

64015030 Mini Project #1 เกมไพ่ Blackjack

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ให้สร้างเกมไพ่ Blackjack

ทดลองเล่นได้ที่ <https://games.washingtonpost.com/games/blackjack/>

เงื่อนไขของเกม Blackjack

1. จำนวนไพ่มีไม่จำกัดชุด
2. ไม่มี Joker
3. Jack/Queen/King เท่ากับ 10
4. Ace สามารถนับเป็น 1 หรือ 11 ก็ได้

ให้ใช้ list ต่อไปนี้แทน A -> K

```
cards = [11, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 10, 10]
```

Requirement

1. เริ่มต้นสุ่มแจกไพ่ user และ computer ข้างละ 2 ใบ
2. ตรวจสอบว่าเป็น Blackjack หรือไม่ (A + ไพ่แต้ม 10)
3. ถ้า computer ได้ blackjack ผู้เล่นจะแพ้ แม้ว่า user จะได้เหมือนกัน ถ้า computer เป็นหน้าอื่น แต่ user ได้ Blackjack ก็ชนะไปเลย
4. ให้คำนวณคะแนนของ user และ computer
5. ถ้าแจกไพ่ A จะนับเป็น 11 แต่ถ้าคะแนนเกิน 21 จะนับเป็น 1
6. เปิดไพ่ใบแรกของ computer ให้ user เห็น
7. เกมจะจบเมื่อ user ได้คะแนน > 21 หรือได้ blackjack
8. ถามผู้ใช้งานว่าจะเอาไพ่เพิ่มหรือไม่
9. เมื่อ user ไม่ต้องการไพ่เพิ่ม computer จะเอาไพ่เพิ่มหากได้คะแนน < 16

10. เปรียบเทียบคะแนนระหว่าง user กับ computer ว่าใครชนะ แพ้ หรือ เสมอ
11. เมื่อจบให้แสดงหน้าไพ่ของทั้ง 2 ข้าง
12. ถามว่าจะเล่นต่อหรือไม่

```
import random

cards = [11, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 10, 10]
user_hand = []
computer_hand = []

def deal_card(player_hand):
    """ deal 2 card for player if player not have any card in hand"""
    amount_of_cards_to_deal = 2 if not player_hand else 1
    for _ in range(amount_of_cards_to_deal):
        random_card = random.choice(cards)
        player_hand.append(random_card)

def calculate_score(card_list):
    """ calculate score by card in list"""
    score_of_list = 0
    for card in card_list:
        score_of_list += card
    return score_of_list

def does_player_have_blackjack(player_hand):
    """ check player has blackjack"""
    return True if 11 in player_hand and 10 in player_hand and len(
        player_hand) == 2 else False
```

```
def is_score_over_twenty_one(player_hand, player_score):
    """ check if card over 21 then check if have ace in deck change to 1 then if over 21 or not found ace then return True"""
    if player_score > 21:
        found_ace_card = False
        for idx, card in enumerate(player_hand):
            if card == 11:
                player_hand[idx] = 1
                found_ace_card = True
                break
        player_score = calculate_score(player_hand)
        if not found_ace_card or player_score > 21:
            return True
    return False
```

```
def compare(user_score, computer_score):
    """compare score to other"""
    if user_score > computer_score:
        print("You win 😊")
    elif user_score < computer_score:
        print("You lose 😞")
    elif user_score == computer_score:
        print("Draw 🤝")
```

```
def reveal_all_card():
    """reavel all card"""
    print(
        f"Your final hand: {user_hand}, final score: {calculate_score(user_hand)}")
    print(
        f"Computer's final hand: {computer_hand}, final score: {calculate_score(computer_hand)}")
```

```
is_enough_cards = False
is_game_finished = True
is_start = True
```

```

while is_start:
    while not is_game_finished:
        computer_score = calculate_score(computer_hand)
        while not is_enough_cards:
            user_score = calculate_score(user_hand)
            if does_player_have_blackjack(computer_hand):
                reveal_all_card()
                print("Lose, opponent has Blackjack 🐼")
                is_game_finished = True
                break
            elif does_player_have_blackjack(user_hand):
                reveal_all_card()
                print("Win with a Blackjack 😎")
                is_game_finished = True
                break
            if is_score_over_twenty_one(user_hand, user_score):
                reveal_all_card()
                print("You went over. You lose 😭")
                is_game_finished = True
                break
            if user_score == 21:
                reveal_all_card()
                print("Win 😎")
                is_game_finished = True
                break
        print(f"Your cards: {user_hand}, {calculate_score(user_hand)}")
        print(f"Computer's first card: {computer_hand[0]}")
        while True:
            get_another_card = input(
                "Type 'y' to get another card, type 'n' to pass: ")
            if get_another_card.lower() in ("y", "n"):
                break
            else:
                print("please enter 'Y' | 'N' !")
        if get_another_card.lower() == 'y':
            deal_card(user_hand)
        elif get_another_card.lower() == 'n':
            is_enough_cards = True
            break
    if is_game_finished:
        break

```

```
while computer_score < 17:
    deal_card(computer_hand)
    computer_score = calculate_score(computer_hand)

if is_score_over_twenty_one(computer_hand, computer_score):
    reveal_all_card()
    print("Opponent went over. You win 🎉")
    is_game_finished = True
else:
    user_score = calculate_score(user_hand)
    computer_score = calculate_score(computer_hand)
    reveal_all_card()
    compare(user_score, computer_score)
    is_game_finished = True

want_to_play = input(
    "Do you want to play a game of Blackjack? Type 'y' or 'n': ")
if want_to_play.lower() == 'y':
    is_start = True
    is_game_finished = False
    is_enough_cards = False
    user_hand.clear()
    computer_hand.clear()
    deal_card(user_hand)
    deal_card(computer_hand)
else:
    is_start = False
```

```
Do you want to play a game of Blackjack? Type 'y' or 'n':y
Your cards: [10, 5], 15
Computer's first card: 4
Type 'y' to get another card, type 'n' to pass: y
Your cards: [10, 5, 2], 17
Computer's first card: 4
Type 'y' to get another card, type 'n' to pass: y
Your cards: [10, 5, 2, 3], 20
Computer's first card: 4
Type 'y' to get another card, type 'n' to pass: n
Your final hand: [10, 5, 2, 3], final score: 20
Computer's final hand: [4, 11, 3], final score: 18
You win 😊

Do you want to play a game of Blackjack? Type 'y' or 'n': y
Your cards: [11, 6], 17
Computer's first card: 7
Type 'y' to get another card, type 'n' to pass: n
Your final hand: [11, 6], final score: 17
Computer's final hand: [7, 9, 10], final score: 26
Opponent went over. You win 🎉

Do you want to play a game of Blackjack? Type 'y' or 'n': y
Your cards: [10, 10], 20
Computer's first card: 8
Type 'y' to get another card, type 'n' to pass: n
Your final hand: [10, 10], final score: 20
Computer's final hand: [8, 11], final score: 19
You win 😊

Do you want to play a game of Blackjack? Type 'y' or 'n': y
Your cards: [9, 8], 17
Computer's first card: 3
Type 'y' to get another card, type 'n' to pass: n
Your final hand: [9, 8], final score: 17
Computer's final hand: [3, 10, 7], final score: 20
You lose 😞

Do you want to play a game of Blackjack? Type 'y' or 'n': n
```