

Gizmoball: Use Cases

CS308 Group MW1

Play Mode

Start Game

Preconditions

- Game must not be running already
- A build must be loaded and ready to play

Triggers

- Button click "Start" button

Basic course of events

- Ball spawns
- Game clock begins
- Ball begins moving

Alternative Paths

- No build loaded/Game is already running; Prompt user to load a build/Do nothing

Post Condition

- Game clock is ticking
 - Ball is moving
-

Pause Game

Preconditions

- Game must be currently running in order to use stop game button
- Ball must still be moving

Triggers

- Button click "Stop" button

Basic Course of Events

- Ball starts in motion
- Stop button clicked by user

- Game tick stops
- Ball movement stops

Alternative Paths

- Ball is not in motion when clicked: Must already be stopped; warning message/do nothing.

Postconditions

- Game tick stopped at current tick
 - Ball not in motion
-

Tick

Preconditions

- Stop button must have been used before tick button will work
- Ball motion must have stopped, based off above

Triggers

- Button click “Tick” button

Basic Course of Events

- Stop button is clicked to stop ball and allow for tick to be used
- Game tick stops ticking
- Tick button is pressed
- Game tick will increment by one tick
- GUI will rewrite and display any updates that occurred during the tick

Alternative Paths

- Ball is still in motion when clicked: Game hasn’t been paused yet to allow for game tick; do nothing.

Postconditions

- Game clock is paused
 - Ball is not in motion
 - Screen has been redrawn to reflect last tick
-

Build Mode

Preconditions

- Game state must be in play mode

Triggers

- Button click “Build Mode” button

Basic Course of Events

- Game view switches from play mode into build mode

Alternative Paths

- No alternative paths

Postconditions

- Build mode interface will be visible
 - Play mode options no longer visible
-

Load Game

Preconditions

- A valid build must exist externally saved in a file

Triggers

- Load button is clicked by the user

Basic course of events

- The user clicks the load game button
- A file explorer will open with a list of the saved games
- The user will select the game they wish to load
- The game will load into play mode

Alternative paths

- No saved build; do nothing
- The file is corrupted give user an error message

Post conditions

- The correct game configuration is loaded from the file into build mode
-

Reload Game

Preconditions

- The game needs to be running or paused to reload the game

Triggers

- Reload button is clicked

Basic course of events

- The user clicks the reload button
- The layout of a current game that is running is reloaded onto the grid

Alternative paths

- No alternative paths

Post conditions

- The game is reloaded and ready to be started

Build Mode

Save Game

Preconditions

- A configured game must exist with objects on the map
- Must be in build mode

Triggers

- Save button is clicked by the user

Basic course of events

- The user enters the title under which they want to save the game
- The user clicks the save button
- The location of every object on the map would be saved in their current state
- The data from the build would be saved to a command file

Alternative paths

- If a user does not name the build; Prompt for a name
- The name given is a duplicate; Prompt for a different name
- There is no space on the hard drive; Prompt user to clear up disk space

Post conditions

- The state of the game is saved to a command file
-

Load Game

Preconditions

- A valid build must exist externally saved in a file

Triggers

- Load button is clicked by the user

Basic course of events

- The user clicks the load game button
- A file explorer will open with a list of the saved games
- The user will select the game they wish to load
- The game will load into build mode

Alternative paths

- No saved build; do nothing
- The file is corrupted give user an error message

Post conditions

- The correct game configuration is loaded from the file into build mode
-

Play Mode

Preconditions

- Game state must be in build mode

Triggers

- Button click "Play Mode" button

Basic Course of Events

- Game view switches from build mode into play mode

Alternative Paths

- No alternative paths

Postconditions

- Play mode interface will be visible
- Build mode options no longer visible

Circle/Triangle/Square/Left Flipper/Right Flipper

Preconditions

- Must be in build mode
- Must be space on the board for object

Triggers

- Button click

Basic Course of Events

- User clicks button according to gizmo they want
- User clicks empty space on board grid
- Gizmo is placed

Alternative Paths

- Board is full; notify user
- Space chosen already has a placed gizmo; notify user or place in closest free space

Postconditions

- Correct gizmo will be placed in the right spot
-

Absorber

Preconditions

- Must be space on board

Triggers

- Button click

Basic Course of Events

- Click button
- Enter Placing mode
- Click and drag across game board for the desired length of gizmo
- Place Absorber
- Exit placing mode

Alternative Paths

- If board selection intersects a placed Gizmo, don't place absorber and prompt user to select empty space

Postconditions

- Absorber placed
-

Move Gizmo

Preconditions

- The game needs to be in build mode
- There needs to be a gizmo added in the layout

Triggers

- Button "move" initiates the moving of Gizmo's

Basic Course of events

- The user selects a Gizmo by clicking it using left mouse click

- The user presses key “move” to starting moving the Gizmo
- The user drags and drops where he wishes the Gizmo to be.
- The user clicks on map to exit the moving mode

Alternative paths

- There is no Gizmo's to be moved
- The Gizmo is moved in position where it cannot exist

Postconditions

- The Gizmo has been moved
-

Rotate Gizmo

Preconditions

- The game needs to be in build mode
- There needs to be a gizmo added in the layout

Triggers

- Button “rotate” initiates the rotation clockwise by 90 degrees of Gizmo's

Basic course of events

- The user selects a Gizmo by clicking it using left mouse click
- The user presses “rotate” to start rotating the Gizmo clockwise
- The user exits the rotation mode by clicking on map

Alternative paths

- There is no Gizmo's to be moved
- The Gizmo cannot be rotated

Postconditions

- The Gizmo has been rotated
-

Delete Gizmo

Preconditions

- Game must be in Build Mode
- Map must contain at least one gizmo

Triggers

- Button click of the “Delete Gizmo” button
- Click of the Gizmo on the Map

Basic Course of Events

- “Delete Gizmo” button click enters “delete state”
- Gizmo to be deleted on the Map is selected by being clicked on once
- The Gizmo is deleted from the map
- The Build Mode remains in “delete state” so if another Gizmo is clicked on it will be deleted
- The Build Mode exits the “delete state” when another button is clicked or the game is switched to Play Mode

Alternative Paths

- No Gizmos on map; warning message/do nothing

Postconditions

- The Gizmo has been deleted
-

Clear Board

Preconditions

- Board must have at least one Gizmo already place; Board cannot be empty

Triggers

- Button click “Clear Board” button

Basic Course of Events

- Button click
- All Gizmos currently place on board are removed
- Any additional balls placed are removed
- Board is fully reset

Alternative Paths

- Board is already clear; do nothing

Postconditions

- Board is clear
-

Connect Gizmo

Preconditions

- There should be at least 2 Gizmo’s placed on the grid

Triggers

- Button click “Connect Gizmo” button

Basic Course of Events

- “Connect Gizmo” button click enters “connect state”
- First Gizmo on the Map to be connected is selected by being clicked on once
- Second Gizmo on the Map to be connected to the first Gizmo is selected by being clicked on once
- The two Gizmos are connected
- The Build Mode exits the “connect state”
- The Build Mode remains in delete mode so if another Gizmo is clicked on it will be deleted
- The Build Mode exits the delete mode when another button is clicked or the game is switched to Play Mode

Alternative Paths

- There is less than 2 Gizmos on the board, show a message to a user/do nothing

Postconditions

- Gizmos are connected correctly
-

Disconnect Gizmo

Preconditions

- At least one set of connected Gizmos must exist on the build

Triggers

- Click “Disconnect Gizmo” button

Basic Course of Events

- Click button
- Enter disconnect state
- Any gizmo that is clicked will be disconnected from other Gizmos providing it was actually connected
- Exit disconnect mode

Alternative Paths

- Clicked gizmo is not connected to anything; Prompt user to select a connected Gizmo instead

Postconditions

- Connected Gizmo will be disconnected
-

Key Connect Gizmo

Preconditions

- Must be at least one flipper placed as well a single Gizmo on the board to enter Key Connect mode

Triggers

- Button click

Basic Course of Events

- Button click
- Enter Key Connect Mode
- Click on any non-connected trigger on the board
- Prompt user to press key to bind
- Get input and map it as a trigger to chosen gizmo
- Prompt disappears
- Exit mode

Alternative Paths

- There are no Gizmos on the board

Postconditions

- Gizmo will respond to keypress
-

Key Disconnect Gizmo

Preconditions

- Must be at least one flipper on the board that is connected

Triggers

- Button click

Basic Course of Events

- Button click
- Enter disconnect mode
- Click flipper
- If flipper is currently connected to a key, remove binding
- Exit mode

Alternative Paths

- The user selects a flipper that is not connected

Postconditions

- Chosen flipper will be unbound

Friction

Preconditions

- None

Triggers

- User input and button click

Basic Course of Events

- User enters valid value for friction in text box
- Button click
- Set the value of the friction that user has entered

Alternative Paths

- The user has entered incorrect value, show user a error message

Postconditions

- Friction value updated
-

Gravity

Preconditions

- None

Triggers

- User input and button click

Basic Course of Events

- User enters value for gravity
- Click a button to set the value of the gravity
- The value of the gravity has been updated

Alternative Paths

- The user has entered incorrect input which will give a user an error message

Postconditions

- Gravity value will be updated
-

Add Ball

Preconditions

- None

Triggers

- User input and button click

Basic Course of Events

- Enter ball size in text box
- Button click
- If value is valid accept it and ball is placed on grid

Alternative Paths

- The input was not in range of possible values prompt the user with error message

Postconditions

- Ball placed on grid