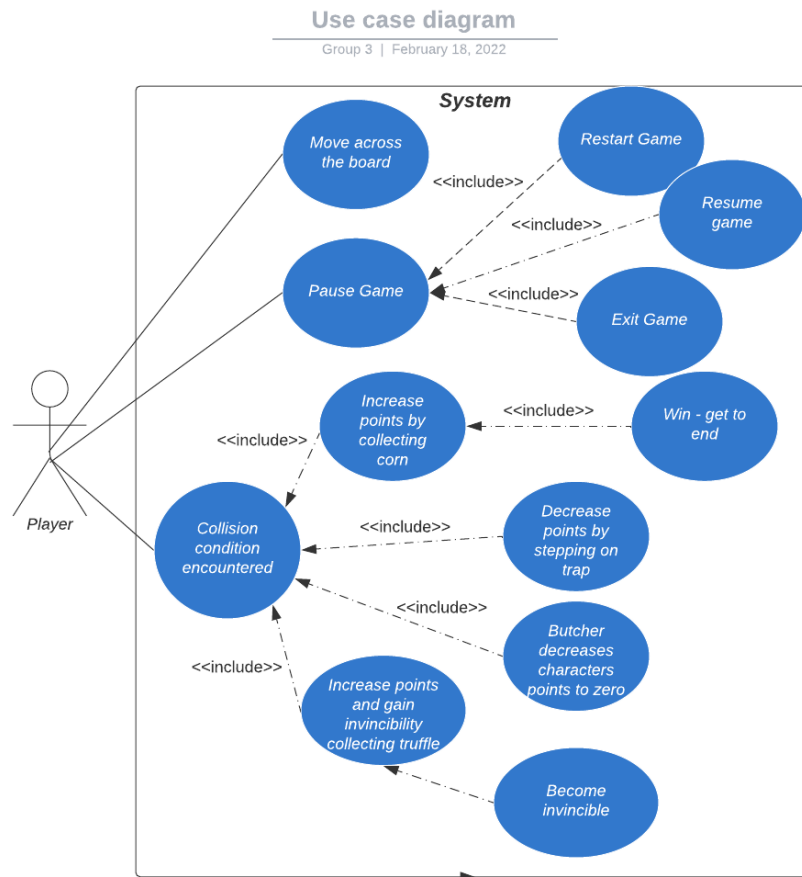


Group 3 - Use Cases

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Use case diagram



The "Collision condition encountered" use case could <<include>> "Move across the board" but for clarity of the diagram they are kept separate. Collisions may happen when the player is standing still (with the moving enemy).

Formal Use Cases

1. Use case template for Moving character across board

Use case: Move character (Wilbur) across the board

Iteration: 1

Primary actor: Player

Goal in context: To move Wilbur across the board while avoiding enemies.

Preconditions: Game must be started and the player must not have paused the game.

Trigger: Player presses any of the arrow keys to move Wilbur in the required direction

Scenario:

1. Player decides a direction to travel in
2. Player presses an arrow key direction
3. Character moves in the corresponding direction
4. Character moves to a different space of the board

Exceptions:

1. Barrier is in the direction the player selects to move. The character will not move in this case.
2. Beartrap is in the space the character moves into. See **Collision condition met** use case.
3. Butcher catches up with the character or butcher is in the space the character moves into. See **Collision condition met** use case.
4. Character moves into the exit point. See **Character reaches end** use case.

Priority: High priority, main function of the game.

When available: First increment.

Frequency of use: Very frequent, main functionality of the game.

Channel to actor: Via computer, game interface.

Secondary actors: n/a

Channels to secondary actors: n/a

Open issues:

1. Will the character have a moving animation?
2. How will collision detection work for butchers, traps, Wilbur, and rewards?
3. Will the character show the player that they collided with a barrier?

2. Use case template for Character reaches End

Use case: Character reaches end space.

Iteration: 1

Primary actor: Player

Goal in context: To win the game by moving Wilbur to the exit of the board.

Preconditions: Game must be started and the player must not have pressed pause.

Trigger: Game has started and the player believes they have collected all the corn.

Scenario:

1. Player navigates to end of board
2. Player steps on end space

Exceptions:

1. Player has not collected all the corn. Player must collect the rest of the corn, see **collision condition encountered** use case.
2. Character is hit by butcher on end space. The player should be invincible on the end tile to allow them to pass through the exit without dying.

Priority: High priority, main functionality.

When available: First increment.

Frequency of use: Maximum once per game.

Channel to actor: Via computer, game interface.

Secondary actors: n/a

Channels to secondary actors: n/a

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Open issues:

1. Will the game notify the player that the character has not collected enough corn? If so, how?
2. Will an animation show Wilbur exiting when conditions are met?

3. Use case template for Collision condition encountered

Use case: Collision condition encountered

Iteration: 1

Primary actor: Player

Goal in context: To receive feedback if the character touches an item or enemy

Preconditions: Game must be started and the player must not have pressed pause. In some cases (with enemies) the player must not be invincible.

Trigger: The player walks into, steps on, or otherwise contacts an item or enemy.

Scenario:

1. Player navigates onto beartrap, corn, butcher, magic truffle, or butcher runs into the player.
2. Player sees Wilbur's score decrease in the case of the beartrap (dies if points become negative). Wilbur dies in case of a butcher encounter. Wilbur's points increase in case of corn encounter. Wilbur's points increase and becomes invincible for some specified time in case of magic truffle encounter.

Exceptions:

1. Wilbur is invincible. See **Become invincible** use case.
2. Wilbur reaches the end (with the correct amount of corn) at the same time as the butcher hits him. See **Character reaches end** use case.
3. Wilbur reaches a magic truffle (or other reward) at the same time as the butcher or trap gives him damage. In this case, the reward will take precedence.

Priority: High priority, main function of the game.

When available: First increment.

Frequency of use: Very frequent, multiple times per game.

Channel to actor: Via computer, game interface.

Secondary actors: n/a

Channels to secondary actors: n/a

Open issues:

1. Will the player be able to see how much damage was taken?
2. Will Wilbur show that he has been damaged?
3. Will the player be able to see how many points were gained? Or the timer for invincibility?
4. How will we show that Wilbur is invincible? Will the enemies react differently to him?

4. Use case template for Become invincible

Use case: (Wilbur) Becomes invincible.

Iteration: 2

Primary actor: Player

Goal in context: Allowing Wilbur to not take damage when being attacked by a butcher or walking over a beartrap.

Preconditions: Game must be started and the player must not have pressed pause, a magic truffle must be available on the board.

Trigger: Player sees a magic truffle on the board and will try to gather it.

Scenario:

1. Player navigates to the truffle
2. Player walks over the truffle
3. Player collects truffle, increasing points and making them invincible for some specified amount of time.

Exceptions:

1. Wilbur becomes invincible at the same time as he is affected by a butcher or beartrap. See **Collision condition encountered** use case.

Priority: Medium priority

When available: First or second increment.

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Frequency of use: Semi frequently, maybe a few times a game.

Channel to actor: Via computer, game interface.

Secondary actors: n/a

Channels to secondary actors: n/a

Open issues:

1. How long should invincibility last?
2. Should Wilbur move differently when invincible?

5. Use case template for Pause Game

Use case: Pause the game.

Iteration: 2

Primary actor: Player

Goal in context: To freeze the state of the game so that the player can exit, take a break, restart or resume.

Preconditions: Game must be started and Wilbur must be alive.

Trigger: Player presses the pause button.

Scenario:

1. Player decides to take a break, restart, or exit
2. Player presses the pause button
3. Player decides to exit and selects the exit option, decides to restart the game and selects the restart option, or decides to keep playing and selects the resume option.

Exceptions:

1. Wilbur is damaged, or given points at the same time as a pause occurs. In this case, the damage or reward will take precedence.

Priority: Medium priority.

When available: Second increment.

Frequency of use: Somewhat frequent.

Channel to actor: Via computer game interface.

Secondary actors: n/a

Channels to secondary actors: n/a

Open issues:

1. Which button will trigger pause?
2. Will the player have more options than exit and resume?
3. How will we accurately freeze the state of the game?