Experiment-2.2

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Subject Name: Java Lab   **Subject Code:** 21CSP-319

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

2. Objective:
• To learn about concept of sets of collection.
• To learn about HashSet, List in java.

3. Algorithm:
1. Create a card class having symbol and number.
2. Add details of cards in all type of set class.
3. Then print how many cards we have to gather to have 4 unique symbol.
4. Print all unique cards in sorted order.

4. Code:

```java
import java.util.HashSet;
import java.util.Set;

class Card {
    private String symbol;

    public Card(String symbol) {
        this.symbol = symbol;
    }

    public String getSymbol() {
        return symbol;
    }

    // Override equals and hashCode for proper HashSet functionality
    @Override
```

```java
    public boolean equals(Object obj) {
        if (this == obj) return true;
        if (obj == null || getClass() != obj.getClass()) return false;
        Card card = (Card) obj;
        return symbol.equals(card.symbol);
    }

    @Override
    public int hashCode() {
        return symbol.hashCode();
    }
}

public class UniqueSymbolsCollector {
    public static void main(String[] args) {
        Set<Card> uniqueSymbolsSet = new HashSet<>();

        // Adding cards to the set
        uniqueSymbolsSet.add(new Card("Heart"));
        uniqueSymbolsSet.add(new Card("Diamond"));
        uniqueSymbolsSet.add(new Card("Spade"));
        uniqueSymbolsSet.add(new Card("Club"));
        uniqueSymbolsSet.add(new Card("Heart")); // Duplicate, won't be added

        // Displaying unique symbols
        System.out.println("Unique Symbols in the set:");
        for (Card card : uniqueSymbolsSet) {
            System.out.println(card.getSymbol());
        }
    }
}
```
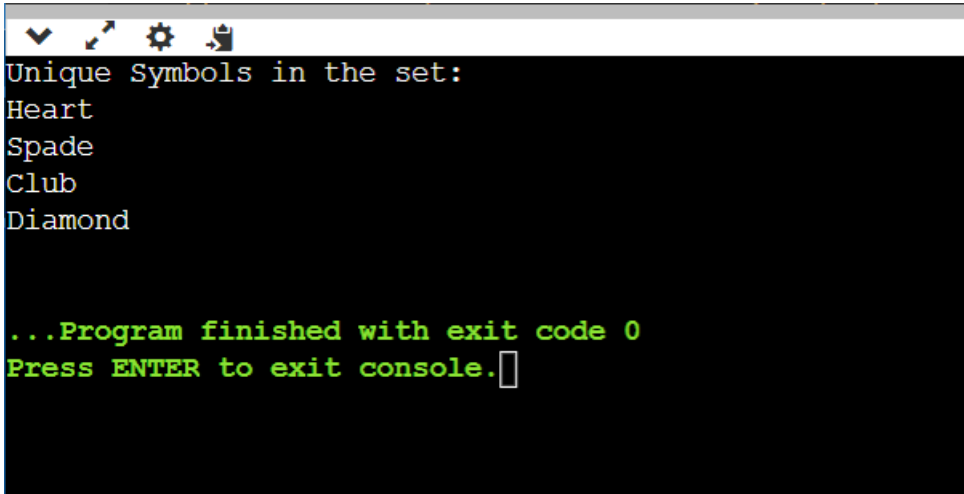
5. Output

```
Unique Symbols in the set:
Heart
Spade
Club
Diamond


...Program finished with exit code 0
Press ENTER to exit console.
```

6. Learning outcomes:

- Learnt about concept of sets of collection.
- Learnt about HashSet, List in java.