Part I: Advanced Programming (AP-OOAD) Lab - CSP318

Lab Assignment-2 (Introduction to C++/JAVA Concepts)

Objective: Understanding Objects, Member functions and Constructors

**Program 1:** Create a class Student with data members for student name, roll number, and marks. Implement member functions to input and display student information. Use a constructor to initialize the object with default values.

**Program 2:** Design a class Rectangle with attributes for length and width. Include member functions to calculate the area and perimeter of the rectangle. Implement a constructor to set initial values for length and width.

**Program 3:** Design a class Car with attributes for make, model, and year of manufacture. Include member functions to display car details and check if the car is a vintage model. Use a constructor to set initial values.

**Program 4:** Create a class Book with attributes for book title, author, and quantity in stock. Implement member functions to display book details, update stock, and check if the book is available. Use a constructor to initialize book details.

**Program 5:** Create a class named Loan for managing bank loans with private data members for customer name, loan amount, and interest rate. Include member functions to calculate monthly payments and display loan information. Write a constructor to initialize the loan details.

**Program 6:** Create a class BankAccount with members customer name, balance and abstract methods deposite(), and withdrawal(). Implement a method display() in BankAccount to show the balance of the account. Implement two classes SavingAccount and Overdraft that overrides the abstract methods with their own private members. Create objects of the two classes to demonstrate the accounts functionalities.