

## LAB INDEX

NAME: Vivek Kumar

SUBJECTNAME: Project Based Learning in Java Lab

UID: 21BCS8129

SUBJECTCODE: 20CSP-314

SECTION: WM-20BCS-616/A

Sr. No	Program	Date	Evaluation				Sign
			LW (12)	VV (10)	FW (8)	Total (30)	
1	Create an application to save the employee information using arrays.	09-08-2022					
2	Design and implement a simple inventory control system for a small video rentalstore.	23-08-2022					
3	Create a application to calculate interest for FDs, RDs based on certain conditions using inheritance.	02-09-2022					
4	Create a program to show the usage of Sets of Collection interface.	27-09-2022					
5	Create a program to set view of Keys from Java Hashtable.	27-09-2022					
6	Write a Program to perform the basic operations like insert, delete, display and search in list. List contains String object items where these operations are to be performed.						
7	Create a menu based Java application with the following options.1.Add an Employee2.Display All3.Exit If option 1 is selected, the application should gather details of the employee like employee name, employee id, designation and salary and store it in a file. If option 2 is selected, the application should display all the employee details. If option 3 is selected the application should exit.						
8	Create a palindrome creator application for making a longest possible palindrome out of given input string.						
9	Create a Servlet/ application with a facility to print any message on web browser.						
10	Create JSP application for addition, multiplication and division.						



**CHANDIGARH UNIVERSITY  
UNIVERSITY INSTITUTE OF NGINEERING  
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**



<b>Submitted By:</b> Vivek Kumar(21BCS8129)		<b>Submitted To:</b> Neeru Sharma(E12950)	
<b>Subject Name</b>	Project Based Learning in Java Lab		
<b>Subject Code</b>	20CSP-321		
<b>Branch</b>	Computer Science and Engineering		
<b>Semester</b>	5 <sup>th</sup>		

## Experiment - 4

**Student Name: Vivek Kumar****Branch: BE-CSE(LEET)****Semester: 5<sup>th</sup>****Subject Name: Project Based Learning in Java Lab****UID: 21BCS8129****Section/Group: 20BCS-WM-616/A****Date of Performance: 27/09/2022****Subject Code: 20CSP-321**

### 1. Aim/Overview of the practical:

Create a program to show the usage of Sets of Collection interface.

### 2. Task to be done/ Which logistics used:

Write the program to create an application to perform a set manipulation.

### 3. Software Requirements (For programming-based labs):

- JDK-8 or any
- Eclipse-IDE for Java

### 4. Steps for experiment/practical/Code:

```
package unit2;
```

```
import java.util.*;
```

```
public class WorkSheet4 {
```

```
    public static void main(String args[]) {
```

```
        Set<Character> mySet1 = new HashSet<Character>();
```

```
        mySet1.add('A');
```

```
        mySet1.add('B');
```

```
        mySet1.add('C');
```

```
        mySet1.add('A');
```

```
        mySet1.add('B');
```

```
        System.out.println("mySet1: " + mySet1);
```

```
        List<Character> list = new ArrayList<Character>();
```

```
        list.add('A');
```

```
        list.add('A');
```

```
        list.add('B');
```

```
        list.add('C');
```

```
        list.add('B');
```

```
        Set<Character> mySet2 = new HashSet<Character>(list);
```

```
        System.out.println("list: " + list);
```

```
        System.out.println("mySet2: " + mySet2);
```

```
        System.out.println("MySet1 matches mySet2: " + mySet1.equals(mySet2));
```

```
        mySet2.remove('A');
```

```
        System.out.println("mySet2: " + mySet2);
```

```
        System.out.println("MySet1 matches mySet2: " + mySet1.equals(mySet2));
```

```
        System.out.println("MySet1 contains all the elements: " + mySet1.containsAll(list));
```

```
System.out.println("MySet2 contains all the elements: " + mySet2.containsAll(list));
```

```
Iterator<Character> iterator = mySet1.iterator();
while (iterator.hasNext()) {
    System.out.println("Iterator loop: " + iterator.next());
}
```

```
for(Object str:mySet1) {
    System.out.println("For each loop "+str);
}
```

```
mySet1.clear();
System.out.println("mySet1 is Empty: " + mySet1.isEmpty());
```

```
System.out.println("mySet1 has: " + mySet1.size() + " Elements");
System.out.println("mySet2 has: " + mySet2.size() + " Elements");
```

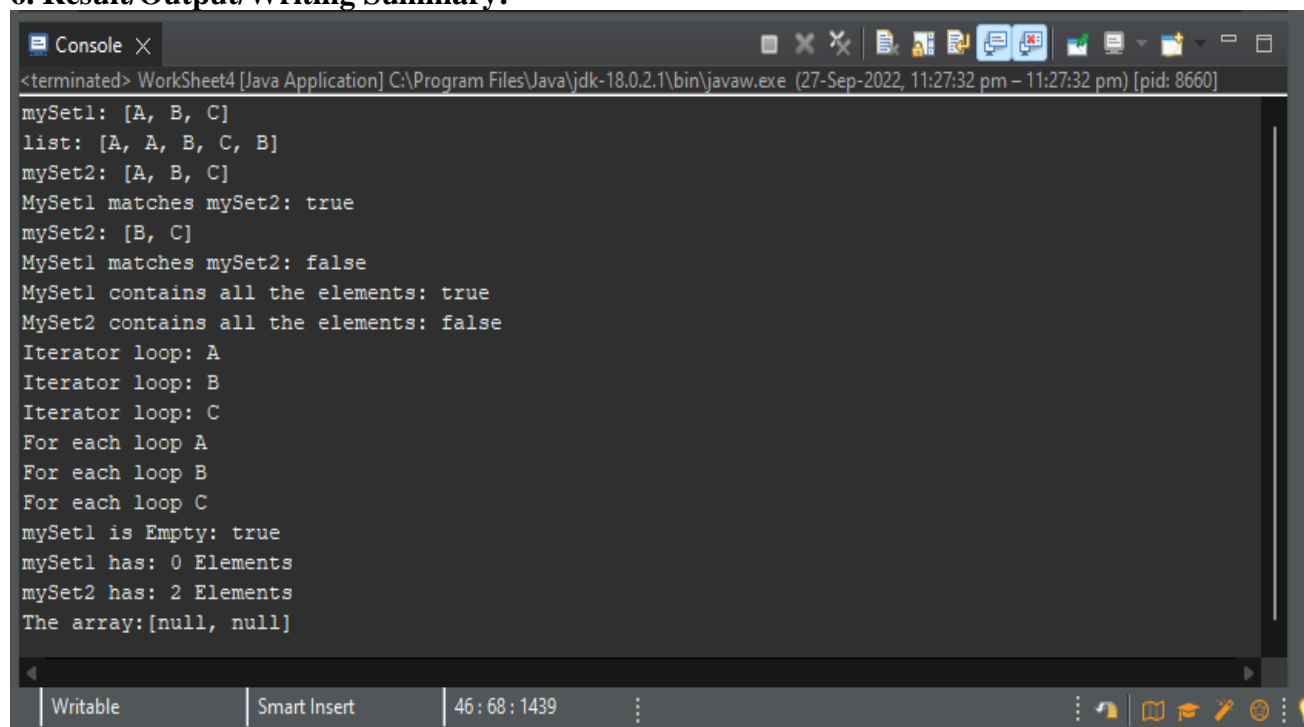
```
Object[] array = mySet1.toArray(new String[mySet2.size()]);
System.out.println("The array:" + Arrays.toString(array));
```

```
}
}
```

## 5. Observations/Discussions/ Complexity Analysis:

Here we have created the Set, list and Iterator and Data inserted, performed all the Operation of set and Hashset.

## 6. Result/Output/Writing Summary:



```
<terminated> WorkSheet4 [Java Application] C:\Program Files\Java\jdk-18.0.2\bin\javaw.exe (27-Sep-2022, 11:27:32 pm - 11:27:32 pm) [pid: 8660]
mySet1: [A, B, C]
list: [A, A, B, C, B]
mySet2: [A, B, C]
MySet1 matches mySet2: true
mySet2: [B, C]
MySet1 matches mySet2: false
MySet1 contains all the elements: true
MySet2 contains all the elements: false
Iterator loop: A
Iterator loop: B
Iterator loop: C
For each loop A
For each loop B
For each loop C
mySet1 is Empty: true
mySet1 has: 0 Elements
mySet2 has: 2 Elements
The array:[null, null]
```

**Learning outcomes (What I have learnt):**

1. Learnt How to create the HashSet and insert the values to it.
2. Set manipulation concept understood.
3. Created list and Imported list in to a set.
4. Learnt the concept of Iterator.
5. Learnt concept of Set to Array Conversion

**Evaluation Grid (To be created per the faculty's SOP and Assessment guidelines):**

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To be submitted at the end of the day).		
2.	Post-Lab Quiz Result.		
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		
	Signature of Faculty (with Date):	Total Marks Obtained:	