

JAVA PROGRAMMING COURSE

EXERCISE

INSTANCE OF IN JAVA

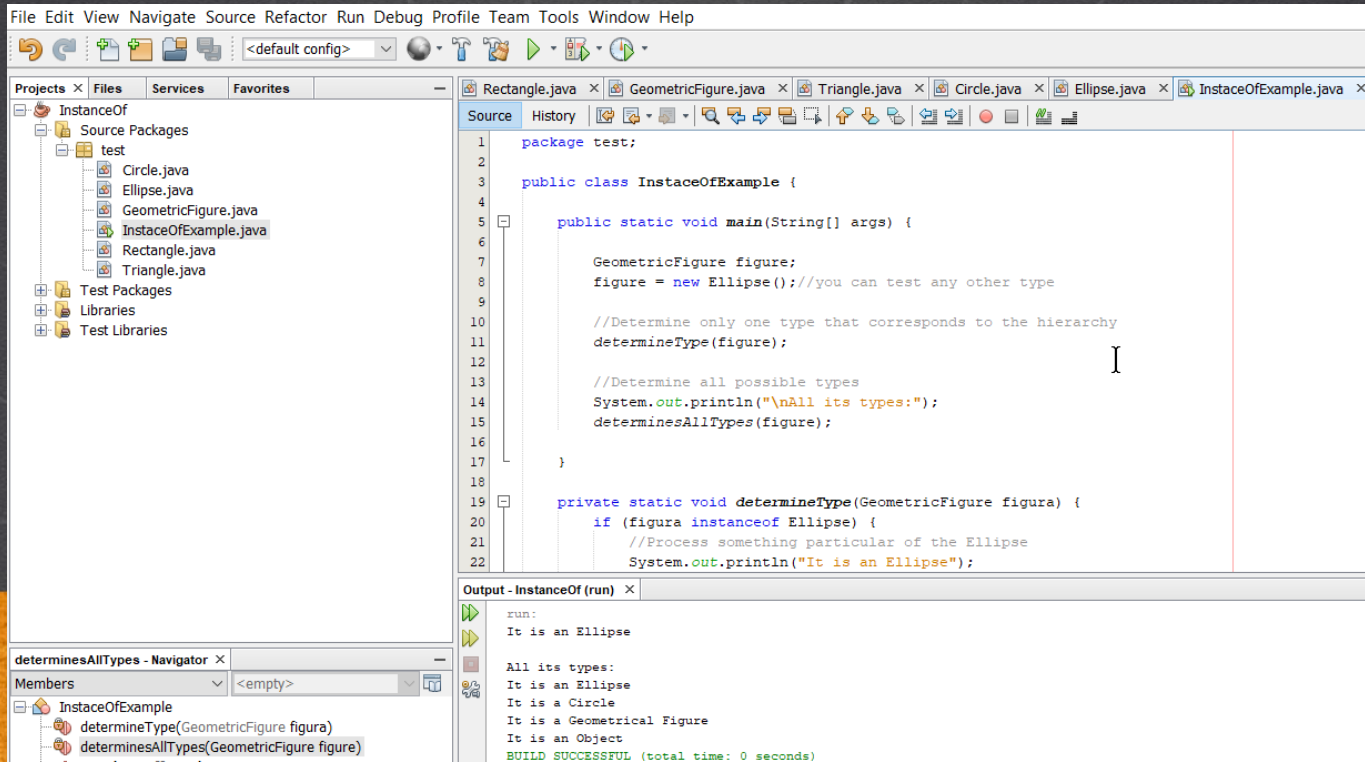


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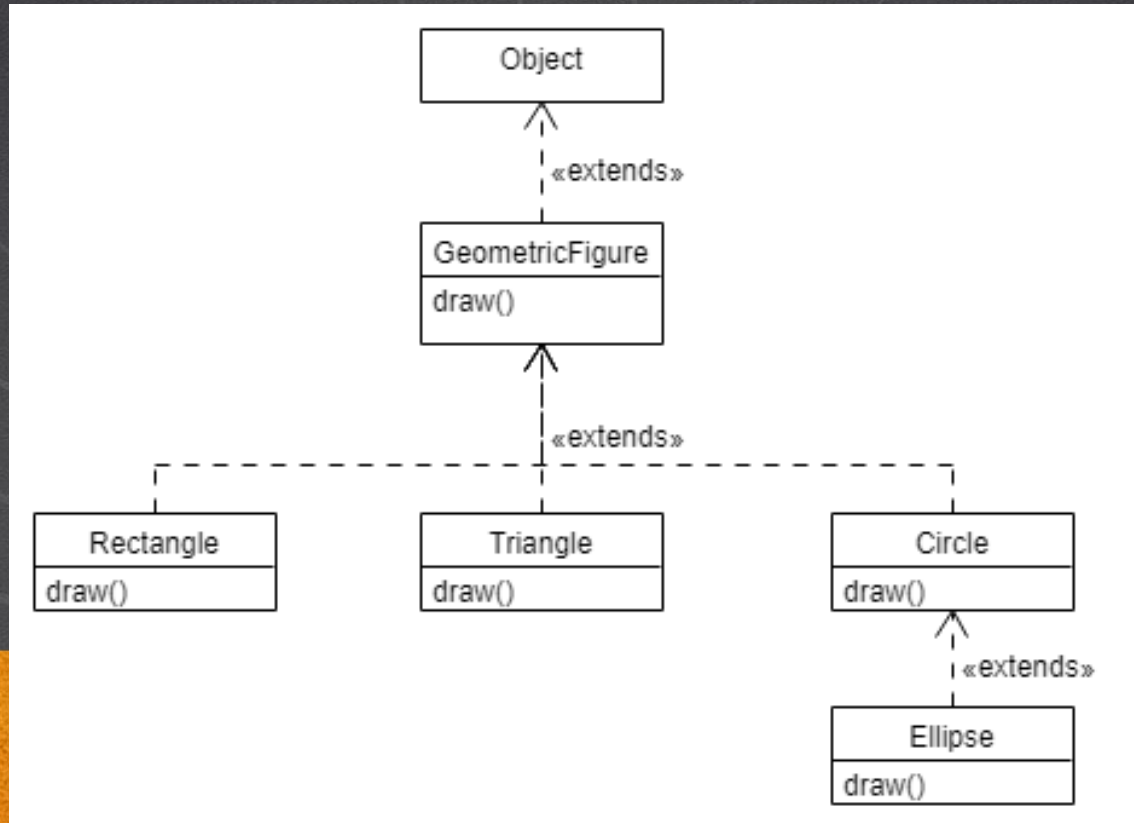
EXERCISE OBJECTIVE

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



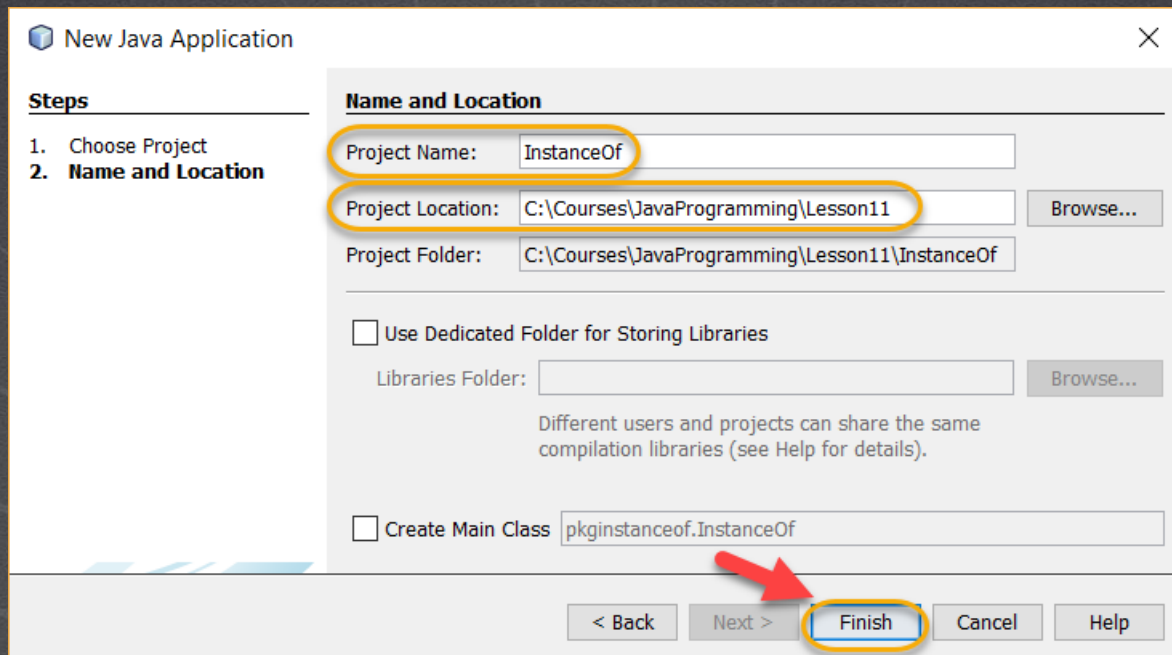
CLASS DIAGRAM

The project will be based on the following class diagram:



1. CREATE A NEW PROJECT

Create a new project:



New Java Application

Steps

1. Choose Project
2. **Name and Location**

Name and Location

Project Name:

Project Location:

Project Folder:

☐ Use Dedicated Folder for Storing Libraries

Libraries Folder:

Different users and projects can share the same compilation libraries (see Help for details).

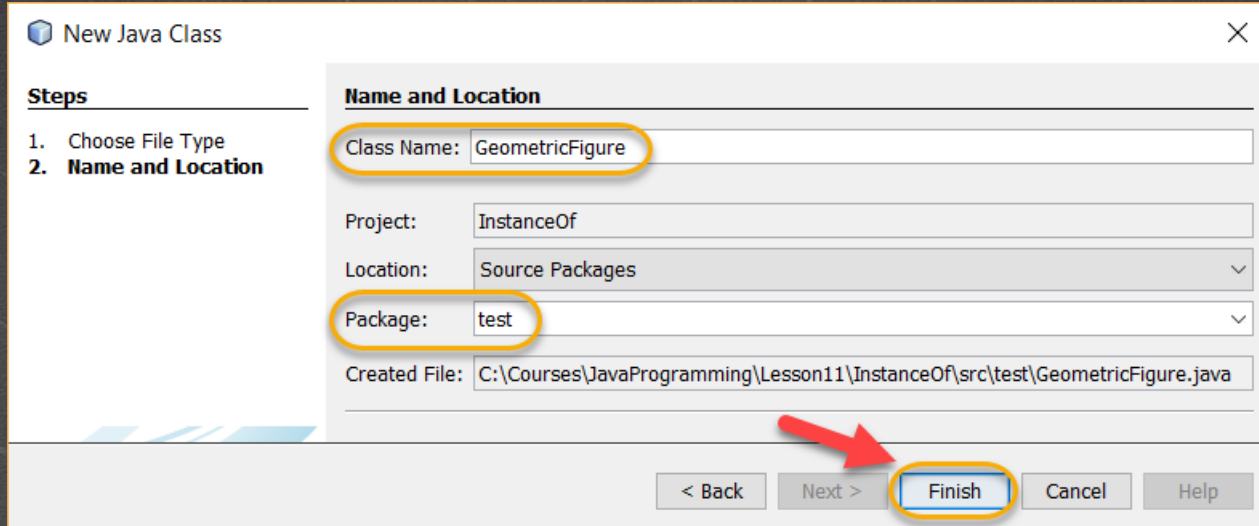
☐ Create Main Class

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2. CREATE A NEW CLASS

Create a new Class:



New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

< Back Next > **Finish** Cancel Help

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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:

New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

< Back Next > **Finish** Cancel Help

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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:

New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name: Triangle

Project: InstanceOf

Location: Source Packages

Package: test

Created File: C:\Courses\JavaProgramming\Lesson11\InstanceOf\src\test\Triangle.java

< Back Next > **Finish** Cancel Help

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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:

New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

< Back Next > **Finish** Cancel Help

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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:

New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

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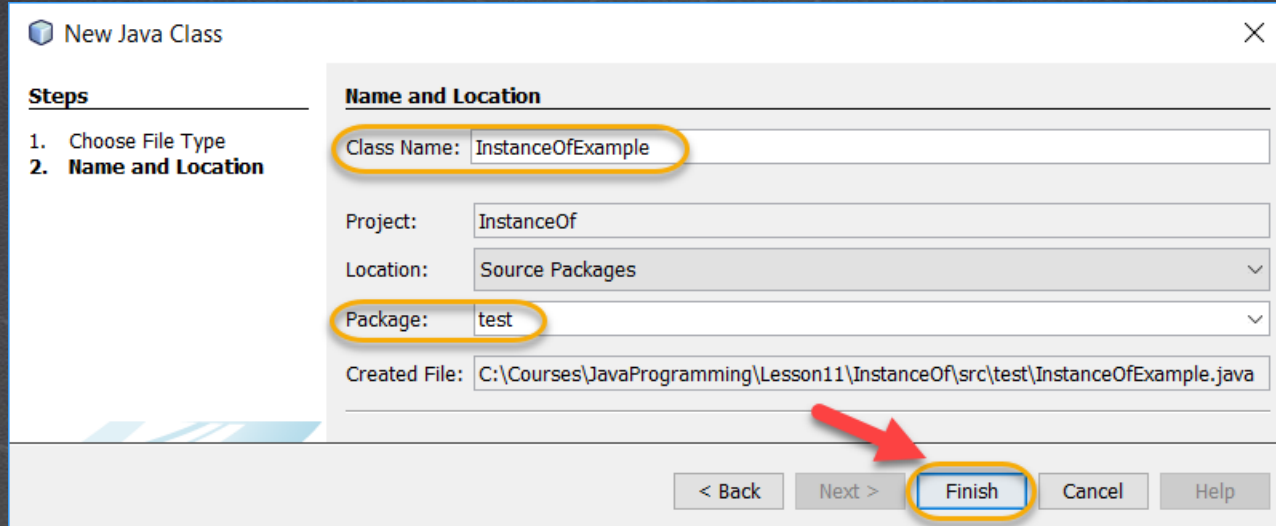
11. MODIFY THE CODE

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:



New Java Class

Steps

1. Choose File Type
2. **Name and Location**

Name and Location

Class Name:

Project:

Location:

Package:

Created File:

< Back Next > **Finish** Cancel Help

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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");  
    }  
}
```

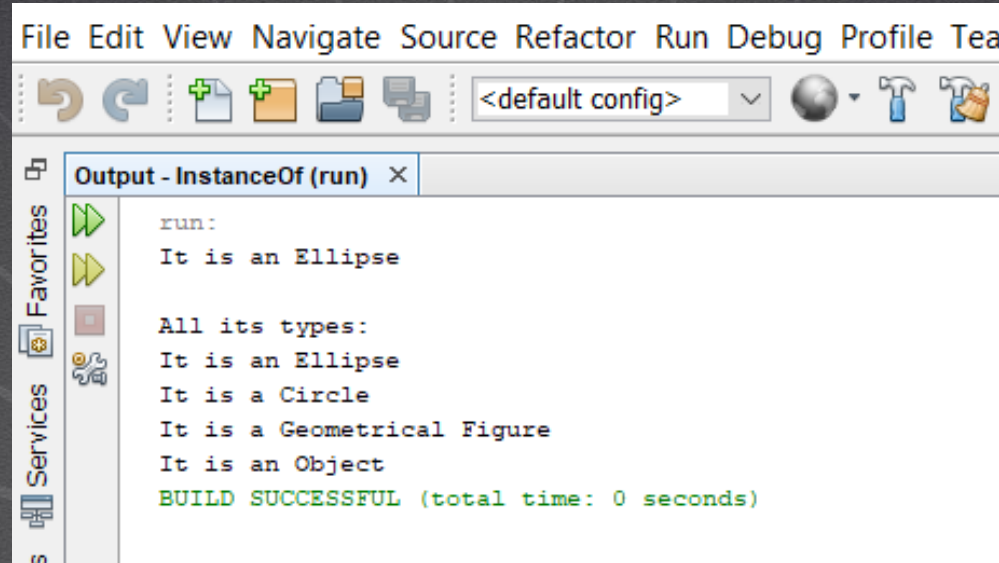

13. MODIFY THE CODE

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:



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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

By: Eng. Ubaldo Acosta



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