

```
import java.util.Scanner;

class Shape {
    String type;
    String color;
    private String name;

    public Shape(String type) { this.type = type; }

    public String getName() { return name; }

    public void setName(String name) { this.name = name; }

    public double calculateArea(int radius) { return 3.14 * radius * radius; }

    public int calculateArea(int width, int length) {
        return width * length;
    }

    public void calculateArea(int side1, int side2, int side3) {
        double s = (side1 + side2 + side3) / 2;
        double area = Math.sqrt(s * (s - side1) * (s - side2) * (s - side3));
        System.out.println("Area = " + area);
    }
}
```

```
public class Main {
    public static void main(String[] args) {

        System.out.println("*** Program: Area calculation ***");
        System.out.println("Select menu");
        System.out.println("1 : Circle");
        System.out.println("2 : Rectangle");
        System.out.println("3 : Triangle");
        System.out.println("4 : Exit");
        System.out.println("Select menu: ");
        Scanner input = new Scanner(System.in);
```

```
Scanner input = new Scanner(System.in);
int menu = input.nextInt();
input.nextLine(); // nextInt() does not consume the '\n'. Need to do it manually.

while (menu != 4) {
    if (menu == 1) {
        System.out.println("Create circle object...");
        Shape circleObj = new Shape( type: "circle");
        System.out.println("Enter name of shape: ");
        circleObj.setName(input.nextLine());
        System.out.println("Enter color: ");
        circleObj.color = input.nextLine();
        System.out.println("Enter radius: ");
        int radius = input.nextInt();
        input.nextLine(); // nextInt() does not consume the '\n'. Need to do it manually.
        System.out.println("Circle name: " + circleObj.getName() + " color = " + circleObj.color);
        System.out.println("Area = " + circleObj.calculateArea(radius));
    }
    if (menu == 2) {
        System.out.println("Create rectangle object...");
        Shape rectangleObj = new Shape( type: "rectangle");
        System.out.println("Enter name of rectangle: ");
        rectangleObj.setName(input.nextLine());
        System.out.println("Enter color: ");
        rectangleObj.color = input.nextLine();
        System.out.println("Enter width: ");
        int width = input.nextInt();
        System.out.println("Enter length: ");
        int length = input.nextInt();
        input.nextLine(); // nextInt() does not consume the '\n'. Need to do it manually.
        System.out.println("Rectangle name: " + rectangleObj.getName() + " color = " + rectangleObj.color);
        System.out.println("Area = " + rectangleObj.calculateArea(width, length));
    }
    if (menu == 3) {
        System.out.println("Create triangle object...");
        Shape triangleObj = new Shape( type: "triangle");
        System.out.println("Enter name of triangle: ");
        triangleObj.setName(input.nextLine());
        System.out.println("Enter color: ");
        triangleObj.color = input.nextLine();
    }
}
```



```

        input.nextLine(); // nextInt() does not consume the '\n'. Need to do it manually.
        System.out.println("Rectangle name: " + rectangleObj.getName() + " color = " + rectangleObj.color);
        System.out.println("Area = " + rectangleObj.calculateArea(width, length));
    }
    if (menu == 3) {
        System.out.println("Create triangle object...");
        Shape triangleObj = new Shape( type: "triangle");
        System.out.println("Enter name of triangle: ");
        triangleObj.setName(input.nextLine());
        System.out.println("Enter color: ");
        triangleObj.color = input.nextLine();
        System.out.println("Enter side1: ");
        int side1 = input.nextInt();
        System.out.println("Enter side2: ");
        int side2 = input.nextInt();
        System.out.println("Enter side3: ");
        int side3 = input.nextInt();
        input.nextLine(); // nextInt() does not consume the '\n'. Need to do it manually.
        System.out.println("Rectangle name: " + triangleObj.getName() + " color = " + triangleObj.color);
        triangleObj.calculateArea(side1, side2, side3);
    }
    System.out.println("");
    System.out.println("*** Program: Area calculation ***");
    System.out.println("Select menu");
    System.out.println("1 : Circle");
    System.out.println("2 : Rectangle");
    System.out.println("3 : Triangle");
    System.out.println("4 : Exit");
    System.out.println("Select menu: ");
    menu = input.nextInt();
    input.nextLine(); // nextInt() does not consume the '\n'. Need to do it manually.
}
input.close();
System.out.println("Exit");
}
}

```