Why do we need Inheritance?

Ans: Inheritance is important in programming because it allows classes to inherit properties and behaviors from other classes. This promotes code reuse, modular design, and extensibility. It also enables polymorphism, where objects of different classes can be treated as a common superclass. Inheritance helps organize code hierarchically and supports encapsulation. Overall, it makes software development more efficient, flexible, and easier to understand.

Create a class named 'Rectangle' with two data members 'length' and ‘width’. Its constructor has parameters for length and width to initialize length and width of the rectangle. Create another class 'Square' that inherits the 'Rectangle' class with its constructor having a parameter for its side. Calling the constructor of its parent class as 'super(side, side)'. Complete these classes and print the area and perimeter of a rectangle and a square.

Ans:

public class Rectangle {

public double length;

public double width;

public Rectangle(double length, double width) {

this.length = length;

this.width = width;

}

public double area() {

return length \* width;

}

public double perimeter() {

return 2 \* (length + width);

}

}

public class Square extends Rectangle {

public Square(double side) {

super(side, side);

}

public double area() {

return length \* width;

}

public double perimeter() {

return 2 \* (length + width);

}

}

import java.util.Scanner;

public class Main {

public static void main(String[] args) {

Scanner scn = new Scanner(System.***in***);

System.***out***.println("One side of Rectangle: ");

int a = scn.nextInt();

System.***out***.println("Another side of Rectangle: ");

int b = scn.nextInt();

System.***out***.println("Side of Square: ");

int c = scn.nextInt();

Rectangle rec = new Rectangle(a,b);

System.***out***.println("\nRectangle");

System.***out***.println("Area: "+rec.area());

System.***out***.println("Perimeter: "+rec.perimeter());

Square sq = new Square(c);

System.***out***.println("\nSquare");

System.***out***.println("Area: "+sq.area());

System.***out***.println("Perimeter: "+sq.perimeter());

scn.close();

}

}