Main.java

```java
// Name: Rupankar Das
// PRN: 23070126111
// Batch: AIML 2023-27
// Github : https://github.com/mvrck-dev/Java-Lab/tree/main/Assignments/Assignment%204

import java.util.Scanner;
public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        boolean exit = false;

        while (!exit) {
            System.out.println("\nSelect a Shape:");
            System.out.println("1. Circle");
            System.out.println("2. Rectangle");
            System.out.println("3. Square");
            System.out.println("4. Sphere");
            System.out.println("5. Cylinder");
            System.out.println("6. Equilateral Pyramid");
            System.out.println("7. Exit");
            System.out.print("Enter your choice: ");

            int choice = scanner.nextInt();
            Shape shape = null;
            Volume volumeShape = null;

            switch (choice) {
                case 1:
                    System.out.print("Enter radius of the circle: ");
                    double radius = scanner.nextDouble();
                    shape = new Circle(radius);
                    break;

                case 2:
                    System.out.print("Enter length and width of the rectangle: ");
                    double length = scanner.nextDouble();
                    double width = scanner.nextDouble();
                    shape = new Rectangle(length, width);
                    break;

                case 3:
                    System.out.print("Enter side of the square: ");
                    double side = scanner.nextDouble();
                    shape = new Square(side);
                    break;

                case 4:
                    System.out.print("Enter radius of the sphere: ");
                    double sphereRadius = scanner.nextDouble();
                    volumeShape = new Sphere(sphereRadius);
                    break;
```

```
52
53                 case 5:
54                     System.out.print("Enter radius and height of the cylinder: ");
55                     double cylRadius = scanner.nextDouble();
56                     double height = scanner.nextDouble();
57                     volumeShape = new Cylinder(cylRadius, height);
58                     break;
59
60                 case 6:
61                     System.out.print("Enter base side and height of the equilateral
   pyramid: ");
62                     double baseSide = scanner.nextDouble();
63                     double pyrHeight = scanner.nextDouble();
64                     volumeShape = new EquilateralPyramid(baseSide, pyrHeight);
65                     break;
66
67                 case 7:
68                     exit = true;
69                     break;
70
71                 default:
72                     System.out.println("Invalid choice! Try again.");
73                     continue;
74             }
75
76             if (shape != null) {
77                 shape.displayShape();
78                 System.out.println("Area: " + shape.calculateArea());
79                 System.out.println("Perimeter: " + shape.calculatePerimeter());
80             }
81
82             if (volumeShape != null) {
83                 System.out.println("Volume: " + volumeShape.calculateVolume());
84             }
85         }
86         scanner.close();
87     }
88 }
89
```