B. Tech.(CSE) Semester-III
Object Oriented Programming Lab
Laboratory Assignment

Note: Last Date of Evaluation of Assignment is **5th November, 2023.** Include this in your previous file.

Write C++ codes for the following problems:

1. **Simple Calculator:**
   - **Attributes:**
     - Two input numbers
     - Operator (+, -, *, /)
   - **Functionalities:**
     - Accept two numbers and an operator as input.
     - Perform the selected operation.
     - Display the result.
     - Handle division by zero or invalid input.
2. **Library Management System:**
   - **Attributes:**
     - Book title, author, ISBN, availability status
     - User records with names and IDs
   - **Functionalities:**
     - Add, update, or remove books from the library.
     - Search for books by title, author, or ISBN.
     - Check in/out books to users.
     - Display a list of available and overdue books.
3. **Student Gradebook:**
   - **Attributes:**
     - Student names, IDs, and grades
   - **Functionalities:**
     - Add and manage student records.
     - Assign grades to students.
     - Calculate and display the average grade.
     - Identify the student with the highest and lowest grades.
4. **Bank Account Management System:**
   - **Attributes:**
     - Account types (savings, checking)
     - Account holders' names and account balances
   - **Functionalities:**
     - Create and manage bank accounts.
     - Deposit and withdraw funds.
     - Display account balance and account details.

5. **Online Shopping Cart:**
   - **Attributes:**
     - Product catalog with names, prices, and quantities
     - User shopping carts
     - Shipping information
   - **Functionalities:**
     - Browse products and add items to the cart.
     - Calculate and display the total cost.
     - Input and validate shipping information.
     - Complete the purchase transaction.
6. **Employee Payroll System:**
   - **Attributes:**
     - Employee records with names, IDs, hourly rates, and work hours
   - **Functionalities:**
     - Add, update, or remove employee records.
     - Calculate and display employee salaries.
     - Generate payroll reports.
     - Handle overtime and deductions.
7. **Address Book Application:**
   - **Attributes:**
     - Contacts with names, phone numbers, and email addresses
   - **Functionalities:**
     - Add, update, or delete contacts.
     - Search for contacts by name or email.
     - Display a list of all contacts.

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