Week 4

Exercise 1.4.10

Write a program `Deal` that takes an integer command-line argument `n` and prints `n` poker hands (five cards each) from a shuffled deck, separated by blank lines.

```java
public class Deal {
  public static void main(String[] args) {
    Card[] deck = new Card[52];
    for(var i = 0; i < 52; i++) {
      var value = (i % 13) + 1;
      var suit = i / 13;
      deck[i] = Card.fromNumbers(suit, value);
      System.out.print(deck[i].sprintCard());
    }

  }
}
```

Listing 1: Deal

```java
public class Card {
  public static final String CLUBS = "♣";
  public static final String DIAMONDS = "♦";
  public static final String HEARTS = "♥";
  public static final String SPADES = "♠";

  public enum Suit {
    Clubs,
    Diamonds,
    Hearts,
    Spades;

    public String sprint() {
      switch(this) {
        case Clubs: return Card.CLUBS;
        case Diamonds: return Card.DIAMONDS;
        case Hearts: return Card.HEARTS;
        case Spades: return Card.SPADES;
      }
      throw new NullPointerException();
    }
  }

  public Suit suit;
  public int value;

  public Card(Suit suit, int value) {
    this.suit = suit;
    this.value = value;
  }

  public static Card fromNumbers(int suit, int value) {
    return new Card(Suit.values()[suit], value);
  }

  public String sprintValue() {
    if(this.value == 1) {
      return "A";
    } else if(this.value == 11) {
      return "J";
    } else if(this.value == 12) {
      return "Q";
    } else if(this.value == 13) {
      return "K";
    } else if(this.value == 10) {
      return "⒑";
    }
    return Integer.toString(this.value);
  }

  public String sprintCard() {
    var output = "";
    var value = this.sprintValue();
    var suit = this.suit.sprint();

    output += value;

    if(this.value > 10) {
      output += "   ";
    } else {
      output += this.value >= 4 ? suit : " ";
      output += this.value < 4 && this.value > 1 ? suit : " ";
      output += this.value >= 4 ? suit : " ";
    }
    output += value;
    output += "\n";

    if(this.value > 10) {
      output += "     \n";
      output += "     \n";
    } else {
      output += " ";
      output += this.value >= 6 ? suit : " ";
      output += this.value % 2 == 1 || this.value >= 8 ? suit : " ";
      output += this.value >= 6 ? suit : " ";
      output += " ";
      output += "\n";


      output += " ";
      output += this.value >= 9 ? suit : " ";
      output += this.value == 8 || this.value == 10 ? suit : " ";
      output += this.value >= 9 ? suit : " ";
      output += " ";
      output += "\n";
    }


    output += value;

    if(this.value > 10) {
      output += "   ";
    } else {
      output += this.value >= 4 ? suit : " ";
      output += this.value < 4 && this.value > 1 ? suit : " ";
      output += this.value >= 4 ? suit : " ";
    }
    output += value;
    output += "\n";

    return output;
  }
}
```

Listing 2: Card

Exercise 1.4.14

Write a code fragment to print the transposition (rows and columns exchanged) of a square two-dimensional array. For the example spreadsheet array in the text, you code would print the following:

```
99 98 92 94 99 90 76 92 97 89
85 57 77 32 34 46 59 66 71 29
98 78 76 11 22 54 88 89 24 38
```