Use Cases

Build Mode

Add Gizmo

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Add Gizmo" button
- Basic course of events
  - User clicks where they want the gizmo to be
  - System checks if the gizmo to be added would overlap with any other existing gizmo
  - Adds gizmo to board
- Alternative event
  - Gizmo would overlap with another gizmo
  - System does not place gizmo
- Post-condition
  - Gizmo is added to the game board

Move Gizmo

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Move Gizmo" button
- Basic course of events
  - User clicks the gizmo they want to move
  - User clicks where they want to move the gizmo
  - System checks if the gizmo to be moved would overlap with any other existing gizmo
  - Moves gizmo to selected location
- Alternative event
  - Gizmo would overlap with another gizmo
  - System does not move gizmo
- Post-condition
  - Gizmo is moved to another part of the game board

Remove Gizmo

- Pre-conditions
    - User must be in build mode
- Triggers
    - User presses the "Remove Gizmo" button
- Basic course of events
    - User clicks the gizmo they want to remove
    - System deletes gizmo from board
- Post-condition
    - Gizmo is removed from the game board

Rotate Gizmo Clockwise

- Pre-conditions
    - User must be in build mode
- Triggers
    - User presses the "Rotate Gizmo Clockwise" button
- Basic course of events
    - User clicks on gizmo to rotate clockwise
    - System rotates gizmo 90 degrees clockwise
- Post-condition
    - Gizmo is rotated 90 degrees clockwise

Rotate Gizmo Anti-clockwise

- Pre-conditions
    - User must be in build mode
- Triggers
    - User presses the "Rotate Gizmo Anti-clockwise" button
- Basic course of events
    - User clicks on gizmo to rotate anti-clockwise
    - System rotates gizmo 90 degrees anti-clockwise
- Post-condition
    - Gizmo is rotated 90 degrees anti-clockwise

Add Connection

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Add Connection" button
- Basic course of events
  - User clicks on a gizmo to link its trigger
  - User clicks on another gizmo to link its action to the previously clicked gizmos trigger
  - System links first gizmos trigger to second gizmos action
- Post-condition
  - First gizmos trigger is linked to second gizmos action

Remove Connection

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Remove Connection" button
- Basic course of events
  - User clicks on a gizmo to have its trigger removed
  - User clicks on a gizmo to have its action removed
  - System checks whether there is a connection between the two gizmos
  - System removes connection
- Alternative event
  - System finds there is no connection between the two gizmos
  - System does nothing
- Post-condition
  - A connection between two gizmos is removed

Add Key Connection

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Add Key Trigger" button
- Basic course of events
  - User presses a key to link its trigger
  - User clicks on a gizmo to link its action to the keys trigger
  - System links the keys trigger to the gizmos action
- Post-condition
  - Key-press's trigger is connected to gizmos action

Remove Key Connection

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Remove Key Connection" button
- Basic course of events
  - User presses a key to have its trigger removed
  - User clicks on a gizmo to have its action removed
  - System checks whether there is a connection between the key and gizmo
  - System removes connection
- Alternative event
  - System finds there is no connection between the key and gizmo
  - System does nothing
- Post-condition
  - A connection between a key and a gizmo is removed

Add Ball

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Add Ball" button
- Basic course of events
  - User enters the balls velocity
  - User enters the balls direction
  - User clicks where to place the ball
  - System checks whether the ball would overlap with a previously placed gizmo or the boundary of the playing area
  - System places ball on board with entered velocity and direction
- Alternative event 1
  - System finds that the ball overlaps with a gizmo or the boundary of the playing area
  - System does nothing
- Alternative event 2
  - System finds that the ball has no velocity and is inside an absorber
  - System places ball on the board with entered velocity and direction
- Post-condition
  - Ball is placed on the board with set velocity and direction

Save Configuration

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses "Save Configuration" button
- Basic course of events
  - User enters a file name
  - System saves the layout to a file in the standard format with the given name
- Post-condition
  - Layout is saved to a file

Load Configuration

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses "Load Configuration" button
- Basic course of events
  - User browses for file to load
  - User clicks open file
  - System loads file into the game board
- Post-condition
  - Layout is loaded from file

Switch to Run Mode

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses the "Switch to Run Mode" button
- Basic course of events
  - System switches to run mode
- Post-condition
  - System is switched to run mode

Quit

- Pre-conditions
  - User must be in build mode
- Triggers
  - User presses "Quit" button
- Basic course of events
  - System checks if layout has saved
  - System prompts user to save
  - User clicks save
  - User enters a file name to save as
  - System saves layout to file in standard format
  - System quits application

- Alternative event 1
  - System finds layout has already been saved
  - System quits application
- Alternative event 2
  - User clicks do not save
  - System quits application
- Post-condition
  - The application has closed

Change Gravity

- Pre-conditions
  - User must be in build mode
- Triggers
  - User moves gravity slider and clicks apply settings
- Post-conditions
  - System changes gravity to set amount

Change Friction1

- Pre-conditions
  - User must be in build mode
- Triggers
  - User moves friction1 slider and clicks apply settings
- Post-conditions
  - System changes friction1 to set amount

Change Friction2

- Pre-conditions
  - User must be in build mode
- Triggers
  - User moves friction2 slider and clicks apply settings
- Post-conditions
  - System changes friction2 to set amount

Run Mode

Press Key Trigger

- Pre-conditions
    - User must be in run mode
- Triggers
    - User presses a key
- Basic course of events
    - System checks if key's trigger is linked to any actions
    - System performs all actions
- Alternative events
    - System finds key's trigger isn't linked to any actions
    - System does nothing
- Post-conditions
    - Actions link to the keys trigger are performed

Play game

- Pre-conditions
    - User must be in run mode
- Triggers
    - User presses "Play" button
- Post-condition
    - System repeatedly ticks at a set rate

Tick game

- Pre-conditions
    - User must be in run mode
- Triggers
    - User presses "Tick" button
- Post-condition
    - System performs a single tick

Reset game

- Pre-conditions
    - User must be in run mode
- Triggers
    - User presses "Reset" button
- Post-condition
    - System resets game board to starting configuration

Load Configuration

- Pre-conditions
    - User must be in run mode
- Triggers
    - User presses "Load Configuration" button
- Basic course of events
    - User browses for file to load
    - User clicks open file
    - System loads file into the game board
- Post-condition
    - Layout is loaded from file

Switch to Build Mode

- Pre-conditions
    - User must be in run mode
- Triggers
    - User presses the "Switch to Build Mode" button
- Basic course of events
    - System switches to build mode
- Post-condition
    - System is switched to build mode

Quit

- Pre-conditions
  - User must be in run mode
- Triggers
  - User presses "Quit" button
- Basic course of events
  - System quits application
- Post-condition
  - The application has closed