Experiment 4.2

Student Name: Muskan Pandey **UID: 22BCS12593**
Branch: CSE **Section/Group: 22BCS_IOT-618/B**
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Subject: Java **Subject Code: 22CSH-359**

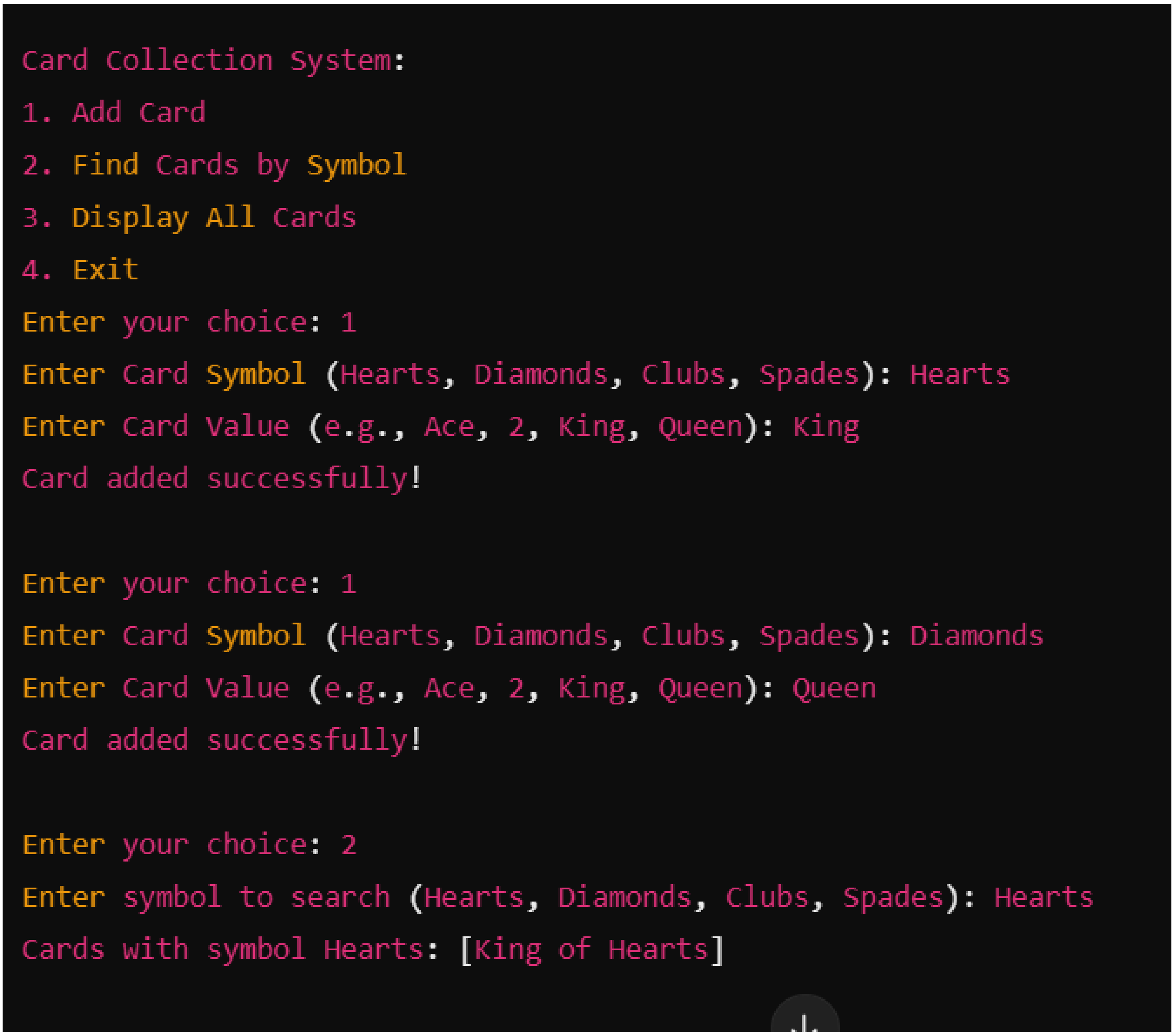
1.Aim: Create a program to collect and store all the cards to assist the users in finding all the cards in a given symbol using the Collection interface.

1. **Objective:** The objective of this program is to store and manage a collection of playing cards using Java's Collection interface. The program will allow users to:
   Add cards to the collection.
   Search for all cards of a given symbol (e.g., Hearts, Diamonds).
   Display all stored cards.
2. **Code:**

```
import java.util.*;

class Card {
    String symbol;
    String value;

    Card(String symbol, String value) {
        this.symbol = symbol;
        this.value = value;
    }

    public String toString() {
        return value + " of " + symbol;
    }
}

public class CardCollection {
    public static void main(String[] args) {
        Map<String, List<Card>> cardCollection = new HashMap<>();
        Scanner scanner = new Scanner(System.in);
        int choice;

        do {
            System.out.println("\nCard Collection System:");
            System.out.println("1. Add Card");
            System.out.println("2. Find Cards by Symbol");
            System.out.println("3. Display All Cards");
            System.out.println("4. Exit");
            System.out.print("Enter your choice: ");
            choice = scanner.nextInt();
            scanner.nextLine(); // Consume newline

            switch (choice) {
                case 1: // Add Card
                    System.out.print("Enter Card Symbol (Hearts, Diamonds, Clubs, Spades):
");
                    String symbol = scanner.nextLine();
                    System.out.print("Enter Card Value (e.g., Ace, 2, King, Queen): ");
                    String value = scanner.nextLine();

                    cardCollection.putIfAbsent(symbol, new ArrayList<>());
                    cardCollection.get(symbol).add(new Card(symbol, value));

                    System.out.println("Card added successfully!");
                    break;

                case 2: // Find Cards by Symbol
                    System.out.print("Enter symbol to search (Hearts, Diamonds, Clubs,
Spades): ");
                    String searchSymbol = scanner.nextLine();

                    if (cardCollection.containsKey(searchSymbol)) {
                        System.out.println("Cards with symbol " + searchSymbol + ": " +
cardCollection.get(searchSymbol));
                    } else {
                        System.out.println("No cards found for this symbol.");
                    }
                    break;

                case 3: // Display All Cards
                    System.out.println("\nAll Stored Cards:");
                    if (cardCollection.isEmpty()) {
                        System.out.println("No cards in the collection!");
                    } else {
                        for (Map.Entry<String, List<Card>> entry : cardCollection.entrySet()) {
                            System.out.println(entry.getKey() + ": " + entry.getValue());
                        }
                    }
                    break;

                case 4:
```

```
                System.out.println("Exiting program...");
                break;

            default:
                System.out.println("Invalid choice! Please enter a valid option.");
        }
    } while (choice != 4);

    scanner.close();
  }
}
```

3. Output:



```
Card Collection System:
1. Add Card
2. Find Cards by Symbol
3. Display All Cards
4. Exit
Enter your choice: 1
Enter Card Symbol (Hearts, Diamonds, Clubs, Spades): Hearts
Enter Card Value (e.g., Ace, 2, King, Queen): King
Card added successfully!

Enter your choice: 1
Enter Card Symbol (Hearts, Diamonds, Clubs, Spades): Diamonds
Enter Card Value (e.g., Ace, 2, King, Queen): Queen
Card added successfully!

Enter your choice: 2
Enter symbol to search (Hearts, Diamonds, Clubs, Spades): Hearts
Cards with symbol Hearts: [King of Hearts]
```