**Use Case Documentation WD Team 4**

**CS308**

Use case: Start

Actor: Player

Preconditions: User in build mode, and changes to run mode to start gameplay

Triggers: User clicks the start button

Basic course of events:

1. User clicks the “Start” button

1.1 button mouse event is triggered

1.2 code behind button event handler is fired and the system reacts to user click event

2. Board changes from build mode to play mode

3. Control panel is switched in JFrame displaying the gameplay board

4. Gizmos and ball are displayed in static position, ready for gameplay

Use case: Stop

Actor: Player

Preconditions: Game play must have already be started in order to be stopped

Triggers: User clicks Stop button

Basic course of events:

1. Game is in run mode and has already started gameplay

2. User wishes to end game, and clicks the “Stop” Button

3. Mouse event is triggered, initiating the gameplay to be stopped

4. Game is stopped during execution

Post conditions: The game stops, and stops the ball moving, as well as flippers rotating

Use case: Load Model from pre-existing source

Actor: Player

Preconditions: N/A User expects to load previously saved game

Triggers: User Clicks Load Model button

Basic course of events:

1. User executes Gizmoball system game

2. GUI is displayed to the user

3. User clicks “Load Model” button

4. Button triggers event listener to react to load button being clicked

5. Pre-existing saved game is loaded from file

6. GUI is displayed to the user

Alternative paths: If unexpected data from file throws an exception

Postconditions: Game is displayed in previously saved format as expected

Use case: Reload Model

Actor: Player

Preconditions: User in build mode

Triggers: User Clicks Reload Model button

Basic course of events:

1. User clicks “Reload Model” button

2. Button triggers event listener to react to reload button being clicked

3. Pre-existing saved game is loaded from file

4. GUI is displayed to the user

Alternative paths: If unexpected data from file throws an exception

Postconditions: Game is displayed in previously saved format as expected

Use case: Save Model

Actor: Player

Preconditions: There should be some progress in build mode in order to save

Triggers: User Clicks Save Model button

Basic course of events:

1. User initiates game, i.e. game is started

2. User is in build mode and creates the gizmos and gameplay as they would like it to be presented in the GUI

3. User clicks “Save Model” during system execution

5. Mouse event trigger is handled

6. Build mode state is saved to external file

7. File is saved for use in future for loading gameplay build

Alternative paths:

1. An exception is raised preventing the user from saving the game.

2. The system crashes whilst the user is saving the data preventing the game from being saved.

Post conditions: Data is saved to a file for use at a later time if the user would like to reload in the future. File is saved without error

Use case: Build Gameplay

Actor: Player

Preconditions: N/A

Triggers: User starts game by clicking on the “Build mode” button to run the mode builder.

Basic course of events:

1. User starts the system game

2. User is in gizmo build mode

3. User can click on buttons displayed on GUI to create Gizmos, flippers, add ball etc to the game

4. When any of these are clicked, the system responds to the mouse event corresponding to the correct button clicked

5. Gizmos are placed in coordinates of game board which the user clicks to create

6. Gizmos such as the absorber are created using drag and drop to define the size

7. Gizmos can be connected together in build mode to form shapes in the board

8. Other settings such as friction and gravity can be defined at this stage

9.1 When the user is finished creating the build of the game, the user can click “Run Mode” firing the mouse event

9.2 Run mode is initialised and the game build created is now displayed for the user to play the game

Alternative paths: 1. The user quits whilst in build mode.

2. User deletes the gizmos already created and aborts build mode unexpectedly.

Use case: Quit

Actor: Player

Preconditions: Game must already be started or in build mode for the user to be able to quit the game using the GUI

Triggers: User clicks Quit button during build mode or in gameplay, triggering an event to stop the game and close the GUI

Basic course of events:

1. User clicks the “Quit game” button

2. System responds to the event and handles this by exiting the system and closing the GUI

Post conditions: Execution finishes, gameplay stops and the GUI closes

\*Still need more use cases such as Add Gizmo, Add Absorber, Key Connect to event handling, Add Flippers etc.\*

Use case: Add Gizmo

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the add gizmo button

1. Basic course of events:
2. User in in build mode
3. User clicks add gizmo button
4. Mouse event trigger is handled
5. User clicks somewhere on game board
6. Mouse event trigger is handled
7. Gizmo is added to the board at the coordinates the user clicked on the grid

Post conditions: Gizmo is recorded and put onto the game board at user coordinates

Use case: Add Absorber

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the add gizmo button

Basic course of events:

1. User in in build mode
2. User clicks add absorber button
3. Mouse event trigger is handled
4. User clicks somewhere on game board
5. Mouse event trigger is handled
6. Absorber is added to the board at the coordinates the user clicked on the grid

Post conditions: Absorber is recorded and put onto the game board at user coordinates

Use case: Add Flipper

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the add flipper button

Basic course of events:

1. User in in build mode
2. User clicks add flipper button
3. Mouse event trigger is handled
4. User clicks somewhere on game board
5. Mouse event trigger is handled
6. Flipper is added to the board at the coordinates the user clicked on the grid

Post conditions: Flipper is recorded and put onto the game board at user coordinates

Use case: Key Connect

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the key connect button

Basic course of events:

1. User in in build mode
2. User clicks the key connect button
3. Game waits for user to click a flipper or bumper
4. Mouse event is handled
5. Games waits for user to press a mouse or keyboard key
6. Key listener event is handled
7. Key is linked to object
8. Key listener is added for that game load out

Post conditions: Action on board is connected to key listener

Use case: Key Disconnect

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the key disconnect button

Basic course of events:

1. User in in build mode
2. User clicks the key disconnect button
3. Game waits for user to click a flipper or bumper
4. Mouse event is handled
5. Games waits for user to press a mouse or keyboard key
6. Key listener event is handled
7. Key is unlinked from object
8. Key listener is deleted for that key

Post conditions: Action on board is disconnected to key listener

Use case: Add Ball

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the add ball

Basic course of events:

1. User in in build mode
2. User clicks add ball button
3. Mouse event trigger is handled
4. User clicks somewhere on game board
5. Mouse event trigger is handled
6. Ball is added to the board at the coordinates the user clicked on the grid
7. Other balls are checked for on the board and are deleted

Post conditions: One ball is now on the board

Use case: Rotate

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the rotate button

Basic course of events:

1. User in in build mode
2. User clicks rotate button
3. Mouse event trigger is handled
4. User clicks somewhere on game board
5. Mouse event trigger is handled
6. Object at grid coordinates is rotated

Post conditions: Object is rotated

Use case: Clear board

Actor: Player

Preconditions: Game is running in build mode

Triggers: User click the clear board

1. Basic course of events:
2. User in in build mode
3. User clicks clear board
4. Mouse event trigger is handled
5. Board is deleted
6. New empty game board is loaded in

Post conditions: Empty board is loaded

Use case: Move

Actor: Player

Preconditions: Game is running in build mode

Triggers: Use clicks move button

Basic course of events

1. User is in build mode
2. User clicks move
3. Mouse event is handled
4. User selects object on board
5. Mouse event trigger is handled
6. Object at grid coordinates is selected
7. User clicks place on board
8. Mouse event trigger is handled
9. Object is placed at that location on board and removed from previous location on the board

Post conditions: Object is move from one set of coordinates to another

Use case: Connect

Actor: Player

Preconditions: Game is running in build mode

Triggers: Use clicks connect button

Basic course of events

1. User is in build mode
2. User clicks connect
3. Mouse event is handled
4. User selects object on board
5. Mouse event trigger is handled
6. Object at grid coordinates is selected
7. User clicks another object on board
8. Mouse event trigger is handled
9. Object are connected

Post conditions: Two objects are connected

Use case: Disconnect

Actor: Player

Preconditions: Game is running in build mode

Triggers: Use clicks disconnect button

Basic course of events

1. User is in build mode
2. User clicks disconnect
3. Mouse event is handled
4. User selects object on board
5. Mouse event trigger is handled
6. Object at grid coordinates is selected
7. User clicks another object on board
8. Mouse event trigger is handled
9. Object are disconnected

Post conditions: Two objects are disconnected

Use case: Change friction

Actor: Player

Preconditions: Game is running in build mode

Triggers: Use moves friction slider

Basic course of events

1. User is in build mode
2. User moves friction slider
3. Event is handled
4. New slider position recorded
5. Friction number changed to that

Post conditions: Games recorded friction changed

Use case: Change gravity

Actor: Player

Preconditions: Game is running in build mode

Triggers: Use selects text field

Basic course of events

1. User is in build mode
2. User selects text field
3. User types in text field
4. New number recorded
5. Game gravity changed to that

Post conditions: Games recorded gravity changed

Use case: Delete

Actor: Player

Preconditions: Game is running in build mode

Triggers: Use clicks delete button

Basic course of events

1. User is in build mode
2. User clicks delete button
3. Mouse event is handled
4. User clicks object on board
5. Mouse event is handled
6. Object at coordinates clicked is deleted from board

Post conditions: Object has been removed from board