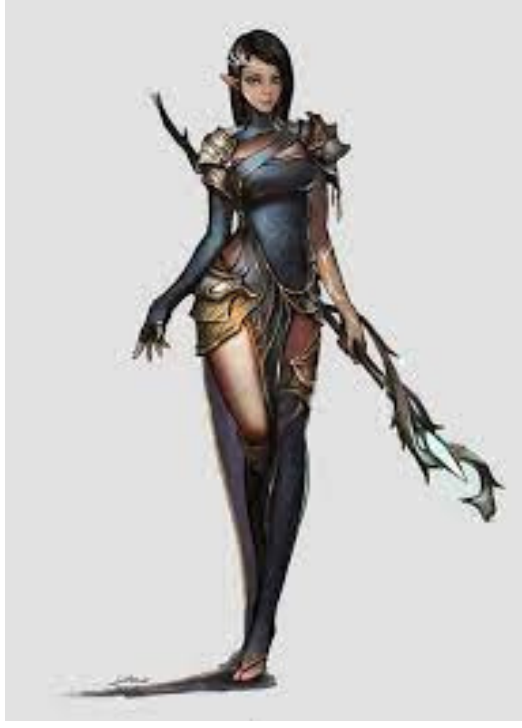
BLACKJACK GAME PRESENTATION

How we built our Blackjack game with Python

ABOUT US



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ABOUT BLACKJACK

- Blackjack is a card-based game played at casinos.
- The participants in this game do not compete with the dealer assigned by the casino.
- The magic number for Blackjack is 21.
- If a player gets an exact 21 = Win
- If a player gets above 21 = Loose

STEP BY STEP PLAN

Step 1: Imports and Global Variables

Step 2: Create a Card Class

Step 3: Create a Deck Class

Step 4: Create a Hand Class

Step 5: Write a function for taking hits

Step 6: Write a function prompting the Player to Hit or Stand

Step 7: Write functions to display cards

Step 8: Write functions to handle end of game scenarios

STEP BY STEP PLAN

1. if dealer_card_total > player_card_total: player loses
2. if dealer_card_total < player_card_total: player won
3. if dealer_card_total= player_card_total: tie
4. 7: if hit:
5. Update player_card_total until he stands
6. Hit or stand option after every turn
7. if player_card_total = 21, he wins blackjack
8. if player_card_total > 21, he loses

THE CODE

```
import random
suits = ('Hearts', 'Diamonds', 'Spades', 'Clubs')
ranks = ('Two', 'Three', 'Four', 'Five', 'Six', 'Seven', 'Eight', 'Nine', 'Ten', 'Jack', 'Queen',
'King', 'Ace')
values = {'Two':2, 'Three':3, 'Four':4, 'Five':5, 'Six':6, 'Seven':7, 'Eight':8, 'Nine':9, 'Ten':10,
'Jack':10,
        'Queen':10, 'King':10, 'Ace':11}
playing = True
class Card:
    def __init__(self, suit, rank):
        self.suit = suit
        self.rank = rank
    def __str__(self):
        return self.rank + ' of ' + self.suit
```

THE CODE

```
i#creating Deck, shuffle function and single dealing
class Deck:
    def __init__(self):
        self.deck = []  # start with an empty list#
        for suit in suits:
            for rank in ranks:
                self.deck.append(Card(suit, rank))
    def __str__(self):
        deck_comp = '' #strating competition deck empty#
        for card in self.deck:
            deck_comp += '\n' + card.__str__() #add each card object;s strin#
        return 'The deck has' + deck_comp
    def shuffle(self):
        random.shuffle(self.deck)
    def deal(self):
        single_card = self.deck.pop()
        return single_card
```

THE CODE

```
i#creating a hand#
class Hand:
    def __init__(self):
        self.cards = []  # start with an empty list as we did in the Deck class
        self.value = 0   # start with zero value
        self.aces = 0    # add an attribute to keep track of aces
    def add_card(self,card):
        self.cards.append(card)
        self.value += values[card.rank]
        if card.rank == 'Ace':
            self.aces += 1
    def adjust_for_ace(self):
        while self.value > 21 and self.aces:
            self.value -= 10
            self.aces -= 1
```

THE CODE

```
# taking hits#
def hit(deck,hand):
    hand.add_card(deck.deal())
    hand.adjust_for_ace()
#player to take hits or stand#
def hit_or_stand(deck,hand):
    global playing
    while True:
        x = input("Would you like to Hit or Stand? Enter 'h' or 's'")
        if x[0].lower() == 'h':
            hit(deck,hand)  # hit() function defined above
        elif x[0].lower() == 's':
            print("Player stands. Dealer is playing.")
            playing = False
        else:
            print("Sorry, please try again.")
            continue
        break
```

THE CODE

```
#functions to display cards#
def show_some(player,dealer):
    print("\nDealer's Hand")
    print("<card hidden>")
    print(' ', dealer.cards[1])
    print("\nPlayer's Hand: ", *player.cards, sep= '\n')
def show_all(player,dealer):
    print("\nDealer's Hand:", *dealer.cards, sep="\n")
    print("Dealer's Hand =",dealer.value)
    print("\nPlayer's Hand: ", *player.cards, sep= '\n')
    print("Player's Hand = ", player.value)
def player_busts(player,dealer):
    print("Player busts!")
def player_wins(player,dealer):
    print("Player wins!")
def dealer_busts(player,dealer):
    print("Dealer busts!")
def dealer_wins(player,dealer):
    print("Dealer wins!")
def push(player,dealer):
    print("Dealer and Player tie! It's a push.")
```

THE CODE

```
while True:
    # Print an opening statement
    print("Welcome to my kickass Blackjack game.")
    # Create & shuffle the deck, deal two cards to each player
    deck = Deck()
    deck.shuffle()
    player_hand = Hand()
    player_hand.add_card(deck.deal())
    player_hand.add_card(deck.deal())
    dealer_hand = Hand()
    dealer_hand.add_card(deck.deal())
    dealer_hand.add_card(deck.deal())
    # Show cards (but keep one dealer card hidden)
    show_some(player_hand, dealer_hand)
    while playing:  # recall this variable from our hit_or_stand function
        # Prompt for Player to Hit or Stand
        hit_or_stand(deck, player_hand)
        # Show cards (but keep one dealer card hidden)
        show_some(player_hand,dealer_hand)
        # If player's hand exceeds 21, run player_busts() and break out of loop
        if player_hand.value >21:
            player_busts(player_hand, dealer_hand, player_chips)
            break
```

THE CODE

```
# If Player hasn't busted, play Dealer's hand until Dealer reaches 17
  if player_hand.value <= 21:
    while dealer_hand.value <17:
      hit(deck, dealer_hand)
    # Show all cards
    show_all(player_hand,dealer_hand)
    # Run different winning scenarios
    if dealer_hand.value > 21:
      dealer_busts(player_hand,dealer_hand)
    elif dealer_hand.value > player_hand.value:
      dealer_wins(player_hand,dealer_hand)
    elif dealer_hand.value < player_hand.value:
      player_wins(player_hand,dealer_hand)
    else:
      push(player_hand,dealer_hand)
```

THE CODE

```
# Ask to play again
  new_game = input("would you like to play again? Enter 'y' or 'n'")
  if new_game[0].lower() == 'y':
      playing = True
      continue
  else:
      print('Thanks for playing! ')
      break
```

THE CODE

```
# Ask to play again
  new_game = input("would you like to play again? Enter 'y' or 'n'")
  if new_game[0].lower() == 'y':
      playing = True
      continue
  else:
      print('Thanks for playing! ')
      break
```

THE GAME

Now lets play!

https://github.com/Gixi0612/IronhackLabs_Gian gLe/blob/master/Module%201/Final%20Blackjack .ipynb

THANK YOU