Black Jack

Ojo ,Ohiz

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Black Jack, a famously played poker game is a game mostly played among poker either as a simple hobby amongst friends, or even as a form of gambling in places such as Las Vegas.

NEW LANGUAGE

The language we have shifted to now is known as JAVA. Perhaps the most used coding language on earth, unlike the last language, (Python), they need work with "Classes and Methods" , you would need to specialise the data type of and object, and the organisation of the code doesn't matter how it operates.

```
public class "any chosen name by author"
```

This code is what we always need and started with.

JAVA CODE

```
import java.util.*;
public class Cards{

  static int count=52;

  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];
```

We need to import util* when we are going to use the methods Scanner or Arrylist in the following code.The * have included that all things in java.util.

The count represents the number of cards remaining in the deck.

This is going to pick a random number for the range that you set.

This is the methods with no return type, that why we put "void" and this methods help us to shuffle the card in deck with using for loop.

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

This is the method deal is used to get one card from the deck to the player.

This method is changing what if the cards in deck that started with "A" to the value 1.

Here are a overloading code that using aces, and these code can help us to check our cards in array that start with "A" and turn it to 1.

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This method is going to changing the card in deck that start with "1", "J", "Q", "K", to the value 10, and if it is "A" get the value 11, and the other number just get what their own number value.

```
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;
}
```

Here is for loop that counting the sum value of cards in your hand.

There is a Ace system, we are using while loop to work when the sum value of your hand cards is over 21 then the Ace value will be 1, but when the sum value is less than 21, the Ace value will be 11.

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

   Scanner scan = new Scanner(System.in);

   String[] deck = new String[52];
   String[] suit = new String[4];
   int[] card = new int[13];

   for (int i=0; i<card.length; i++){
     card[i]=i+1;}
   String cardName;
   suit[0] = "Clubs";
   suit[1] = "Diamonds";
   suit[2] = "Hearts" ;
   suit[3] = "Spades";
   for(int i=0; i<4; i++){
     for(int j=0; j<13; j++){
```

Here is the main methods setting the cards and the suit, number of cards with the for loop and if else funtions.

```
        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];
      }
    }

    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)

    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){
      System.out.println("BUST!!!!");
      break;
    }

    System.out.println( "hit[H] or stand[S]?");
         say=scan.nextLine();
         if(say.equals("H")){state=true;}
         else{state=false;}
    }

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

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

    if( (value(hand)>value(dealer_hand) && value(hand)<22)
     | (value(dealer_hand) > 21) ){
      System.out.println( "YOU WIN !!!!");
    }
    else{System.out.println( "YOU LOSE. BOO !!!!");}

  }
}
```

```
 > run Cards
Dealer showing: 7_Diamonds
Contents of hand: [6_Hearts, 6_Spades]
Your score is: 12
hit[H] or stand[S]?
 [DrJava Input Box]
Dealer showing: 7_Diamonds
Contents of hand: [6_Hearts, 6_Spades, Ace_Hearts]
Your score is: 13
hit[H] or stand[S]?
 [DrJava Input Box]
Dealer showing: 7_Diamonds
Contents of hand: [6_Hearts, 6_Spades, Ace_Hearts, 9_Spades]
Your score is: 22
BUST!!!!
Dealer has: [6_Clubs, 7_Diamonds, 5_Diamonds]
Dealer score is: 18
YOU LOSE. BOO !!!!
>
```