Experiment – 2.2

Student Name: Rohan Jaiswal
UID: 21BCS2856
Branch: BE-CSE
Section: KRG-CC-1/B
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1. **Aim:** Create a program to collect unique symbols from a set of cards using the set interface.

2. **Objective:** To learn about the concept of sets of collections and to learn about HashSet and List in Java.

3. **Input/Apparatus Used:** Hardware Requirements: - Minimum 384MB RAM, 100 GB hard Disk, processor with 2.1 MHz Software Requirements: - Eclipse, NetBeans, IntelliJ, etc.

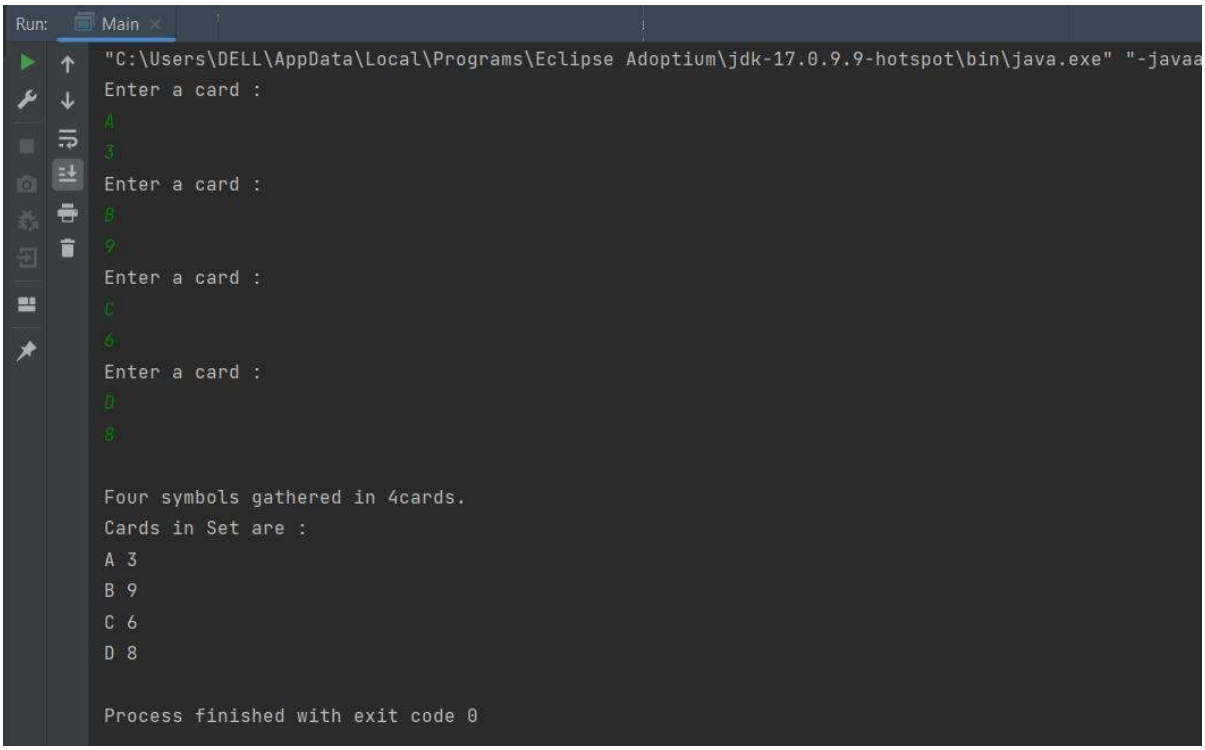
4. **Procedure/Algorithm/Pseudocode:**

- Create a card class having a symbol and number.
- Add details of cards in all types of set classes.
- Then print how many cards we have to gather to have 4 unique symbols.
- Print all unique cards in sorted order.

5. **Script and Output:**

```
import java.util.HashSet;
import java.util.Scanner;
import java.util.Set;
import java.util.TreeSet;
public class Main {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      Set<Card> cards = new HashSet<>();
      Set<String> symbols = new HashSet<>();
      while (symbols.size() < 4) {
         System.out.println("Enter a card :");
```

```
            String symbol = scanner.next();
            int number = scanner.nextInt();
            Card card = new Card(symbol, number);
            if (cards.add(card)) {
                symbols.add(symbol);
            }
        }
        System.out.println("Four symbols gathered in " + cards.size() + "
cards.");
        System.out.println("Cards in Set are :");
        TreeSet<Card> sortedCards = new TreeSet<>((card1, card2) ->
card1.symbol.compareTo(card2.symbol));
        sortedCards.addAll(cards);
        for (Card card : sortedCards) {
            System.out.println(card.symbol + " " + card.number);
        }
    }
    static class Card {
        String symbol;
        int number;
        Card(String symbol, int number) {
            this.symbol = symbol;
            this.number = number;
        }
        @Override
        public boolean equals(Object o) {
            if (this == o) return true;
            if (o == null || getClass() != o.getClass()) return false;
            Card card = (Card) o;
            return symbol.equals(card.symbol);
        }
        @Override
        public int hashCode() {
            return symbol.hashCode();
        }
    }
}
```



6. **Learning Outcome:** In this experiment, we learned about
   a. concept of sets of collections.
   b. HashSet and List in Java.