two matrices.

Q5. Write a C++ program for addition of two complex numbers using friend function (use constructor function to initialize data members of complex class).