**Use Cases in Build Mode**

**General Precondition:**

* The game must be in build mode.

**Add gizmos**

**Precondition & Trigger:**

* 2D Map must exist.
* The user has to press the add gizmo option to initiate the process of adding a gizmo.

**Basic course of events:**

1. Press the add gizmo button/option.
2. The user has to select from a selection of gizmos (square, circular, triangular, flipper or absorber).
3. Using the mouser to point on the 2d grid map to place the gizmo.
4. Gizmo is placed and the process has been carried out successfully.

**Alternative Paths:**

**Absorber**

1. (Main step 2) If the absorber is selected the user has to select 2 points on the map.
2. The system will create an absorber based on the 2 positions with height and length that will vary from 1L upwards.
3. Place it on the map.

**Cancel**

1. (Main step 2 or 3) The user can press esc button to cancel the action.

**Change gizmo position**

**Precondition & Trigger:**

* At least 1 gizmo must exist on the map.
* The user has to click the change gizmo position option.

**Basic course of events:**

1. Press the change position button/option.
2. The user has to select which gizmo on the map to move.
3. Select on the map the destination of the new position.
4. The map updates and shows the gizmo inside the new position.

**Alternative Paths:**

**Empty first position**

1. (Main step 2) If the selected position doesn’t have a gizmo, alerts the user.
2. The system will only procced once the user picks a position which has a gizmo.
3. Then place the gizmo.

**Gizmo in destination position**

1. (Main step 3) If the destination position already has a gizmo, alerts the user.
2. The system will only proceed once the user picks an empty position on the map.
3. Then places the gizmo.

**Rotate gizmo**

**Precondition & Trigger:**

* At least one gizmo must be present on the map.
* The user must click on the rotate gizmo button/option.

**Basic course of events:**

1. Press the rotate gizmo button.
2. Select a position on the 2d map grid that has a gizmo.
3. The system will rotate the gizmo 90 degrees.

**Alternative Paths:**

1. (Main step 2) If the user selects a position that doesn’t have a gizmo nothing will happen.

**Connect trigger to action**

**Precondition & Trigger:**

* At least have 2 gizmos available to set a trigger and an action.
* The user must select the trigger to action option.

**Basic course of events:**

1. Select the trigger to action option then select a gizmo that will trigger the action (ball touching the gizmo).
2. Select 1 or more gizmos that will react to the trigger with an action.
3. Set the gizmos’ action (become invisible, rotate , change colour).

**Alternative Paths:**

**Skipping trigger gizmo & action performed on gizmo/gizmos**

1. (Main step 2 & 3) If the user doesn’t select the gizmo that will trigger the action or it doesn’t select the gizmo/gizmos that will be effected (do some action), The system will produce a reasonable error.

**Connect key to gizmo**

**Precondition & Trigger:**

1. At least 1 gizmo must be present on the map.
2. Press the key to gizmo option.

**Basic course of events:**

1. Click the option to assign a key to a gizmo.
2. Select a key on the keyboard.
3. Select 1 or more gizmos from the map to be activated(action).

**Alternative Paths:**

**Empty position**

1. (Main step 3) If the user picks a position that doesn’t not have a gizmo, it will be disregarded.

**No Key identified**

1. (Main step 2) If the user tries to skip the key assignment, the system will produce an error.

**Delete gizmo**

**Precondition & Trigger:**

* At least 1 gizmo must be present on the map.
* Press the delete gizmo option.

**Basic course of events:**

1. Select the delete option.
2. Pick a position on the map that has a gizmo.
3. The system will delete the gizmo.

**Alternative Paths:**

1. (Main step 2) If the user selects a position that is empty.
2. The system will alert the user that nothing was deleted.

**Save Map**

**Precondition & Trigger:**

* At least 1 gizmo is present on the map.
* User must click the save option to initiate the saving process.

**Basic course of events:**

1. Select the save option
2. Navigate to pick a saving directory for the saved game
3. An output file will be produced as a saving file.

**Alternative Paths:**

**Cancel**

1. (Main step 2) User can cancel at any time without saving any file.

**Load Map**

**Basic course of events:**

1. Select the load map option.
2. Navigate to find available map on the storage drive.
3. Click on a specific map and open.
4. The system will load the map.

**Alternative Paths:**

**Cancel**

1. (Main step 2) The user can cancel the loading at any time.
2. The system will not load a map.

**Incompatible file**

1. (Main step 3) If the user picks a non-compatible file to load an error pops up.
2. The loading is terminated unsuccessfully without loading any map.

**Ball Placement**

**Precondition & Trigger:**

* The user must click on the place ball option/button.

**Basic course of events:**

1. Press the place ball button.
2. Select a position on the 2d map grid that is empty.
3. The system will place the ball on that position.

**Alternative Paths:**

**Non-Empty Position**

1. (Main step 2) If the user selects a position that has a gizmo it will alert.
2. The use will wait until the user picks an empty position to place the ball.

**Switch Mode:**

* The building mode switches to playing/running mode and disregards any unsaved changes.

**Quit the application**

* The game is terminated and any unsaved changed disregarded.