Black Jack Simulator

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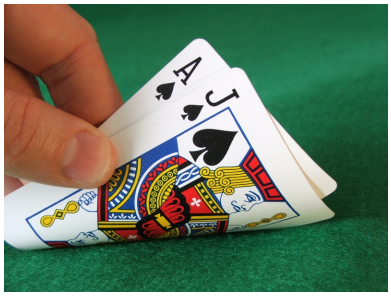

Figure 1: Gambling simulator. Play without loosing your year salary and wife

Blackjack, also known as twenty-one, is the most widely played casino banking game in the world.[1] Blackjack is a comparing card game between a player and dealer, meaning players compete against the dealer but not against other players. It is played with one or more decks of 52 cards.

- If you want another card to try and get you closer to 21, you Hit
- To stick with what you have got, you Stand
- The maximum winning amount of points you can get is 21
- If you score is greater than 21, you will loose.

PYTHON CODE

```
import java.util.*;
import java.util.Scanner; //import scanner library

public class Cards { //create a class Cards

    static int count = 52; //the count represents the number of cards remaining in the deck

    public static int rand(int high) {
        return (int)(high * Math.random() + 1);
    }

    public static void shuffle(String[] the_deck, int switches) {
        String temp;
        int a;
        int b;
        for (int i = 0; i < switches; i++) {
            a = rand(52);
            b = rand(52);
            temp = the_deck[a - 1];
            the_deck[a - 1] = the_deck[b - 1];
            the_deck[b - 1] = temp;
        }
    }

    public static String deal(String[] the_deck) {
        count = count - 1;
        return the_deck[count];
    }

    public static int aces(String the_card) {
        if (the_card.charAt(0) == 'A') {
            return 1;
        } else {
            return 0;
        }
    }

    public static int aces(String[] the_hand) {
        int sum = 0; //initial value
        for (int i = 0; i < the_hand.length; i++) {
            sum = sum + aces(the_hand[i]);
        }
        return sum; // return sum value
    }

    public static int aces(ArrayList the_hand) {
        int sum = 0;
        for (int i = 0; i < the_hand.size(); i++) {
            sum = sum + aces(the_hand.get(i).toString());
        }
        return sum;
    }

    public static int value(String the_card) {
        char first = the_card.charAt(0);
        if (first == '1' | first == 'J' | first == 'Q' | first == 'K') {
            return 10;
        } else if (first == 'A') {
            return 11;
        } else {
            return Character.getNumericValue(first);
        }
    }
```

```
public static int value(String[] the_hand) {
    int sum = 0;
    for (int i = 0; i < the_hand.length; i++) {
        sum = sum + value(the_hand[i]);
    }
    return sum;
}

public static int value(ArrayList the_hand) {
    int sum = 0;
    int num_aces = aces(the_hand);
    for (int i = 0; i < the_hand.size(); i++) {
        sum = sum + value(the_hand.get(i).toString());
    }
    while (num_aces > 0 && sum > 21) {
        sum = sum - 10;
        num_aces = num_aces - 1;
    }
    return sum;
}



public static void main(String[] args) { //main method

    Scanner scan = new Scanner(System.in);

    String[] deck = new String[52]; // create deck of 52 card
    String[] suit = new String[4]; // 4 types of cards
    int[] card = new int[13]; // numberof card from 0 to 13

    for (int i = 0; i < card.length; i++) {
        card[i] = i + 1;
    }
    String cardName;
    suit[0] = "Clubs"; // Include Clubs
    suit[1] = "Diamonds"; // Include Diamonds
    suit[2] = "Hearts"; // Include Hearts
    suit[3] = "Spades";// Include Spades


    for (int i = 0; i < 4; i++) {
        for (int j = 0; j < 13; j++) {
            if (j == 0) {
                cardName = "Ace";
            } else if (j == 10) {
                cardName = "Jack";
            } else if (j == 11) {
                cardName = "Queen";
            } else if (j == 12) {
                cardName = "King";
            } else {
                cardName = Integer.toString(card[j]);
            }
            deck[13 * i + j] = cardName + "_" + suit[i];
        }
    }

    shuffle(deck, 1000); //shuffle 1000 times

    String say;
    boolean state = true;

    ArrayList hand = new ArrayList();
    ArrayList dealer_hand = new ArrayList();
    dealer_hand.add(deal(deck));
    dealer_hand.add(deal(deck));
    hand.add(deal(deck));

    while (state) { // while state is true do

        hand.add(deal(deck));

        System.out.println("Dealer showing: " + dealer_hand.get(1));
        System.out.println("Contents of hand: " + hand);
        System.out.println("Your score is: " + value(hand));

        if (value(hand) > 21) { //If you score is greater than 21
            System.out.println("BUST!!!!"); //You are busted and you loose.
            break;
        }

        System.out.println("hit[H] or stand[S]?"); //Increment the score or stand
        say = scan.nextLine(); //Scan if you want to hit or stand
        if (say.equals("H")) { //If you want to hit
            state = true; //
        } else { // or
            state = false; //
        }
    }

    while (value(dealer_hand) < 17) {
        dealer_hand.add(deal(deck));
    }


    System.out.println("Dealer has: " + dealer_hand); //Output "Dealer has" score
    System.out.println("Dealer score is: " + value(dealer_hand)); //Dealer's score
```

```
        if ((value(hand) > value(dealer_hand) && value(hand) < 22) | (value(dealer_hand) > 21)) { //If you score is bigger than dealer's and less than 21 do
            System.out.println("YOU WIN !!!!"); // Output "YOU WIN !!!!"
        } else { // or do
            System.out.println("YOU LOSE. BOO !!!!"); // Output "YOU LOOSE. BOO !!!!"
        }
    }
}
```

OUTPUT:

Your score is: 29 BUST!!!! Dealer has: [Jack$_S pades, 3_S pades, 4_D iamonds$]$Dealer score is:$ 17$YOU LOSE. BOO$!!!! The output depends on what your score is