

C++ Assignment-2

1. Using the concept of array of object in C++, store more than one employee data consisting employee id, name, and salary. Show the name and ids of employees, those salaries are above 50000.
2. Write a C++ program that store 5 student data using array of objects. Students have their roll no., name, and marks of three subjects to store. Calculating average of three marks and showing name, average, and grade of the corresponding average marks (>80: Grade A, >70: Grade B, >60: Grade C, >50: Grade D, >40: Grade E, less than 40: Grade F)
3. Write a C++ program that stores the length and breadth of five rectangles. Show the rectangles in the output, whose length and breadth are equal.
4. Write a C++ program to find out greatest between three numbers using nested class.
5. Write a C++ program using nested class to print a private member of the outer class that calculates area of circle.
6. Write a menu driven program of calculator using nested class, where individual computation done in separate class.
7. Write a program to read a file and count the number of chars, words, and lines, and print these quantities.
8. Program in C++ Using file handling to perform following operations on a text file:
 - a) Add new record
 - b) View all records
 - c) Delete particular record
 - d) Search record
 - e) Update record
9. Create two classes named Mammals and Marine Animals. Create another class named Blue Whale, which inherits both the above classes. Now, create a function in each of these classes, which prints, "I am mammal", "I am a marine animal" and "I belong to both the categories: Mammals as well as Marine Animals" respectively. Now, create an object for each of the above class and try calling
 - a) function of Mammals by the object of Mammal

- b) function of MarineAnimal by the object of MarineAnimal
 - c) function of BlueWhale by the object of BlueWhale
 - d) function of each of its parent by the object of BlueWhale
10. Make a class named Fruit with a data member to calculate the number of fruits in a basket. Create two other class named Apples and Mangoes to calculate the number of apples and mangoes in the basket. Print the number of fruits of each type and the total number of fruits in the basket.
11. We want to calculate the total marks of each student of a class in Physics, Chemistry and Mathematics and the average marks of the class. The number of students in the class is entered by the user. Create a class named Marks with data members for roll number, name and marks. Create three other classes inheriting the Marks class, namely Physics, Chemistry and Mathematics, which are used to define marks in individual subject of each student. Roll number of each student will be generated automatically.
12. Create a class named Shape with a function that prints "This is a shape". Create another class named Polygon inheriting the Shape class with the same function that prints "Polygon is a shape". Create two other classes named Rectangle and Triangle having the same function which prints "Rectangle is a polygon" and "Triangle is a polygon" respectively. Again, make another class named Square having the same function, which prints "Square is a rectangle".
Now, try calling the function by the object of each of these classes.
13. Write a program to create a class shape with functions to find area of the shapes and display the name of the shape and other essential component of the class. Create derived classes circle, rectangle and trapezoid each having overridden functions area and display. Write a suitable program to illustrate virtual functions and virtual destructor.
14. Create a class Person and two derived classes Employee, and Student, inherited from class Person. Now create a class Manager which is derived from two base classes Employee and Student. Show the use of the virtual base class.
15. Write a program with Student as abstract class and create derive classes Engineering, Medicine and Science from base class Student. Create the objects of the derived classes and process them and access them using array of pointer of type base class Student.