DEPARTMENT OF

COMPUTER SCIENCE & ENGINEERING

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Experiment 6

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Semester: 6th
Subject: Project Based Learning in Java

UID: 22BCS14274
Section/Group: 22BCS_KRG_IOT-3B
Date of Performance: 19/02/2025
Subject Code: 22CSP-359

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

. Objective:

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- 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.

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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:");
```

```
            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.