

Fully Dressed Use Case 6: Handling Special Combinations

Primary Actor : Player

Stakeholders and Interests:

Stakeholders	Interests
Player	Wants to take full advantage of special combinations by placing or displacing a stone on a strategically beneficial square, Wants to have the process be intuitive and error-free.
Other Player(Human and/or Computer)	Want fair application of rules when special combinations affect their stones, Wants a smooth gameplay experience.
Developers	Must validate special combinations, Wants to update the board and manage displacements accurately, Wants special combinations to be handled correctly according to game rules.
Distributors	Reaching the target gaming audience, ensuring the availability of the product and its updates.
Customer Support	Handling failures with the game if it assigns wrong placement of stones, Assisting with any game queries, Handling complaints, Providing tailored solutions keeping the company's reputation in mind

Preconditions:

- The game has started.
- It is the player's turn and they have at least one stone remaining to place.
- The player has rolled the dice and triggered a special combination (five of a kind, straight 1-6, or six of a kind).

Success Guarantee (Postconditions):

- The stone is placed or displaced according to the special combination rules.
- Scores are adjusted if a displacement occurs.
- The game board is updated accordingly and the game proceeds to the next turn.

Main Success Scenario:

1. The player rolls all six dice.
2. The system analyzes the dice values and identifies a special combination (five of a kind, straight 1-6, or six of a kind). [Alt1: *No special combination detected*]
3. The system informs the player that a special combination has been rolled and explains the available options.
4. The player selects a target square on the board for stone placement. [Alt2: *Player decides not to use special combination*]
5. The system verifies the square's validity. [Alt3: *Five of a kind or Straight of six*]
6. For "six of a kind" where the selected square is already occupied, The system displaces the existing stone.
7. The system prompts the player to relocate the displaced stone to another valid square.
8. The player selects a new location for the displaced stone.
9. The system places the displaced stone in the new location and the player's stone in the originally selected square.
10. The system places the stone and updates the game state.
11. The system recalculates scores ((if displacement occurred).
12. The system advances the turn to the next player. [Use Case Ends]

Alternative Flows:

Alt1: *No special combination detected*

1. The system proceeds with standard combination handling.
2. Flow resumes at standard placing a stone.

Alt2: *Player decides not to use special combination*

1. After step 4, the player decides not to use the special combination ability.
2. The system prompts the player to select a regular combination from the rolled dice.
3. Flow continues with the standard placing of a stone.

Alt3: *Five of a kind or Straight of six*

1. The player may place a stone on any free square.
2. The system places the player's stone on the selected empty square.
3. Flow resumes at Step 10.

Exceptions:

- If the system fails to analyze the dice values, it informs the player of the error. The system offers the player the option to re-roll. If the issue persists, the system logs the error and may offer to save the game state before exiting. The use case ends.
- If the system fails to update the board state, it notifies the player of the issue, logs the error with time and details, and aborts the special combination action. The use case ends.

Special Requirements:

- The system must validate and process special combinations within 3 seconds of dice roll.
- Color-blind friendly indicators must be used to show valid placement options for special combinations.
- Game board must save/load within 5 seconds.
- Board state should be saved between game sessions.
- The game interface must provide alternative visual indicators (patterns or icons) alongside colours to support users with colour vision deficiency.

Open Issues:

- How to handle multiple special combinations in a single roll?
- How does the AI prioritize squares for displacement in Hard difficulty?
- Should there be an option to disable or modify special combination rules for custom games?
- Whether to allow an “undo” option if a player mistakenly places a stone using a special combination?