Experiment 5

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Subject: Project Based Learning in Java **Subject Code: 22CSP-359**

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:

- To implement a Java program that utilizes the Collection framework to store and manage card objects efficiently.
- To practice the use of ArrayList for dynamic storage and retrieval of objects.
- To enhance input validation techniques by handling incorrect or empty inputs properly.

3. Implementation/Code:

```
import java.util.*;
class card{
   String type;
   int value;
   card(String type,int value){
      this.type=type;
      this.value=value;
   }
}
public class Main{
   public static void main(String[] args) {
      List<card> cards=new ArrayList<>();
      Scanner sc=new Scanner(System.in);
      System.out.print("Enter the number of cards: ");
      int n=sc.nextInt();
      System.out.println("Enter the card:");
      for(int i=0; i<n; i++){
         System.out.println("Card Type:");
         String t=sc.next();
```

```
            System.out.println("Card Value:");
            int v=sc.nextInt();
            cards.add(new card(t,v));
        }
        System.out.print("Enter the card Type to Search: ");
        String type=sc.next();
        if(type.isEmpty()) {
        System.out.println("Cannot be empty");
        return; }
        if(!type.equals("diamond")&&
        !type.equals("heart")&&
        !type.equals("club")&&
        !type.equals("spade")){
            System.out.println("Invalid Card Type");
            return; }
        boolean found=false;
        System.out.println("Cards with Type: "+type);
        for(card c:cards){
            if(c.type.equals(type)){
                System.out.println(c.value);
                found=true;
            }
        }
        if(!found)  System.out.println("No such card found");
    }
}
```

4. Output:

```
PS C:\Users\hp.pc\Desktop\programming languages\java> cd "c:\Users\
Class\" ; if ($?) { javac exp2.java } ; if ($?) { java exp2 }
Enter the number of cards: 3
Enter the card:
Card Type:
heart
Card Value:
2
Card Type:
diamond
Card Value:
2
Card Type:
club
Card Value:
1
Enter the card Type to Search: heart
Cards with Type: heart
2
PS C:\Users\hp.pc\Desktop\programming languages\java\javaClass>
```

5. Learning Outcomes

- Understand how to use the Collection framework (List interface) in Java for object storage and retrieval.
- Gain experience in handling user input effectively and implementing validation checks.
- Develop an understanding of iterating over collections to search for specific objects dynamically.
- Improve coding skills in object-oriented programming by creating and managing custom classes (Card class).