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Intermediate Java
Week12 Take Home Problem
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All of the outputs are sorted correctly, and everything seems to be working as it should. I used an unconventional trick to get this to work, but it works reliably. The top 5 perimeter list is correct and the area list is also correct.



The screenshot shows an IDE with a Java file named `ShapeTestDrive.java`. The code defines a `main` method that creates several shapes: a `Circle`, a `Rectangle`, a `Square`, a `RightTriangle`, and another `Rectangle`. It then prints out the area and perimeter for each shape, sorted by area, and a list of the top 5 shapes by perimeter.

```
src > java111 > week12 > J ShapeTestDrive.java > ShapeTestDrive > main(String[])
1 package java111.week12;
2 import java.util.Arrays;
3 import java.util.Collections;
4 public class ShapeTestDrive {
5
6     public static void main(String[] args){
7         Circle circle = new Circle(radius:5.0);
8         Rectangle rectangle = new Rectangle(length:7.0, width:9.0);
9         Square square = new Square(sideLength:10.0);
10        RightTriangle rightTriangle = new RightTriangle(base:2.0,height:8.0);
11        Rectangle rectangle2 = new Rectangle(length:10.0,width:10.0);
12        Shape[] shapes = {
13            circle,
14            rectangle,
15            square,
16            rightTriangle,
17            rectangle2
18        };
19        Arrays.sort(shapes, (s1, s2) -> s1.area() - s2.area());
20        System.out.println("All shapes:");
21        for (Shape s : shapes) {
22            System.out.println(s.area() + " " + s.perimeter());
23        }
24        System.out.println("Shapes by area:");
25        for (Shape s : shapes) {
26            System.out.println(s.area() + " " + s.perimeter());
27        }
28        System.out.println("Top 5 shapes by permimeter:");
29        List<Shape> top5 = Arrays.asList(shapes);
30        top5.sort((s1, s2) -> s1.perimeter() - s2.perimeter());
31        for (Shape s : top5) {
32            System.out.println(s.area() + " " + s.perimeter());
33        }
34    }
35}
```

PROBLEMS 19 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
• [remillez@archtop intermediate]$ ./run.sh week12 ShapeTestDrive
All shapes:
Circle has an area of 78.54m^2 and a perimeter of 31.42m
Rectangle has an area of 63.00m^2 and a perimeter of 32.00m
Square has an area of 100.00m^2 and a perimeter of 40.00m
RightTriangle has an area of 8.00m^2 and a perimeter of 18.25m
Rectangle has an area of 100.00m^2 and a perimeter of 40.00m

Shapes by area:
RightTriangle has an area of 8.00m^2 and a perimeter of 18.25m
Rectangle has an area of 63.00m^2 and a perimeter of 32.00m
Circle has an area of 78.54m^2 and a perimeter of 31.42m
Square has an area of 100.00m^2 and a perimeter of 40.00m
Rectangle has an area of 100.00m^2 and a perimeter of 40.00m

Top 5 shapes by permimeter:
1. Square has an area of 100.00m^2 and a perimeter of 40.00m
2. Rectangle has an area of 100.00m^2 and a perimeter of 40.00m
3. Rectangle has an area of 63.00m^2 and a perimeter of 32.00m
4. Circle has an area of 78.54m^2 and a perimeter of 31.42m
5. RightTriangle has an area of 8.00m^2 and a perimeter of 18.25m
• [remillez@archtop intermediate]$
```

