Experiment-2.1

Student Name: Sanchit Singal   **UID**: 21BCS1569

Branch: BE-CSE   **Section/Group:** 606_B

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Subject Name: Project Based learning with Java   **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:** Write a java program to collect and store all the cards to assist the users in finding all the cards in a given symbol using Collection interface.

3. **Algorithm/Approach/Code:**

    ```
    import java.util.*;

    class Card {
        String symbol;
        int number;

        public Card(String symbol, int number) {
            this.symbol = symbol;
            this.number = number;
        }

        public String toString() {
    ```

```java
        return symbol + number;
    }
}


public class Main{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        Map<String, List<Card>> cardMap = new TreeMap<>();

        System.out.println("Enter Number of Cards:");
        int numberOfCards = scanner.nextInt();
        scanner.nextLine();
        for (int i = 0; i < numberOfCards; i++) {
            System.out.println("Enter card " + (i + 1) + ":");
            String symbol = scanner.next();
            int number = scanner.nextInt();
            scanner.nextLine();
            Card card = new Card(symbol, number);
            List<Card> cards = cardMap.getOrDefault(symbol, new ArrayList<>());
            cards.add(card);
            cardMap.put(symbol, cards);
        }

        System.out.println("Distinct Symbols are:");
        for (String symbol : cardMap.keySet()) {
            System.out.print(symbol + " ");
        }
```

```java
        System.out.println();

        for (Map.Entry<String, List<Card>> entry : cardMap.entrySet()) {
            String symbol = entry.getKey();
            List<Card> cards = entry.getValue();

            System.out.println("Cards in " + symbol + " Symbol ");
            System.out.println("Number of cards: " + cards.size());

            int sum = 0;
            for (Card card : cards) {
                sum += card.number;
                System.out.print(card + " ");
            }
            System.out.println();
            System.out.println("Sum of Numbers: " + sum);
        }
    }
}
```

4. Output:

```
aditya@Aditayas-MacBook-Air java class % cd  /Users/aditya/Documents/java class/   && javac exp2.java && java exp2
Enter Number of Cards:
5
Enter card 1:
a
15
Enter card 2:
a
20
Enter card 3:
b
2
Enter card 4:
b
5
Enter card 5:
c
10
Distinct Symbols are :
a b c
Cards in a Symbol
Number of cards : 2
a15 a20
Sum of Numbers : 35
Cards in b Symbol
Number of cards : 2
b2 b5
Sum of Numbers : 7
Cards in c Symbol
Number of cards : 1
c10
Sum of Numbers : 10
```

5. Learning Outcomes:

1) Array of card object to store multiple card Information
2) Oops concept
3) Switch Statements