浙大20秋JAD W1实验

返回

6-2 矩形 (10分)

设计一个表示矩形的类Rectangle，这个类用一个表示坐标点的类Point的对象来表达它的左上角坐标，用一个表示尺寸的类Dimension的对象来表示它的大小。 你的程序要严格按照所给的类和函数的声明来实现。

作者	**翁恺**
单位	浙江大学
代码长度限制	16 KB
时间限制	400 ms
内存限制	64 MB

函数接口定义：

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PTA

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```java
/**
 * Represents a point in 2D, with x and y, like (x,y).
 */
class Point {
    private int x;
    private int y;

    /**
     * Creates a point with coordinate at (x,y)
     * @param x the x coordinate
     * @param y the y coordinate
     */
    public Point(int x, int y) {

    }

    /* (non-Javadoc)
     * @see java.lang.Object#toString()
     * The generated string as: "(x,y)
     */
    @Override
    public String toString() {

    }

    /**
     * Moves the point with dx and dy.
     * @param dx the distance to be moved at x-axis
     * @param dy the distance to be moved at y-axis
     */
    public void move(int dx, int dy) {

    }

    /**
     * Calculate the distance between this and p.
     * @param p the other point.
     * @return the distance between this and p.
     */
    public double distance(Point p) {

    }
}

/**
 * A dimension in 2D, with width and height.
 */
class Dimension {
    private int width;
    private int height;

    /**
     * Creates a dimension with specified width and height.
     * @param width the width of the dimension
     * @param height the height of the dimension
     */
    public Dimension(int width, int height) {

    }

    /* (non-Javadoc)
     * @see java.lang.Object#toString()
     * The generated string as: "width by height"
     */
    @Override
    public String toString() {

    }

    /**
     * Resizes the dimension with scales at width and height.
     * Although the scales are in double, the result should be integers as well.
     * @param widthScale the scale at width
     * @param heightScale the scale at height
     */
    public void resize(double widthScale, double heightScale) {

    }
```

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```
    public int area() {

    }
}

/**
 * Represents a rectangle, with a point at its top-left and a dimension.
 *
 */
class Rectangle {
    private Point topleft;
    private Dimension size;

    /**
     * Creates a rectangle.
     * @param topleft the coordinate of its top-left
     * @param size the dimension of its size
     */
    public Rectangle(Point topleft, Dimension size) {

    }

    /* (non-Javadoc)
     * @see java.lang.Object#toString()
     * The generated string as: "Rectangle at (x,y):width by height"
     */
public String toString() {

}

/**
 * Moves the rectangle some distance.
 * @param dx the distance to be moved at x-axis
 * @param dy the distance to be moved at y-axis
 */
public void move(int dx, int dy) {

}

/**
 * Resizes the rectangle at both width and height
 * @param widthScale the scale at width
 * @param heightScale the scale at height
 */
public void resize(double widthScale, double heightScale) {

}

/**
 * Calculates the area of this rectangle.
 * @return the area of this rectangle.
 */
public double area() {

    }

    /**
     * Calculates the distance between this rectangle and r.
     * @param r the other rectangle
     * @return the distance between this rectangle and r.
     */
    public double distance(Rectangle r) {

    }
}
```

裁判测试程序样例:

PTA

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```
public class Main {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        int x = in.nextInt();
        int y = in.nextInt();
        int width = in.nextInt();
        int height = in.nextInt();
        Rectangle r = new Rectangle(
            new Point(x,y), new Dimension(width, height));
        Rectangle r2 = new Rectangle(
            new Point(x,y), new Dimension(width, height));
        int dx = in.nextInt();
        int dy = in.nextInt();
        r.move(dx, dy);
        double widthScale = in.nextDouble();
        double heightScale = in.nextDouble();
        r.resize(widthScale, heightScale);
        System.out.println(r);
        System.out.printf("%.2f\n", r.area());
        System.out.printf("%.2f\n", r.distance(r2));
        in.close();
    }
}

/* 请在这里填写答案 */
```

输入样例:

```
0 0 100 100 20 20 2 2
```

输出样例:

```
Rectangle at (20,20):200 by 200
40000.00
28.28
```

Java (javac 1.8.0)

```
class Point {
    private int x;
    private int y;

    /**
     * Creates a point with coordinate at (x,y)
     * @param x the x coordinate
     * @param y the y coordinate
     */
    public Point(int x, int y) {
        this.x = x;
        this.y = y;
    }

    /* (non-Javadoc)
     * @see java.lang.Object#toString()
     * The generated string as: "(x,y)
     */
    @Override
    public String toString() {
        String ss="(" + this.x + "," + this.y + ")";
        return  ss;
    }

    /**
     * Moves the point with dx and dy
```

自定义测试 如何使用? 展开测试区

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