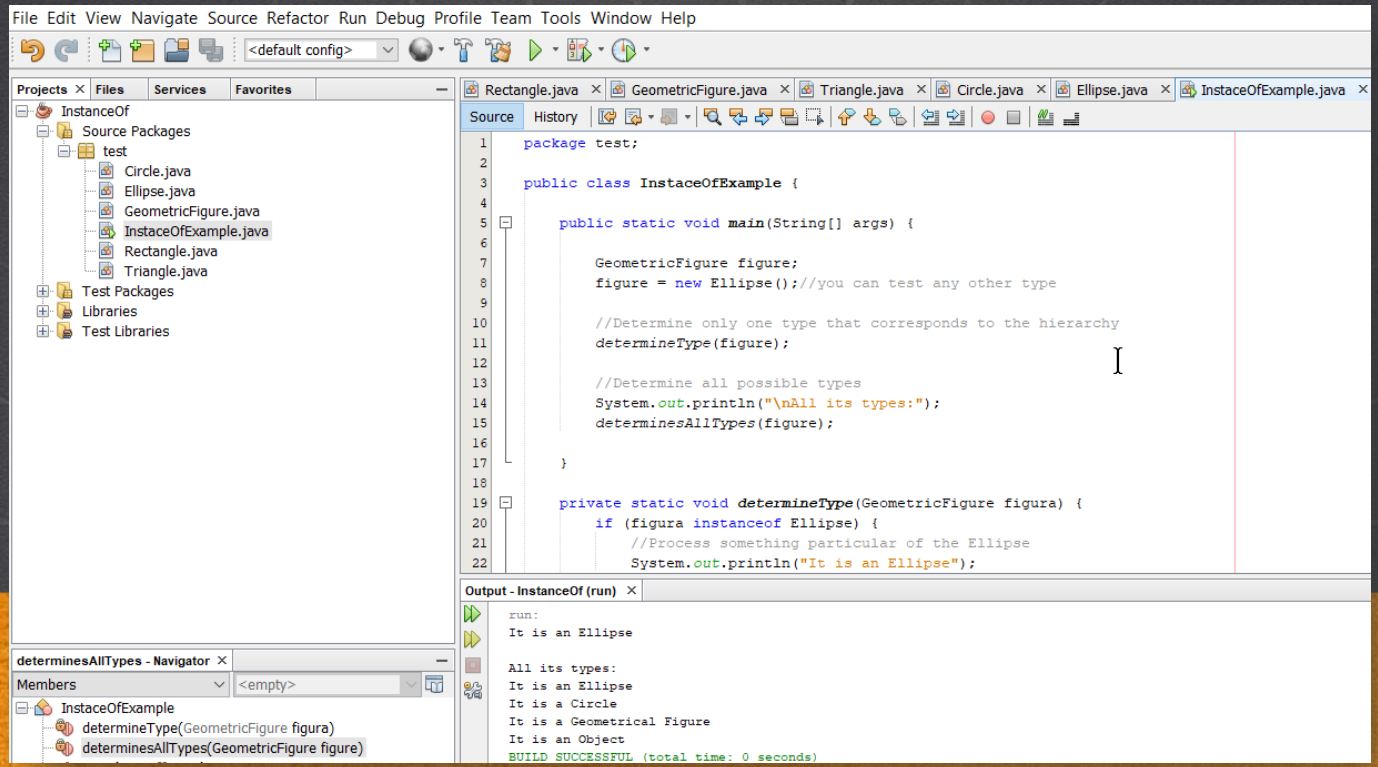
# EXERCISE

# INSTANCE OF IN JAVA

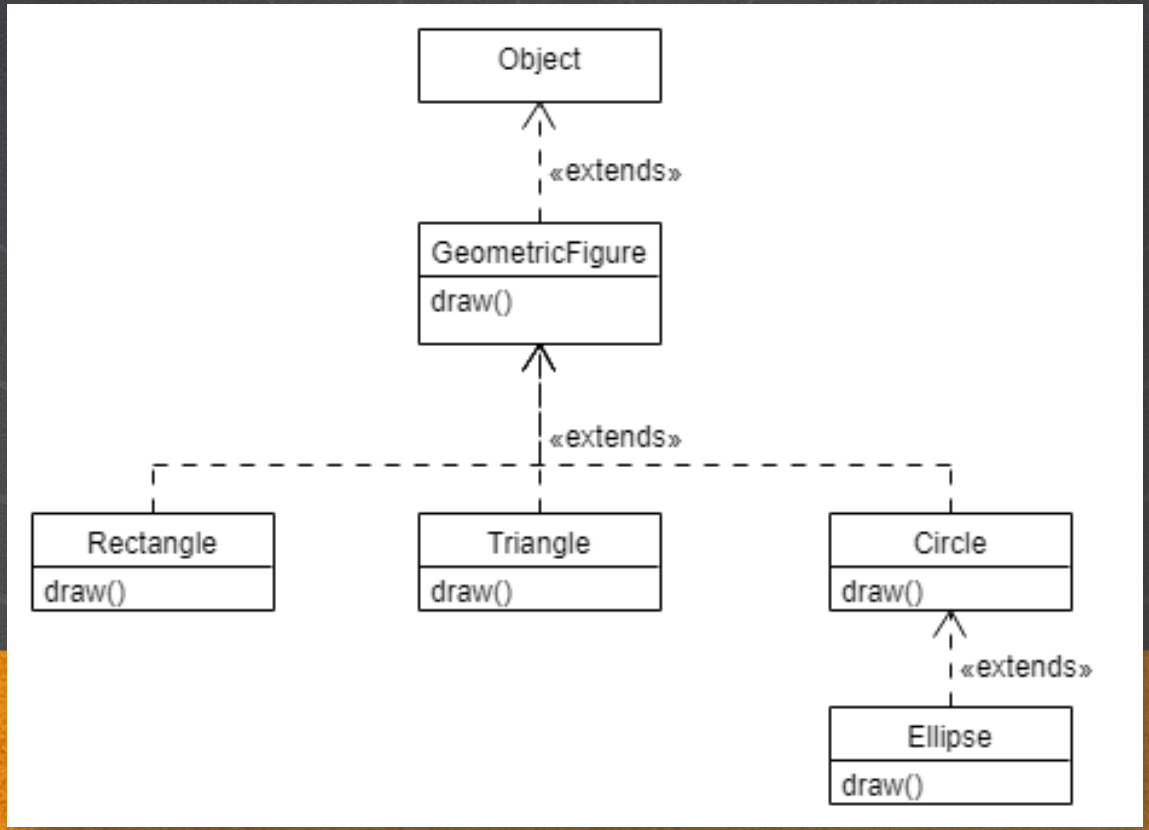
# EXERCISE OBJECTIVE

Create an exercise of the use of instance of. At the end we should observe the following:



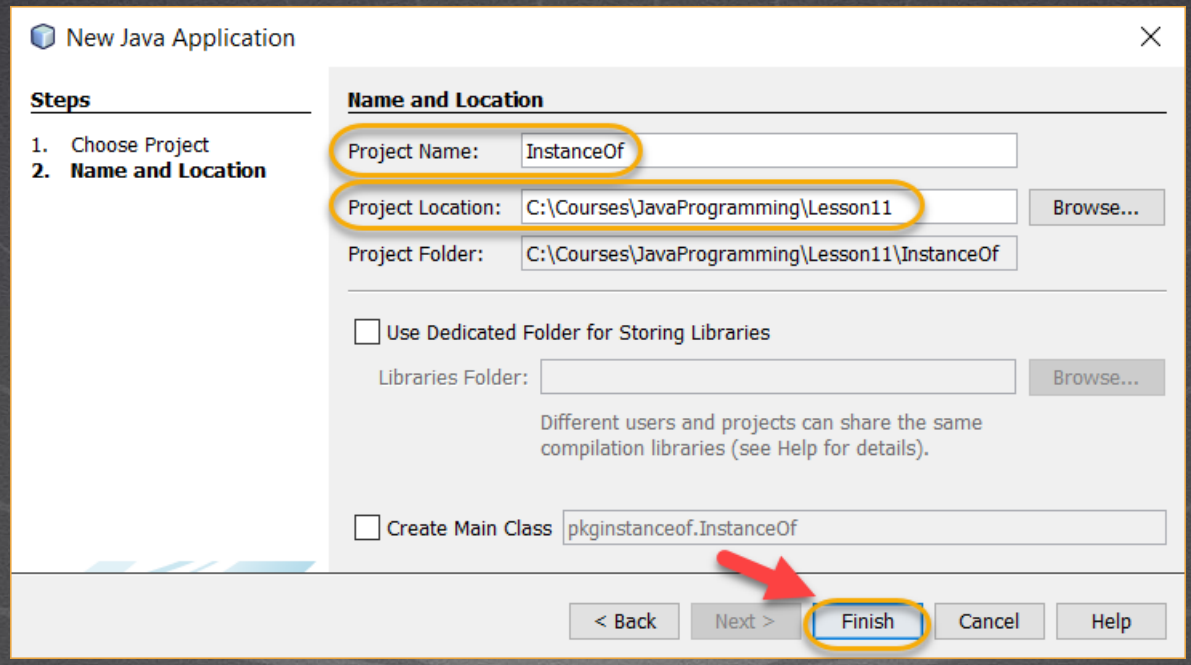
# CLASS DIAGRAM

The project will be based on the following class diagram:



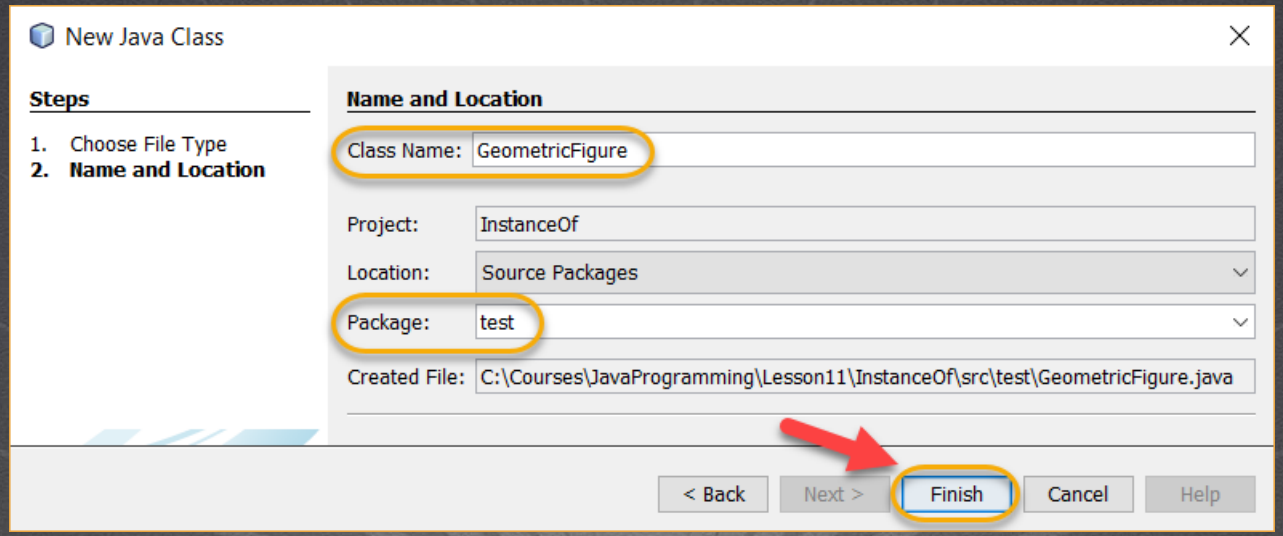
# 1. CREATE A NEW PROJECT

Create a new project:



# 2. CREATE A NEW CLASS

Create a new Class:



# 3. MODIFY THE CODE

## GeometricFigure.java:

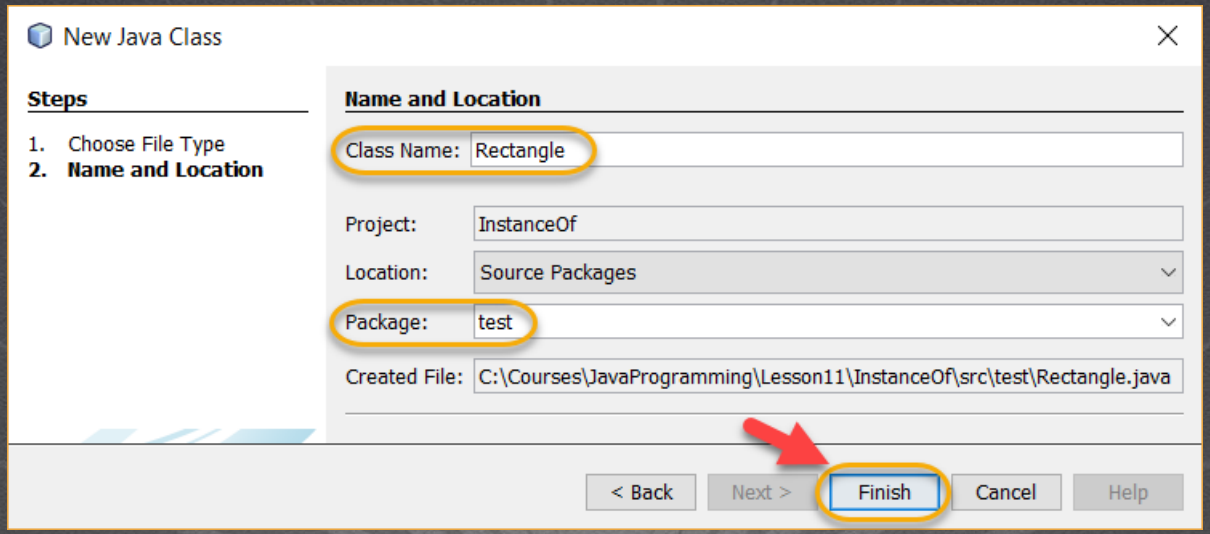
```
package test;

public class GeometricFigure {

    public void draw(){
        System.out.println("Draw geometric figure");
    }
}
```

# 4. CREATE A NEW CLASS

Create a new class:



# 5. MODIFY THE CODE

## Rectangle.java:

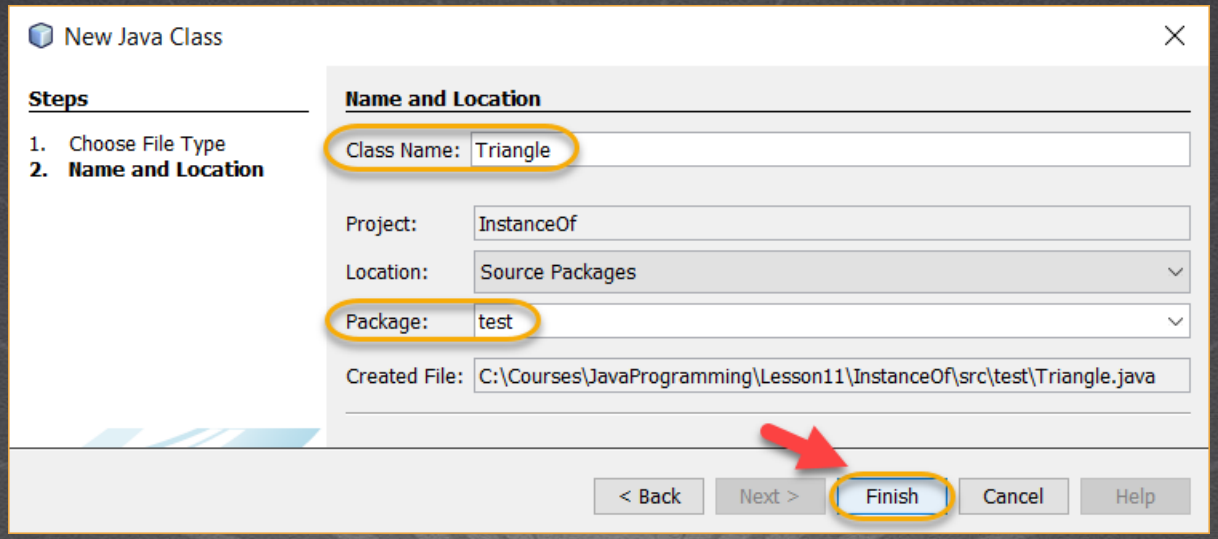
```
package test;

public class Rectangle extends GeometricFigure {

    public void draw() {
        System.out.println("draw Rectangle");
    }
}
```

# 6. CREATE A NEW CLASS

Create a new class:



# 7. MODIFY THE CODE

## Triangle.java:

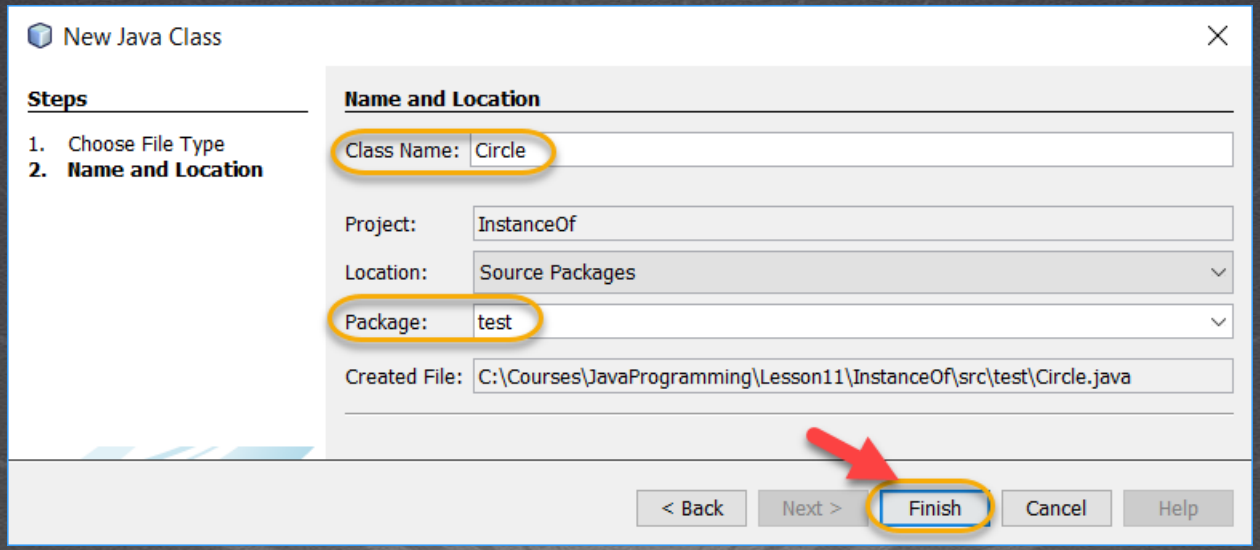
```
package test;

public class Triangle extends GeometricFigure {

    public void draw() {
        System.out.println("draw Triangle");
    }
}
```

# 8. CREATE A NEW CLASS

Create a new class:



# 9. MODIFY THE CODE

## Circle.java:

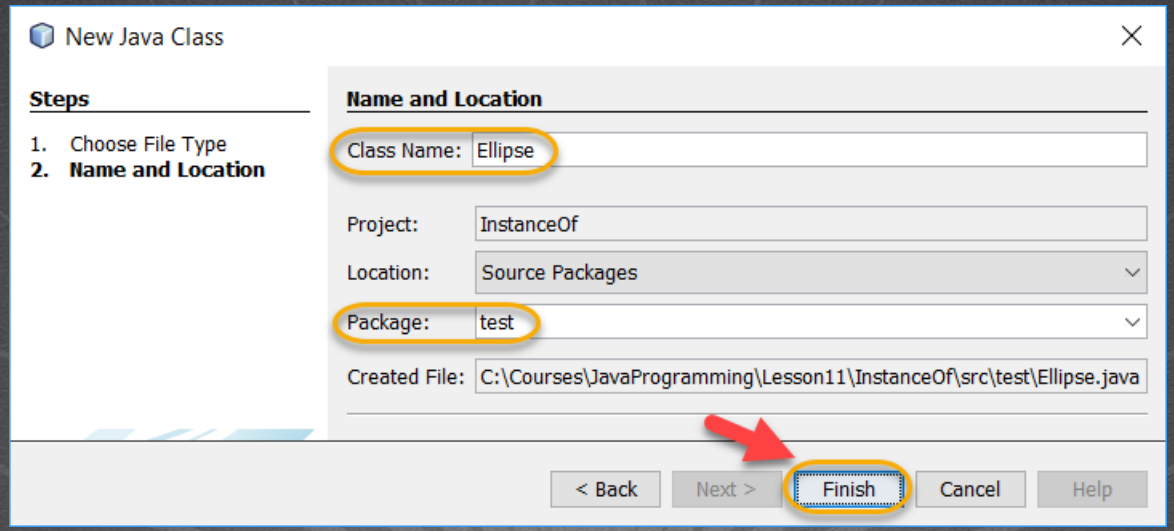
```
package test;

public class Circle extends GeometricFigure {

    public void draw() {
        System.out.println("draw Circle");
    }
}
```

# 10. CREATE A NEW CLASS

Create a new class:



# 11. MODIFY THE CODE

## Ellipse.java:

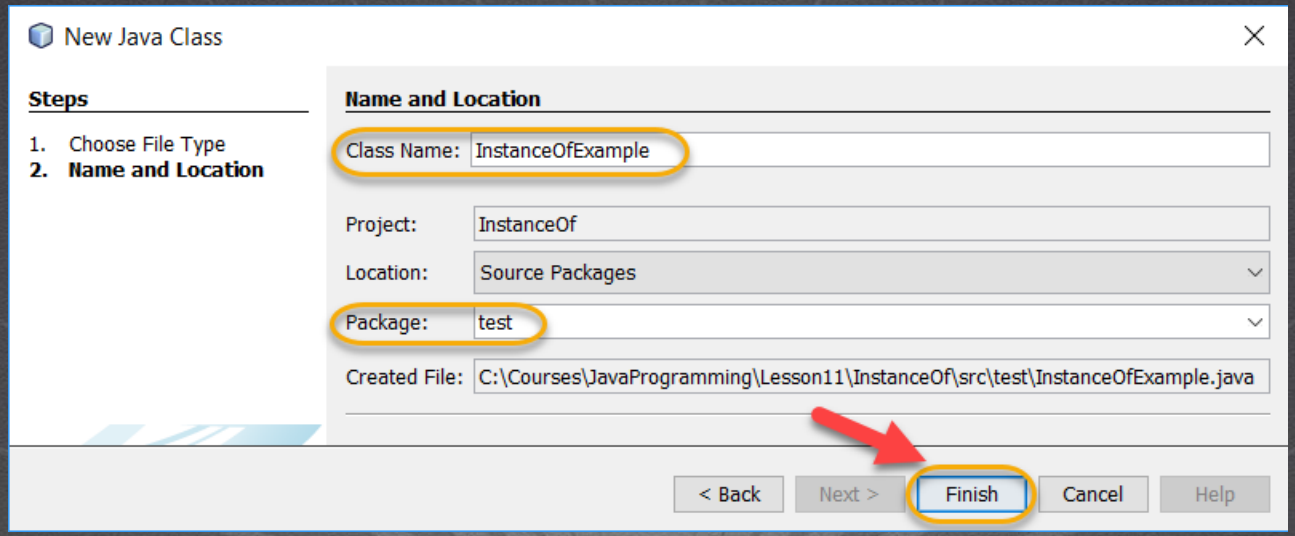
```
package test;

public class Ellipse extends Circle {

    public void draw() {
        System.out.println("draw Ellipse");
    }
}
```

# 12. CREATE A NEW CLASS

Create a new class:



# 13. MODIFY THE CODE

## InstanceOfExample.java:

```
package test;

public class InstanceOfExample {

    public static void main(String[] args) {

        GeometricFigure figure;
        figure = new Ellipse();//you can test any other type

        //Determine only one type that corresponds to the hierarchy
        determineType(figure);

        //Determine all possible types
        System.out.println("\nAll its types:");
        determinesAllTypes(figure);
    }
```

# 13. MODIFY THE CODE

## InstanceOfExample.java:

```
private static void determineType(GeometricFigure figure) {
    if (figure instanceof Ellipse) {
        //Process something particular of the Ellipse
        System.out.println("It is an Ellipse");
    } else if (figure instanceof Circle) {
        //Process something particular of the Circle
        System.out.println("It is a Circle");
    } else if (figure instanceof GeometricFigure) {
        //Process something particular of the Geometrical Figure
        System.out.println("It is a Geometrical Figure");
    } else if (figure instanceof Object) {
        //Process something particular from the Object class
        System.out.println("It is an Object");
    } else {
        System.out.println("The type was not found");
    }
}
```

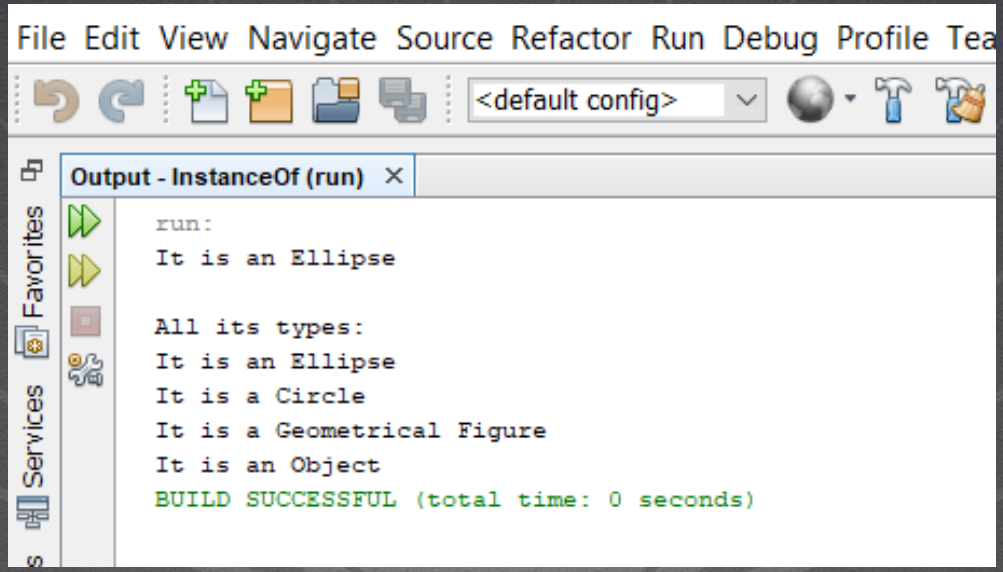
# 13. MODIFY THE CODE

## InstanceOfExample.java:

```
    private static void determinesAllTypes(GeometricFigure figure) {
        if (figure instanceof Ellipse) {
            System.out.println("It is an Ellipse");
        }
        if (figure instanceof Circle) {
            System.out.println("It is a Circle");
        }
        if (figure instanceof GeometricFigure) {
            System.out.println("It is a Geometrical Figure");
        }
        if (figure instanceof Object) {
            System.out.println("It is an Object");
        } else {
            System.out.println("The type was not found");
        }
    }
}
```

# 14. EXECUTE THE PROJECT

The result is as follows:



# EXERCISE CONCLUSION

- With this exercise we have put into practice the word “instance of” which basically helps us to know if a variable points towards a certain type in execution time and with it execute some corresponding code, either of that type of data or any other code that we are interested in executing, such as a data conversion, which we will see in the following topics.

ONLINE COURSE

# JAVA PROGRAMMING

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