

定义 definition

1. 手牌：玩家们手上拿的牌
Hands: The cards the players are holding
 2. 牌库：牌堆顶部未被抽取的牌
Deck: The top undrawn cards of the deck
 3. 坟场：弃用的或者已经被消耗的牌
Graveyard: discarded or consumed cards
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游戏功能逻辑 game function logic

1. 游戏初始化功能 Game initialization function
 1. 建立牌库 build library of deck
 1. 初始化牌库，牌库逻辑为一个元组 Initialize the card library, the logic of the card library is a tuple
 2. 打乱牌库的顺序，生成一个新的序列 Shuffle the order of the deck to generate a new sequence
 3. 每个玩家发七张牌，并且判断玩家的人数是否合理 Each player is dealt seven cards, and it is judged whether the number of players is reasonable
 4. 开局展示牌库顶端的第一张牌，展示它并且将它送入坟场 Start by revealing the first card from the top of the deck, revealing it and sending it to the graveyard

牌库为[(颜色, 功能),(颜色, 功能),(颜色, 功能),....(颜色, 功能)]

The deck is [(color, function), (color, function), (color, function),....(color, function)]

例如[(红色, 数字1),(黑色, 抽四张并指定颜色),(绿色, 跳过下一个玩家)]

For example [(red, number 1), (black, draw four cards and specify the color), (green, skip the next player)]

当然我们可以用数字来代表某个功能

Of course we can use numbers to represent a function

2. 发牌功能 Licensing function
 1. 发牌的数量 number of cards dealt
 1. 发0张牌 Deal 0 cards
 1. 玩家在本回合中打了牌，即将一张牌展示并置入坟场了 The player played a card this turn and is about to reveal and put a card into the graveyard

2. 发1张牌 Deal 1 card
 1. 本回合玩家没有合法的牌可以打 The player has no legal cards to play this turn
3. 发2张牌 Deal 2 card
 1. 上一个玩家使用了抽两张的功能牌 The last player used a feature card that draws two cards
 2. 喊uno的速度比其他玩家慢 Shout uno slower than other players
4. 发4张牌 Deal 4 card
 1. 上一个玩家用了发四张的黑色功能牌 The last player used a black utility card that was dealt four
2. 发牌的顺序 (判断条件是是否使用了反转功能牌) order of dealing (The judgment condition is whether the reversal function card is used)
 1. 顺时针 clockwise
 2. 逆时针 anticlockwise
3. 判断功能 judgment function
 1. 时间判断 time judgment
 1. 回合时间, 即出牌时间和抽牌后的考虑时间 Round time, that is, the time of playing cards and the consideration time after drawing cards
 2. uno时间, 即喊uno的考虑时间 Uno time, that is, the consideration time for calling uno
 3. 打出黑色功能牌后决定颜色的时间 The time to decide the color after the black function card is played
 2. 出牌判断 card judgment
 1. 合法性, 即打出的牌是否合法 Legality, that is, whether the cards played are legal
 2. 胜利判断, 玩家手牌为零则胜利, 统计所有玩家手牌数 Victory judgment, the player wins if his hand is zero, and counts the number of hands of all players
 3. uno判断, 判断哪个玩家先说了uno Uno judgment, judge which player said uno first
 4. 发牌数量、发牌顺序判断 Judging the number of cards dealt and the order of deal cards
4. 弃牌功能 玩家在回合开始将一张牌送到坟场 Discard function Player sends a card to the graveyard at the beginning of the turn