

Fully Dressed Use Cases

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 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.

Preconditions:

- The option to start a new game has been selected by the user or the user has opted to load an old game
- The level of difficulty for the game is selected

Postconditions:

- Every player has been assigned their set-pieces
- The first turn is assigned to one of the players
- A new game is started with the selected difficulty

Main Success Scenario:

1. The system provides the user with the opportunity to select the number of players.
2. The user selects how many players the game will involve or the user exits the use case [Use Case Ends].
3. The system provides the user with the opportunity to select how many human players and AI players will play, or the opportunity to go back to the “number of players” option.
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 option].
5. The system provides the user with an opportunity to toggle vision impairment mode on or off, or the opportunity to go back to the number of human and AI players option.
6. The user toggles the vision impairment mode on or off or goes back [Alt 2: User selects to go back to the number of human and AI players option].
7. The system provides the user with the opportunity to select a colour for each player or assign each player a colour randomly or to go back to the vision impairment option.
8. The user selects a colour for each player or goes back [Alt 3: User selects to go back to the vision impairment option].
9. The system informs the user that a new game has started.

Alternative Flows:

1. Alt 1: User selects to go back to the number of player option
 - Flow resumes at Main Success Scenario Step 1.
2. Alt 2: User selects to go back to the number of humans and AI players option
 - Flow resumes at Main Success Scenario Step 3.
3. Alt 3: User selects to go back to the vision impairment option
 - Flow resumes at Main Success Scenario Step 5.

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 orient selected piece accordingly and place the piece on a legal place on the board.

Preconditions:

- A game has been initiated or a saved game session has been loaded
- The game has not ended and has valid remaining moves
- The player's pieces can be legally placed on the board if not then player skips turn

Postconditions:

- A legal move has been made
- The turn has been passed onto the next player

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.
4. The system allows the player to rotate the selected piece.
5. The system allows the player to flip the selected piece.
6. The player places the piece on the board or player changes the select piece [Alt 2: Player changes the selected piece].
7. The system checks that the player move is valid [Alt 3: Invalid Move].
8. The system checks that the game is not over. If over then no more turns [Use Case Ends].
9. The system changes the current turn to the next player accordingly [Use Case Ends].

Alternative Flows:

- Alt 1: Player doesn't have valid moves
 - The system checks whether the player has available pieces or if no pieces left then the use case ends[Use Case Ends].
 - 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 [Use Case Ends].
- Alt 2: Player changes the selected piece
 - Flow resumes at Main Success Scenario Step 3.
- Alt 3: 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 errors checking legal moves, checking available pieces or changing player turns then the system informs the user and the 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?