

ASSIGNMENT NO.4

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Batch: AIML B1

Title: DECK

1. Main.java

```
// Main.java
```

```
//Name - Neil Cardoz
```

```
//PRN - 23070126079
```

```
//Batch - AIML B1
```

```
import java.util.Scanner;
```

```
public class Main {
```

```
    public static void main(String[] args) {
```

```
        Scanner scanner = new Scanner(System.in);
```

```
        Deck deck = new Deck();
```

```
        deck.createDeck(); // Initialize the deck with cards
```

```
int choice;

do {

    System.out.println("\nMenu:");

    System.out.println("1. Print Deck");

    System.out.println("2. Print a Random Card");

    System.out.println("3. Find a Card");

    System.out.println("4. Shuffle Deck");

    System.out.println("5. Deal 5 Random Cards");

    System.out.println("6. Compare Two Cards");

    System.out.println("7. Check if Two Cards Have the Same
Suit");

    System.out.println("8. Exit");

    System.out.print("Enter your choice: ");

    choice = scanner.nextInt();

    switch (choice) {

    case 1:

        deck.printDeck();

        break;

    case 2:

        deck.printCard();

        break;
```

case 3:

```
System.out.print("Enter card rank: ");  
String rank = scanner.next();  
System.out.print("Enter card suit: ");  
String suit = scanner.next();  
deck.findCard(rank, suit);  
break;
```

case 4:

```
deck.shuffleDeck();  
System.out.println("Deck shuffled successfully.");  
break;
```

case 5:

```
deck.dealCard();  
break;
```

case 6:

```
System.out.println("Enter details for the first  
card:");
```

```
System.out.print("Rank: ");  
String rank1 = scanner.next();  
System.out.print("Suit: ");  
String suit1 = scanner.next();
```

```
System.out.println("Enter details for the second  
card:");
```

```
System.out.print("Rank: ");
```

```

        String rank2 = scanner.next();

        System.out.print("Suit: ");

        String suit2 = scanner.next();

        boolean sameRank = deck.compareCard(new
Card(rank1, suit1), new Card(rank2, suit2));

        System.out.println("Do the cards have the same
rank? " + sameRank);

        break;
    case 7:

        System.out.println("Enter details for the first
card:");

        System.out.print("Rank: ");

        String r1 = scanner.next();

        System.out.print("Suit: ");

        String s1 = scanner.next();

        System.out.println("Enter details for the second
card:");

        System.out.print("Rank: ");

        String r2 = scanner.next();

        System.out.print("Suit: ");

        String s2 = scanner.next();

        boolean sameSuit = deck.sameCard(new Card(r1, s1),
new Card(r2, s2));

```

```

                System.out.println("Do the cards have the same
suit? " + sameSuit);

                break;

            case 8:

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

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

                break;

            default:

                System.out.println("Invalid choice. Try again.");

        }

    } while (choice != 8);

    scanner.close();

}

}

```

2. Card.java

```

// Card.java

import java.util.*;

class Card{

```

```
String rank;

String suit;

public Card(String rank, String suit) {

    this.rank = rank;

    this.suit = suit;

}

public String getRank() {

    return rank;

}

public String getSuit() {

    return suit;

}

public String toString() {

    return rank + " of " + suit;

}

}
```

3. Student.java

```
//Deck.java
```

```
import java.util.*;
```

```
class Deck {
```

```
    ArrayList<Card> deck;
```

```
    public Deck(){
```

```
        deck = new ArrayList<>();
```

```
    }
```

```
    public void createDeck(){
```

```
        String[] ranks =
```

```
        {"A","2","3","4","5","6","7","8","9","10","J","Q","K"};
```

```
        String[] suits = {"Hearts", "Spades", "Diamonds", "Clubs"};
```

```
        for (String rank: ranks){
```

```
            for(String suit: suits){
```

```
                deck.add(new Card(rank,suit));
```

```
            }
```

```
        }
```

```
    }
```

```
    void printDeck() {
```

```
        for(Card card : deck) {
```

```
            System.out.println(card);
```

```
            System.out.println("Deck shuffled.");
```

```
        }  
    }  
  
    public void shuffleDeck(){  
        Collections.shuffle(deck);  
    }  
  
    // Print 1 randomcard from the deck  
    public void printCard(){  
        Collections.shuffle(deck);  
        System.out.println("The cards is "+deck.get(1));  
    }  
  
    // Method to check if two cards belong to the same suit  
    public boolean sameCard(Card c1, Card c2) {  
        return c1.getSuit().equals(c2.getSuit());  
    }  
  
    // Method to check if two cards have the same rank  
    public boolean compareCard(Card c1, Card c2) {  
        return c1.getRank().equals(c2.getRank());  
    }  
  
    // Method to find and print a specific card  
    public void findCard(String rank, String suit) {  
        for (Card card : deck) {  
            if (card.getRank().equals(rank) &&  
card.getSuit().equals(suit)) {
```



```
        System.out.println("Card found: " + card);
        return;
    }
}
System.out.println("Card not found.");
}

// Method to deal 5 random cards
public void dealCard() {
    Collections.shuffle(deck);
    System.out.println("Dealt 5 random cards:");
    for (int i = 0; i < 5; i++) {
        System.out.println(deck.get(i));
    }
}

}
```

4. Output

```
PS D:\Programming in Java Lab (PIJL)\Lab_Assignments\Deck-Java-Lab> java .\Main.java
```

```
Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 1
A of Hearts
Deck shuffled.
A of Spades
Deck shuffled.
A of Diamonds
Deck shuffled.
A of Clubs
Deck shuffled.
2 of Hearts
Deck shuffled.
2 of Spades
Deck shuffled.
2 of Diamonds
Deck shuffled.
2 of Clubs
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Spades
Deck shuffled.
3 of Diamonds
Deck shuffled.
3 of Clubs
Deck shuffled.
4 of Hearts
Deck shuffled.
4 of Spades
```

Windows PowerShell

```
4 of Diamonds
Deck shuffled.
4 of Clubs
Deck shuffled.
5 of Hearts
Deck shuffled.
5 of Spades
Deck shuffled.
5 of Diamonds
Deck shuffled.
5 of Clubs
Deck shuffled.
6 of Hearts
Deck shuffled.
6 of Spades
Deck shuffled.
6 of Diamonds
Deck shuffled.
6 of Clubs
Deck shuffled.
7 of Hearts
Deck shuffled.
7 of Spades
Deck shuffled.
7 of Diamonds
Deck shuffled.
7 of Clubs
Deck shuffled.
8 of Hearts
Deck shuffled.
8 of Spades
Deck shuffled.
8 of Diamonds
Deck shuffled.
8 of Clubs
Deck shuffled.
9 of Hearts
Deck shuffled.
9 of Spades
Deck shuffled.
9 of Diamonds
```

```
Windows PowerShell
9 of Hearts
Deck shuffled.
9 of Spades
Deck shuffled.
9 of Diamonds
Deck shuffled.
9 of Clubs
Deck shuffled.
10 of Hearts
Deck shuffled.
10 of Spades
Deck shuffled.
10 of Diamonds
Deck shuffled.
10 of Clubs
Deck shuffled.
J of Hearts
Deck shuffled.
J of Spades
Deck shuffled.
J of Diamonds
Deck shuffled.
J of Clubs
Deck shuffled.
Q of Hearts
Deck shuffled.
Q of Spades
Deck shuffled.
Q of Diamonds
Deck shuffled.
Q of Clubs
Deck shuffled.
K of Hearts
Deck shuffled.
K of Spades
Deck shuffled.
K of Diamonds
Deck shuffled.
K of Clubs
Deck shuffled.
```

```
Windows PowerShell
K of Diamonds
Deck shuffled.
K of Clubs
Deck shuffled.

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 2
The cards is 6 of Spades

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 2
The cards is 7 of Diamonds

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 3
Enter card rank: 5
Enter card suit: Spades
```

```
Windows PowerShell
The cards is 7 of Diamonds

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 3
Enter card rank: 5
Enter card suit: Spades
Card found: 5 of Spades

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 4
Deck shuffled successfully.

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 5
Dealt 5 random cards:
5 of Spades
3 of Hearts
3 of Hearts
9 of Hearts
A of Hearts
```

```
Windows PowerShell
8. Exit
Enter your choice: 4
Deck shuffled successfully.

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 5
Dealt 5 random cards:
5 of Spades
3 of Hearts
K of Hearts
9 of Hearts
A of Hearts

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 6
Enter details for the first card:
Rank: 5
Suit: Clubs
Enter details for the second card:
Rank: 5
Suit: Spades
Do the cards have the same rank? true

Menu:
1. Print Deck
```

```
Windows PowerShell
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 6
Enter details for the first card:
Rank: 5
Suit: Clubs
Enter details for the second card:
Rank: 5
Suit: Spades
Do the cards have the same rank? true

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 7
Enter details for the first card:
Rank: A
Suit: spades
Enter details for the second card:
Rank: a
Suit: Spades
Do the cards have the same suit? false

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
```

```
Windows PowerShell
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 7
Enter details for the first card:
Rank: A
Suit: spades
Enter details for the second card:
Rank: a
Suit: Spades
Do the cards have the same suit? false

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 7
Enter details for the first card:
Rank: A
Suit: Spades
Enter details for the second card:
Rank: A
Suit: Clubs
Do the cards have the same suit? false

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 8
Exiting program.
```

```
Windows PowerShell
Enter your choice: 7
Enter details for the first card:
Rank: A
Suit: spades
Enter details for the second card:
Rank: a
Suit: Spades
Do the cards have the same suit? false

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 7
Enter details for the first card:
Rank: A
Suit: Spades
Enter details for the second card:
Rank: A
Suit: Clubs
Do the cards have the same suit? false

Menu:
1. Print Deck
2. Print a Random Card
3. Find a Card
4. Shuffle Deck
5. Deal 5 Random Cards
6. Compare Two Cards
7. Check if Two Cards Have the Same Suit
8. Exit
Enter your choice: 8
Exiting program.
Exiting program.
PS D:\Programming in Java Lab (PIJL)\Lab_Assignments\Deck-Java-Lab> |
```

5. Repository

<http://github.com/Neil-Cardoz/Deck-Java-Lab>