ASSIGNMENT NO.4

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Batch: AIML B1

Title: DECK

1. Main.java

```
// Main.java
//Name - Neil Cardoz
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//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));
```

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));
    }
}</pre>
```

}

4. Output

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

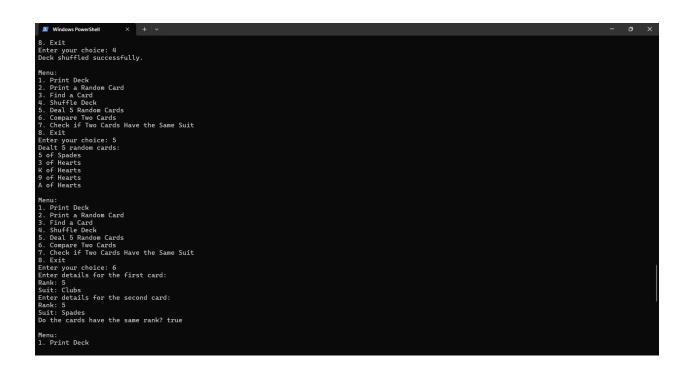
Menu:

1. Priot a Randon 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
Abek shuffled.
A of Spades
Deck shuffled.
A of Dalanonds
Deck shuffled.
2 of Hearts
Deck shuffled.
2 of Dianonds
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Clubs
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Glamonds
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Dalanonds
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Dalanonds
Deck shuffled.
3 of Hearts
Deck shuffled.
3 of Dalanonds
Deck shuffled.
4 of Spades
```

```
# Windows NowerShell X + V - O X

9 of learnts
Deck shuffled.
9 of Spades
Deck shuffled.
10 of Clubs
Deck shuffled.
10 of Spades
Deck shuffled.
11 of Spades
Deck shuffled.
12 of Clubs
Deck shuffled.
13 of Spades
Deck shuffled.
14 of Spades
Deck shuffled.
15 of Spades
Deck shuffled.
16 of Spades
Deck shuffled.
16 of Spades
Deck shuffled.
17 of Clubs
Deck shuffled.
18 of Spades
Deck shuffled.
19 of Spades
Deck shuffled.
19 of Spades
Deck shuffled.
19 of Spades
Deck shuffled.
```

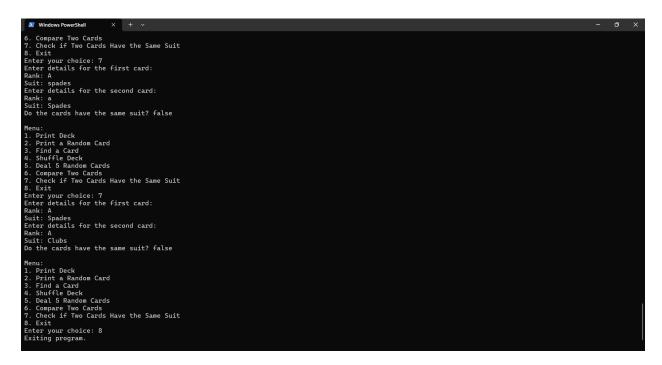




```
## Windows PowerStell X + V - O X

3. Find a Card
4. Shuffle Deck
5. Deal 5. Rando Cards
6. Capta Cards
7. Check 15 Two Cards Have the Same Suit
8. Exit
8. Exit
8. Exit
9. Exit Spades
10. The Cards Have the same rank? true

**Menn:
9. Print Deck
1. Print a Randon Cards
6. Compare Two Cards
7. Check 15 Two Cards Have the Same Suit
8. Exit Spades
9. Suit: Spades
10. Suit: Spades
```



```
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
5. Compare Prow Cards
6. Compare Prow Cards
7. Check if Two Cards Have the Same Suit?
8. Exit
Enter details for the second card:
Rank: A
Suit: Spades
Do the cards have the Same suit?
Enter your choice: 7
Enter your choice: 7
Enter your choice: 7
Enter of 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
6. Suit: Clubs
Compare Inso Cards
```

5. Repository

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