

JAVA PROGRAMMING COURSE

JAVA COLLECTIONS



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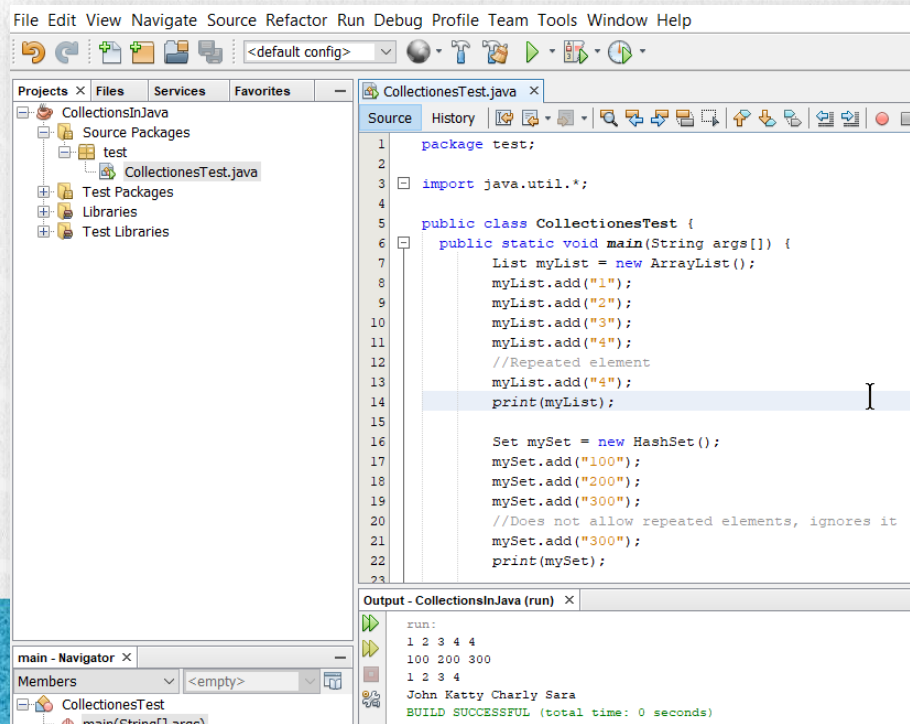


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EXERCISE OBJECTIVE

Implement the concept of collections in Java. At the end we should observe the following:



The screenshot shows an IDE window with the following components:

- Project Explorer:** Shows a project named 'CollectionsInJava' with sub-packages 'Source Packages' and 'Test Packages'. A file 'CollectionesTest.java' is located in the 'test' package.
- Source Editor:** Displays the code for 'CollectionesTest.java'. The code uses `ArrayList` and `HashSet` from `java.util`. It demonstrates adding elements to a list and a set, including repeated elements.
- Output Console:** Shows the output of the program, which prints the contents of the list and the set.

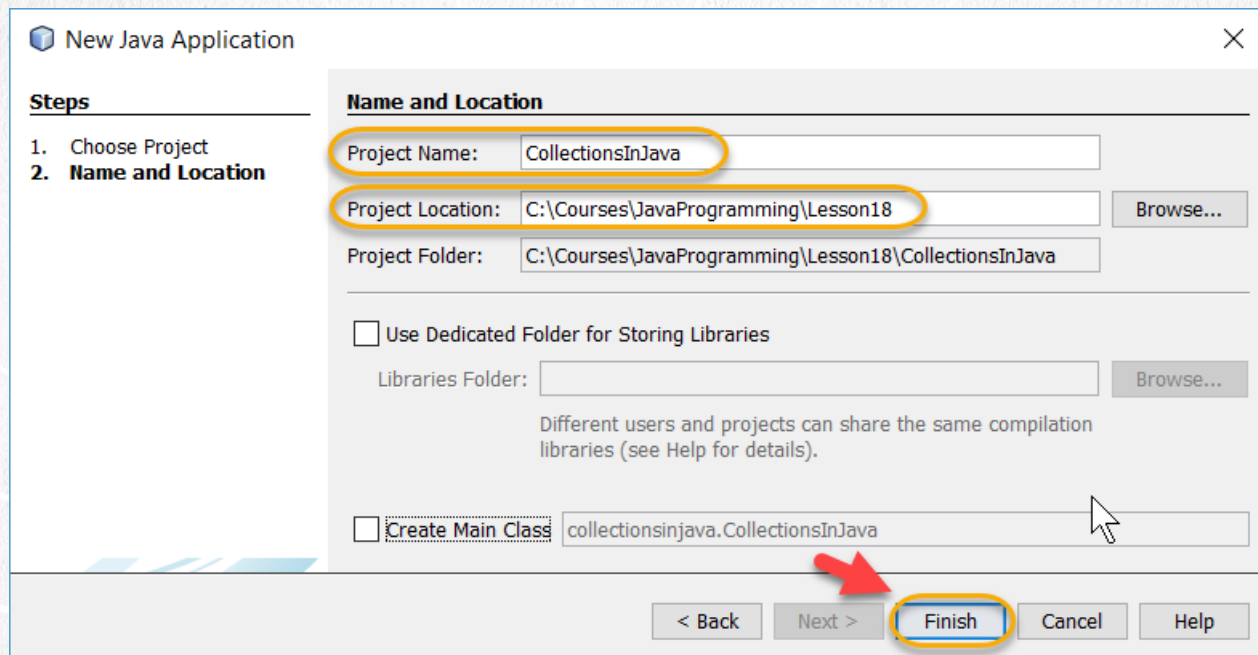
```
1 package test;
2
3 import java.util.*;
4
5 public class CollectionesTest {
6     public static void main(String args[]) {
7         List myList = new ArrayList();
8         myList.add("1");
9         myList.add("2");
10        myList.add("3");
11        myList.add("4");
12        //Repeated element
13        myList.add("4");
14        print(myList);
15
16        Set mySet = new HashSet();
17        mySet.add("100");
18        mySet.add("200");
19        mySet.add("300");
20        //Does not allow repeated elements, ignores it
21        mySet.add("300");
22        print(mySet);
23    }
24 }
```

Output - CollectionsInJava (run) X

```
run:
1 2 3 4 4
100 200 300
1 2 3 4
Johnn Katty Charly Sara
BUILD SUCCESSFUL (total time: 0 seconds)
```


1. CREATE NEW PROJECT

Create a new Project:



New Java Application

Steps

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

Name and Location

Project Name: CollectionsInJava

Project Location: C:\Courses\JavaProgramming\Lesson18 Browse...

Project Folder: C:\Courses\JavaProgramming\Lesson18\CollectionsInJava

☐ 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 collectionsinjava.CollectionsInJava

< Back Next > **Finish** Cancel Help

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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

CollectionsTest.java:

```
package test;

import java.util.*;

public class CollectionesTest {
    public static void main(String args[]) {
        List myList = new ArrayList();
        myList.add("1");
        myList.add("2");
        myList.add("3");
        myList.add("4");
        //Repeated element
        myList.add("4");
        print(myList);

        Set mySet = new HashSet();
        mySet.add("100");
        mySet.add("200");
        mySet.add("300");
        //Does not allow repeated elements, ignores it
        mySet.add("300");
        print(mySet);
    }
}
```

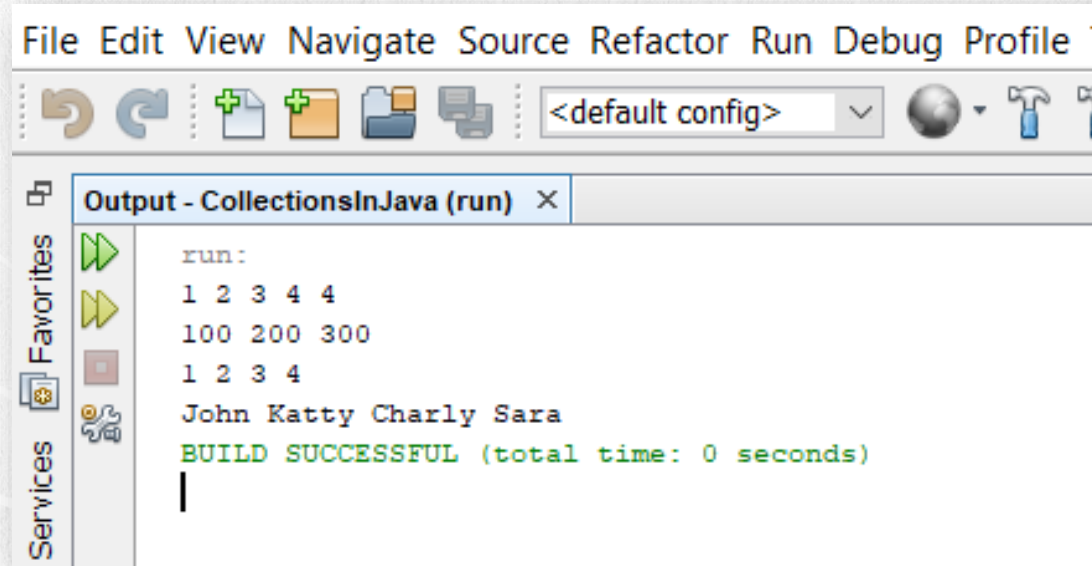

3. MODIFY THE CODE

CollectionsTest.java:

```
Map myMap = new HashMap();  
//Key, value  
myMap.put("1", "John");  
myMap.put("2", "Katty");  
myMap.put("3", "Charly");  
myMap.put("4", "Sara");  
//All the keys are printed  
print(myMap.keySet());  
//All values are printed  
print(myMap.values());  
  
}  
  
private static void print(Collection collection) {  
    for (Object element : collection) {  
        System.out.print(element + " ");  
    }  
    System.out.println("");  
}  
}
```

3. EXECUTE THE PROJECT

The result is as follows:



The screenshot shows an IDE's Run Output window. The title bar reads "Output - CollectionsInJava (run)". The window contains the following text:

```
run:
1 2 3 4 4
100 200 300
1 2 3 4
John Katty Charly Sara
BUILD SUCCESSFUL (total time: 0 seconds)
```

The IDE's menu bar includes File, Edit, View, Navigate, Source, Refactor, Run, Debug, and Profile. The toolbar contains icons for undo, redo, new file, new folder, save, and a dropdown menu currently set to "<default config>". On the left side, there are vertical tabs for Favorites and Services.

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EXERCISE CONCLUSION

With this exercise we have put into practice the concept of collections in Java.

Although we have worked with the String data type, we can work with any type of data, including those that we create, in this way the use of collections will be much more complete and thus simplify our code when using data sets.

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