



WORKSHEET – 4

Student Name: Anjali Singh

Branch: BE-CSE

Semester: 5TH

Subject Name: Project based learning with Java

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UID: 20BCS9239

Section/Group: 607 A

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Aim: Write a program to collect and store all the cards to assist the users in finding all the cards in a given symbol.

Software used : IntelliJ

Task to be done:

Write a program to collect and store all the cards to assist the users in finding all the cards in a given symbol.

This cards game consists of N number of cards. Get N number of cards details from the user and store the values in Card object with the attributes symbol and number.

Store all the cards in a map with symbol as its key and list of cards as its value. Map is used here to easily group all the cards based on their symbol.

Once all the details are captured print all the distinct symbols in alphabetical order from the Map. For each symbol print all the card details, number of cards and their sum respectively.

CODE



```
package com.nirvana;

import java.util.*;

public class LabFive {
    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        List<Integer> values = new ArrayList<Integer>();
        TreeMap<String, List<Integer>> mp = new TreeMap<>();           int
        totalNoOfCards, index, value, sum = 0, noOfCards = 0;
        System.out.println("Enter Number Of Cards : ");
        totalNoOfCards = input.nextInt();
        String symbols;
        for(index = 1; index <= totalNoOfCards; index++){
            System.out.println("Enter Card " + index + " : ");
            symbols = input.next();           value = input.nextInt();
            if(mp.containsKey(symbols)){           values =
                mp.get(symbols);           values.add(value);
            }else{
                values = new ArrayList<Integer>();
                values.add(value);           mp.put(symbols,
                values);
            }
        }
        System.out.println("Distinct Symbols are : ");
        for(Map.Entry getData : mp.entrySet()){
            System.out.print(getData.getKey() + " ");           }
```



```
        System.out.println();
        for(Map.Entry getData : mp.entrySet()){
            System.out.println("\nCards in " + getData.getKey() + "
Symbol : ");
            ArrayList<Integer> symbolArray = (ArrayList<Integer>)
getData.getValue();
            Iterator itr= symbolArray.iterator();
while(itr.hasNext())
            {
                noOfCards++;
                int num = (int) itr.next();
                System.out.print(getData.getKey());
System.out.println(" " + num);                sum
+= num;
            }
            System.out.println("Number of Cards : " + noOfCards);
System.out.println("Sum of Numbers : " + sum);                sum =
0;                noOfCards = 0;
        }
    }
}
```



OUTPUT

```
Pro...  [Icons]  LabFour.java  LabFive.java  FileWriterExample.java  LabMst.java
Run:  LabFive
"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea_rt.jar
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv4Stack=true
Enter Number Of Cards :
13
Enter Card 1 :
9
12
Enter Card 2 :
5
11
Enter Card 3 :
5
9
Enter Card 4 :
d
13
Enter Card 5 :
5
10
Enter Card 6 :
d
3
```



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```
Pro...  [Icons]  LabFour.java  LabFive.java  FileWriterExample.java  LabMst.java
Run:  LabFive
Enter Card 7 :
c
4
Enter Card 8 :
h
11
Enter Card 9 :
q
12
Enter Card 10 :
s
5
Enter Card 11 :
e
3
Enter Card 12 :
w
1
Enter Card 13 :
w
7
```



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```
Pro...  LabFour.java  LabFive.java  FileWriterExample.java  LabMst.java
Run:  LabFive
Distinct Symbols are :
c d e h q s w

Cards in c Symbol :
c 4
Number of Cards : 1
Sum of Numbers : 4

Cards in d Symbol :
d 13
d 3
Number of Cards : 2
Sum of Numbers : 16

Cards in e Symbol :
e 3
Number of Cards : 1
Sum of Numbers : 3

Cards in h Symbol :
h 11
Number of Cards : 1
Sum of Numbers : 11
```

```
Pro...  LabFour.java  LabFive.java  FileWriterExample.java  LabMst.java
Run:  LabFive
Cards in q Symbol :
q 12
Number of Cards : 1
Sum of Numbers : 12

Cards in s Symbol :
s 12
s 11
s 9
s 10
s 5
Number of Cards : 5
Sum of Numbers : 47

Cards in w Symbol :
w 1
w 7
Number of Cards : 2
Sum of Numbers : 8

Process finished with exit code 0
```

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LEARNING OUTCOMES

- 1.Learned about collection framework.
- 2.HashMap, tree map and list were implemented.
- 3.Learned about different constructors and their methods.