

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 5

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Subject: Project Based Learning in Java

Subject Code: 22CSP-359

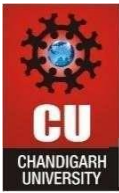
1. Aim: Create a program to collect and store all the cards to assist the users in finding all the cards in a given symbol using Collection interface.

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();
        }
    }
}
```



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```
        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\hp.pc\Desktop\programming languages\java\javaClass\" ; 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>
```



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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).