November 26, 2015 [1]

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

    Rectangle myRectangle = new Rectangle();
    Rectangle yourRectangle = new Rectangle();
    yourRectangle.multiply(4);

    System.out.println(yourRectangle);
    System.out.println(myRectangle);
    System.out.println(myRectangle.overlap(yourRectangle));
    System.out.println();

    System.out.println("moving yourRectangle...");
    yourRectangle.moveTo(2, 2);
    System.out.println(yourRectangle);
    System.out.println(myRectangle);
    System.out.println(myRectangle.overlap(yourRectangle));

  }
}
//-------------------------------------
public class Rectangle{

  private double x, y; //Coordinate for left and bottom corner
  private double length;
  private double width;
  private String color;

  public Rectangle() { //Default Constructor.

    x = 0.0;
    y = 0.0;
    length = 1.0;
    width = 1.0;
    color = "blue";
    //32 bytes 4*8byte
  }
  //-------------------------------------
  public String toString(){

    return "x: " + x + " y: " + y + " length: "
     + length + " width: " + width + " color: " + color;
  }
  //-------------------------------------
```

[1] A quick work in class without paying attention to coding style.

```
public void rotate(){

    double temp;
    temp = length;
    length = width;
    width = temp;
  }
  //-------------------------------------
  public void moveTo(double x, double y){
    this.x = x;
    this.y = y;
    // x = newX; this.x = newX;
    // y = newY; this.y = newY;
    //we do like that to differentiate the object parameter from method
parameter.
  }
  //-------------------------------------
  public double circumfrance(){

    return 2 * (width + length);
  }
  //-------------------------------------
  public double area(){

    return width * length;
  }
  //-------------------------------------
  public void hopUp(int n){

    y = y + n * width;
  }
  //-------------------------------------
  public void hopRight(int n){

    x = x + n * length;
  }
  //-------------------------------------
  public void multiply(double n){

    width = width * Math.sqrt(n);
    length = length * Math.sqrt(n);
  }
  //-------------------------------------
  public int compareTo( Rectangle otherRect){

    /*double areaThis = length * width;
    double areaOther = otherRect.length * otherRect.width;
    */
    double areaThis = area();
    double areaOther = otherRect.area();
```

```
    int result;
    if(areaThis > areaOther){

      result = 1;

    }else if(areaThis == areaOther){

      result = 0;

    }else{

      result = -1;

    }
    return result;
  }

  public Rectangle copy(){

   Rectangle result = new Rectangle();

   result.x = this.x;
   result.y = this.y;
   result.color = this.color;
   result.length = this.length;
   result.width = this.width;

   return result;
  }

  public boolean overlap(Rectangle otherRect){

    boolean result = true;

    if ( x + length < otherRect.x || otherRect.x + otherRect.length < x)
      result = false;
    if ( y + width < otherRect.y || otherRect.y + otherRect.width < y)
      result = false;

    return result;
  }
}
```