LAB INDEX

NAME: Vivek Kumar
UID: 21BCS8129
SECTION: WM-20BCS-616/A

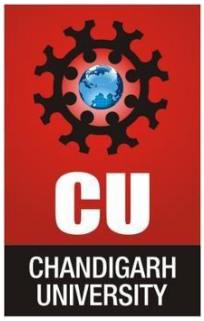
SUBJECTNAME: Project Based Learning in Java Lab
SUBJECTCODE: 20CSP-314

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.						
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



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

Experiment - 4

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

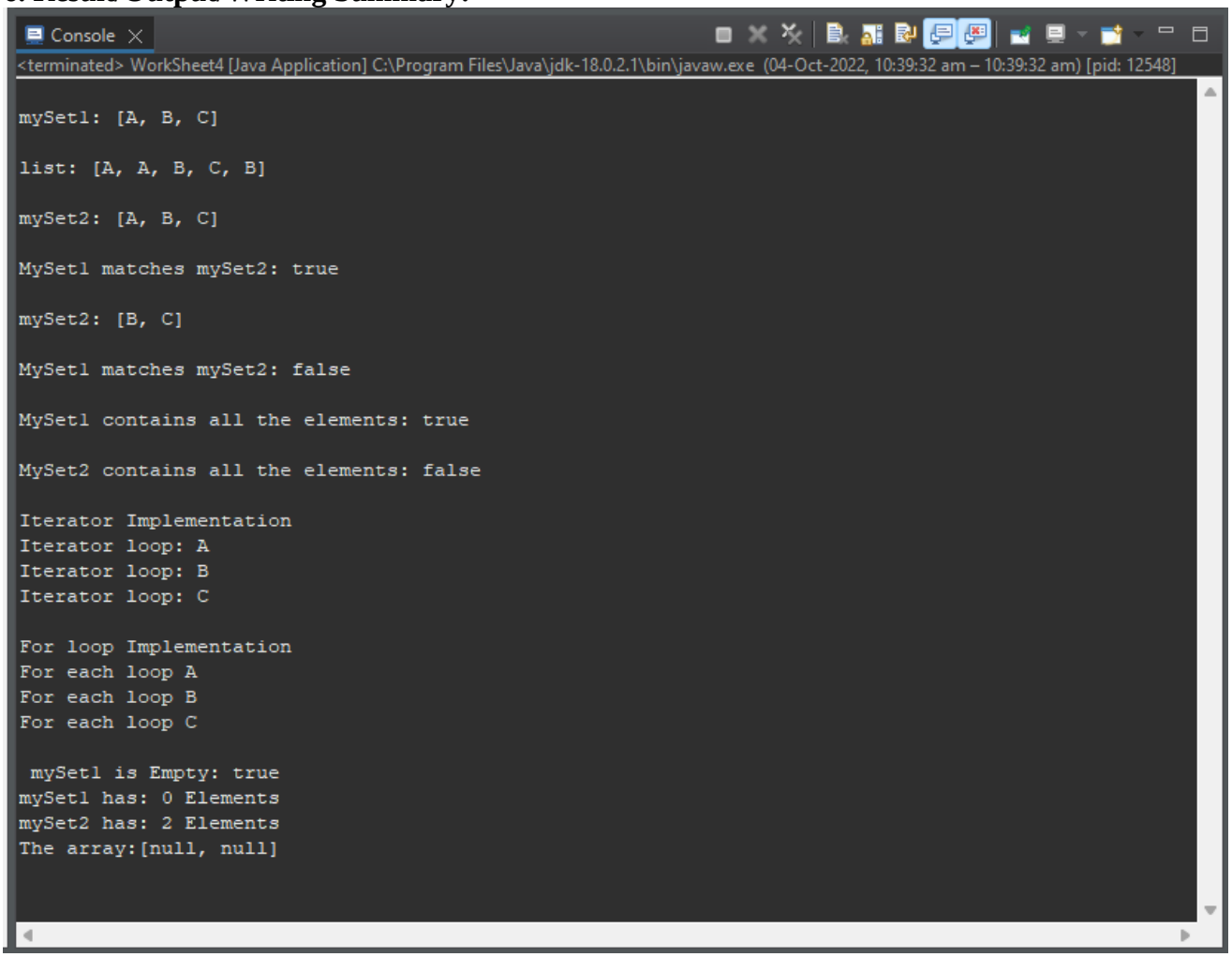
```
package unit2;
import java.util.*;

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("\nmySet1: " + 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("\nlist: " + list);
      System.out.println("\nmySet2: " + mySet2);

      System.out.println("\nMySet1 matches mySet2: " + mySet1.equals(mySet2));
```

```
        mySet2.remove('A');
        System.out.println("\nmySet2: " + mySet2);
        System.out.println("\nMySet1 matches mySet2: " + mySet1.equals(mySet2));

        System.out.println("\nMySet1 contains all the elements: " + mySet1.containsAll(list));
        System.out.println("\nMySet2 contains all the elements: " + mySet2.containsAll(list));

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

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

        mySet1.clear();
        System.out.println("\nmySet1 is Empty: " + mySet1.isEmpty());

        System.out.println("\nmySet1 has: " + mySet1.size() + " Elements");
        System.out.println("\nmySet2 has: " + mySet2.size() + " Elements");

        System.out.println("\nArray Conversion");
        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:



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:	