



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 with 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"
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>
```



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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).