

---

# CS 5001

# Final Project:

# BLACKJACK

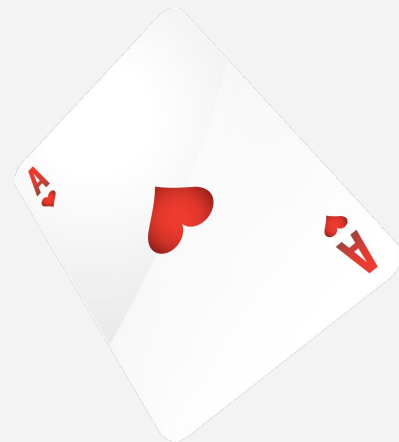
Byunghyun (Ben) Ko, Deo Gracias (Gio) Ong, Xinrui (Richard) Yi



---



1

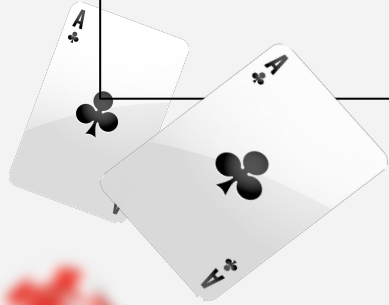


# MOTIVATION & METHODS



---

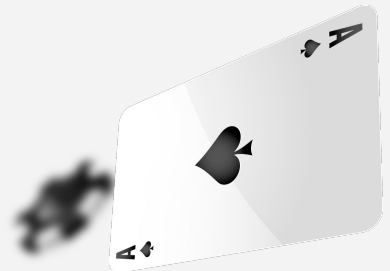
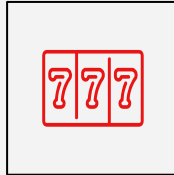
# Why BlackJack?



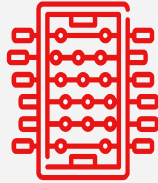
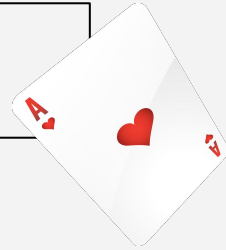
## Goals

Digital Version Of BlackJack

**Rationale**  
Implement Python



# Tools & Methods



## Tool

Pygame, Github...

## Methods

Class, Dictionary, Loop...

---



# Key Concepts

```
class Hand:
    """ class: Hand
    Attributes: cards, value
    Methods: add_card (appends a new card to cards)
    | | | calc_value (calculates the value of the hand)
    """

    def __init__(self, cards=[], value=0):
        """
        Constructor -- creates a new instance of a hand
        Parameters: self -- the current object
        | | | cards -- a list of cards in the hand
        | | | value -- value of the hand
        """

        self.cards = cards
        self.value = value
```

## Class

```
def calc_value(self):
    """
    calculates the value of the current hand and updates the
    value of the hand
    :return: None
    """
    value = 0

    non_aces = [card for card in self.cards if card != 'A']
    aces = [card for card in self.cards if card == 'A']

    for card in non_aces:
        value += CARD_VALUE[card]

    count = 0
    for card in aces:
        value += 1
        count += 1
        if value <= 11 and len(aces) == count:
            value += 10
```

## Loop



---



2

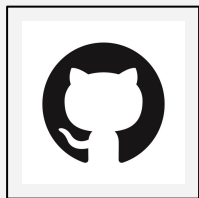
**CONCLUSION**



---

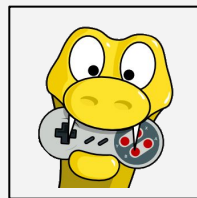


# FINDINGS / LESSONS LEARNED



## GITHUB

Coordinating work  
on Github



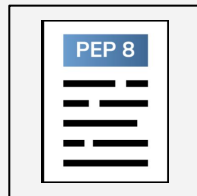
## PYGAME

Learning Pygame for  
the first time!



## CLASSES

Classes can be very  
helpful & simplify

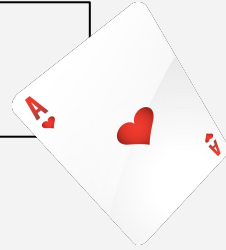


## STYLING (PEP 8)

Consider it WHILE  
coding!



# LIMITATIONS / FUTURE EXTENSIONS



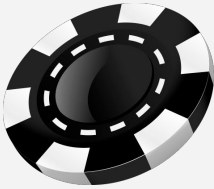
## Layer of complexity

Split option for players



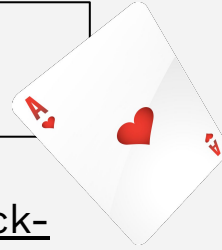
## Timing Limitation

Insurance option for players





# REFERENCES



- <https://medium.com/geekculture/understanding-oop-python-with-a-deck-of-cards-%EF%B8%8E%EF%B8%8F-99c31ea5acaa>
- <https://www.makeuseof.com/start-menu-and-game-over-screen-with-pygame/>
- <https://stackoverflow.com/questions/68761290/how-to-insert-url-link-inside-a-pygame>
- <https://www.vecteezy.com/vector-art/3520134-dark-poker-background-of-spades-and-clubs>
- [https://www.youtube.com/watch?v=e3YkdOXhFpQ&t=677s&ab\\_channel=LeMasterTech](https://www.youtube.com/watch?v=e3YkdOXhFpQ&t=677s&ab_channel=LeMasterTech)
- <https://github.com/Mozes721/BlackJack>

