

For this exercise, follow the steps in document: **createNewJavaProject**

Use the following project, package and class names:

Project: **PerimeterProject**

Package: **perimter**

Class: **Shape**

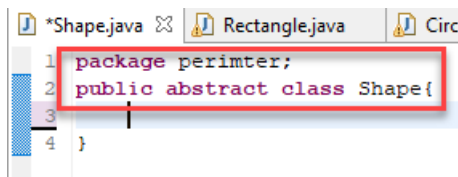
Class: **Rectangle**

Class: **Circle**

You should have a copy of the source code.

The **Permieter.java** class file will open in the **Eclipse editor** window. Notice the **perimeter** package name.

In the main method, enter the code below



Also create a class for **Rectangle.java**, and **Circle.java**

```
package perimter;
public abstract class Shape{
    private int x;//the x coordinate of the shape
    private int y;//the y coordinate of the shape
    public String toString(){
        return "(" + x + ", " + y + ")";
    }
    public abstract double area ();
    public abstract String getName(); // returns the shape's name
}
```

Class Rectangle

```
package perimeter;

public class Rectangle extends Shape{

    int height;
    int width;

    public Rectangle(int x){
        System.out.println("Circle perimeter: " + 2*Math.PI*x);
    }
    public Rectangle(int x, int y){
        System.out.println("Rectangle perimeter: " +2*(x+y));
    }

    public double area(){

        return 0;
    }
    public String getName(){

        return ""; // returns the shape's
name
    }

    public double getPerimeter(){

        return 0;
    }

    public static void main(String args[]){
        Shape shape1[];

        Rectangle p1 = new Rectangle(3,4);
        Rectangle p2 = new Rectangle(10, 20);
        Circle cir1 = new Circle(3);
        cir1.getShapes();

    }

}
```

Class Circle

```
package perimter;

import java.util.Arrays;

public class Circle extends Shape {

    Shape shapel[];

    public Circle(int r){

        System.out.println("Circle perimeter: " + 2*Math.PI*r);

    }

    public void getShapes(){

        shapel = new Shape[4];
        shapel[0] = new Rectangle(3,4);
        shapel[1] = new Rectangle(1,2);
        shapel[2] = new Circle(2);
        shapel[3] = new Circle(3);

        for (int i = 0;i<shapel.length;i++){
            System.out.println(shapel[i]);
        }

    }

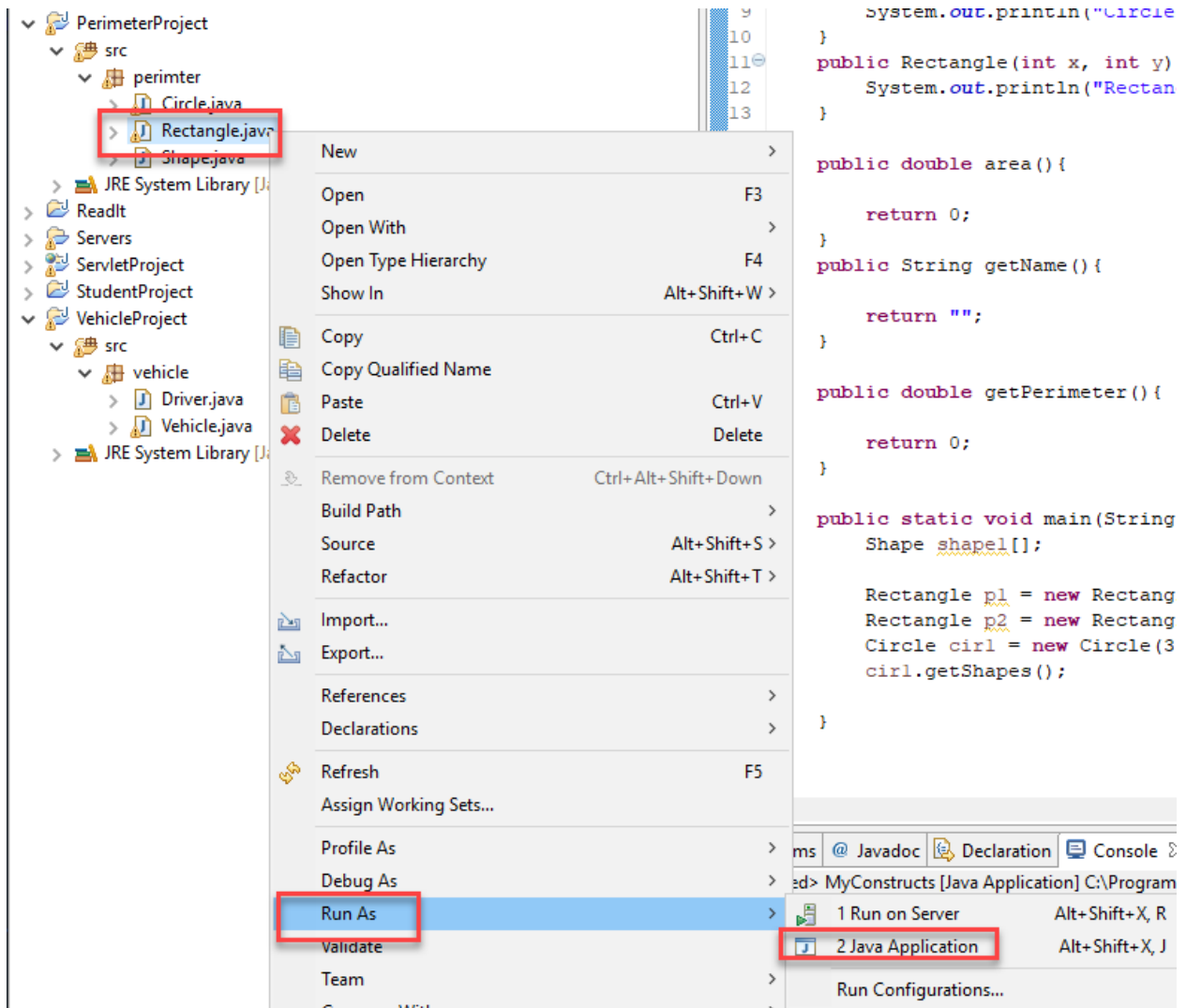
    @Override
    public double area() {
        // TODO Auto-generated method stub
        return 0;
    }

    @Override
    public String getName() {
        // TODO Auto-generated method stub
        return null;
    }

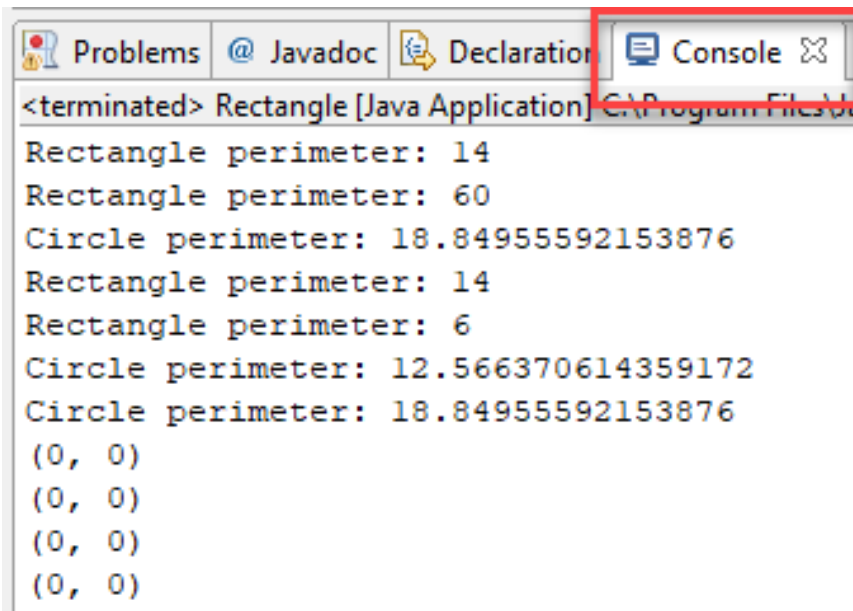
}
```

Run the application.

In the **PerimeterProject** project, select the **Rectangle.java** class file, right click, click **Run As -> Java Application**.



The output will appear in the **Console** window.



The screenshot shows the 'Console' tab selected in the IDE's bottom panel. The output text is as follows:

```
<terminated> Rectangle [Java Application] C:\Program Files\J...  
Rectangle perimeter: 14  
Rectangle perimeter: 60  
Circle perimeter: 18.84955592153876  
Rectangle perimeter: 14  
Rectangle perimeter: 6  
Circle perimeter: 12.566370614359172  
Circle perimeter: 18.84955592153876  
(0, 0)  
(0, 0)  
(0, 0)  
(0, 0)
```