

21CSC201T – Object Oriented Design and Programming

Week - 4 – Tutorial Questions

Constructors, Copy constructor, Destructor

1. Design a system for a library to manage books.

- Create a class Book with attributes: bookID, title, author, and price.
- Implement a default constructor to initialize default values to the book during object creation.
- Implement a parameterized constructor to initialize book details.
- Implement a function displayBookInfo() to show book details.
- Demonstrate creating multiple book objects.

2. Design an online shopping system.

- Create a Product class with attributes: productID, productName, price, and quantity.
- Implement a default constructor to initialize default values to the product details during object creation.
- Implement a parameterized constructor to initialize product details when an object is created.
- Add a function calculateTotalPrice() that calculates the total cost based on quantity.
- Implement a destructor that displays a message when a product object is removed.
- Create an array of Product objects and write a function to display the details of all products in the cart.

3. A theatre wants to automate its ticket booking system.

- Create a class MovieTicket with attributes: movieName, seatNumber, price, and isBooked.
- Implement a constructor to initialize the ticket details when an object is created.
- Implement functions to bookTicket(), cancelTicket(), and displayTicketDetails().
- Ensure that a ticket can only be booked if it's not already booked.
- Implement a destructor to display a message when a ticket object is deleted.

Demonstrate the ticket booking and cancellation process with multiple objects.

4. Design an employee management system for a company.

- Create a class Employee with attributes: empID, name, salary, and designation.
- Implement a parameterized constructor to initialize employee details.
- Implement a copy constructor that creates a duplicate employee record.
- Implement a function displayDetails() to show employee details.
- Demonstrate creating multiple employee objects, including a copied object using the copy constructor.

[Note: Create an employee E1 using the parameterized constructor. Create another employee E2 as a copy of E1 and display both employee details.]