

Coding Set 3

C++ Practice Questions on Classes and Objects (10 Questions)

Q1. Basic Class Definition

Create a class Student with two data members: rollNo and name. Write a program to:

1. Create an object of the class.
 2. Assign values to its data members.
 3. Display the values.
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Q2. Multiple Objects

Create a class Book with data members title, author, and price. Write a program to create three objects of Book, initialize them with user input, and display their details.

Q3. Member Functions Outside Class

Create a class Rectangle with data members length and width.

- Define a member function area() outside the class (using scope resolution operator).
 - In main(), create an object and display its area.
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Q4. Constructors

Create a class Employee with data members id and salary.

- Write a parameterized constructor to initialize data members.
 - Create two objects and display their details.
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Q5. Default and Parameterized Constructors

Create a class Circle with data member radius.

- Write a default constructor that sets radius to 1.
 - Write a parameterized constructor that accepts radius from user.
 - Add a function area() to calculate and display the area.
 - Demonstrate both constructors in main().
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Q6. Destructor

Create a class `FileHandler` with a constructor that prints "File opened" and a destructor that prints "File closed".

- Create an object in `main()` and observe the order of constructor and destructor calls.
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Q7. Copy Constructor

Create a class `Car` with data members `brand` and `price`.

- Define a copy constructor to initialize one object from another.
 - Demonstrate copy constructor in `main()`.
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Q8. Object as Function Argument

Create a class `Complex` with two data members `real` and `imag`.

- Define a function `add(Complex c)` that adds the current object with object `c` and returns the result.
 - In `main()`, create two complex numbers and add them.
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Q9. Returning Object from Function

Create a class `Time` with data members `hours` and `minutes`.

- Write a function `addTime(Time t)` that adds two time objects and returns a new object.
 - Ensure minutes are properly converted into hours if they exceed 60.
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Q10. Mini Project - Student Report Card

Create a class `Report` with:

- Data members: `name`, `rollNo`, `marks[5]`.
- Member functions:
 - `input()` → to take details from user.
 - `display()` → to show details.
 - `calculateGrade()` → to calculate total, percentage, and grade (A, B, C, Fail).

Write a program to create multiple objects of `Report` and display the report card for each student.