

Fully Dressed Use Cases (Revised)

Group No# 9

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Initiate a game

Primary Actor: User

Stakeholders and Interests:

- *User*: wants to set up the game according to their preference and start game with their chosen settings.
- *Players*: determining which combination of other human players and computer players will be present for the given game, and which player number, colour and piece appearance they are assigned.
- *Software Developers*: want the game to start without any errors
- *UI Designers*: want the interface to feel interactive and user friendly

Preconditions:

- Open Blokus Game use case
- The option to start a new game has been selected by the user from the main screen window[reference: Open Blokus Game use case]

Postconditions:

- Every player has been assigned their set-pieces
- The first turn is assigned to the player with the color blue
- A new game is started with the selected difficulty, colorblind options and scoring type.
- The user is sent to the play game window(reference:take a turn use case)

Main Success Scenario:

1. The system provides the user with the opportunity to select the number of players.
2. The user selects the number of players or the user decides to exit [Use Case Ends].
3. The system provides the user with the opportunity to select the number of human players and AI players.
4. The user selects the number of humans and AI players or decides to go back [Alt 1: User selects to go back to the number of players selection].
5. The system provides the user with an opportunity to select their preferences for colorblind mode.
6. The user selects whether they want the colorblind mode enabled or disabled, or decides to go back [Alt 2: User selects to go back to the number of humans and AI players selection]
7. The system provides the user with the opportunity to select the difficulty level for AI players
8. The user selects their desired difficulty for the AI players or decides to go back [Alt 3: User selects to go back to colorblind option selection]

9. The system provides the user with the opportunity to select the scoring type for the game
10. The user selects his desired scoring type for the game or decides to go back [Alt 4: User selects to go back to AI player difficulty selection]
11. The system provides the user with the opportunity to select whether they want colors to be selected randomly or go back [Alt 5: User selects to go back to scoring type selection] or [Alt 4] or [Alt 3] or [Alt 2] or [Alt 1].
12. The user selects that each player will select their own color or selects that color selection be done randomly [Alt 6: User decides that color selection is done randomly]
13. The user selects a colour for each player [Alt 7: User selects a color already selected by another player] or goes back [Alt 8: User selects to go back to is color selection random option] or [Alt 4] or [Alt 3] or [Alt 2] or [Alt 1]
14. The system provides the user with the opportunity to start a new game with the selected option [Alt 9: Selected options is incomplete] or to go back to main screen window [reference: Open Blokus Game use case] or to reset the selected options [Alt 1]
15. The system determines that selected options is valid and a new game starts [Use case ends]

Alternative Flows:

1. Alt 1: User selects to go back to the number of players selection
 - Flow resumes at Main Success Scenario Step 1.
2. Alt 2: User selects to go back to the number of humans and AI players selection
 - Flow resumes at Main Success Scenario Step 3.
3. Alt 3: User selects to go back to colorblind option selection
 - Flow resumes at Main Success Scenario Step 5.
4. Alt 4: User selects to go back to AI player difficulty selection
 - Flow resumes at Main Success Scenario Step 7
5. Alt 5: User selects to go back to scoring type selection
 - Flow resumes at Main Success Scenario Step 9
6. Alt 6: User decides that color selection is done randomly
 - Color selection is done randomly.
 - Flow resumes at Main Success Scenario Step 14.
7. Alt 7: User selects a color already selected by another player
 - If player 1 selects a color that player 2 has selected, then player 2 will have to choose a color.
 - Flow resumes at Main Success Scenario Step 13.
8. Alt 8: User selects to go back to is color selection random option
 - Flow resumes at Main Success Scenario Step 11.

9. Alt 9: Selected options incomplete.

- The system informs the user which options have not been selected
- Flow resumes either at Main Success Scenario Step 1 or Step 3 or Step 5 or Step 7 or Step 9 or Step 11 according to what options have not been selected.

Exceptions:

- If at any time an invalid input is received, then the system informs the user of the problem and records a log, the use case ends.

Special Requirements:

- If there are several human players, they must decide who will choose their colour first and must know that the order of play is blue yellow red green

Open Issues:

- Does the game run properly or does it throw errors?

Take a Turn:

Primary Actor: Player

Stakeholders and Interests:

- *Player*: wants to select a piece and place the piece on a legal place on the board. Know whose turn it is and be able to pass their turn
- *Software Developers*: want the player(s) to take their turn without any errors
- *UI Designers*: want the interface to feel interactive and user friendly

Preconditions:

- A game has been initiated(reference: initiate a game use case) or a saved game session has been loaded(reference: load a game use case)
- The game has not ended and has valid remaining moves

Postconditions:

- A legal move has been made
- The turn has been passed onto the next player until game is over
- Game Over use case

Main Success Scenario:

1. The system informs the user which player's turn it is.
2. The system checks whether the player has pieces that can be placed on the board legally [Alt 1: Player doesn't have valid moves].
3. The system allows the player to select a piece from their available pieces or to pass their turn [Alt 2: Player passes their turn].
4. The player selects a piece.
5. The system allows the player to rotate and/or flip the selected piece.
6. The player may choose to flip and/or rotate the selected piece.
7. The system allows the player to place their piece on the board.
8. The player places the selected piece on the board or player changes the selected piece [Alt 3: Player changes the selected piece].
9. The system checks that the player move is valid [Alt 4: Invalid Move].
10. The system checks that the game is not over. If over then no more turns [Use Case Ends] [Game Over Use Case]
11. The system provides the user with the opportunity to load a game [Load Game Use Case] or save current game [Save Current Game Use Case] or reset the game [Reset Game Use Case] or toggle hints [Toggle Hints Use Case] or toggle colorblind mode [Toggle Colorblind Mode Use Case] or to exit [Use Case Ends] or the game continues.
12. The system changes the current turn to the next player accordingly [Flow Resumes at Main Success Scenario Step 1].

Alternative Flows:

1. Alt 1: Player doesn't have valid moves
 - The system checks whether the player has available pieces or if no pieces left [Flow Resumes at Main Success Scenario Step 10].
 - The system informs the player that there are no valid moves
 - The system informs the player that their turn needs to be passed
 - The player is forced to pass their turn [Alt 2: Player passes their turn].
2. Alt 2: Player passes their turn
 - Flow resumes at Main Success Step 10
3. Alt 3: Player changes the selected piece
 - Flow resumes at Main Success Scenario Step 3.
4. Alt 4: Invalid Move
 - The system informs the player that the move is invalid.
 - The system does not accept the player's move.
 - Flow resumes at Main Success Scenario Step 2

Exceptions:

- If there are any errors arise while checking legal moves, checking available pieces or changing player turns then the system informs the user, logs the error and any other relevant information. [Use case ends]

Special requirements:

- Before taking a turn player(s) must know that each piece of the same colour must be placed on the board only touching the corners. Side to side contact, in this case, is not allowed. Side to side contact with different colour pieces is allowed.

Open Issues:

- Are players able to select a piece and place a piece?