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Experiment 2.1

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Subject Name: Java Lab
Subject Code:21CSH-319

1. **Aim:** Create 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:** This cards game consist of N number of cards. Get N number of cards details from the user and storethe 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 toeasily 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. Foreach symbol print all the card details, number of cards and their sum respectively.

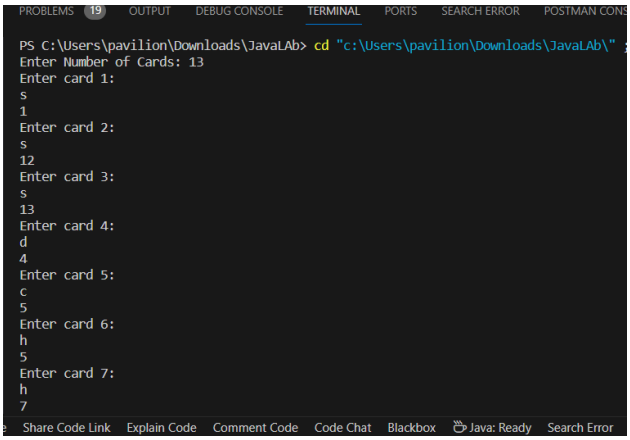
3. **Algo. /Approach and output:**

```
import java.util.*;
class Card {
    String symbol;
    int number;

    public Card(String symbol, int number) {
        this.symbol = symbol;
        this.number = number;
    }
}
public class cards {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter Number of Cards: ");
        int n = scanner.nextInt();
        Map<String, List<Card>> cardMap = new TreeMap<>();
```

```
        for (int i = 0; i < n; ++i) {
            System.out.println("Enter card " + (i + 1) + ":");
            String symbol = scanner.next();
            int number = scanner.nextInt();
            Card card = new Card(symbol, number);
            cardMap.computeIfAbsent(symbol, k -> new ArrayList<>()).add(card);
        }
        System.out.println("Distinct Symbols are:");
        for (String symbol : cardMap.keySet()) {
            System.out.print(symbol + " ");
        }System.out.println();
        for (Map.Entry<String, List<Card>> entry : cardMap.entrySet()) {
            String symbol = entry.getKey();
            System.out.println("Cards in " + symbol + " Symbol:");
            List<Card> cards = entry.getValue();
            int sum = 0;
            for (Card card : cards) {
                System.out.println(card.symbol + " " + card.number);
                sum += card.number;
            }
            System.out.println("Number of cards: " + cards.size());
            System.out.println("Sum of Numbers: " + sum);
        }
    }
}
```

Output:



```
3
Distinct Symbols are:
c d h s
Cards in c Symbol:
c 5
c 3
c 2
Number of cards: 3
Sum of Numbers: 10
Cards in d Symbol:
d 4
d 4
d 3
Number of cards: 3
Sum of Numbers: 11
Cards in h Symbol:
h 5
h 7
h 9
Number of cards: 3
Sum of Numbers: 21
Cards in s Symbol:
s 1
```

```
 Number of cards: 3
 Sum of Numbers: 10
 Cards in d Symbol:
 d 4
 d 4
 d 3
 Number of cards: 3
 Sum of Numbers: 11
 Cards in h Symbol:
 h 5
 h 7
 h 9
 Number of cards: 3
 Sum of Numbers: 21
 Cards in s Symbol:
 s 1
 s 12
 s 13
 s 7
 Number of cards: 4
 Sum of Numbers: 33
 PS C:\Users\pavilion\Downloads\JavaLAb>
```