import java.util.Random; // Import for generating random rank and suit

// Class definition: Card (playing card) and implements Comparable for sorting

**public class Card implements Comparable<Card> {**

// Instance variables to store rank and suit as integers

private int rank;

private int suit;

// Static arrays to map integer values to rank and suit names

private static String[] ranks = {

"2", "3", "4", "5", "6", "7", "8", "9", "10",

"Jack", "Queen", "King", "Ace"

};

private static String[] suits = {

"Clubs", "Diamonds", "Hearts", "Spades"

};

// Constructor: creates a card with random rank and suit

public Card() {

Random random = new Random();

this.rank = random.nextInt(Card.ranks.length);

this.suit = random.nextInt(Card.suits.length);

}

// Overloaded constructor: creates a card with given rank and suit

public Card(int rank, int suit) {

this.rank = rank;

this.suit = suit;

}

// Getter method: returns rank name as a string

public String getRank() {

return Card.ranks[this.rank];

}

// Getter method: returns suit name as a string

public String getSuit() {

return Card.suits[this.suit];

}

// Normal method: compares this card to another (true if this is bigger)

public boolean isBiggerThan(Card anotherCard) {

return this.rank > anotherCard.rank;

}

// toString method: returns a readable string representation of the card

public String toString() {

return getRank() + " of " + getSuit();

}

// Getter method: returns rank as an integer (for internal comparison)

public int getRankValue() {

return this.rank;

}

// Normal method: returns the color of the card based on its suit

public String getColour() {

if (this.getSuit().equals("Diamonds") || this.getSuit().equals("Hearts")) {

return "Red";

} else {

return "Black";

}

}

// compareTo method: required by Comparable interface; compares cards by rank

public int compareTo(Card otherCard) {

if (this.getRankValue() > otherCard.getRankValue()) {

return 1;

} else if (this.getRankValue() < otherCard.getRankValue()) {

return -1;

} else {

return 0;

}

}

}

// Class definition: used to test the Card class

**public class CardTest {**

// Main method: entry point for running the test

public static void main(String[] args) {

// Create two random cards using the default constructor

Card card1 = new Card();

Card card2 = new Card();

// Display both cards using toString()

System.out.println("Card 1 is the " + card1);

System.out.println("Card 2 is the " + card2);

// Compare the two cards by rank and print the result

if (card1.compareTo(card2) > 0) {

System.out.println("Card 1 is bigger");

} else if (card1.compareTo(card2) < 0) {

System.out.println("Card 2 is bigger");

} else {

System.out.println("Card 1 and Card 2 are equal");

}

}

}