Experiment 3

Write a program in Java with class Rectangle with the data fields width, length, area and colour. The length, width and area are of double type and colour is of string type. The methods are get_length(), get_width(), get_colour() and find_area(). Create two objects of Rectangle and compare their area and colour. If the area and colour both are the same for the objects then display " Matching Rectangles", otherwise display " Non-matching Rectangle"

```java
1   import java.util.Scanner;
2
3   public class Rectangle {
4
5       private double width;
6       private double length;
7       private double area;
8       private String colour;
9
10      // Constructor
11      public Rectangle(double width, double length, String colour) {
12          this.width = width;
13          this.length = length;
14          this.colour = colour;
15          this.area = find_area();
16      }
17
18      public double get_width() {
19          return width;
20      }
21
22      public double get_length() {
23          return length;
24      }
25
26      public String get_colour() {
27          return colour;
28      }
29
30      public double find_area() {
31          return width * length;
32      }
33
34      public static void main(String[] args) {
35          Scanner input = new Scanner(System.in);
36
37          // Rectangle 1
38          System.out.println("Enter details for Rectangle 1:");
39          System.out.print("Width: ");
40          double w1 = input.nextDouble();
41          System.out.print("Length: ");
42          double l1 = input.nextDouble();
43          input.nextLine(); // consume newline
44          System.out.print("Colour: ");
45          String c1 = input.nextLine();
46          Rectangle r1 = new Rectangle(w1, l1, c1);
47
48          // Rectangle 2
49          System.out.println("\nEnter details for Rectangle 2:");
50          System.out.print("Width: ");
51          double w2 = input.nextDouble();
```

```java
            System.out.print("Length: ");
            double l2 = input.nextDouble();
            input.nextLine();
            System.out.print("Colour: ");
            String c2 = input.nextLine();
            Rectangle r2 = new Rectangle(w2, l2, c2);

            // Comparison
            if (r1.find_area() == r2.find_area() &&
                r1.get_colour().equalsIgnoreCase(r2.get_colour())) {
                System.out.println("\nMatching Rectangles");
            } else {
                System.out.println("\nNon-matching Rectangle");
            }

            input.close();
        }
}
```

```
Output:

Execution 1:
Enter details for Rectangle 1:
Width: 3
Length: 6
Colour: Red

Enter details for Rectangle 2:
Width: 4
Length: 8
Colour: Blue

Non-matching Rectangle

Execution 2:
Enter details for Rectangle 1:
Width: 4
Length: 6
Colour: Red

Enter details for Rectangle 2:
Width: 6
Length: 4
Colour: Red

Matching Rectangles
```