python porjects\black_jack.py

```python
import random

# function to drawww a random card from the deck

def deck():
    ranks = ['2', '3', '4', '5', '6', '7', '8', '9', '10', 'J', 'Q', 'K', 'A']
    decks = []  # empty list to hold the cards
    for rank in ranks:
        decks.extend([rank] * 4) # so there are 4 suits of cards the loop ends here
    random.shuffle(decks)
    return decks # return to decks up there

# card value function

def card_value(card):
    if card in ['J', 'Q', 'K']:
        return 10
    elif card == 'A':
        return 11
    else:
        return int(card)

# function of hand value

def hand_value(hand):
    total = 0
    aces = 0    # every hand starts with 0

    for card in hand:
        if card in ['J', 'Q', 'K']:
            total += 10
        elif card == 'A':
            total += 11
        else:
            total += int(card) #converts the string to an integer
# so this step is lopping through earch card, identifying its value and adding it to the total

    for card in hand:
        if card == 'A':
            aces += 1

    while total > 21 and aces > 0: # so let say your hand is over 21 and you have more than 0 aces
        total -= 10               # -10 makes the ace worth 1 instead of 11
        aces -= 1                 # so it reduces the number of aces by 1, so that the loop can end aces = 0

    return total
```

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47
48  # now the main game function
49  def blackjack():
50      print("Welcome to Blackjack!")
51      deck_of_cards = deck()  # calling the deck function to get a shuffled deck of cards
52      player_hand = []        # empty list for player hand
53      dealer_hand = []        # empty list for dealer hand
54
55      # dealing initial two cards to player and dealer
56      player_hand.append(deck_of_cards.pop())
57      dealer_hand.append(deck_of_cards.pop())    #by using append which adds an item to the end
    of the list
58      player_hand.append(deck_of_cards.pop())
59      dealer_hand.append(deck_of_cards.pop())
60
61      while True:
62          print(f"Your hand: {player_hand}, total value: {hand_value(player_hand)}")
63          print(f"Dealer's visible card: {dealer_hand[0]}")  #print only the first card of
    dealer
64
65          if hand_value(player_hand) == 21:
66              print("Blackjack! You win!")
67              return
68          elif hand_value(player_hand) > 21:
69              print("Bust! You lose!")
70              return
71
72          action = input("Do you want to 'hit' or 'stand'? ").lower()
73          if action == 'hit':
74              player_hand.append(deck_of_cards.pop())
75          elif action == 'stand':
76              break   # exit the loop and proceed to dealer's turn
77          else:
78              print("Invalid input. Please enter 'hit' or 'stand'.")
79
80      while hand_value(dealer_hand) < 17:  #this step will be skipped if the dealer has 17 or
    more
81          dealer_hand.append(deck_of_cards.pop())
82
83      print(f"Dealer's hand: {dealer_hand}, total value: {hand_value(dealer_hand)}")
84
85      if hand_value(dealer_hand) > 21:
86          print("Dealer busts! You win!")
87      elif hand_value(dealer_hand) > hand_value(player_hand):
88          print("Dealer wins!")
89      elif hand_value(dealer_hand) < hand_value(player_hand):
90          print("You win!")
91      else:
92          print("Push!")
93
94
```

```
95
96
97 # GAME START
98 blackjack()
```