<Logic for play by turn method>

1. while (true)

1. For the four players playing

1. check if player’s card is not 0

A. if the player is a human

Do

1. card information in hand / top card information / prompt user for the cardCode repeat

2. try~catch block

a. if input cardCode is not 0 (when human is available to play)

1. for number of cards in human hand

A. if the cardCode human entered is the same with the cardCode in human’s hand

1. if card color on the discard pile is the same with the card color in human hand or card number on the discard pile is the same with the card number in human hand

- play card (move the card from human hand to discard pile)

- remove that card from human hand

- valid card turns on

- check turns on

2. else

- exception occur (The cardcode human entered doesn’t match with card on the discard pile) - prompt to the cardCode until human inputs right cardCode

2. if valid card turned off

- exception occur (The cardcode human entered doesn’t exist in human hand) - prompt to the cardCode until human inputs right cardCode

3. if human finishes all card in hand

- human is the winner (game end)

b. else - cardCode is 0 (when human is not available to play)

1. for number of cards in human hand

1. if card color on the discard pile is the same with the card color in human hand or card number on the discard pile is the same with the card number in human hand

- exception occur (human has the valid card in hand) - prompt to the cardCode until human inputs right cardCode

- get card (move the card from the discard pile to human hand)

- remove that card from the discard pile

2. if the draw pile is empty

- move all cards from the discard pile to draw pile

- remove all cards in the discard pile

- move the last card from the draw pile to discard pile

- shuffle the draw pile

- check turns on

While (check turned off);

B. else - the player is a bot

1. for number of cards in the bot hand

1. if card color on the discard pile is the same with the card color in bot hand or card number on the discard pile is the same with the card number in bot hand

- play card (move the card from bot hand to discard pile)

- remove that card from bot hand

- valid card turns on

1. if bot finishes all card in hand

- that bot is the winner (game end)

2. if valid card turned off

- get card (move the card from the discard pile to bot hand)

- remove that card from the discard pile

1. if the draw pile is empty

- move all cards from the discard pile to draw pile

- remove all cards in the discard pile

- move the last card from the draw pile to discard pile

- shuffle the draw pile