



Experiment Title: 2.1

Student Name: SANSKAR AGRAWAL

UID: 20BCS5914

Branch: CSE

Section/Group: MM_806 / B

Semester: 5th

D.O.P.: 11-10-2022

Subject Name: PBLJ

Subject Code: 20CSP-321

1. Aim/Overview of the practical:

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 consist 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.

2. Software/Hardware Requirements:

- Eclipse IDE / VS Code
- Java

3. Steps for experiment/practical/Code:

```
import java.util.*;
public class Exp2_1{
    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);
        List<Integer> valueList = new ArrayList<Integer>();
        TreeMap<String,List<Integer>> mapObj = new TreeMap<String,List<Integer>>();
        int total,index,value,sum = 0,count = 0;
        System.out.println("Enter Number of Cards");
        total = input.nextInt();
        String symbol;
        for(index = 1; index <= total;index++)
        {
```

```
System.out.println("Enter Card" + " " +index);
symbol = input.next();
value = input.nextInt();
if(mapObj.containsKey(symbol))
{
    valueList = mapObj.get(symbol);
    valueList.add(value);
}
else
{
    valueList = new ArrayList<Integer>();
    valueList.add(value);
    mapObj.put(symbol,valueList);
}
}
System.out.println("Distinct Symbols are:");
for(Map.Entry getData : mapObj.entrySet())
{
    System.out.println(getData.getKey() + " ");
}
System.out.println();
for(Map.Entry getData : mapObj.entrySet())
{
    System.out.println("Cards In " + getData.getKey() + " Symbol :");
    ArrayList<Integer> temp = (ArrayList<Integer>) getData.getValue();
    Iterator itr= temp.iterator();
    while(itr.hasNext())
    {
        count++;
        int val = (int) itr.next();
        System.out.print(getData.getKey());
        System.out.println(" " + val);
        sum += val;
    }
}
input.close();
System.out.println("Number Of Cards : " + count);
System.out.println("Sum Of Numbers : " + sum);
sum = 0;
}
}
```

4. Result/Output/Writing Summary:

```
Enter Number of Cards
6
Enter Card 1
s
1
Enter Card 2
s
2
Enter Card 3
s
5
Enter Card 4
c
1
Enter Card 5
a
1
Enter Card 6
d
4
Distinct Symbols are:
a
c
d
s

Cards In a Symbol :
a 1
Cards In c Symbol :
c 1
Cards In d Symbol :
d 4
Cards In s Symbol :
s 1
s 2
s 5
Number Of Cards : 6
Sum Of Numbers : 14

Process finished with exit code 0
|
```



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

5. Learning outcomes (What I have learnt):

- Learned about maps.
- Got an overview of the maps and hashing.
- Get to know about crucial test cases.
- Got an understanding about referencing of maps.