

# Assignment (Medium):

🔥 Medium Level: Card Collection System Problem Statement 🔥 Create a program to collect and store all the cards (e.g., playing cards) and assist users in finding all the cards of a given symbol using the Collection interface.

Key Concepts Used 📌 HashMap: To store cards with their symbols as keys.

Collection Interface: To manage and manipulate the card data.

User Interaction: Allow users to search for cards by symbol.

How to Run 📌 Navigate to the Medium/ folder.

Compile and run the CardCollection.java file.

Enter the symbol (e.g., "Hearts", "Spades") to find all cards of that symbol.

## Code:

```
import java.util.*;

class CardCollection {
    static HashMap<String, ArrayList<String>> cardMap = new
HashMap<>();
    static Scanner sc = new Scanner(System.in);

    public static void main(String[] args) {
        while (true) {
            System.out.println("\n1. Add Card");
            System.out.println("2. Search Cards by Symbol");
            System.out.println("3. Show All Cards");
            System.out.println("4. Exit");
            System.out.print("Enter choice: ");
            int choice = sc.nextInt();
            sc.nextLine(); // Consume newline

            switch (choice) {
                case 1: addCard(); break;
                case 2: searchCards(); break;
                case 3: showAllCards(); break;
                case 4: System.out.println("Exiting..."); return;
                default: System.out.println("Invalid choice! Try
again.");
            }
        }
    }

    static void addCard() {
        System.out.print("Enter Card Symbol (e.g., Hearts, Spades):
");
        String symbol = sc.nextLine();
        System.out.print("Enter Card Name (e.g., Ace, King, 2, 3):
");
        String name = sc.nextLine();

        cardMap.putIfAbsent(symbol, new ArrayList<>());
        cardMap.get(symbol).add(name);
        System.out.println("Card added!");
    }

    static void searchCards() {
        System.out.print("Enter symbol to search: ");
        String symbol = sc.nextLine();

        if (cardMap.containsKey(symbol)) {
            System.out.println("Cards in " + symbol + ": " +
cardMap.get(symbol));
        } else {
            System.out.println("No cards found for this symbol.");
        }
    }
}
```

```
    }

    static void showAllCards() {
        if (cardMap.isEmpty()) {
            System.out.println("No cards in the collection.");
        } else {
            for (String symbol : cardMap.keySet()) {
                System.out.println(symbol + ": " +
cardMap.get(symbol));
            }
        }
    }
}
```

## Output:

```
cd "d:\coding\java\" ; if ($?) {

1. Add Card
2. Search Cards by Symbol
3. Show All Cards
4. Exit
Enter choice: 1
Enter Card Symbol (e.g., Hearts, Spades): Spades
Enter Card Name (e.g., Ace, King, 2, 3): Ace
Card added!

1. Add Card
2. Search Cards by Symbol
3. Show All Cards
4. Exit
Enter choice: 3
Spades: [Ace]

1. Add Card
2. Search Cards by Symbol
3. Show All Cards
4. Exit
Enter choice: 4
Exiting...
PS D:\coding\java>
```