

JAVA FUNDAMENTALS COURSE

EXERCISE

WHILE LOOP

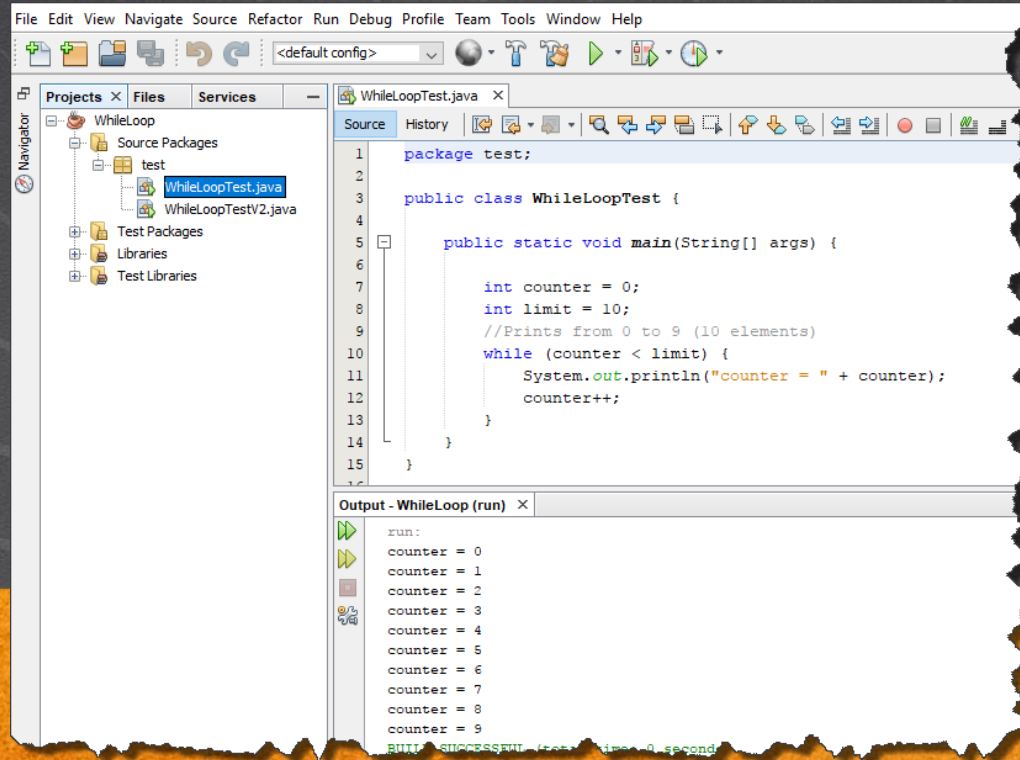


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EXERCISE OBJECTIVE

Create an exercise of the while loop. At the end we should observe the following:



The screenshot shows an IDE window with the following components:

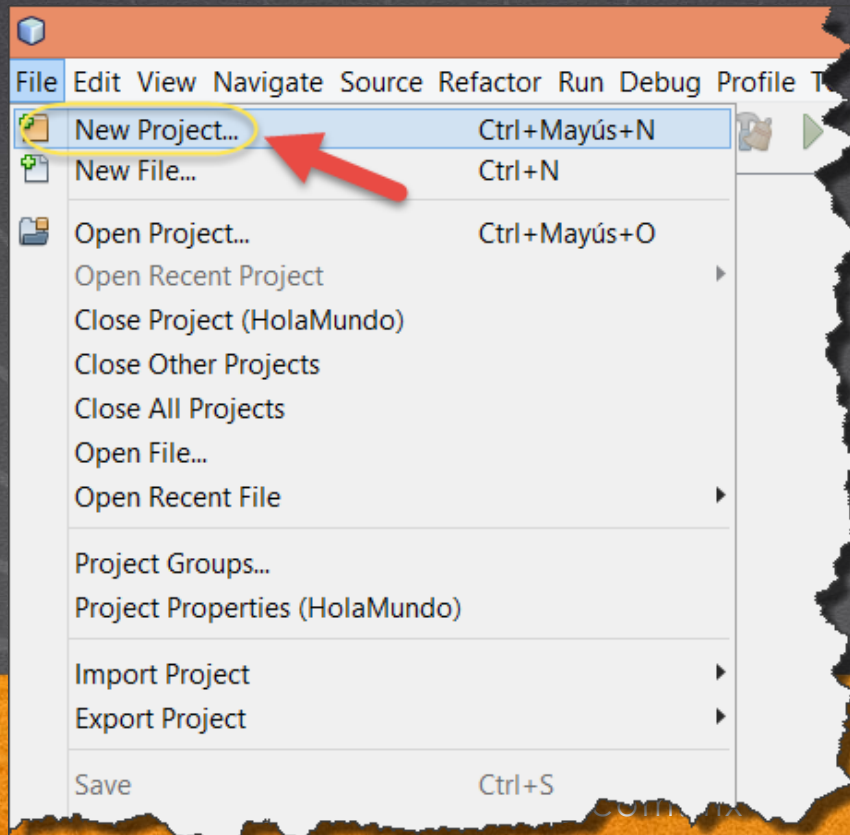
- Navigator:** Displays a project named 'WhileLoop' containing a 'test' package with 'WhileLoopTest.java' and 'WhileLoopTestV2.java'. It also shows 'Test Packages', 'Libraries', and 'Test Libraries'.
- Source Editor:** Shows the code for 'WhileLoopTest.java'. The code is as follows:

```
1 package test;
2
3 public class WhileLoopTest {
4
5     public static void main(String[] args) {
6
7         int counter = 0;
8         int limit = 10;
9         //Prints from 0 to 9 (10 elements)
10        while (counter < limit) {
11            System.out.println("counter = " + counter);
12            counter++;
13        }
14    }
15 }
```
- Output - WhileLoop (run):** Shows the execution output:

```
run:
counter = 0
counter = 1
counter = 2
counter = 3
counter = 4
counter = 5
counter = 6
counter = 7
counter = 8
counter = 9
BUILD SUCCESSFUL (total time: 0 second)
```

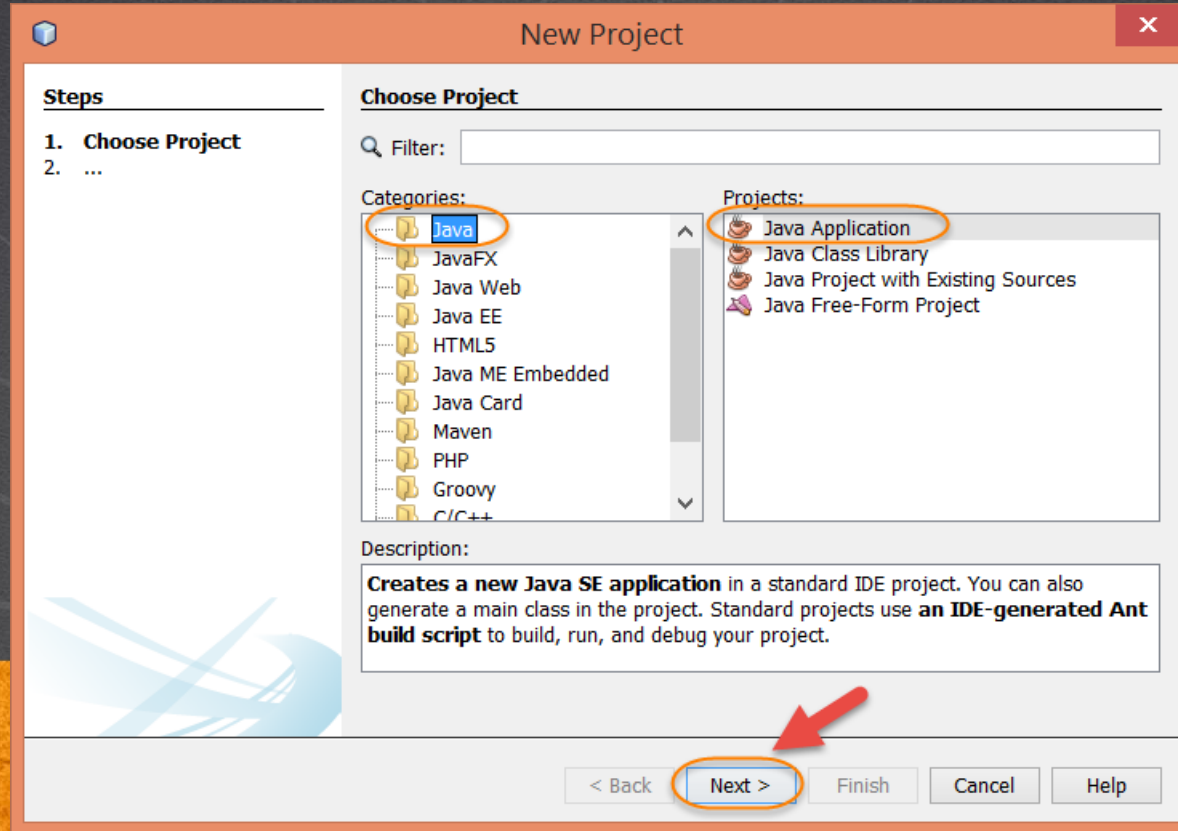
1. CREATE A NEW PROJECT

We are going to create the WhileLoop project:



1. CREATE A NEW PROJECT (CONT)

Select Java -> Java Application:



1. CREATE A NEW PROJECT (CONT)

We are going to create the WhileLoop project:

New Java Application

Steps

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

Name and Location

Project Name: WhileLoop

Project Location: C:\Courses\JavaFundamentals\Lesson05 Browse...

Project Folder: C:\Courses\JavaFundamentals\Lesson05\WhileLoop

☐ Use Dedicated Folder for Storing Libraries

Libraries Folder: Browse...

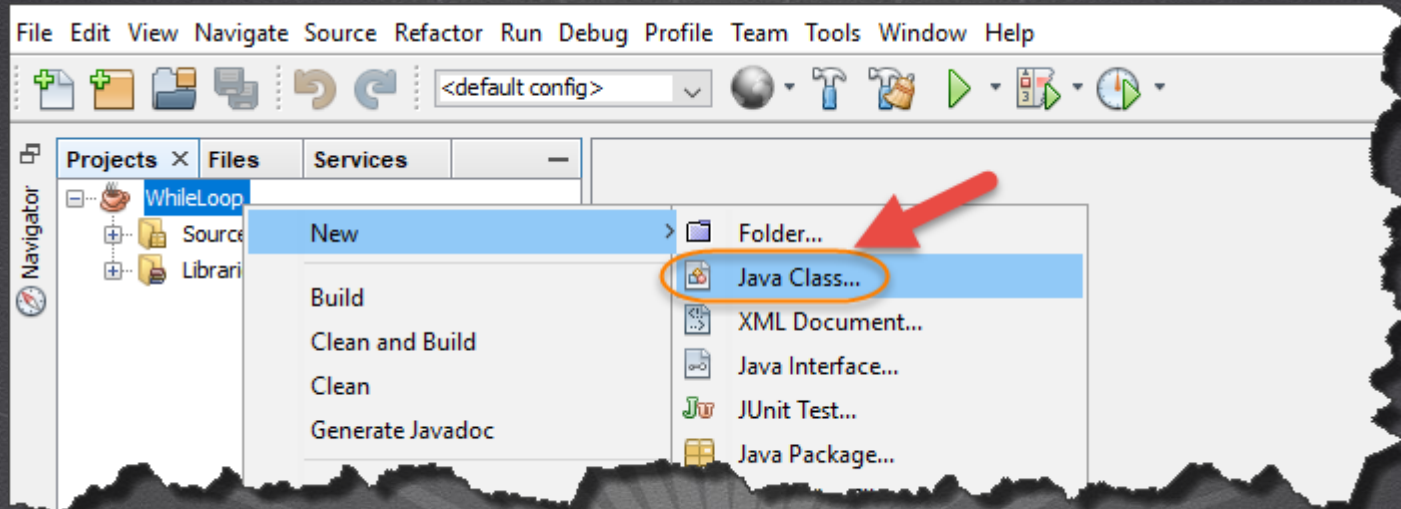
Different users and projects can share the same compilation libraries (see Help for details).

☐ Create Main Class whileloop.WhileLoop

< Back Next > **Finish** Cancel Help

2. CREATE A NEW CLASS

We'll create the WhileLoopTest.java class:



2. CREATE A NEW CLASS

We'll create the WhileLoopTest.java class:

New Java Class

Steps

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

Name and Location

Class Name: WhileLoopTest

Project: WhileLoop

Location: Source Packages

Package: test

Created File: C:\Courses\JavaFundamentals\Lesson05\WhileLoop\src\test\WhileLoopTest.java

< Back Next > **Finish** Cancel Help

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3. MODIFY THE CODE

WhileLoopTest.java:

```
package test;

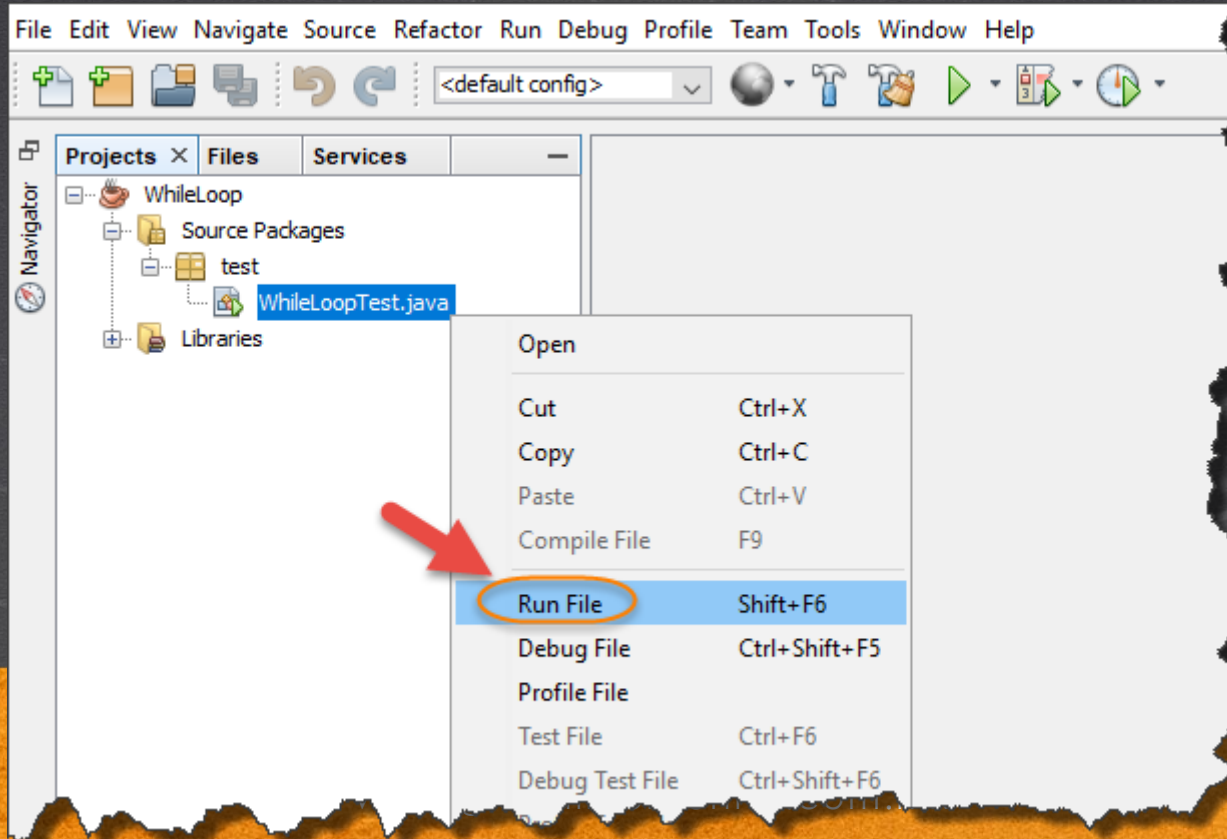
public class WhileLoopTest {

    public static void main(String[] args) {

        int counter = 0;
        int limit = 10;
        //Prints from 0 to 9 (10 elements)
        while (counter < limit) {
            System.out.println("counter = " + counter);
            counter++;
        }
    }
}
```

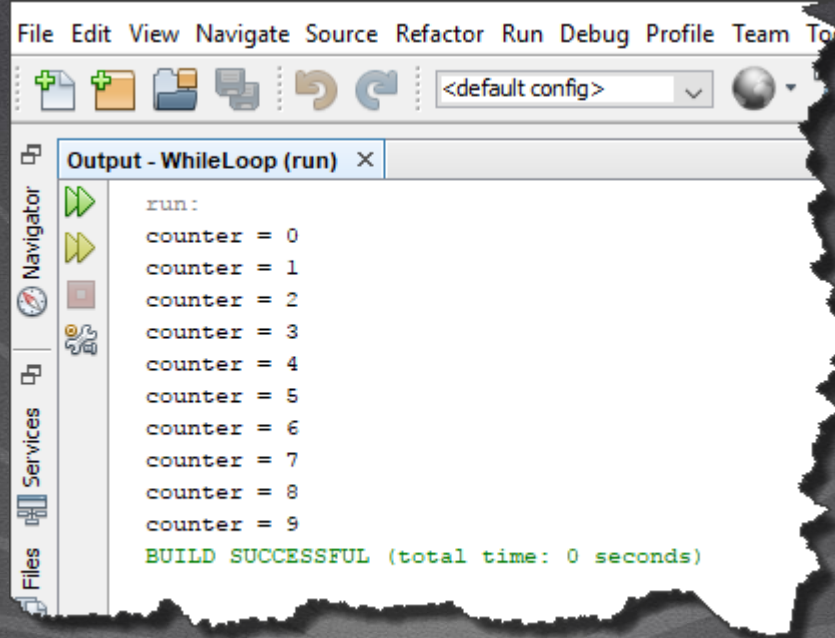

4. EXECUTE THE PROJECT

We execute our project. We give right click -> Run:



4. EXECUTE THE PROJECT (CONT)

The result is as follows:



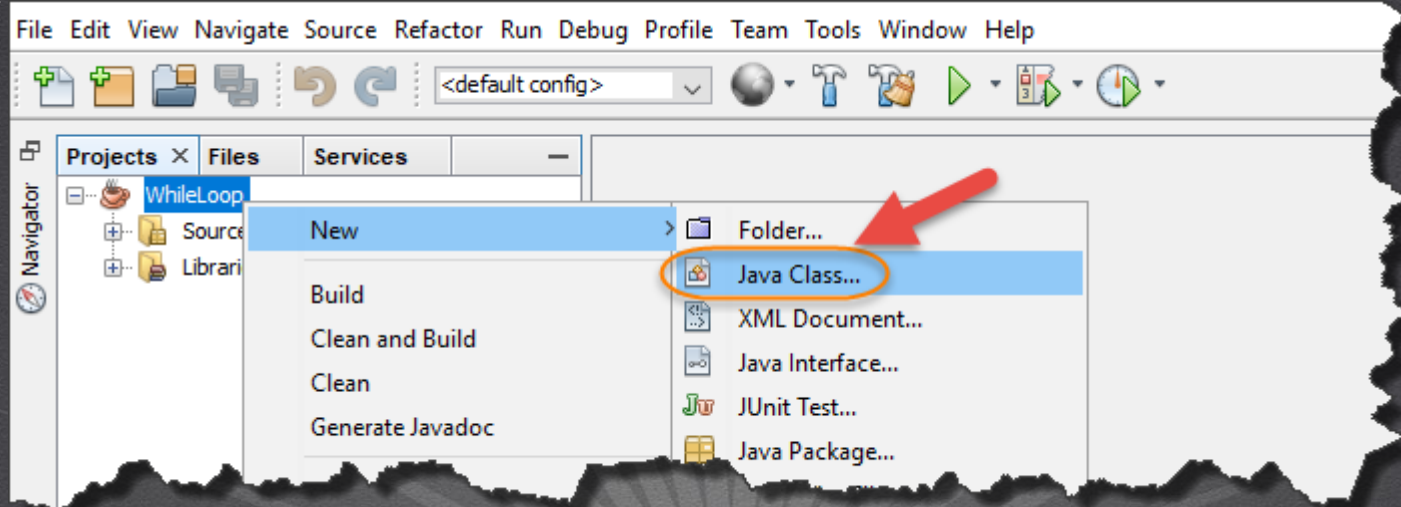
```
File Edit View Navigate Source Refactor Run Debug Profile Team To
+ + 
Output - WhileLoop (run) X
run:
counter = 0
counter = 1
counter = 2
counter = 3
counter = 4
counter = 5
counter = 6
counter = 7
counter = 8
counter = 9
BUILD SUCCESSFUL (total time: 0 seconds)
```

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5. WHILE LOOP VERSION 2

We now create a second version of the exercise. Add a new class:



5. WHILE LOOP VERSION 2

The class name is: WhileLoopTestV2.java:

New Java Class

Steps

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

Name and Location

Class Name: WhileLoopTestV2

Project: WhileLoop

Location: Source Packages

Package: test

Created File: C:\Courses\JavaFundamentals\Lesson05\WhileLoop\src\test\WhileLoopTestV2.java

< Back Next > **Finish** Cancel Help

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PASO 6. MODIFICAMOS EL CÓDIGO

WhileLoopTestV2.java:

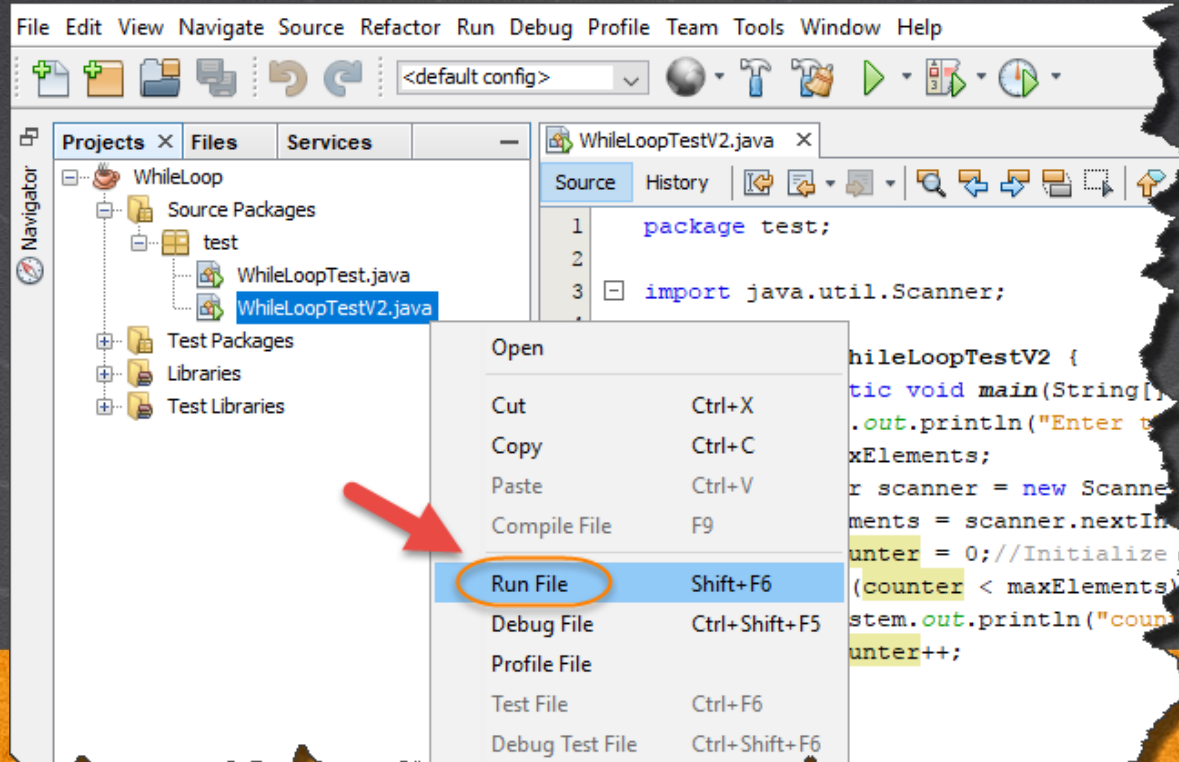
```
package test;

import java.util.Scanner;

public class WhileLoopTestV2 {
    public static void main(String[] args) {
        System.out.println("Enter the number of elements to iterate:");
        int maxElements;
        Scanner scanner = new Scanner(System.in); //Creation of the Scanner object to read data
        maxElements = scanner.nextInt(); //We read the value provided by the user
        int counter = 0; //Initialize the counter
        while (counter < maxElements) {
            System.out.println("counter = " + counter);
            counter++;
        }
    }
}
```

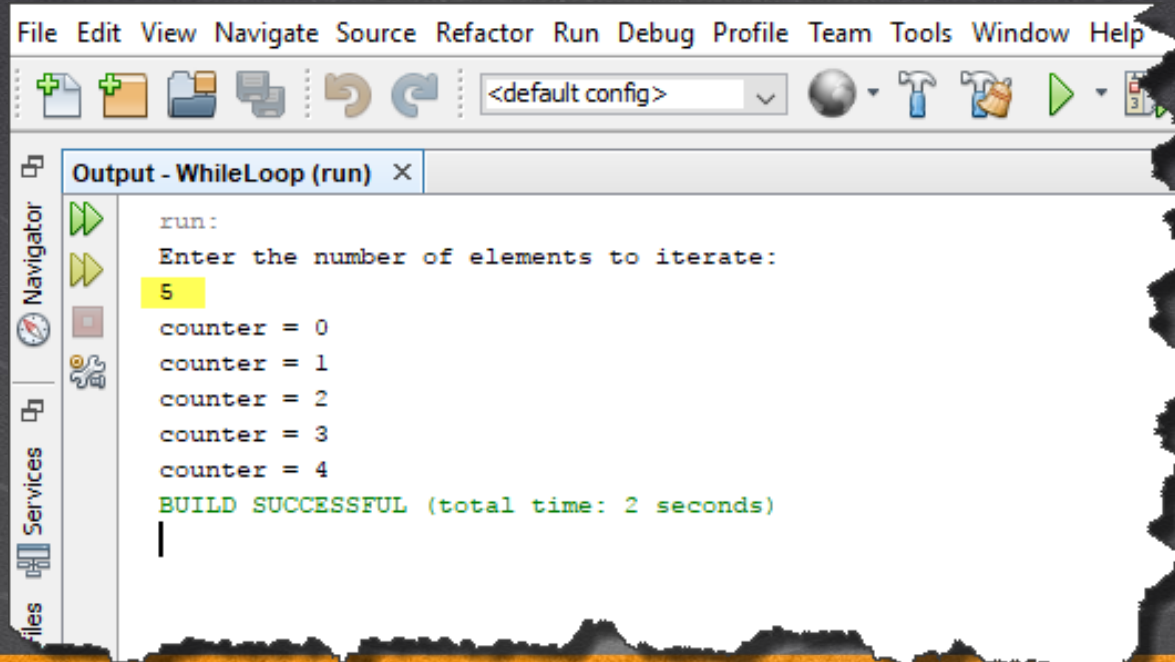
7. EXECUTE THE PROJECT

We execute our project. We give right click -> Run:



7. EXECUTE THE PROJECT (CONT)

The result is as follows:



```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
+ + [Icons] <default config> [Icons] [Run]
Output - WhileLoop (run) x
run:
Enter the number of elements to iterate:
5
counter = 0
counter = 1
counter = 2
counter = 3
counter = 4
BUILD SUCCESSFUL (total time: 2 seconds)
```

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IN CASE OF PROBLEMS

- Remember to code every line of code, DO NOT copy and paste from the eBooks.
- Only in case of problems you can always use the documentation or the resolved projects that we give you in each exercise to check any problems in your code.



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EXERCISE CONCLUSION

- With this exercise we have implemented the handling of the while loop.
- The while loop as we could observe, we can repeat instructions, however we need to have control of the expression to be evaluated, as well as the counter if we are using it, this to avoid infinite loops.



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By: Ing. Ubaldo Acosta



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