Use Cases

## Start a Game:

1. Press ‘Start’ button.  
2. Run game loop.

Preconditions:

* Must be in ‘Play Mode’.
* The game must not be currently running.

Postconditions:

* Game loop runs
* // hidden grid of build mode – this might just be a given as we are in play mode from pre-condition

## Pause a Game:

1. Press ‘Pause’ button.

2. Game loop pauses.

Preconditions:

* Must be in ‘Play Mode’.
* Game must be running.

Postconditions:

* Game has been paused, but not switched to ‘Build Mode’.
* Game loop has been paused.
* ‘Build Mode’ unlocks.

## Exit a Game:

1. Click ‘Quit’ Button.

2. Ask the user for whether they wish to save before exiting.

3. User presses ‘Yes‘ and saves the file.

4. Exits the game.

Preconditions:

* Must be in either game mode.

Postconditions:

* Build is either saved or discarded.
* Application is closed.

Alternate Paths:

3. User presses ‘No’

4. Go to step 4 (Main Path)

3. User presses ‘Cancel’

4. Game returns to the state it was in prior to hitting ‘Exit’

## Switch Between Modes:

1. Press ‘Switch Mode’ button.

2. Toggle to the alternative mode.

Postcondition:

* Display alternative view.

## Triggering the Flipper Manually:

1. User presses the mapped button for moving the flipper.

2. Flipper rotates.

3. User releases the button.

4. Flipper returns to the original state.

Preconditions:

* Flippers must have a button mapped to them.
* Must be in ‘Play Mode’.

Postconditions:

* Flipper is in new position // probably don’t need this postcondition as step 4 says flipper returns to original state.

## Ball hits a Gizmo:

1. Ball is in motion.

2. Ball collides with gizmo.

3. Ball changes direction and velocity based on reflection coefficient.

4. Ball continues to have motion.

Preconditions:

* Should be in ‘Play Mode’.
* Game should not be paused.
* Ball has been shot from the absorber // may not be necessary as a ball doesn’t have to start from absorber.

Postcondition:

* Ball changes it’s direction and/or speed.

## Ball hits Absorber:

1. Ball is in motion.

2. Ball collides with the absorber.

3. Ball stops and is re-positioned in the lower right-hand corner of the absorber.

Preconditions:

* Should be in ‘Play Mode’.
* Game should not be paused.
* Ball has been shot from the absorber // may not be necessary as a ball doesn’t have to start from absorber.

Postcondition:

* Ball has stopped and is now in the right-hand corner of the absorber.

## Shooting a Ball from Absorber:

1. Absorber is triggered.

2. Ball travels straight up at 50L/s until it hits something.

Preconditions:

* Should be in ‘Play Mode’.
* Game should not be paused.
* Ball must be on absorber.

Postcondition:

* Ball is in motion.

## Adding a Gizmo:

1. Pick the desired Gizmo.

2. Drag the Gizmo to board.

3. Release the gizmo in desired place.

4. Gizmo added.

Preconditions:

* Should be in build mode.
* Game board is not full.

Post conditions:

* New gizmo is added to the board.

Alternate Path:

3. Game rejects the gizmo as it overlaps an existing gizmo on the board.

4. Go to step 1 (Main Path).