

LAB 6:- Programms:-

1. Implement the code for stack and Queue using arrays.
2. Implement code for stack and Queue using Linked List.
3. Create a class named 'Member' having the following members:

Data members

- 1 - Name
- 2 - Age
- 3 - Phone number
- 4 - Address
- 5 - Salary

It also has a method named 'printSalary' which prints the salary of the members.

Two classes 'Employee' and 'Manager' inherits the 'Member' class. The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.

4. Create a class named 'Rectangle' with two data members 'length' and 'breadth' and two methods to print the area and perimeter of the rectangle respectively. Its constructor having parameters for length and breadth is used to initialize length and breadth of the rectangle. Let class 'Square' inherit the 'Rectangle' class with its constructor having a parameter for its side (suppose s) calling the constructor of its parent class as 'super(s,s)'. Print the area and perimeter of a rectangle and a square.
5. Now repeat the above example to print the area of 10 squares.
Hint-Use array of objects.
6. Create a class named 'Shape' with a method to print "This is This is shape". Then create two other classes named 'Rectangle', 'Circle' inheriting the Shape class, both having a method to print "This is rectangular shape" and "This is circular shape" respectively. Create a subclass 'Square' of 'Rectangle' having a method to print "Square is a rectangle". Now call the method of 'Shape' and 'Rectangle' class by the object of 'Square' class.
7. Write a Java program to create a class called Animal with a method called makeSound(). Create a subclass called Cat that overrides the makeSound() method to bark.
8. Write a Java program to create a class known as "BankAccount" with methods called deposit() and withdraw(). Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred.
9. Write a Java program to create a class known as Person with methods called getFirstName() and getLastName(). Create a subclass called Employee that adds a new method named getEmployeeId() and overrides the getLastName() method to include the employee's job title.
10. Write a Java program to create a vehicle class hierarchy. The base class should be Vehicle, with subclasses Truck, Car and Motorcycle. Each subclass should have properties such as make, model, year, and fuel type. Implement methods for calculating fuel efficiency, distance traveled, and maximum speed.

11. Write a Java program that creates a class hierarchy for employees of a company. The base class should be Employee, with subclasses Manager, Developer, and Programmer. Each subclass should have properties such as name, address, salary, and job title. Implement methods for calculating bonuses, generating performance reports, and managing projects.