



## **Experiment 2.1**

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**Subject Name: JAVA**

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**1. AIM:** TCreate a program to collect and store all the cards to assist the users in finding all the cards in a given symbol using Collection interface.

### **2. OBJECTIVE:**

To learn about concept of Hashing.

To learn about HashMap.

### **3. CODE:**

```
import java.util.ArrayList;
import java.util.HashMap;
import java.util.Scanner;
import java.util.Map.Entry;

public class Main {
    public static void main(String[] args) {
        HashMap<Character, ArrayList<Integer>> myMap = new
        HashMap<Character, ArrayList<Integer>>();

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter number of cards: ");
        int n = sc.nextInt();
```



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```
for(int i=0; i<n; i++){
    System.out.println("Enter Card "+(i+1));

    System.out.print("Symbol: ");
    Character ch = sc.next().charAt(0);
    System.out.print("Value: ");
    int val = sc.nextInt();
    System.out.println();

    if(myMap.get(ch)==null){
        myMap.put(ch, new ArrayList<Integer>());
    }
    myMap.get(ch).add(val);
}

System.out.println("-----");

System.out.println("\nDistinct symbols are: ");
for(Entry<Character, ArrayList<Integer>> ele : myMap.entrySet() ){
    Character key = ele.getKey();
    System.out.print(key + " ");
}

System.out.println();
System.out.println("-----");

for(Entry<Character, ArrayList<Integer>> ele : myMap.entrySet() ){
    System.out.println();
    Character key = ele.getKey();
    ArrayList<Integer> values = ele.getValue();
    int sum=0;
    int num=0;
    System.out.println("Entries in symbol "+ key + " are: ");
    for(int val : values){
```



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```
        System.out.print(val + " ");
        sum = sum + val;
        num++;
    }
    System.out.print("\n\n");

    System.out.println("Number of Values: " + num);
    System.out.println("Sum of values: " + sum);
}

System.out.println("-----");

sc.close();
}
}
```



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## 4. OUTPUT:

```
g:\main\j
Enter number of cards: 6
Enter Card 1
Symbol: a
Value: 46

Enter Card 2
Symbol: b
Value: 37

Enter Card 3
Symbol: c
Value: 52

Enter Card 4
Symbol: a
Value: 44

Enter Card 5
Symbol: b
Value: 89

Enter Card 6
Symbol: a
Value: 41
```

```
-----
Distinct symbols are:
a b c
-----
```

```
Entries in symbol a are:
46 44 41
```

```
Number of Values: 3
Sum of values: 131
```

```
Entries in symbol b are:
37 89
```

```
Number of Values: 2
Sum of values: 126
```

```
Entries in symbol c are:
52
```

```
Number of Values: 1
Sum of values: 52
-----
```

```
PS D:\Programming\Java\exp4> |
```

```
g:\main\j
Enter number of cards: 5
Enter Card 1
Symbol: a
Value: 99

Enter Card 2
Symbol: a
Value: 98

Enter Card 3
Symbol: a
Value: 97

Enter Card 4
Symbol: b
Value: 1

Enter Card 5
Symbol: b
Value: 2
```

```
-----
Distinct symbols are:
a b
-----
```

```
Entries in symbol a are:
99 98 97
```

```
Number of Values: 3
Sum of values: 294
```

```
Entries in symbol b are:
1 2
```

```
Number of Values: 2
Sum of values: 3
-----
```

```
PS D:\Programming\Java\exp4> |
```