

## Documentation

### **1. An explanation of the purpose of each file in your repository**

Purpose of uno.py: The full game of Uno which allows one human and 1-4 computer players to play.

Purpose of cards.json: The full card deck with each card having its own color, function, number, and type in a list of dictionaries.

### **2. How to run your program from the command line:**

Example: `python3 uno.py cards.json Vinhan -c 3`

1. `python3`
2. Name of the file: `uno.py`
3. File path to json file for standard deck of cards: `cards.json`
4. Your name, or the name of the human player: `Vinhan`
5. Option for adding computer players: `-c`
6. From (1-4) number of computer players you want to add: `3`
7. If `-c` is not added, the default number of computer players is `1`

### **3. How to interpret the output of the program**

A. “Would you like to see the player's hand during the game? (y/n)”

This allows the player/user to see the hand of other players during the game. It helps with debugging just to make sure that the functions and methods work behind the scene.

B. “Starting in clockwise, the order of players are:”

Each game starts in the clockwise direction, and the order of the players are listed.

C.

- a. Turn #1 --- Clockwise
- b. ----- Matt's turn -----
- c. ----- Matt has 7 cards -----

Each turn, the following information is displayed:

- the number of turns that have passed
- the direction of the game
- the name of the player whose turn it is
- how many cards that player has

D. Your matched cards vs Your hand is

Your personal hand is a list of all your cards, while Matched cards is a list of only the cards from your personal hand that match the card on top of the match pile.

E. “select card position: “

When selecting the card position, you select the card from your matched cards, NOT your personal hand.

The card position you input cannot be a letter, but must be a valid integer.

How game is different from regular Uno:

- You win when you have no cards left. There isn't a point in saying “Uno” since it's in the computer
- The Shield allows for more unique gameplay

Rules for the Shield:

1. At the beginning of the game, a player has a chance of being dealt with only 1 Shield
2. You can only play the Shield if you are the receiver of a +2, Skip or Reverse.
  - a. When you play the Shield, you have to put it on top of the match pile and you can play any number color card from your personal hand except for special cards such as +2, Skip or Reverse

- b. If the player who played the Shield does not have a non special card in their hand, a normal color card from the draw pile will be the next card to match
3. When a player discards The Shield, they have a chance of obtaining another Shield from the draw pile
4. During the game, the player has the ability to obtain the Shield from the draw pile but only if they don't have any Shields on hand.

How the Shield works:

1. Shield against +2s
  - a. When the player receiving the +2 plays the Shield, the other player who played the +2 instead must draw 2 cards.
2. Shield against Reverse
  - a. When the player receiving the Reverse plays the Shield, the direction remains unchanged.
3. Shield against Skip
  - a. When the player receiving the Skip plays the Shield, their turn continues and isn't skipped.

Attribution:

Method/function	Primary author	Techniques demonstrated
main	Vinhan Ky	with statements
parse_args	Vinhan Ky	ArgumentParser class
str method	William Delmo	magic methods
plus two	William Delmo	f string
card_selection	Matthew Manik	json.dumps
turn	Matthew Manik	sequence unpacking