

## **Case1: Place a Piece**

**Primary Actor:** Player

### **Stakeholders and Key Interests:**

- Player: Wants to place a piece on the game board.
- Developer: Wants to take feedback from the player to find what was difficult/can be improved and solve the bugs
- Teacher and TAs: Want to monitor the development of the game and grade it.

### **Preconditions:**

- A game must be started and still in progress. There must also be a move left to make.

### **Success Guarantee(Postconditions):**

- The system successfully places a piece on the board depending on the shape and size of the selected piece.

### **Main Success Scenario:**

1. The player selects the shape they would like to place.
2. The system loads this piece.
3. The player selects where they want to place the piece .[Alt 1: Square is taken]
4. The system verifies that the move is valid. [Alt2: Move is invalid].
5. The system places the piece on the board.
6. The system passes the turn to the next player. [Use case ends]

### **Alternative Flows:**

Alt 1 : Square is taken

1. The system displays a message that the square is occupied.
2. The player places the shape on the board.
3. Flow resumes at step 4.

Alt 2: Move is invalid

1. The system displays a message that the move is illegal
2. The player places the shape on the board
3. Flow resumes at step 4

### **Exceptions:**

- If for some reason the connection is lost or the game fails, the use case ends.
- If the time runs up, the use case ends.

### **Special Requirements:**

- Blocks can have numbers for colour blind players and can provide colours and sizes of text fonts used.

**Open Issues:**

- Is the player provided with enough hints on where a piece could be placed?

**Case2: Rotate/Flip a Piece**

**Primary Actor:** Player

**Stakeholder and Key Interests:**

- Player: wants to rotate or flip a piece
- Developer: Wants to take feedback from the player to find what was difficult/can be improved and solve the bugs
- Teacher and TAs: Want to monitor the development of the game and grade it.

**Preconditions:**

- A game must be started and there must be a move left to make.
- A piece must be selected on the player's turn.

**Success Guarantee(Postconditions):**

- The system has successfully flipped or rotated and is ready to be placed on the board.

**Main Success Scenario:**

1. The system provides the option to rotate the piece. [Alt1: The user declines rotation]
2. The user decides to rotate the piece clockwise[Alt2:The user rotates counter-clockwise]
3. The system rotates the piece clockwise
4. The system provides opportunity to flip the piece [Alt3:The user declines flip]
5. The user decides to flip the piece vertically[Alt4: The user flips piece horizontally]
6. The system flips the piece vertically
7. The user is satisfied with their selection and proceeds[Alt5: The user is not satisfied]

**Alternative Scenarios:**

Alt1: The user declines rotation

1. The user declines the rotation
2. The system does not rotate the piece
3. Flow resumes at step 4

Alt2: The user rotates counter-clockwise

1. The user decides to rotate the piece counter-clockwise
2. The system rotates the piece counter-clockwise
3. Flow resumes at step 4

Alt3: The user declines flip

1. The user declines to flip the piece
2. The system does not flip the piece
3. Flow resumes at step 7

Alt4: The user flips piece horizontally

1. The user decides to flip the piece horizontally
2. The system flips the piece horizontally
3. Flow resumes at step 7

Alt5: The user is not satisfied

1. The user is decides they are not satisfied with the changes
2. The system puts the piece back to its default position
3. Flow resumes at step 1

**Exceptions:**

- If the connection is lost or the game fails, the use case ends.
- If the time runs up, the use case ends.

**Special Requirements:**

- The player should be able to flip and rotate the piece as many times as they wish.

**Open Issues:**

- Is it better to not flip a square or to flip it anyway?
- Will flipping/rotating a specific piece overlap anything in the GUI and cause problems?
- Will there be a delay once a piece is rotated or flipped to provide clear transition or will this slow down the pace of the game?