Manual Test Plan

Manual test plan for the UNO GUI

OS support

The following OS can be used for testing:

- Windows 10
- Mac OS X
- Linux

IDE

The following IDE's are recommend for testing:

- IntelliJ
- Eclipse

Java version

Java 1.2 and above

Dependencies

- Java Swing is used to create the GUI, which comes with Standard Java since version 1.2.
- UNO package

Testing set-up

There are two ways to run the game:

- Run the main method in the Welcome class to run the complete game, or
- Run the main method in the StartGame class to skip the welcome window and run a game with four players by default
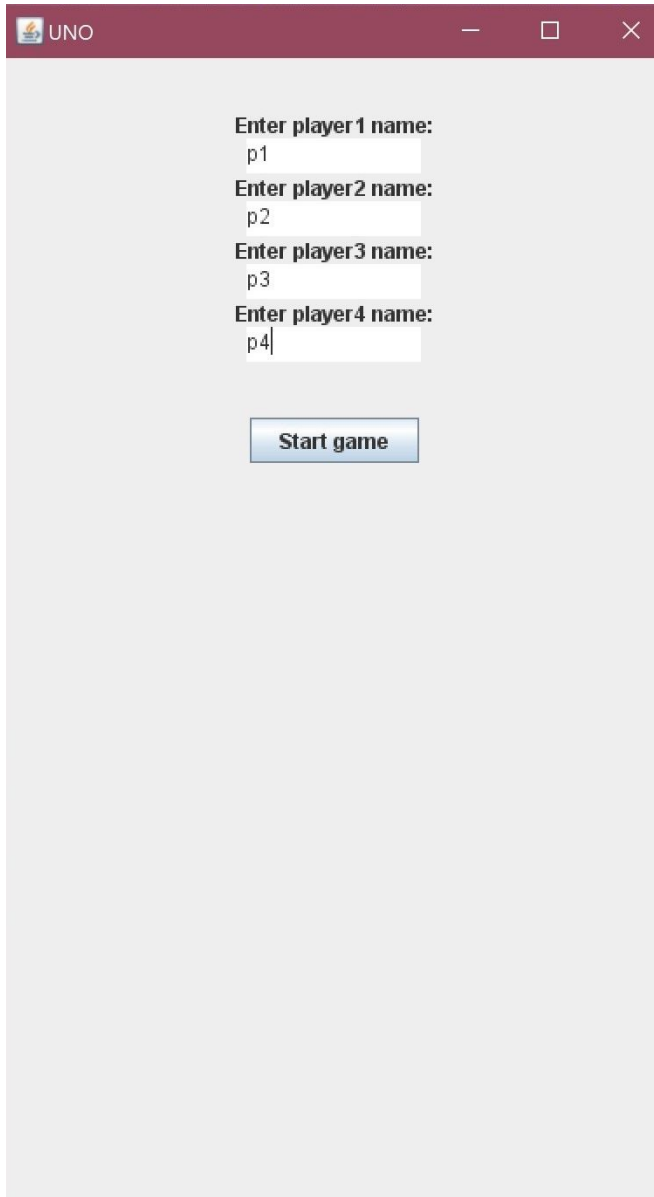
Test Welcome window

- The Welcome window prompts the players to enter the total number of players they wish to have in the game (including AI's), click "Okay" button to go to the StartWindow
- Enter a different positive integer to change the total number of players, the result will show on the StartWindow when you hit "Okay"
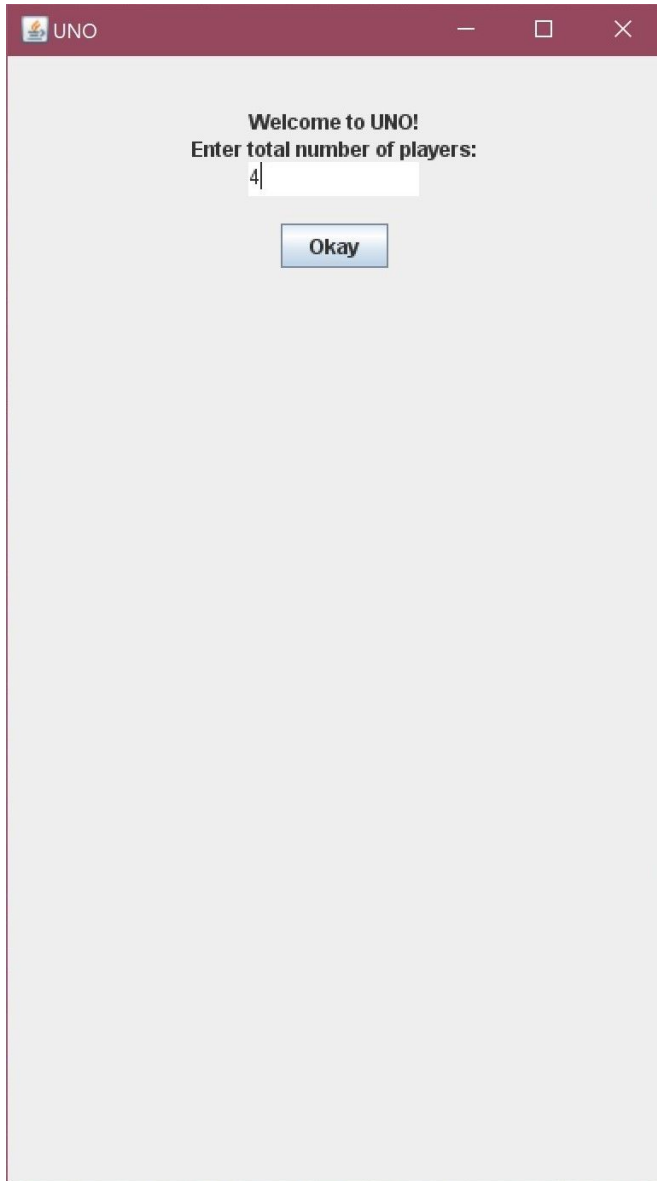
Welcome Window

Test StartGame window

- The StartGame window gets each player's name. Click the "start game" button to start the game
- If the tester chose to run the game by running the StartGame main method (skipping the Welcome window), the default number of players is four, which can be manually changed in the same method
- In the case where there are fewer human players than the total number of players entered, e.g. Three human players in a game of four players, leave the vacant player name textarea blank and AI players will automatically fill up these empty spots when the game starts
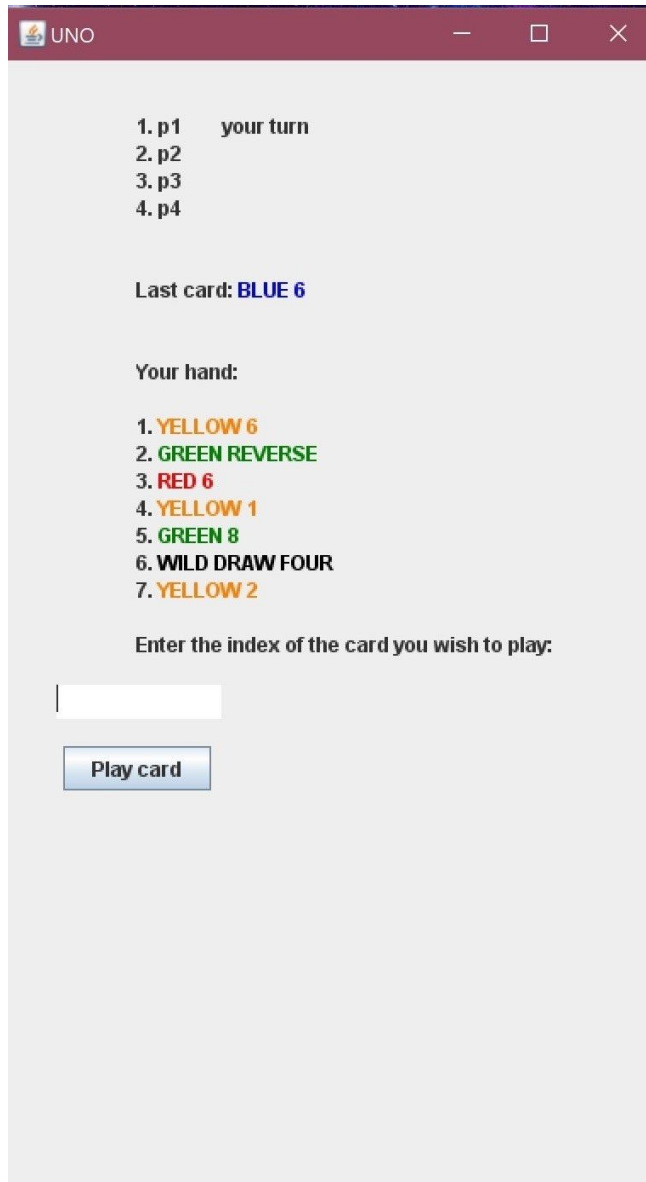
Start Window

Test InGame window

  1. **Start state**
  ● The InGame window shows the current state of the game. It displays all the players'
    names with indices, which player's turn it is, the last card played (the top card of the
    discard pile), shows the current player's hand and hides all the other players' hands. The
    colored cards are color coded for clarity; wild cards and wild draw four cards appear
    black by default, but changes to the chosen color when played out by the player
  ● The following picture shows the start state of a UNO game, where the turn starts with the
    first player in the list and the direction starts as "CLOCKWISE", which corresponds to an
    increasing order of player index, e.x. 1 -> 2 -> 3 -> 4 -> 1 -> …

- The game starts with a number card in the discard pile, shown next to "Last card"
- Each player starts with 7 cards automatically drawn from the deck
- Current player is prompted to enter the index corresponding to the card he/she wishes to play, then click "Play card" to play the chosen card

 Start state

2. **Possible scenarios (Human players)**
- Test each of the following scenarios by making different choices during the game

2.1. Player is not being skipped
(1) Player has at least one valid card

- In this case, a window similar to the start state window is shown; player can enter an index indicating the card he/she wishes to play in the text area
- If the player enters an illegal card (not including WildDrawFour cards, they can be played illegally), the following warning message will pop up when the player clicks "Play card"
- In this case, once the player click "OK", he/she will be prompted to enter another card index, until a legal card index is entered and the card is played
- Once a card has been played successfully the game will move on to the next player with an updated last card and player's hand displayed
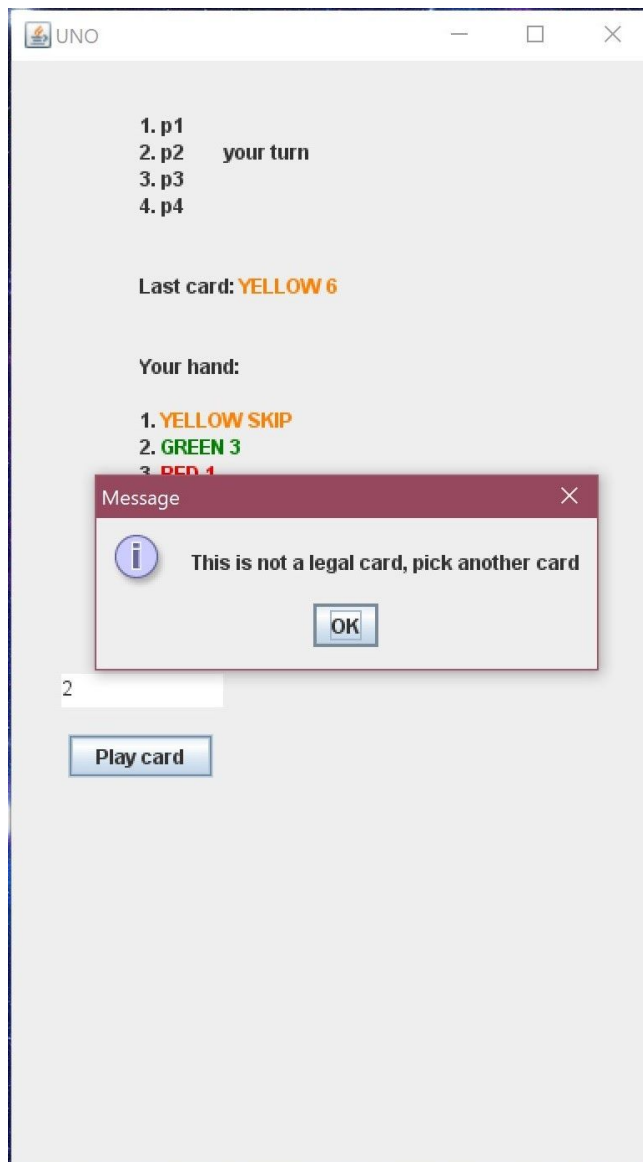
Illegal card warning

- In the special case when the current player played a Number card with the number "7", after clicking "Play card", the player has the option to pick one of the other players to

swap hands with, by entering the player index to swap hands with then clicking the "Swap" button, as shown below

● Neither the swapping process nor the new hand is displayed

Swap hands

(2) Player has no valid card

● In this case, a window similar to the following will be shown
● The current player will be prompted to keep drawing until he/she has a valid card, by clicking "Draw card"

1. p1
2. p2
3. p3   your turn
4. p4

Last card: BLUE 2

Your hand:

1. YELLOW 3
2. GREEN 4
3. YELLOW DRAW TWO
4. YELLOW 0
5. YELLOW REVERSE

You don't have a valid card to play, draw one.

Draw card

No valid card, has to draw

- The following picture shows the scenario when the player had no valid card, then kept drawing until a valid card was drawn.
- Once the player has a valid card from drawing, he/she will be prompted to play a valid card, in this case the valid card will always be the last card in the hand since it was the last card drawn. Player can then enter and play the last card in his/her hand and end his/her turn

UNO

1. p1
2. p2
3. p3   your turn
4. p4

Last card: **BLUE 2**

Your hand:

1. YELLOW 3
2. GREEN 4
3. YELLOW DRAW TWO
4. YELLOW 0
5. YELLOW REVERSE
6. YELLOW 2

Enter the index of the card you wish to play:

6

Play card

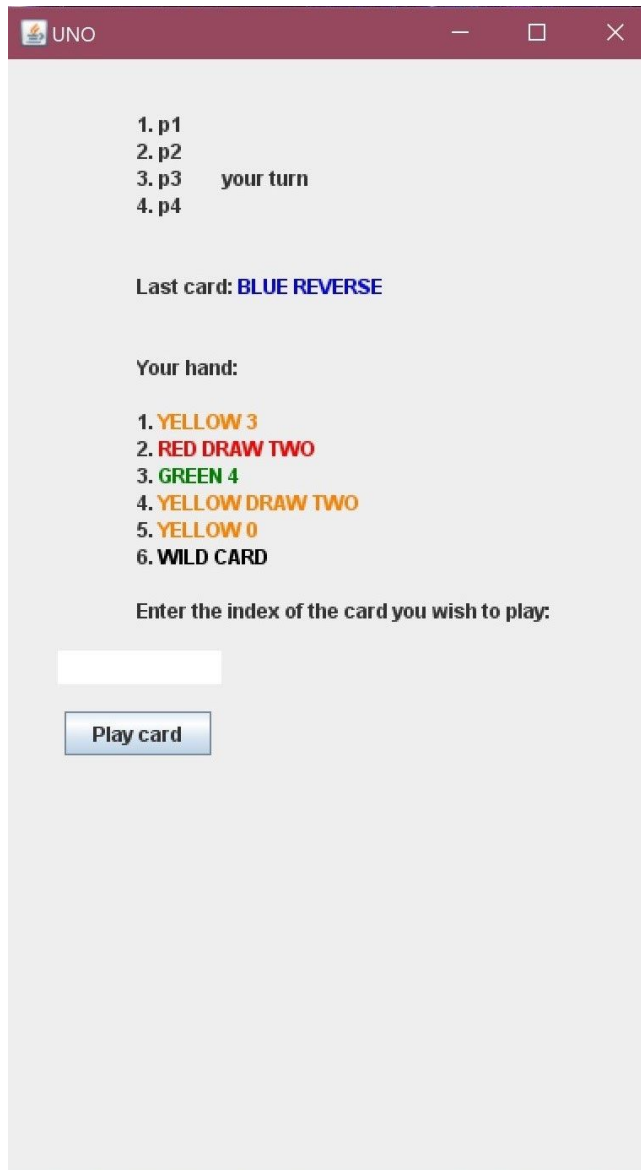Has one valid card after drawing

2.2. Player is being skipped

(1) Last card is a Reverse card

● This scenario is shown in the following picture, where it's p4's turn (Direction is CLOCKWISE) and he/she can choose to play the BLUE REVERSE card

1. p1
2. p2
3. p3
4. p4   your turn

Last card: BLUE 5

Your hand:

1. RED SKIP
2. BLUE REVERSE
3. GREEN 9
4. YELLOW 8
5. BLUE 2
6. RED 4

Enter the index of the card you wish to play:
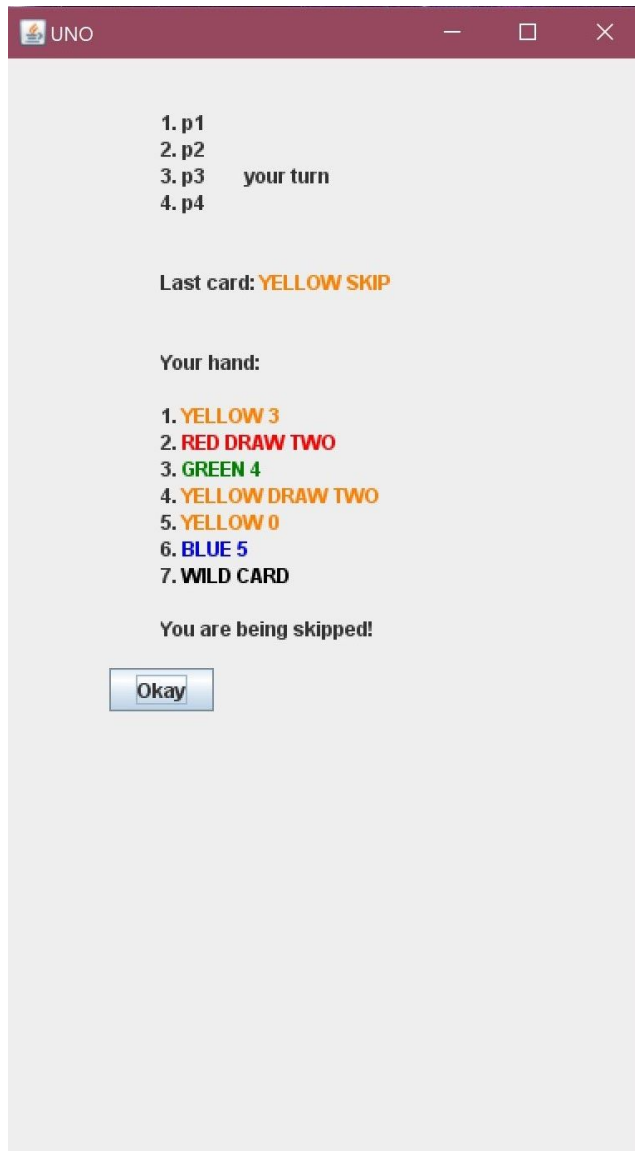
Play card

Player has a Reverse card to play

● Following the scenario shown in the last picture, once the player chose and played the Reverse card, the direction of the game has reversed from CLOCKWISE(increasing player index) to COUNTER_CLOCKWISE(decreasing player index). The game then moves on to the next player, which is now p3 as shown in the picture below

UNO

1. p1
2. p2
3. p3   your turn
4. p4

Last card: BLUE REVERSE

Your hand:

1. YELLOW 3
2. RED DRAW TWO
3. GREEN 4
4. YELLOW DRAW TWO
5. YELLOW 0
6. WILD CARD

Enter the index of the card you wish to play:

Play card

Reversed

(2) Last card is a Skip card
● The following picture shows the scenario where the current player is being skipped
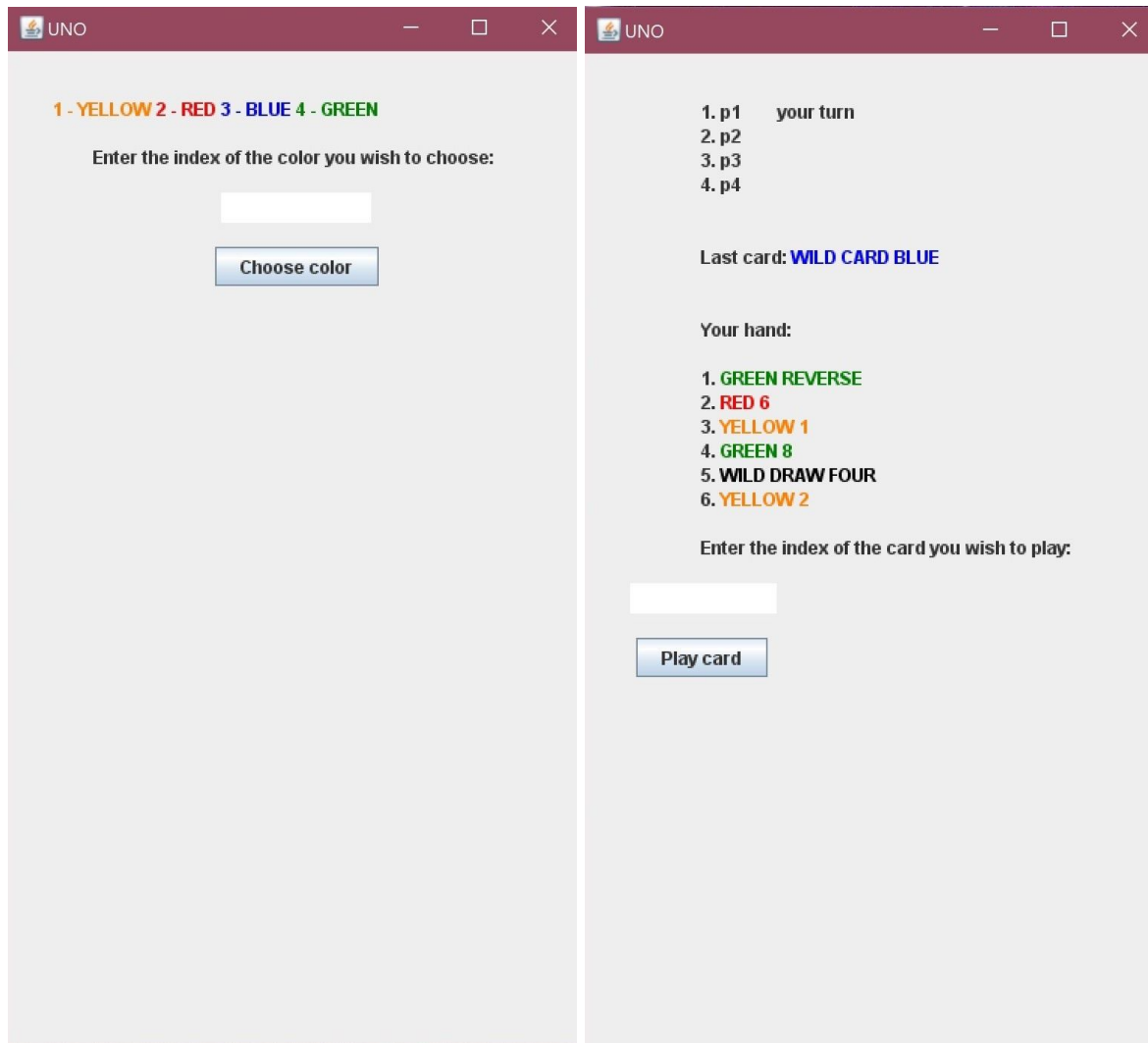● Player can click the "Okay" button for the game to move on to the next player

Skip

(3) Last card is a DrawTwo card
- This scenario is shown below. The current player is forced to draw two cards, which is done automatically, and the two drawn cards are shown to the current player.
- Play can click "Okay" to end turn and move on to the next player

Draw two
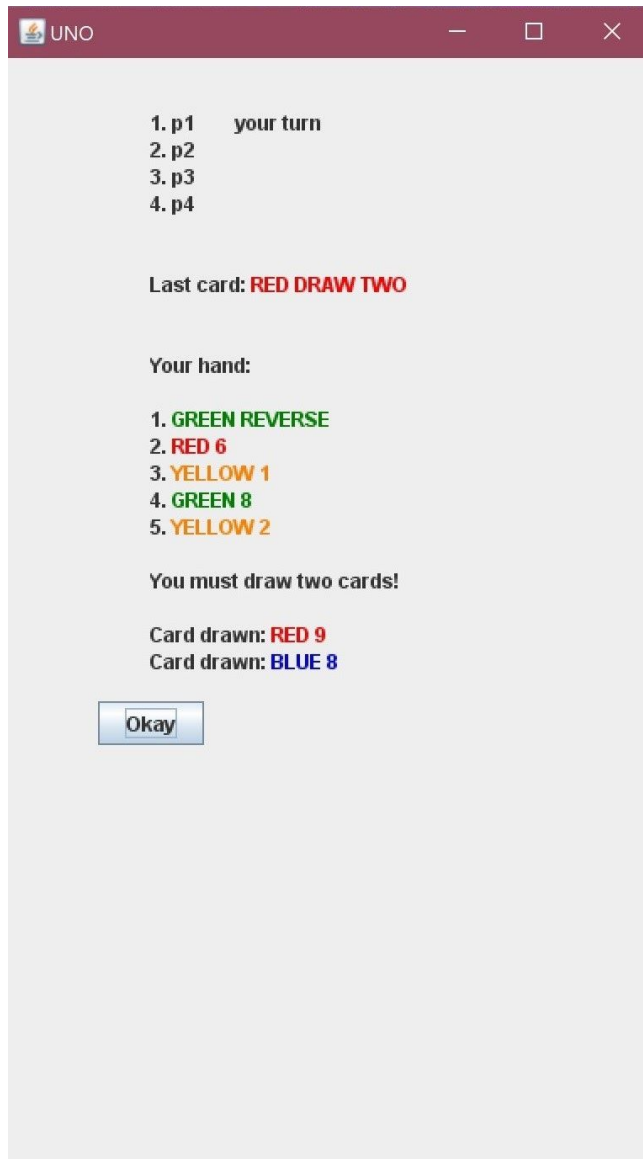
(4) Last card is a Wild card
- When the current player plays a Wild card or a WildDrawFour card, the player is then taken to the ChangeColor window shown on the left below
- The player can then choose one of the four possible colors for his/her Wild card or WildDrawFour card by entering the corresponding index and click "Choose color"
- After the color is chosen, the game moves on to the next player, as shown in the right picture below. Notice the last card, which is a Wild card, has now taken on the color chosen by the last Wild card player

UNO — □ ✕

1 - YELLOW 2 - RED 3 - BLUE 4 - GREEN

Enter the index of the color you wish to choose:

[ ]

Choose color

UNO — □ ✕

1. p1   your turn
2. p2
3. p3
4. p4

Last card: WILD CARD BLUE

Your hand:

1. GREEN REVERSE
2. RED 6
3. YELLOW 1
4. GREEN 8
5. WILD DRAW FOUR
6. YELLOW 2

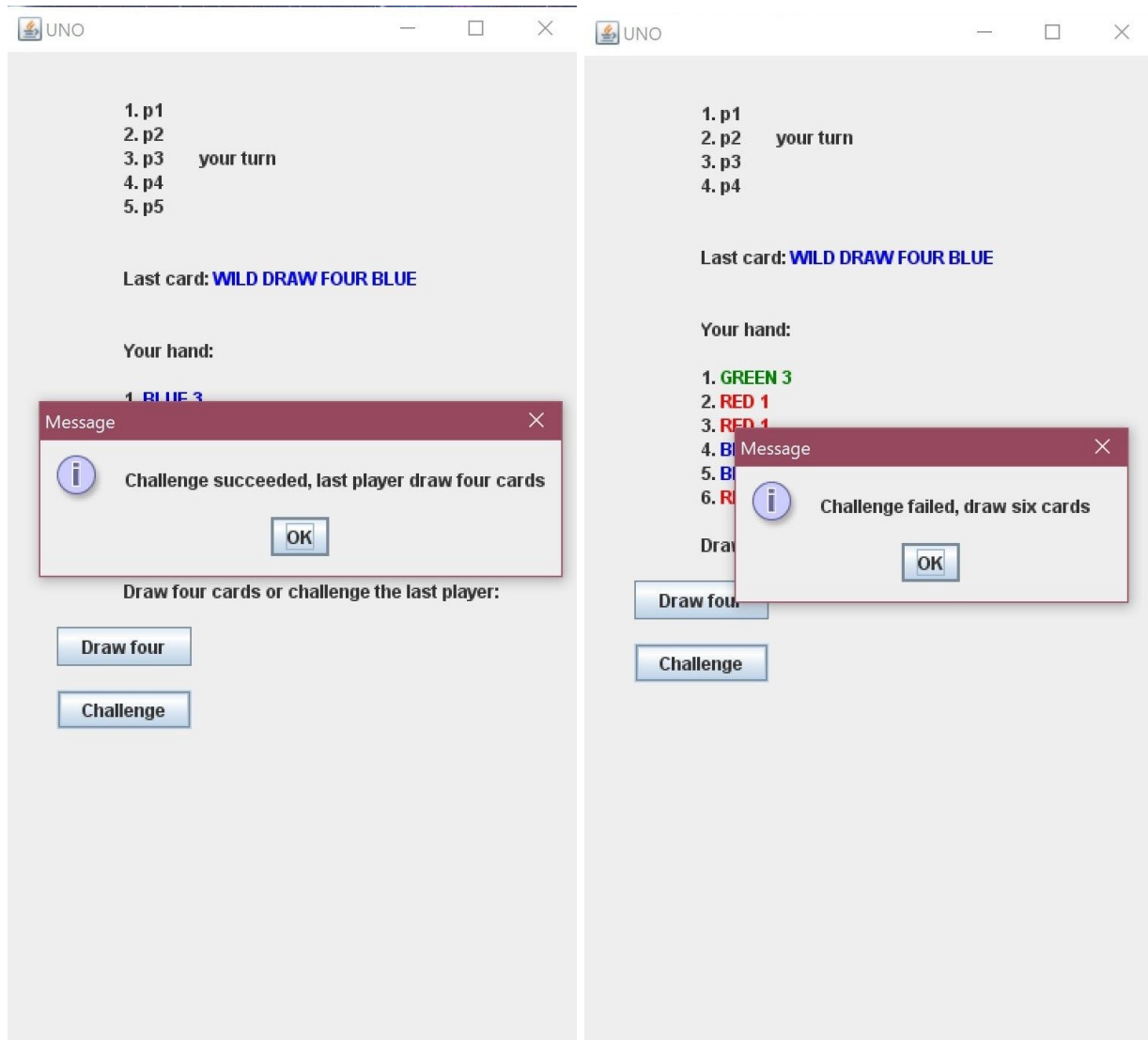Enter the index of the card you wish to play:

[ ]

Play card

(5) Last card is a WildDrawFour card
- In this case, the current player can choose to either draw four cards or challenge the last player as shown below
- A WildDrawFour card is legally played when the player doesn't have any legal card to play other than the WildDrawFour card(s).
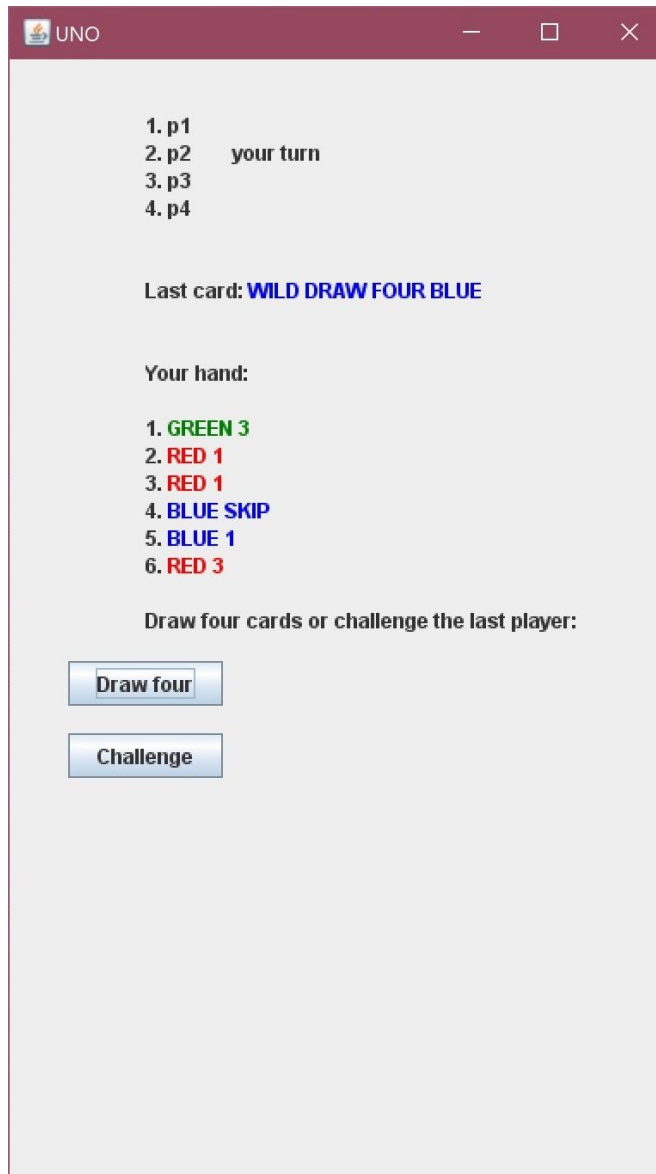
Challenge

- If the player chooses to challenge, one of the following two messages (as shown below) will be shown
- The left picture below shows the scenario when the challenge succeeds, meaning the last player played WildDrawFour card illegally. The last player is therefore penalized with drawing four cards, which is done automatically; the four cards drawn are not displayed
- The right picture below shows the scenario when the challenge fails, meaning the last player played WildDrawFour card legall. The current player is therefore penalized for failing the challenge, and is forced to draw six cards instead of the initial four cards. The six cards are drawn automatically and the cards drawn are not displayed

UNO — □ ✕

1. p1
2. p2
3. p3   your turn
4. p4
5. p5

Last card: **WILD DRAW FOUR BLUE**

Your hand:

1. BLUE 3

Message ✕

ℹ Challenge succeeded, last player draw four cards

OK

Draw four cards or challenge the last player:

Draw four

Challenge

UNO — □ ✕

1. p1
2. p2   your turn
3. p3
4. p4

Last card: **WILD DRAW FOUR BLUE**

Your hand:

1. GREEN 3
2. RED 1
3. RED 1
4. BL
5. BL
6. RE

Draw

Draw four

Challenge

Message ✕

ℹ Challenge failed, draw six cards

OK

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3. Possible scenarios (AI players)

3.1 AI is not being skipped

- The choices made by AI players are not dependent on any user input, therefore when it's an AI's turn, its hand is not displayed, no draw, play card, swap, challenge or choose color options will be shown
- The choices are made behind the scene, and it would appear as if the AI player was skipped
- Notice that when it's the next player's turn after the AI, the last card is changed to whichever card the AI just played, and the corresponding special effects will be applied to the next player
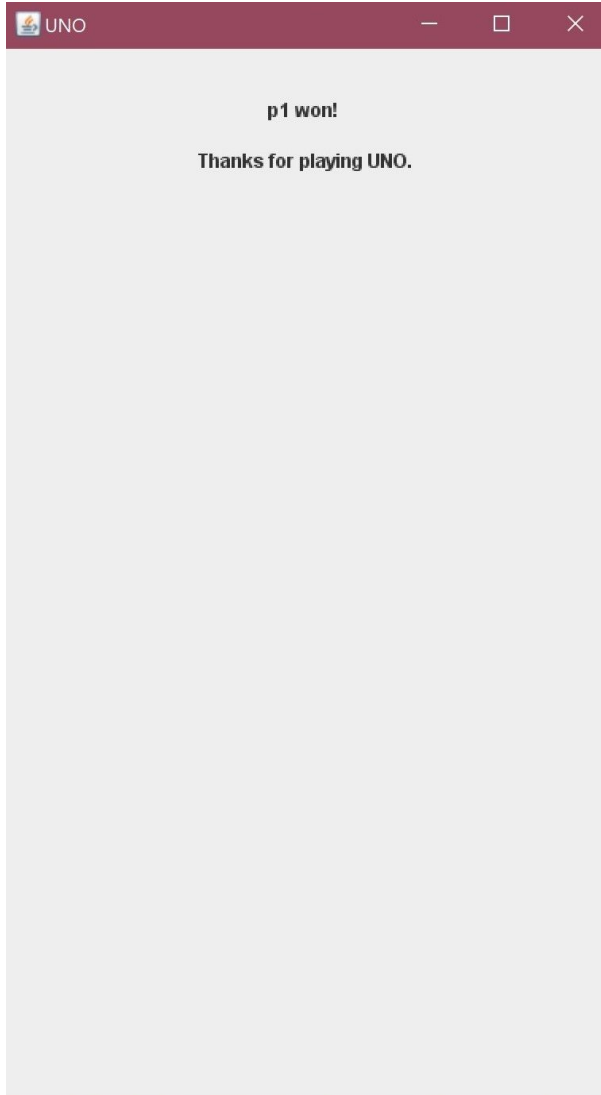
3.2 AI is being skipped

● In the case where the AI has to draw two cards or is being skipped, one of the human players needs to click "Okay" for the AI in order to progress the game, as shown below
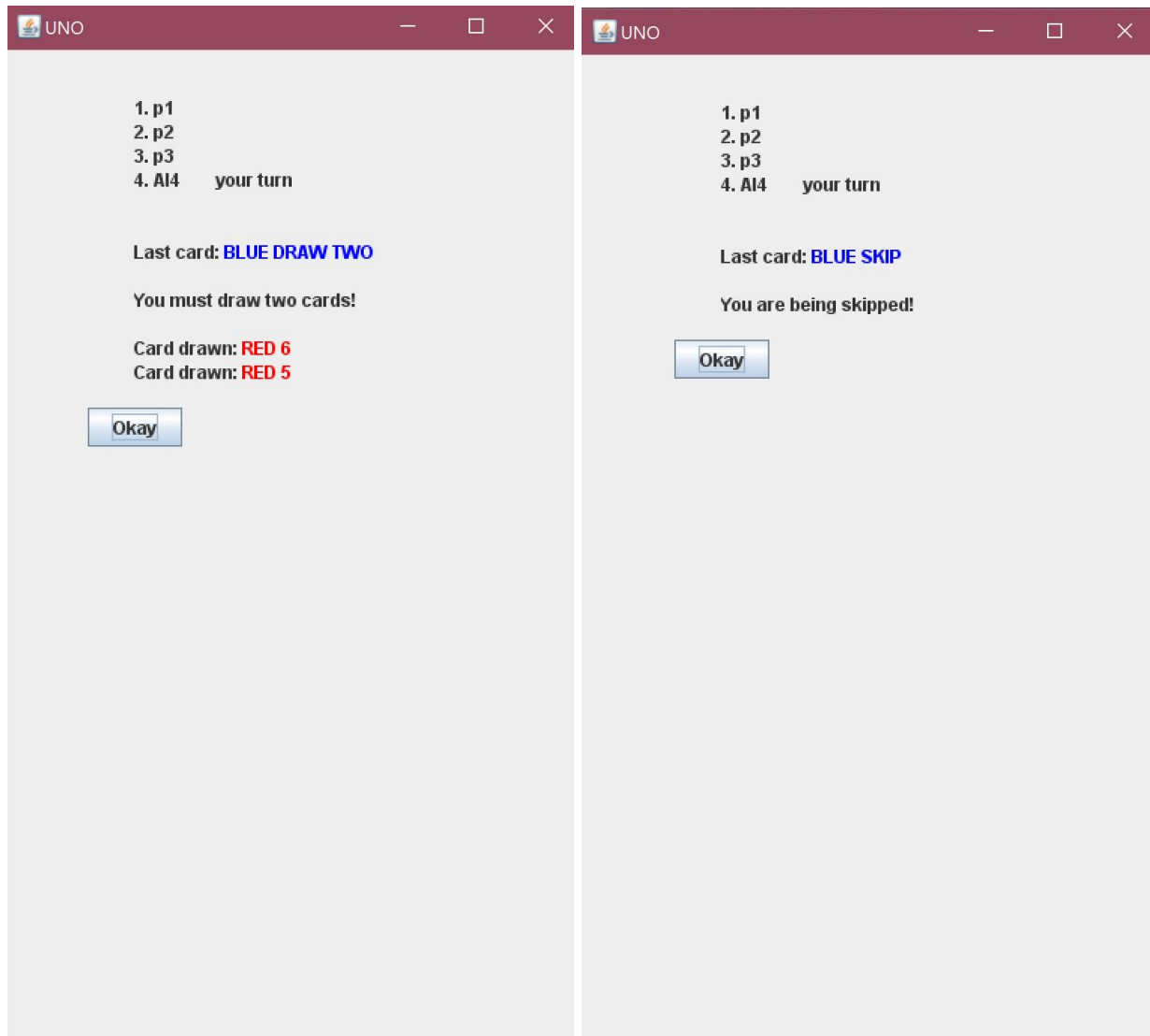
Test EndGame window
- The EndGame window is shown when the game has a winner. It displays the name of the winner and concludes the game, as shown below
- Click the close (X) button to terminate the program

p1 won!

Thanks for playing UNO.

Win window/EndGame window