

2 Fully Dressed Use Case Descriptions: "Set Up a Game" and "Take a Turn":

Set Up a Game:

Primary Actor: Player

Stakeholders and Interests:

- Player: The player seeks a fun and interactive experience by playing the game with other participants.
- Game developers: Game developers who are interested in developing high-quality games for their users.
- Parents: Parents are concerned about protecting their children's privacy and making sure the game is suitable for their children. In addition, they wish to be able to regulate how long their children spend playing the game.

Preconditions:

- To run the game, the device should have the required specifications.
- Device must have enough storage space to save the game data.
- The player has launched the game on his device.

Success Guarantee (Postconditions):

- The game ends when a player reaches the end of three columns or when the player decides to quit the game.
- If the player chooses to save the game, it will save its current state and any other relevant information. The game displays the winner of the game.
- The game runs without any errors or crashes.
- The player can resume a saved game.

Main Success Scenario:

1. The player starts the game and selects "New Game".
2. The player selects the number of players.
3. The player sets each player slot as "human" or "computer".
4. If the slot for a player is set to 'computer', the player must choose a difficulty level for that computer opponent.
5. The game starts with the first player taking their turn.

6. The game runs without any errors or crashes and functions as intended.

Alternative Flows:

Alt1: Invalid number of players selected.

- 1: The system will show an error message and return the player to the main menu.

Alt2: Difficulty level not selected.

- 1: Player trying to start a game without setting the difficulty level for computer players.
- 2: The system will show an error message and return the player to the main menu.

Exceptions:

- In the event of technical difficulties with the game or player's device, they may need to restart the game or seek assistance.

Special Requirements:

- Game will have parental controls so parents can limit their children's gaming time.
- The game will have AI-controlled opponents for single-player mode.
- Every player should have their score tracked automatically and receive regular updates from the game.

Open Issues:

- Is the dice roll random and fair?
- Is the game accessible to players with disabilities?

Prepared by: Taranpreet Singh, Group 7.

Take a Turn:

Primary Actor: Player

Stakeholders and Interests:

- *Player:* Wants to play their turn in an uninterrupted progression of actions, without bugs or other impediments. Wants the game to be fair, accessible and well-balanced. Does not want to be restricted by clunky mechanics or ambiguity.
- *Parents:* Expect a clean, high quality entertainment experience for their children which will exercise strategic planning and spatial reasoning skills without boring, overwhelming or otherwise distressing their children.

Preconditions:

- Game settings have been specified in-game setup menu prior to commencement of game.
- In the case that this turn is not the first turn, the previous player's turn has been successfully completed, resulting in a bust or a legal end-of-turn.

Success Guarantee (Postconditions):

Precisely one of the following has occurred:

1. The player has won the game, successfully moving their pieces to the top of 3, 5, or 7 columns. (dependent on game settings)
2. The player has Bust, ending up with unplaced pieces but unable to make a valid move
3. The player decides to end their turn, replacing the runners that they placed on the board during their turn with pieces of their colour.

Main Success Scenario:

1. The user's turn begins with the commencement of the game or the end of the previous player's turn.
2. The system informs the user that it is their turn and prompts them to roll their dice
3. The player rolls their dice
4. The system prompts the user to group their dice into two pairs
5. The user groups their dice into pairs and the system highlights the user's valid moves (if any)
6. The user makes as many valid moves as possible. If there are no valid moves, the user Busts
7. The system prompts the user to either end their turn or roll again, in which case the system returns to step 2. Otherwise, the next player's turn begins. [Use Case Ends]

Alternative Flows:

alt1: Player Busts

1. The user busts and automatically forfeits their turn.
2. The system informs their user that they are busted and prompts them to end their turn.
3. The user ends their turn.
4. The system passes control to the next player in the turn progression [end of use case].

alt2: Player Wins

1. The user successfully captures the required amount of columns to win.
2. The system informs the user that they have won and gives the user the option to return to game setup.
3. The user enters game setup or terminates the program [end of use case].

alt3: Player opens options menu

1. The user prompts the system to open the options menu.
2. The options menu use case begins [end of use case].

Exceptions:

- If at any time during the progression of the player's turn the system becomes unresponsive or crashes, the system has failed and the game cannot continue.
- Consider adding an advisory message to the user in the event of system failure

Special Requirements:

- User interface must provide accommodation for users affected by colour-vision impairment

Open Issues:

- Special consideration should be given to cases where the user can make no valid move to minimize chance of system failure
- User must be aware of the rules of play. Consider adding a tutorial use case.

Prepared by: Tyler Morgan, Group 7.