

On Console Application – OOPS Assignment

Make abstract class or Interface for all the following programs

- 1) Write a class Calculator to implement the following simple arithmetic operations:
Addition, Subtraction, Division and Multiplication
All the methods should be static. Also make sure that it should not possible to instantiate the class.
- 2) Implement a class Complex which should provide methods to perform the following operations on complex numbers

Addition, Subtraction

Implement using static as well as non-static (instance) methods.
- 3) Write a class “ThreeDimObject” and define overloaded methods name volume() to calculate the volumes of various 3D-Objects (cube, cuboid, sphere and cylinder)
- 4) Implement class Queue. The class should implement the following operations:
Void add(int x);
Int delete;
Boolean isEmpty()
Boolean isQueueFull()
Void Display
Write a menu driven program which makes use of the **Queue** class to create the queue of the desired size. The program should prompt the user to select the desired option and then take appropriate action based on the user choice. The user should be provided exit functionality.
- 5) Write a class Time to represent Time with the following data members: Hours, minutes, seconds and methods to add seconds, minutes, hours, display, time etc. Use appropriate get/set properties.
- 6) Write class **Employee** which should have constructors and methods as given below
Public Employee(String name, double salary)
Public void raiseSalary(double byPercent

Define class **Manager** by extending class **Employee**. The manager also gets bonus in addition to salary, so the class must have an extra property to set **bonus**. The get property of salary of manager class computes salary as sum of base salary and bonus. Also define appropriate properties if required.

Write a Program to instantiate object of the class **Employee** and **Manager** and store them in an array of type pointer of **Employee**. The program must finally display the details of each employee.

7) Implement a class **List** to hold numbers. The class should support the following operations:

- (a) Void add(int x)
- (b) Boolean delete(int x)
- (c) Int delete(long index)
- (d) Void deleteAll()
- (e) Boolean search(int x)
- (f) Void insert(int x, int index)
- (g) List sort()
- (h) Void append(int x)
- (i) Void display()
- (j) Int get(int index)