Assignment 04 - OOPL (Code)

```java
import java.util.*;
abstract class Shape {
        float length;
        float height;

        abstract void calculateArea();

        void getData() {
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter length of the shape(in meters): \n");
        length = sc.nextFloat();
        System.out.println("Enter height of the shape(in meters): \n");
        height = sc.nextFloat();
        }
}

class Triangle extends Shape {

        float area;
        @Override
        void calculateArea() {
        float area = (float) (0.5 * length * height);

        System.out.println("The area of given Triangle is: " + area + " square meter. \n");
        }
}

class Rectangle extends Shape {
        float area1;

        @Override
        void calculateArea() {
        area1 = (float) (height*length);

        System.out.println("The area of given Rectangle is: " + area1 + " square meter. \n");
```

```
        }
}


class Main {
        public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int ch;

        switchCaseLoop:
        while (true) {
        System.out.println("Select Shape: \n");
        System.out.println("1.Type 1 for Triangle. \n2.Type 2 for Rectangle. \n3.Type 3 to Exit.
\n");
        ch = sc.nextInt();

        switch (ch) {
                case 1:
                Triangle T = new Triangle();
                T.getData();
                T.calculateArea();
                break;

                case 2:
                Rectangle R = new Rectangle();
                R.getData();
                R.calculateArea();

                case 3:
                break switchCaseLoop;

                default: System.out.println("Invalid choice! Please enter a valid choice. \n");
        }
        }
        }
}
```

OUTPUT -

Select Shape:

1.Type 1 for Triangle.
2.Type 2 for Rectangle.
3.Type 3 to Exit.

1

Enter length of the shape(in meters):
69

Enter height of the shape(in meters):
420

The area of the given Triangle is: 14490.0 square meter.

Select Shape:

1.Type 1 for Triangle.
2.Type 2 for Rectangle.
3.Type 3 to Exit.

2

Enter length of the shape(in meters):
420

Enter height of the shape(in meters):
69

The area of the given Rectangle is: 28980.0 square meter.

Select Shape:

1.Type 1 for Triangle.
2.Type 2 for Rectangle.
3.Type 3 to Exit.

4

Invalid choice! Please enter a valid choice.

Select Shape:

1.Type 1 for Triangle.
2.Type 2 for Rectangle.
3.Type 3 to Exit.

3

...Program finished with exit code 0