

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 6

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Subject: Project Based Learning in Java

Subject Code: 22CSP-359

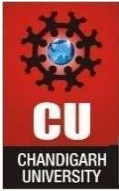
1. Aim: Create a program to collect unique symbols from a set of cards using set interface.

2. Objective:

- To develop a Java program that collects unique card symbols using the Set interface, ensuring that duplicate entries are automatically removed.
- To enhance understanding of data structures in Java, particularly the differences between List and Set interfaces.
- To implement efficient data storage and retrieval techniques using HashSet, which provides O(1) average time complexity for insert and lookup operations.

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 exp2{
    public static void main(String[] args) {
        List<card> cards=new ArrayList<>();
        Set<String> set=new HashSet<>();
        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:");
```



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```
String t=sc.next();
System.out.println("Card Value:");
int v=sc.nextInt();
cards.add(new card(t,v));
set.add(t);
}
System.out.println("Unique Card Symbol: ");
for(String c:set){
    System.out.println(c);
}
}
}
```

4. Output:

```
Enter the number of cards: 4
Enter the card:
Card Type:
heart
Card Value:
1
Card Type:
heart
Card Value:
2
Card Type:
diamond
Card Value:
3
Card Type:
club
Card Value:
1
Unique Card Symbol:
diamond
club
heart
PS C:\Users\hp.pc\Desktop\programming_languages\java\javaClass>
```

5. Learning Outcomes

- Understand the difference between List and Set interfaces, particularly in handling duplicate elements.
- Gain practical experience in using HashSet to store unique values and iterate over them efficiently.
- Learn how to create and manage Java classes (Card class) and store objects dynamically in collections.