**Source code :**

**package** calculator;

**import** java.util.Scanner;

**public** **class** GeometricDimensions{

**public** **static** **double** calculateSquareArea(**double** sideLength) {

**return** sideLength \* sideLength;

}

**public** **static** **double** calculateRectangleArea(**double** length, **double** width) {

**return** length \* width;

}

**public** **static** **double** calculateTriangleArea(**double** base, **double** height) {

**return** 0.5 \* base \* height;

}

**public** **static** **double** calculateCircleArea(**double** radius) {

**return** Math.***PI*** \* radius \* radius;

}

**public** **static** **void** main(String[] args) {

**try**( Scanner scanner = **new** Scanner(System.***in***)){

System.***out***.println("Select a geometric shape:");

System.***out***.println("1. Square");

System.***out***.println("2. Rectangle");

System.***out***.println("3. Triangle");

System.***out***.println("4. Circle");

**int** choice = scanner.nextInt();

**switch** (choice) {

**case** 1:

System.***out***.print("Enter the side length of the square: ");

**double** squareSide = scanner.nextDouble();

System.***out***.println("The area of the square is: " + *calculateSquareArea*(squareSide));

**break**;

**case** 2:

System.***out***.print("Enter the length of the rectangle: ");

**double** rectangleLength = scanner.nextDouble();

System.***out***.print("Enter the width of the rectangle: ");

**double** rectangleWidth = scanner.nextDouble();

System.***out***.println("The area of the rectangle is: " + *calculateRectangleArea*(rectangleLength, rectangleWidth));

**break**;

**case** 3:

System.***out***.print("Enter the base of the triangle: ");

**double** triangleBase = scanner.nextDouble();

System.***out***.print("Enter the height of the triangle: ");

**double** triangleHeight = scanner.nextDouble();

System.***out***.println("The area of the triangle is: " + *calculateTriangleArea*(triangleBase, triangleHeight));

**break**;

**case** 4:

System.***out***.print("Enter the radius of the circle: ");

**double** circleRadius = scanner.nextDouble();

System.***out***.println("The area of the circle is: " + *calculateCircleArea*(circleRadius));

**break**;

**default**:

System.***out***.println("Invalid choice. Please enter a number between 1 and 4.");

}

}

}

}