Factory Escape

By Louis Cooper

Game story

The player takes on the role of a small nameless doll in a vast factory. Planned for incineration, and determined to escape their fate, the doll embarks on a perilous journey through challenges and obstacles as they make their way through the factory.

FX

Flames

Sparks

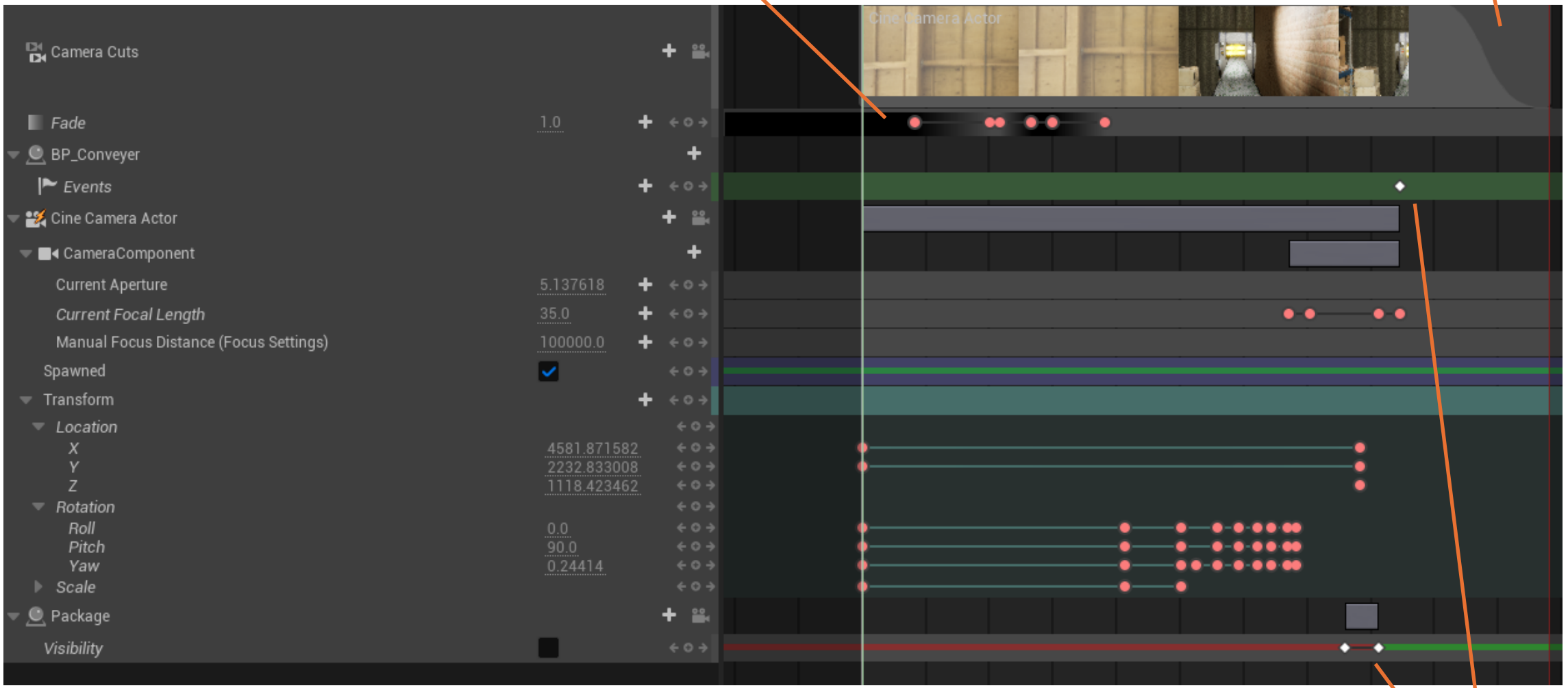
Steam

HDRI (Poly Haven)

LS_Intro

Blending to seamlessly switch cameras

Fading to show eyes opening and closing



Package is hidden and conveyor is off until needed to prevent any problems

LS_SteamIntro

Bee animation and hidden until required

Conveyor turned on at end to link to gameplay

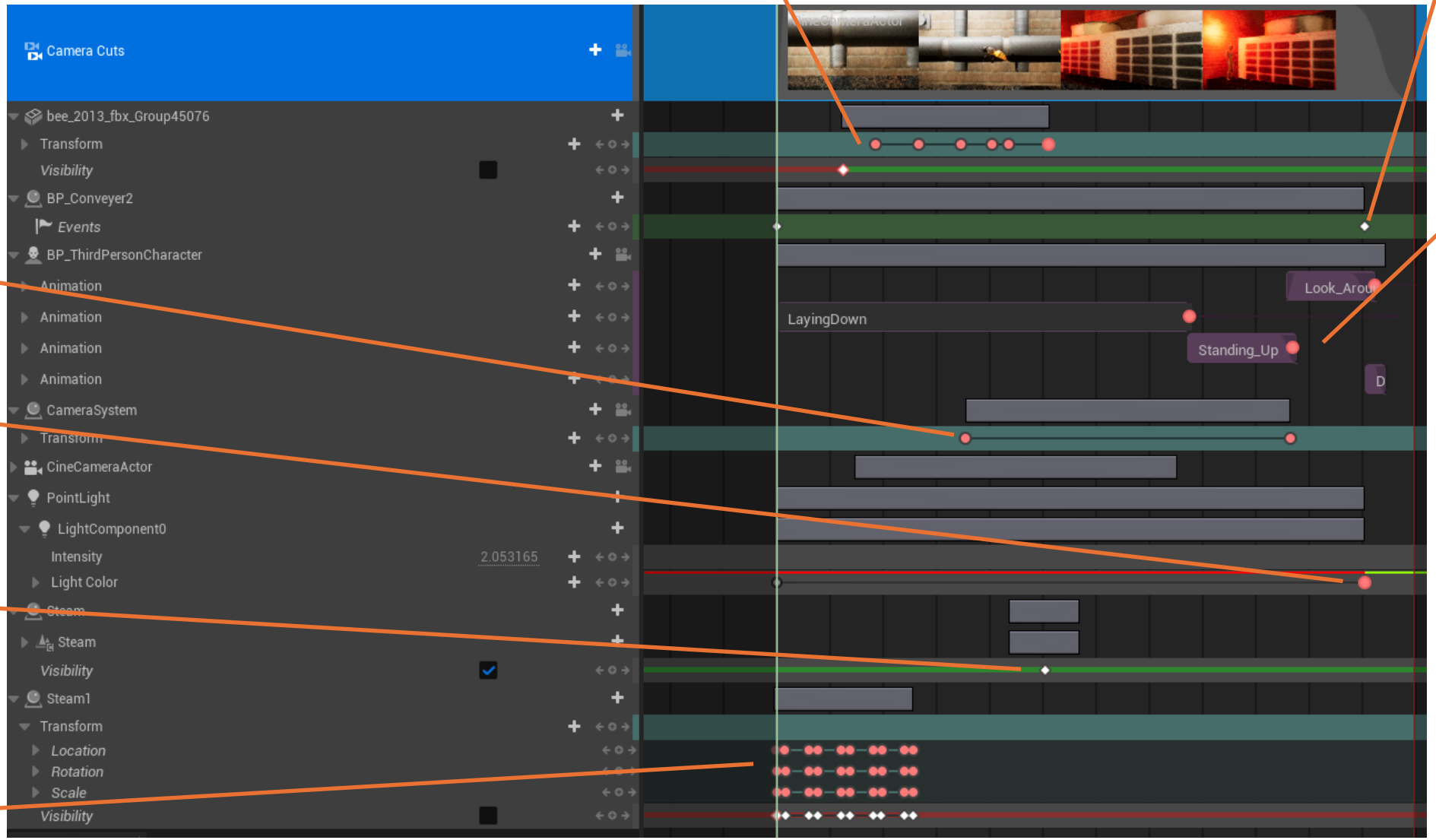
Animations of character with use of weights to overwrite anim bp

Camera movement

Light animation

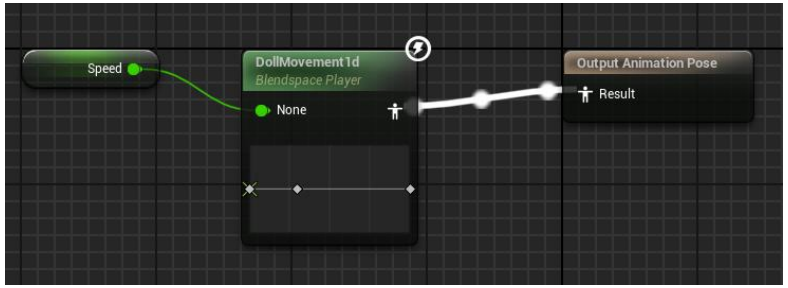
Steam trigger

Droplet animation of it falling

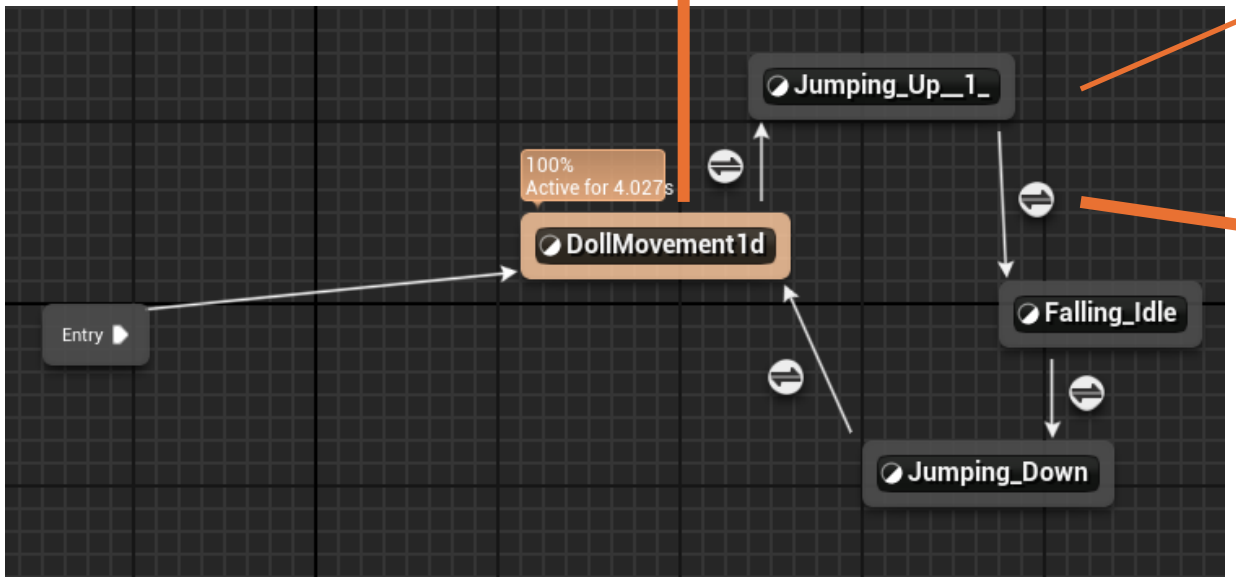


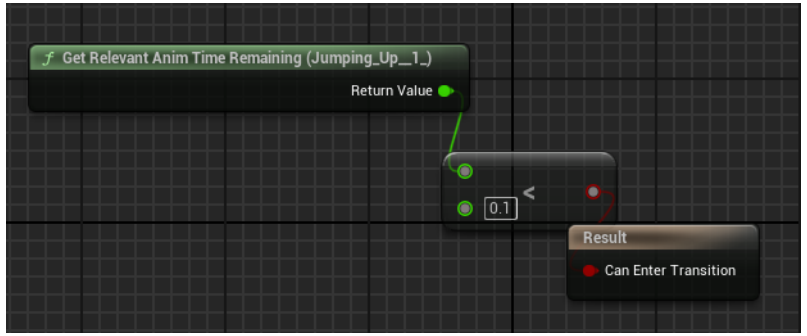
AnimBP

Smooth transition between idle to walking to running based of the speed

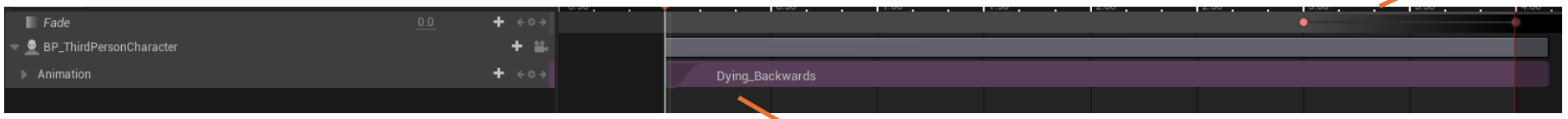


Changes animation state based on criteria like this:





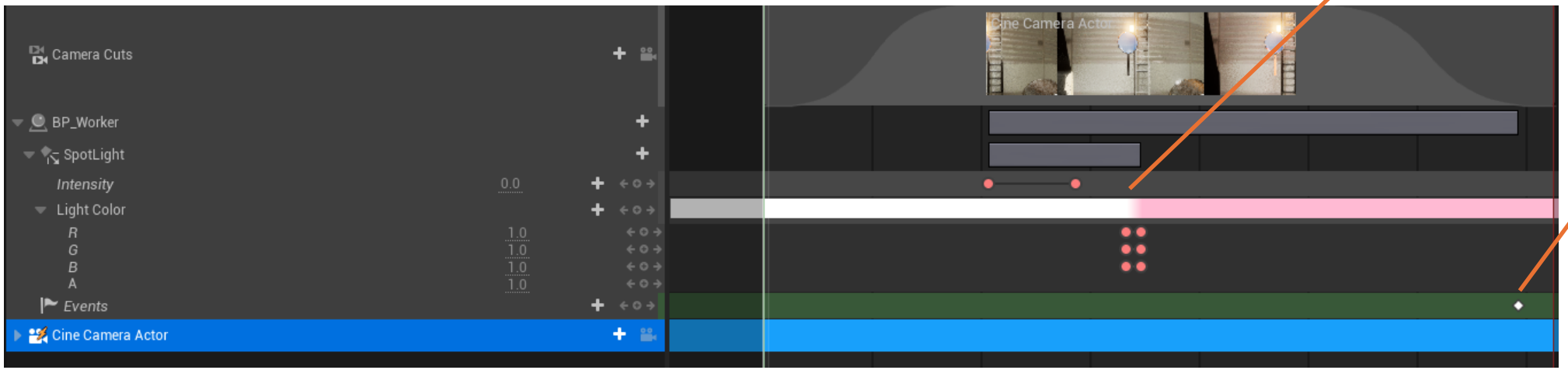
LS_Death



Fade to black

Animation of falling back with fade

LS_BossIntro



Light animation

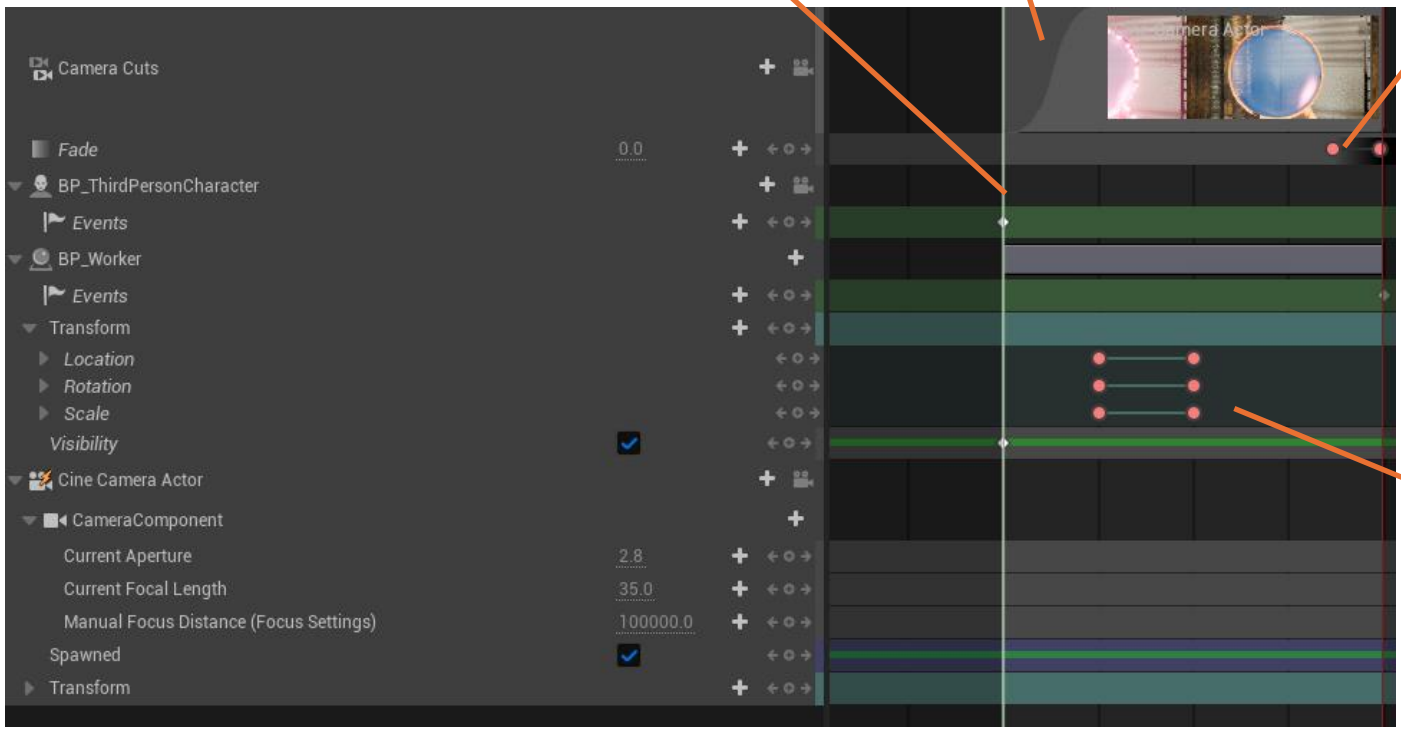
Sets variable that checks if cutscene is done to true

LS_SeenDeath

Sets character variable to Dead

Blend

Fade



Sets worker variable to unseen (to prevent a loop of always thinking is seen and killing character)

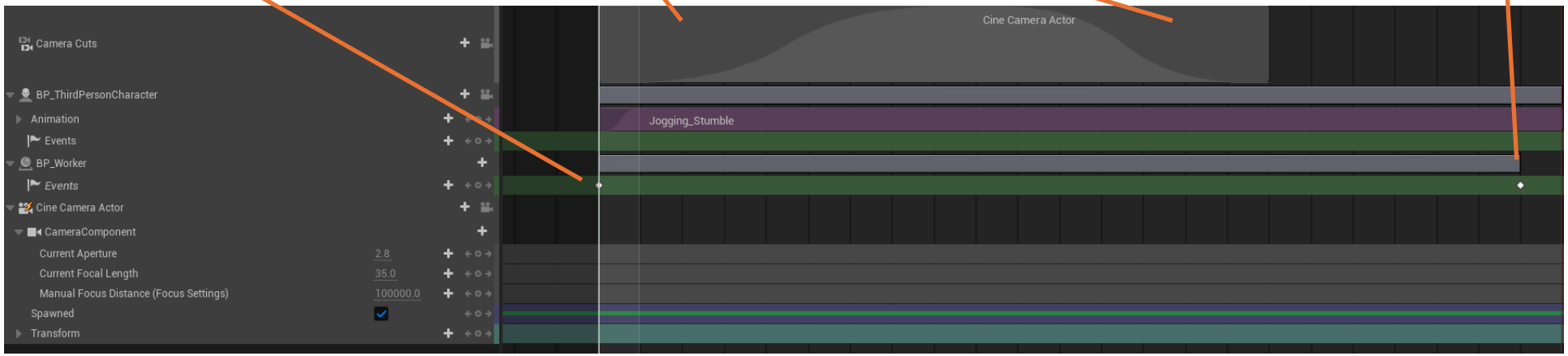
Magnifying glass animation

LS_NearlyFalling

Sets variable that checks if cutscene is done to false

Big blend to make as seamless as possible at that distance

If sequence gets to this point then it triggers seen on worker to kill character

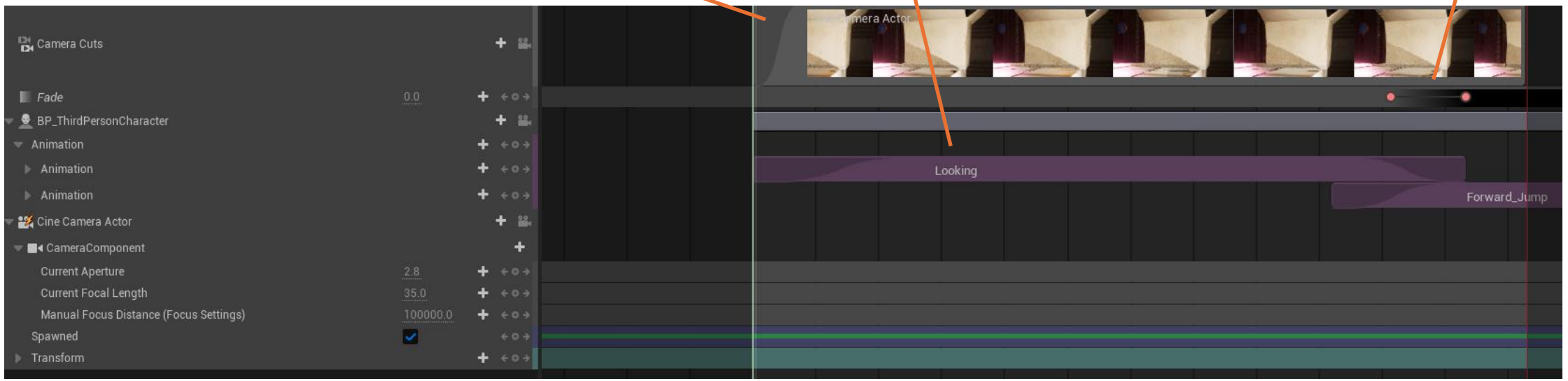


LS_Finale

Blend

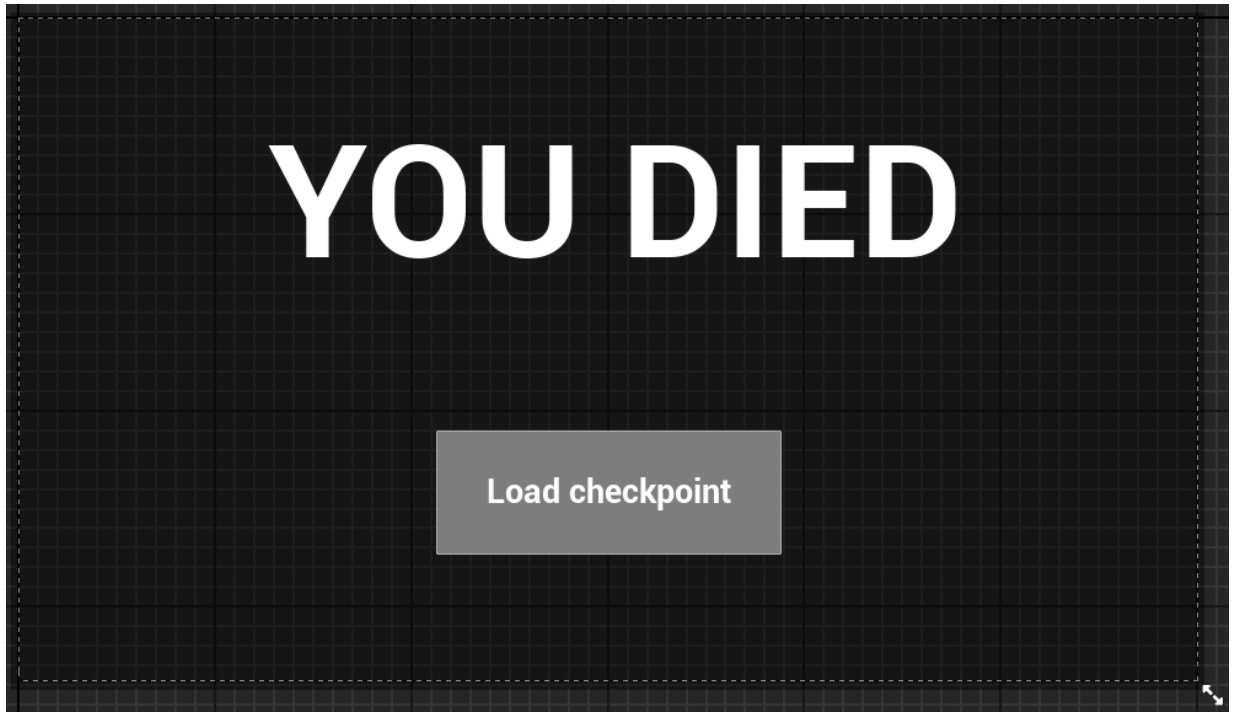
Character animation

Fade to black

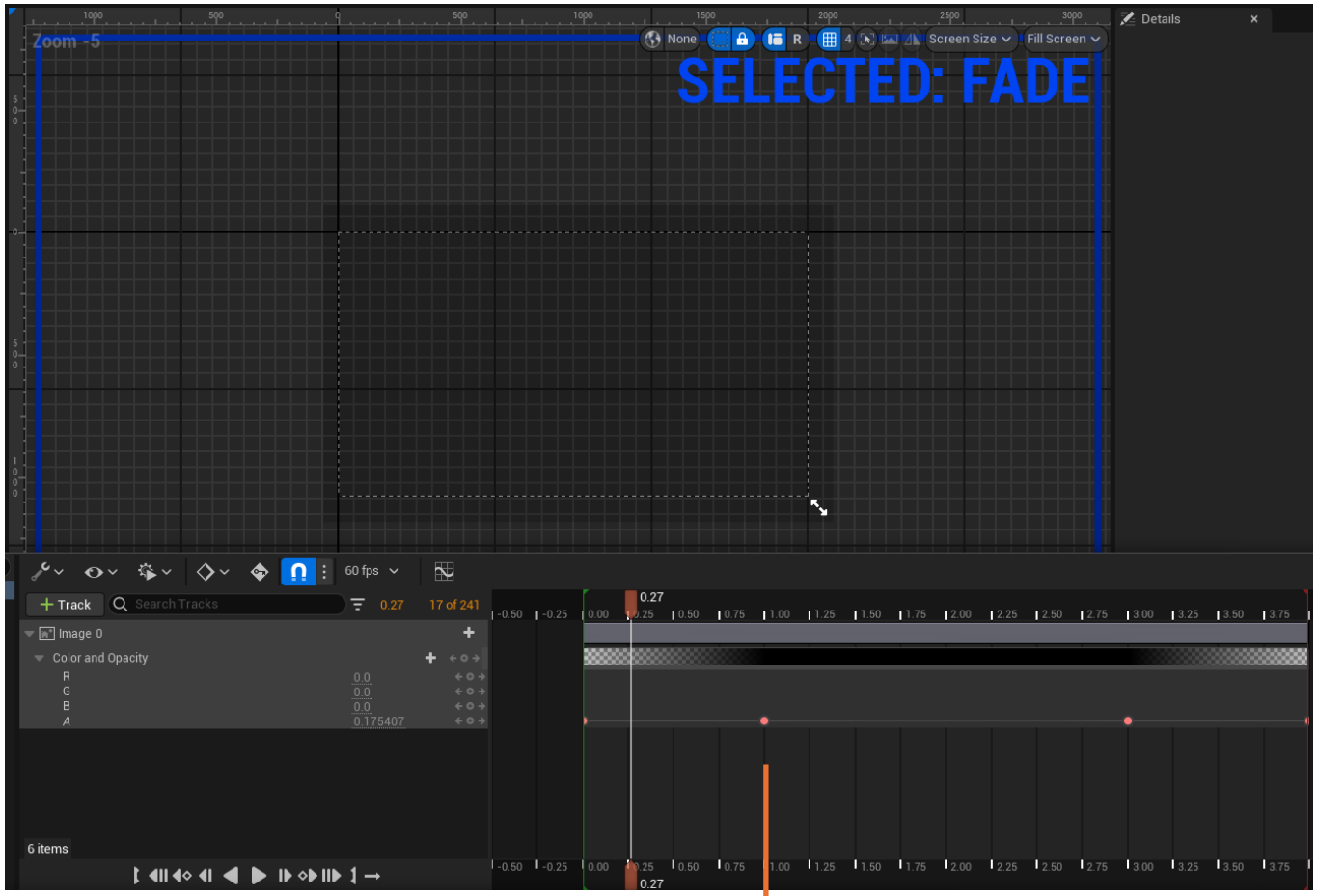


W_MainMenu

W_DeathScreen

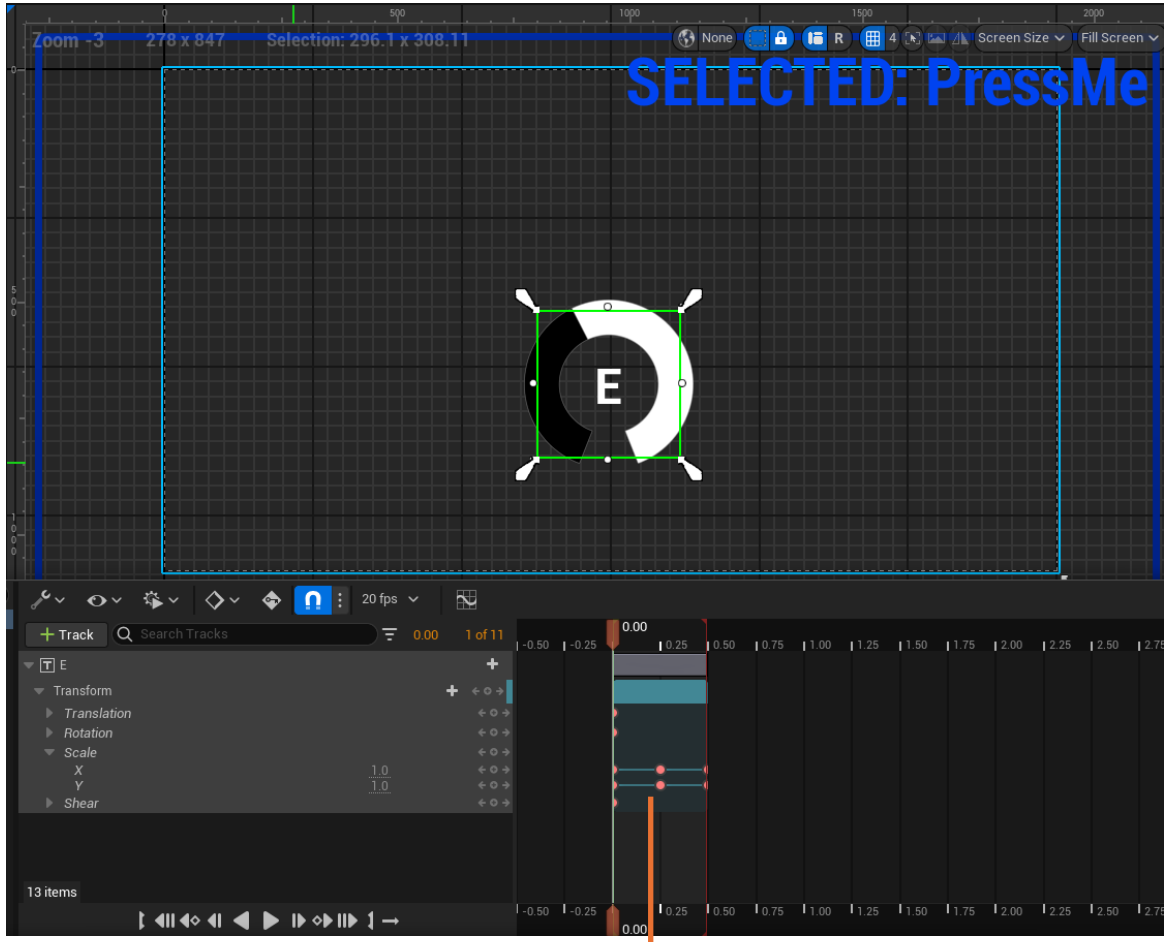


W_FadeToBlack + animation



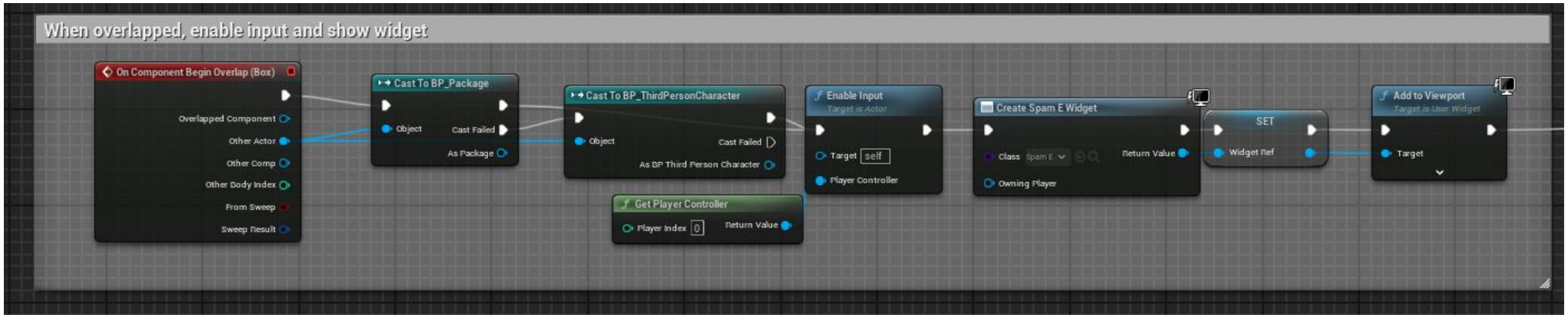
Changes opacity of black image to make fade to black

W_SpamE + animation



Scales text to look like breathing effect

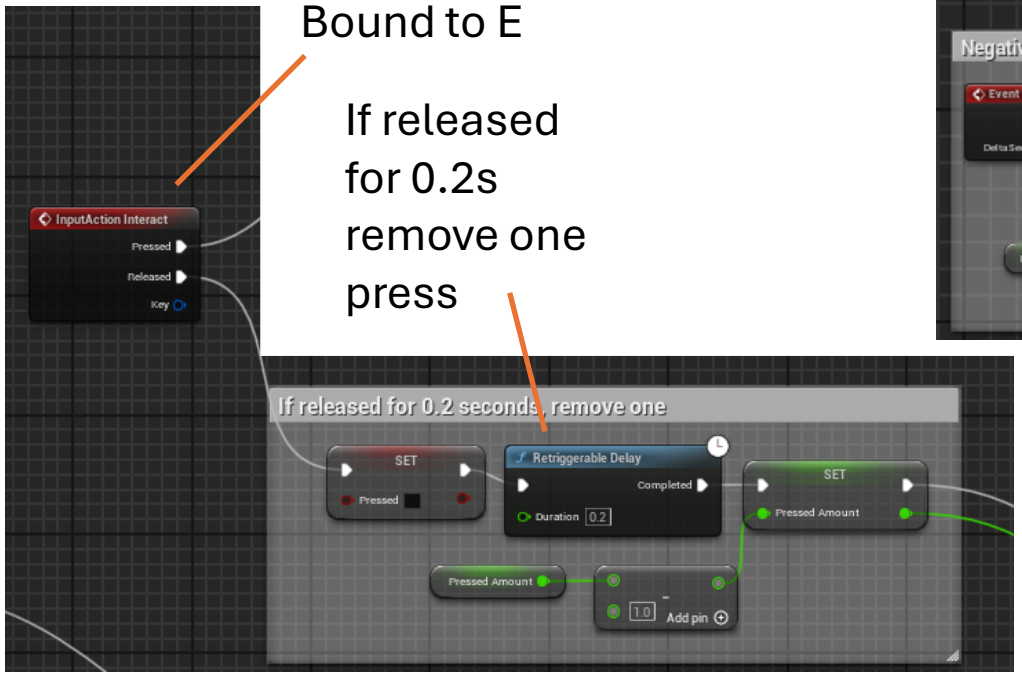
BP_PressButtonRepeatedly

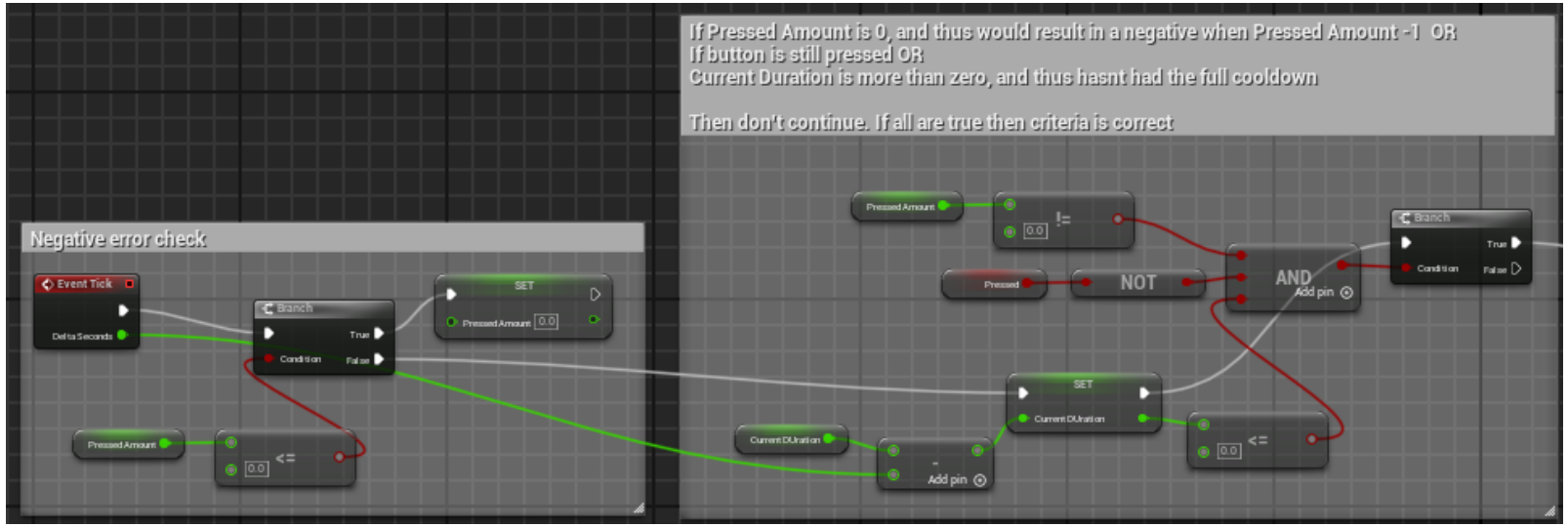


On overlap, create widget and add to viewport

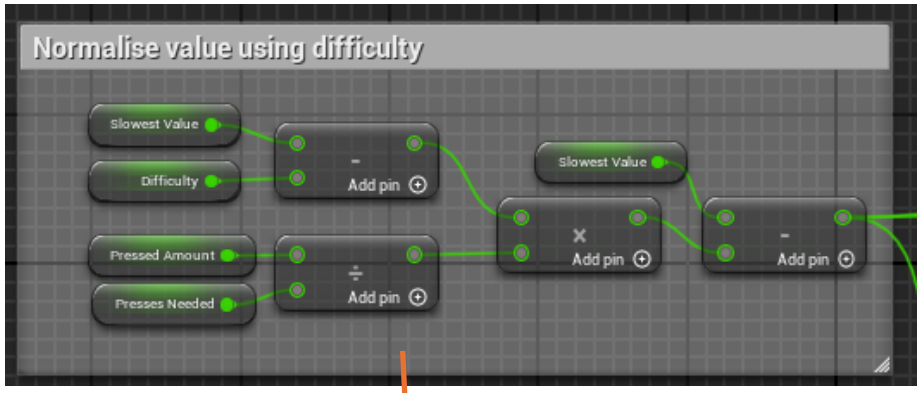
Bound to E

If released for 0.2s remove one press

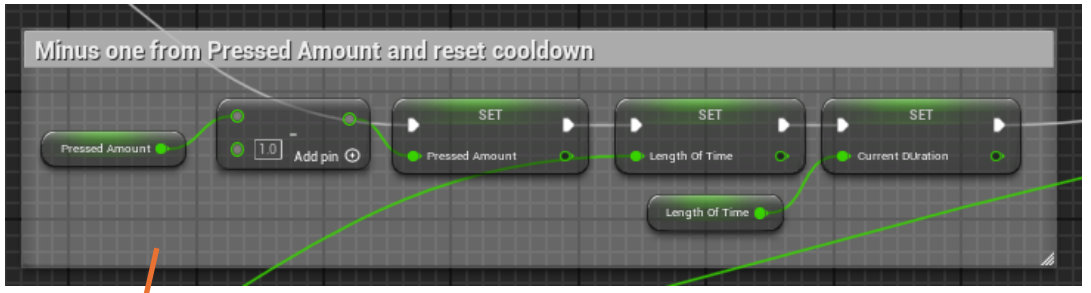




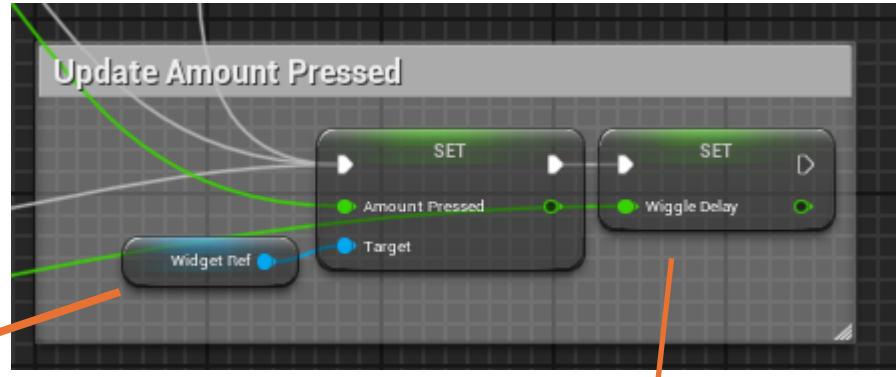
Error prevention checks



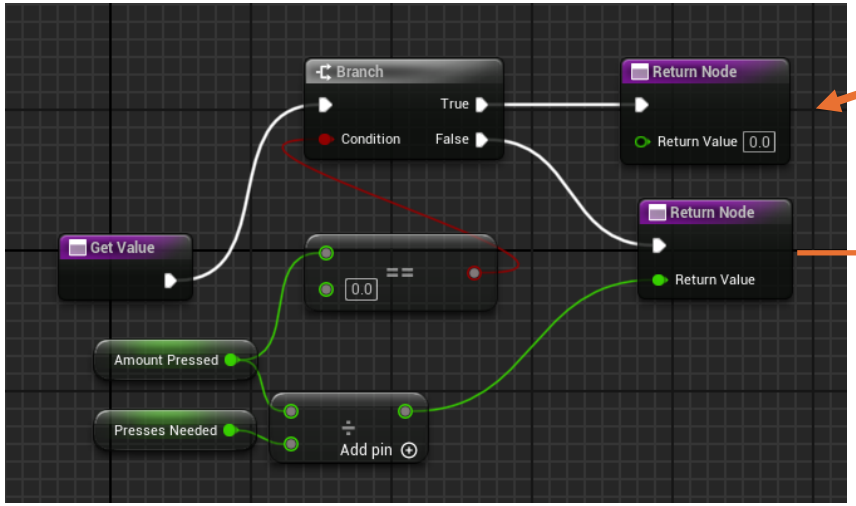
Added to initial removal of one, another delay is worked out using amount pressed, speed to decrease the clicks (difficulty) and slowest value wanted (slowest they'll be removed)



Remove one after this delay and set new delay

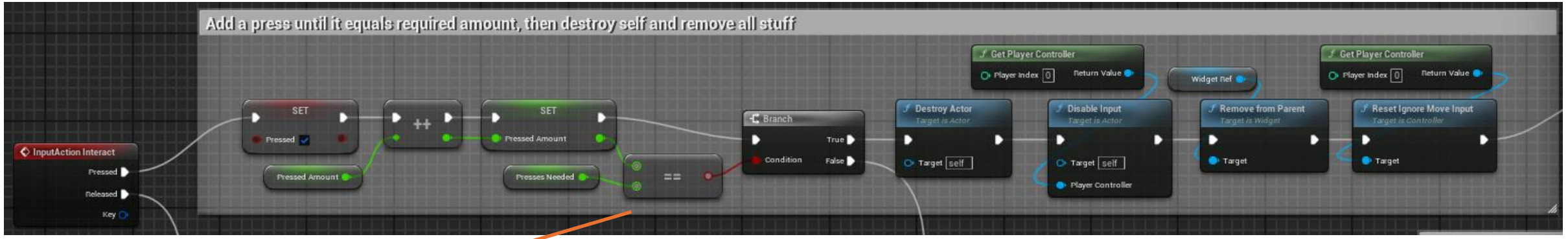


W_SpamE function

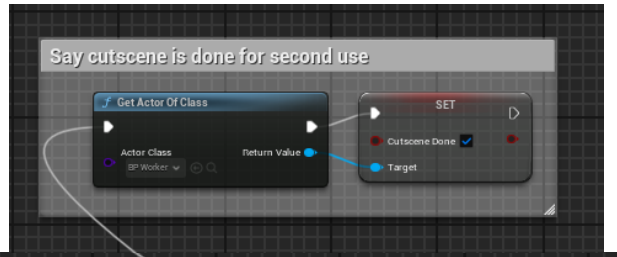


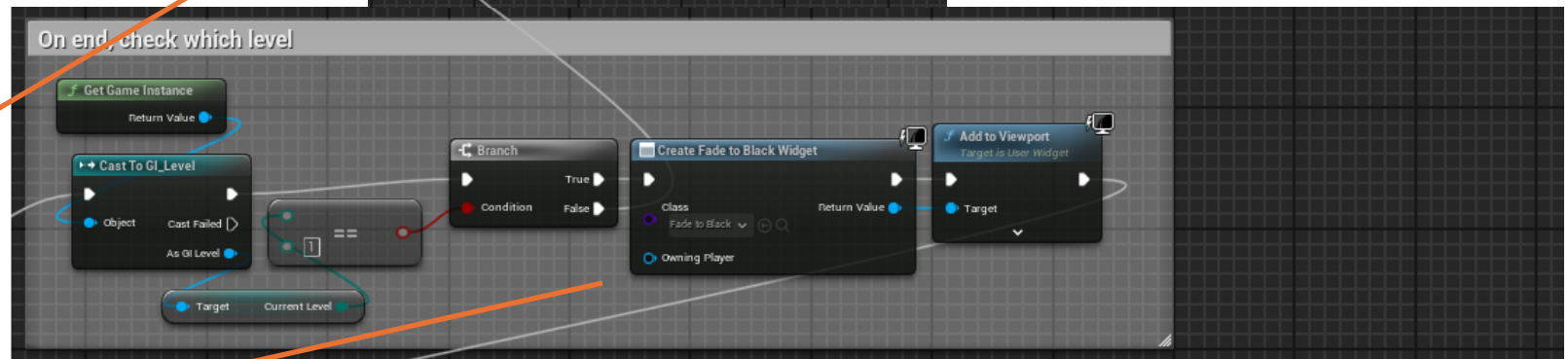
Work out percentage and display on radial slider in widget

Update widget and wiggle (more on next slide)

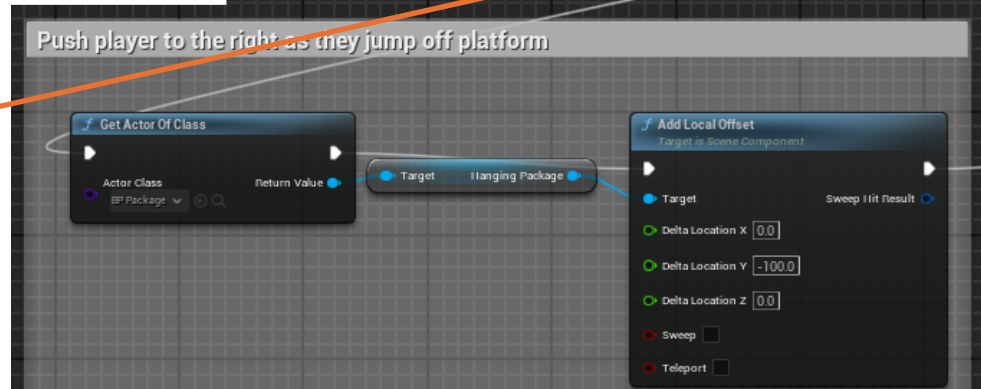


If equal to amount needed, destroy self and then...

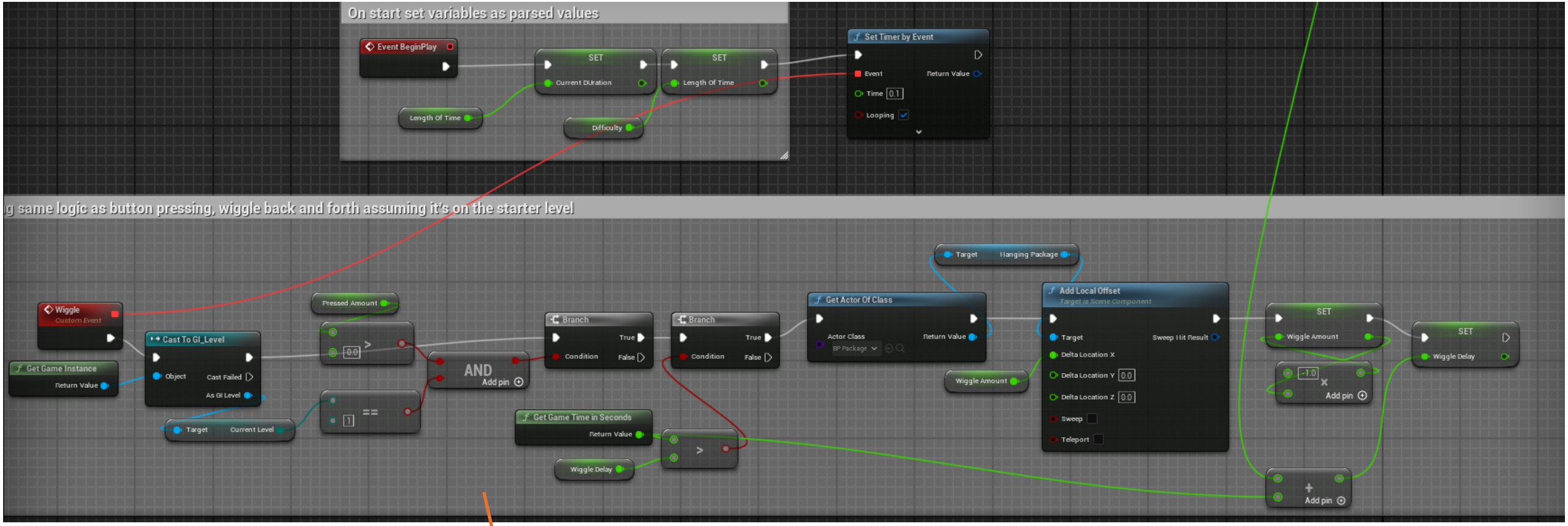




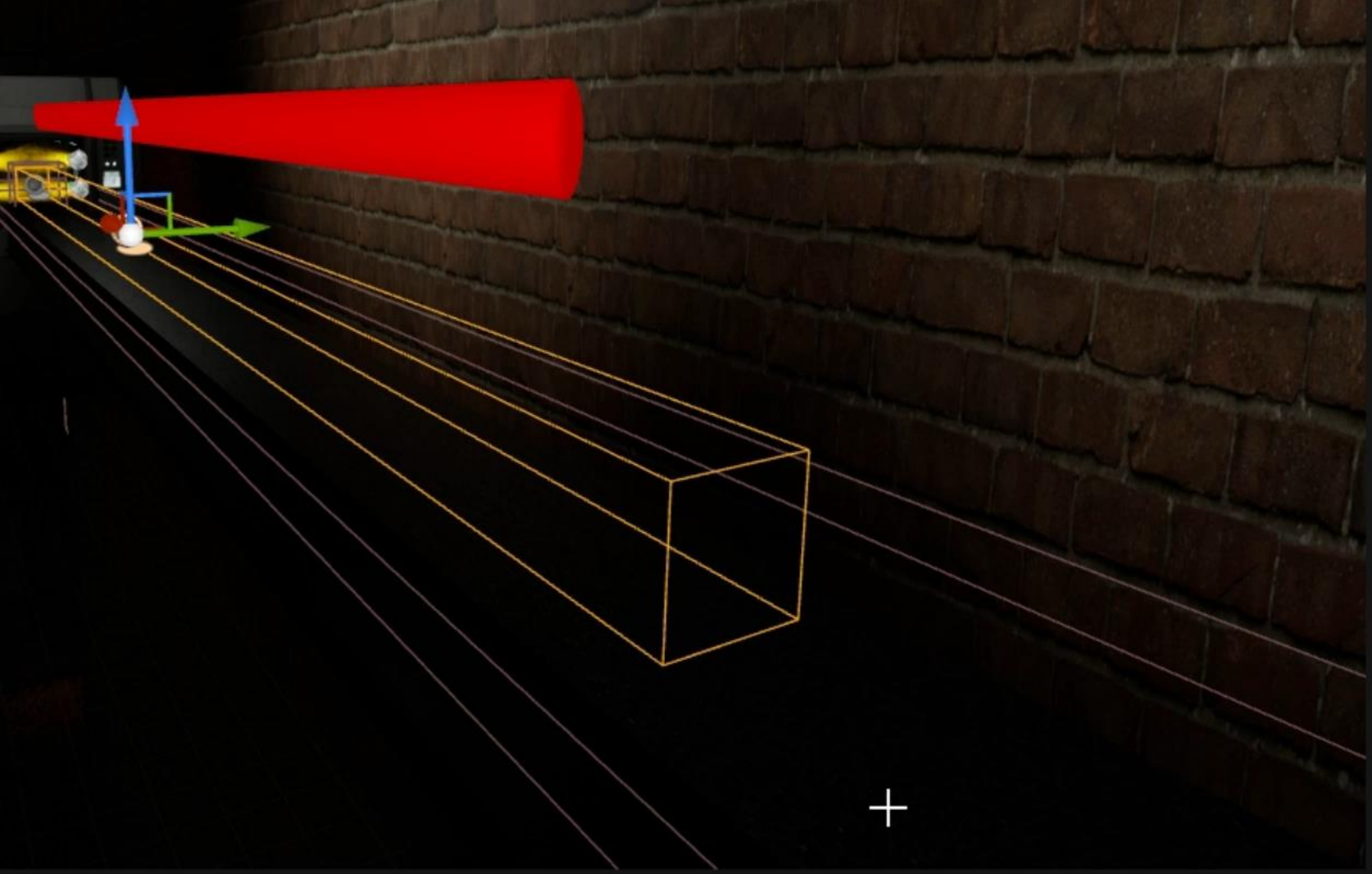
Work out which level and either update BP_Worker variable showing cutscene is done or
fade to black and knock player off platform like they wriggled off and change level state



Set values on begin and start loop for wiggle



Same logic as previous slides but adds offset to player so it looks like they're wriggling back and forth



2 Edit BP_Camera
3 Edit BP_Camera
4 Edit BP_Camera
5 Edit BP_Camera

146 actors (1 selected)

Details | World Settings

PressButtonRepeatedly + Add

PressButtonRepeatedly (Self)

DefaultSceneRoot Edit in Blueprint

Search

General | Actor | LOD | Misc | Physics | Rendering | Streaming | All

Transform

Location	7669.18881	2234.49813	1011.57615
Rotation	0.0 °	0.0 °	0.0 °
Scale	30.319656	1.0	1.0

Default

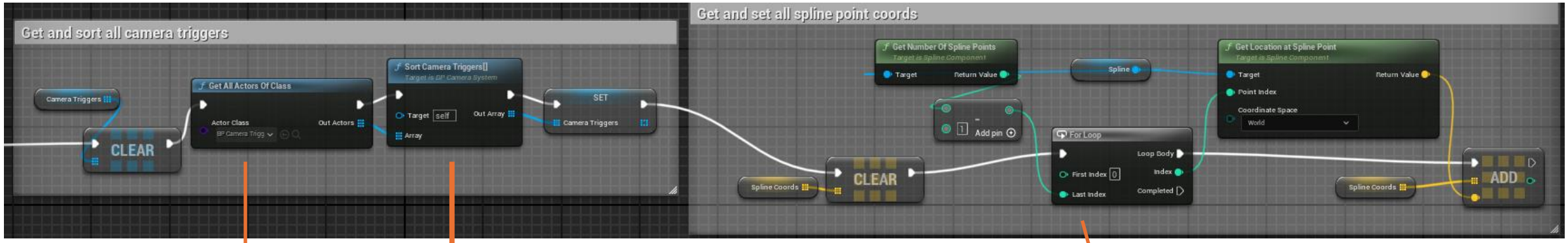
Presses Needed	0.0
Difficulty	0.0

Settings

Trace | Derived Data | 3 Unsaved | Revision Control

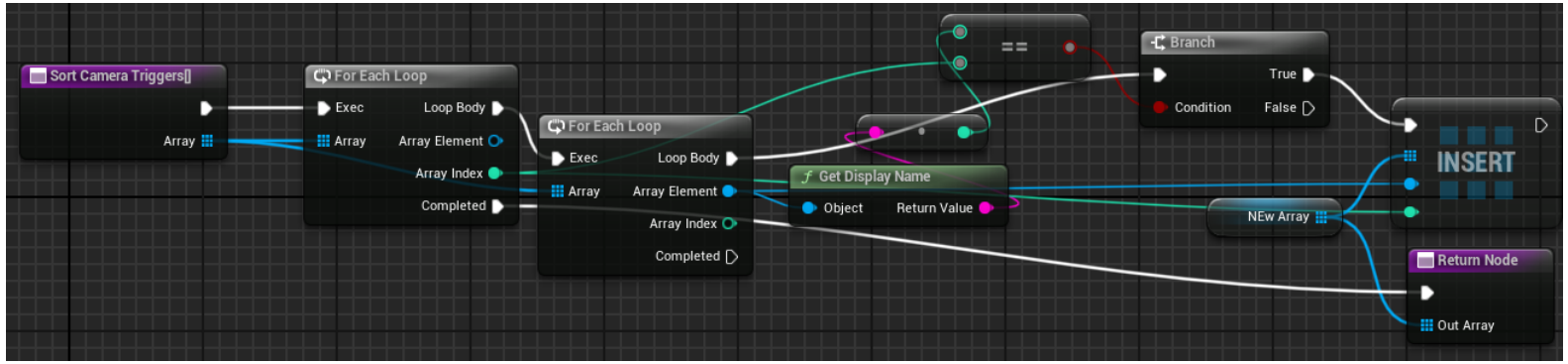
ENG 17:17 16/05/2024

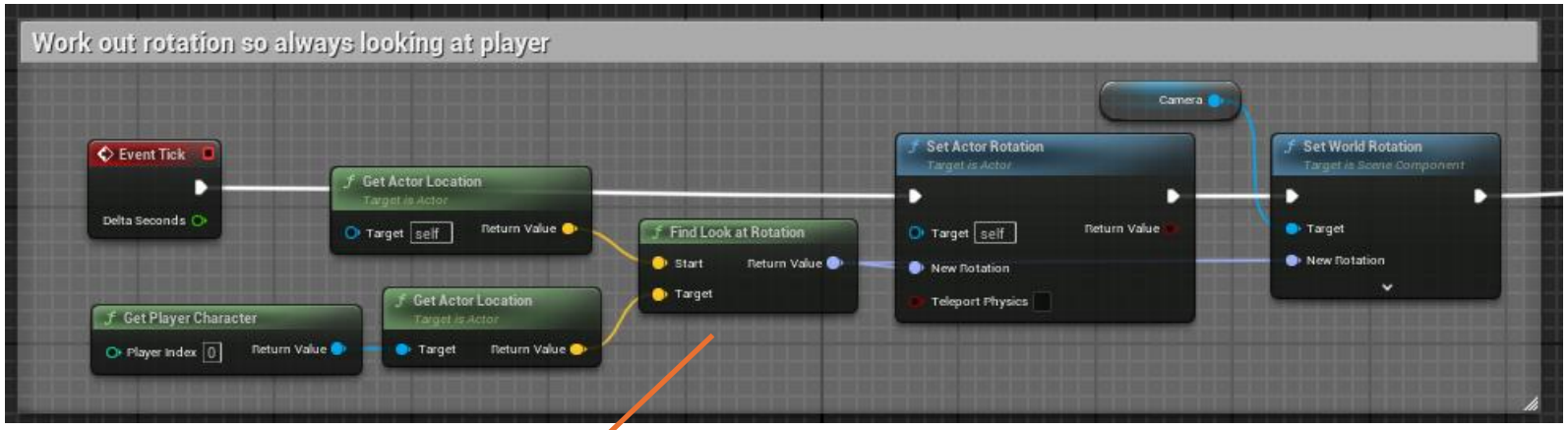
BP_CameraSystem/BP_CameraTriggers



Get all BP_CameraTriggers and sort them into array from 0 to total number

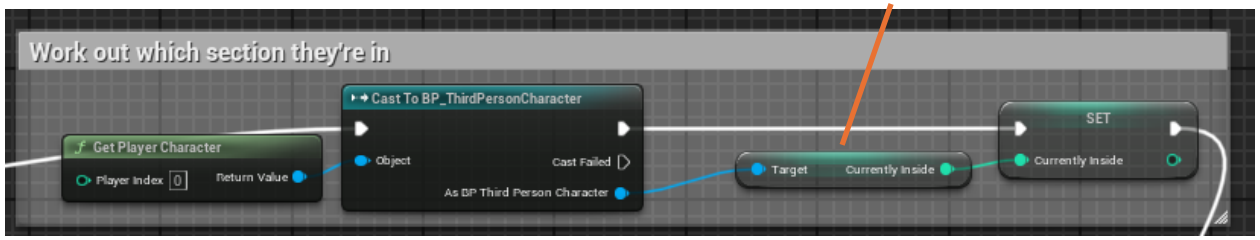
Do the same for spline coordinates on BP_CameraSystem



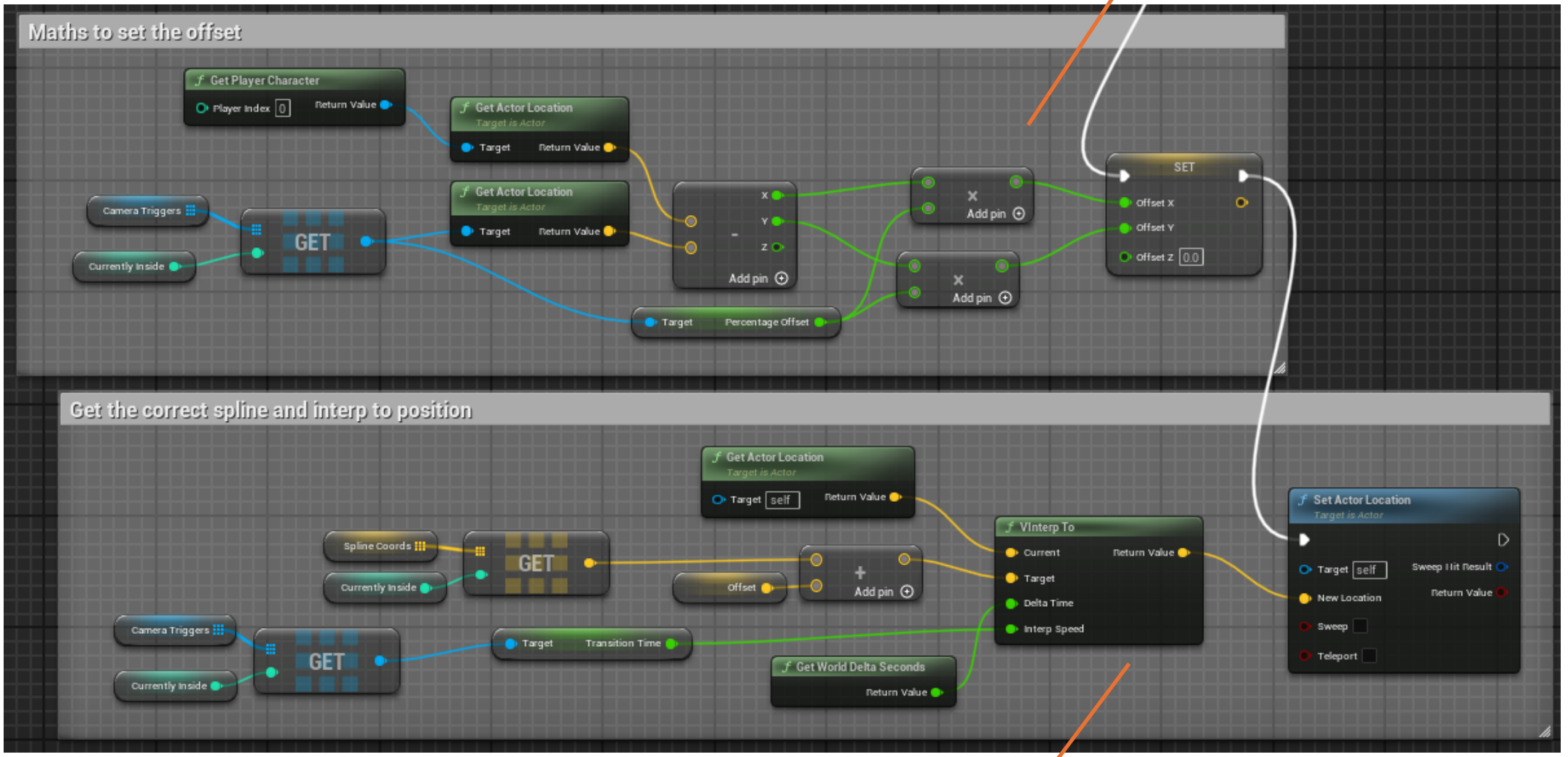


Rotate to always look at player

Find which trigger they're inside of currently through variable on character



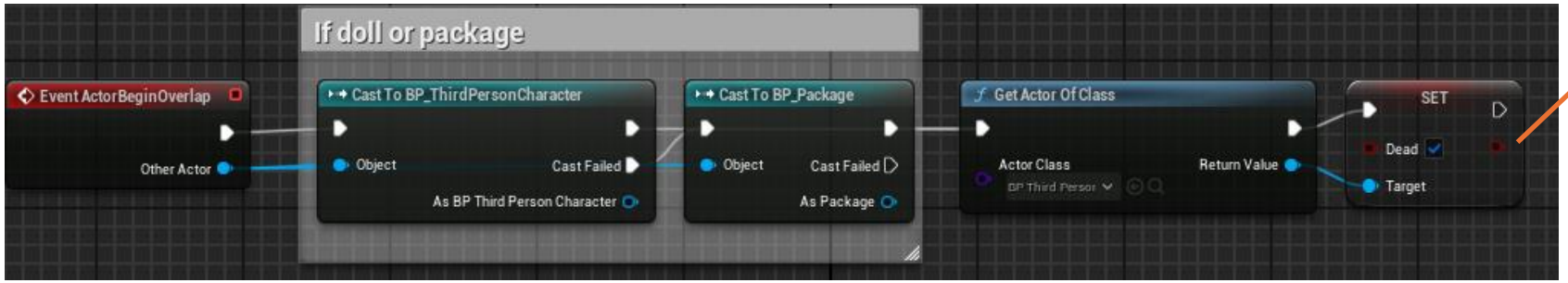
Add a soft offset (using Percentage Offset variable) so the camera follows the player more smoothly



Interp to correct coords based on section they're in adding the offset at speed set by Transition Time variable

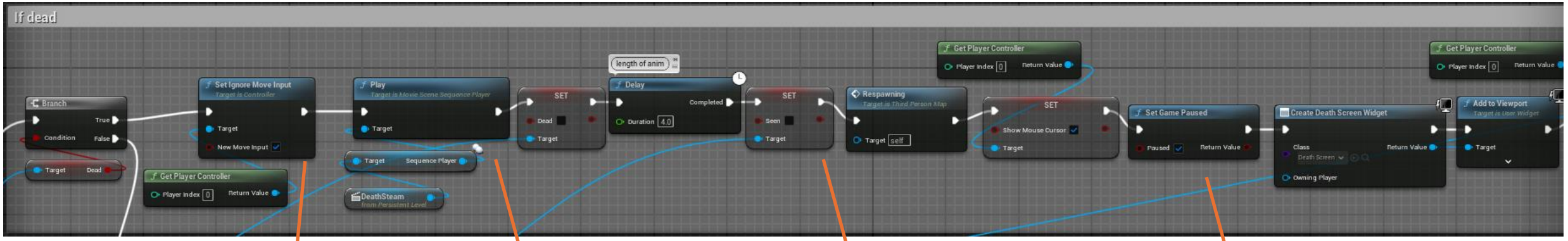
File
Edit
Window
Tools
Build
Select
Actor
Help
DollGame
BackupMap*
Selection Mode
Platforms
Settings
Place Actors
Search Classes
SHAPES
Cube
Sphere
Cylinder
Cone
Plane
Perspective
Lit
Show
CameraSystem
90.000000 °
Outliner
The world contains invalid actor files. Click the Repair button to repair them.
Repair Errors
Search...
Item Label
Type
CameraRig_Rail
CameraRig_Rail
OnRig
CineCameraActo
CameraSystem
Edit BP_Camera
Cube
StaticMeshActor
51 actors (1 selected)
Details
World Settings
CameraSystem
Add
CameraSystem (Self)
DefaultSceneRoot
Edit in Blueprint
Search
General
Actor
LOD
Misc
Physics
Rendering
Streaming
All
Rotation
0.0 °
0.0 °
89.999999 °
Scale
1.0
1.0
1.0
Rendering
Actor Hidden In Game
Editor Billboard Scale
1.0
Content Browser
Add
Import
Save All
All
Content
Settings
Favorites
DollGame
All
Content
Characters
Bee
Doll
Mannequin_UE4
Mannequins
Components
Collections
Search Content
Characters
Components
Imported
Level Prototyping
Materials
Meshes
Sequences
ThirdPerson
Widgets
BackupMap
Level
BP_Camera System
Blueprint Class
BP_Camera Trigger
Blueprint Class
BP_ Checkpoint
Blueprint Class
BP_Conveyer
Blueprint Class
BP_Death
Blueprint Class
BP_Destroy Actor
Blueprint Class
BP_Droplet
Blueprint Class
27 items (1 selected)
Undo: Move Elements
Content Drawer
Output Log
Cmd
Enter Console Command
Trace
Derived Data
14 Unsaved
Revision Control
Type here to search
ENG
17:51
16/05/2024

BP_Death



Set character variable Dead to true

LevelBP – on Death



Stop player moving

Play death animation and reset Dead variable

After 4s (length of death animation) trigger respawning and reset BP_Worker Seen variable to prevent loop

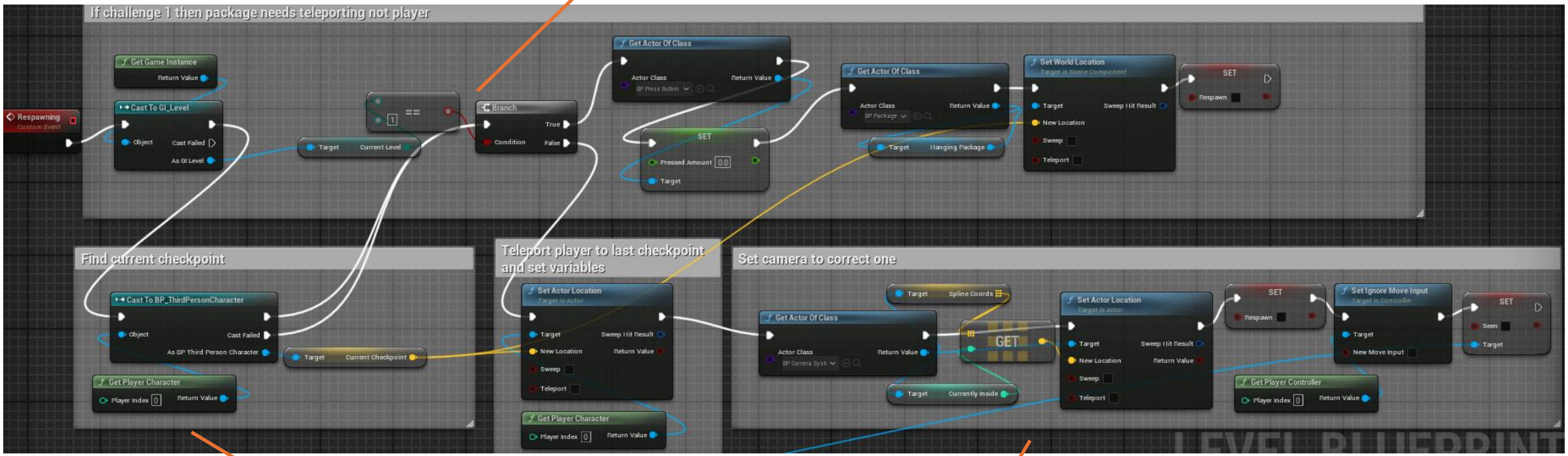
Pause game and show widget etc etc

BP_Checkpoint

Acts as a location for the level blueprint to pickup.

Level BP – respawning event

Check to see if character or package needs resetting



Find current checkpoint and teleport player

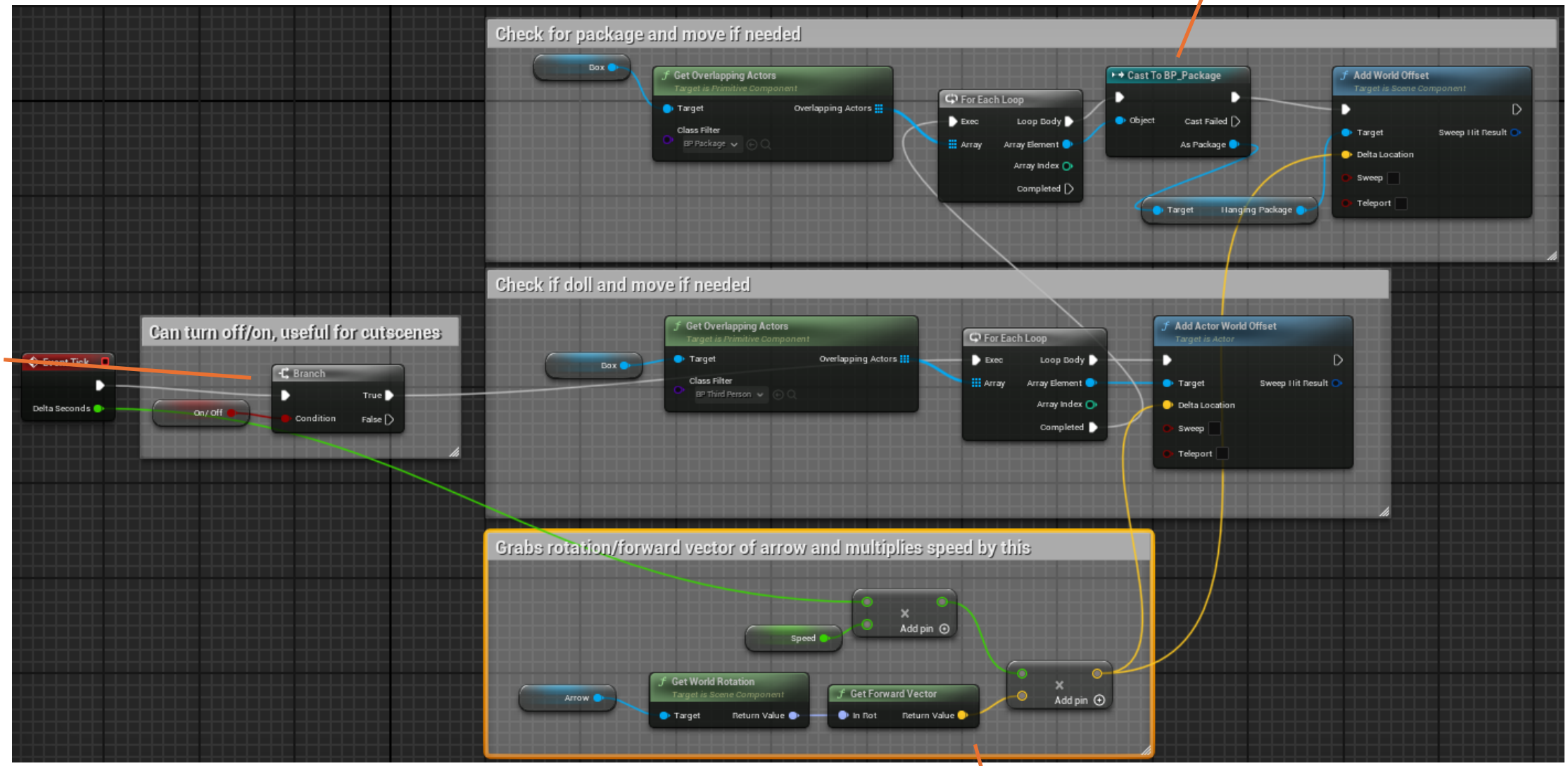
Set camera location to ensure it follows correctly

File
Edit
Window
Tools
Build
Select
Actor
Help
DollGame
ThirdPersonMap*
Selection Mode
Platforms
Settings
Place Actors
Search Classes
SHAPES
Cube
Sphere
Cylinder
Cone
Plane
Perspective
Lit
Show
Outliner
Search...
Item Label
Type
SteamCutscene
Folder
Bee
StaticMeshActor
CineCameraActor
CineCameraActo
BP_Death3
Edit BP_Death
BP_ThirdPersonCharacter
Edit BP_ThirdPer
BP_Worker
Edit BP_Worker
CameraSystem
Edit BP_Camera
FinaleTrigger
TriggerBox
145 actors (145 loaded)
Details
World Settings
Select an object to view details.
Content Browser
Add
Import
Save All
All
Content
Settings
Favorites
DollGame
All
Content
Characters
Bee
Doll
Mannequin_UE4
Mannequins
Components
Collections
Search Content
Characters
Components
Imported
Level Prototyping
Materials
Meshes
Sequences
ThirdPerson
Widgets
BackupMap
Level
BP_Camera System
Blueprint Class
BP_Camera Trigger
Blueprint Class
BP_ Checkpoint
Blueprint Class
BP_Conveyer
Blueprint Class
BP_Death
Blueprint Class
BP_Destroy Actor
Blueprint Class
BP_Droplet
Blueprint Class
27 items (1 selected)
Content Drawer
Output Log
Cmd
Enter Console Command
Trace
Derived Data
2 Unsaved
Revision Control
Type here to search
ENG
18:01
16/05/2024

BP_Conveyor

Work out what needs moving but only player or package

Allows for control over conveyor belt using variable

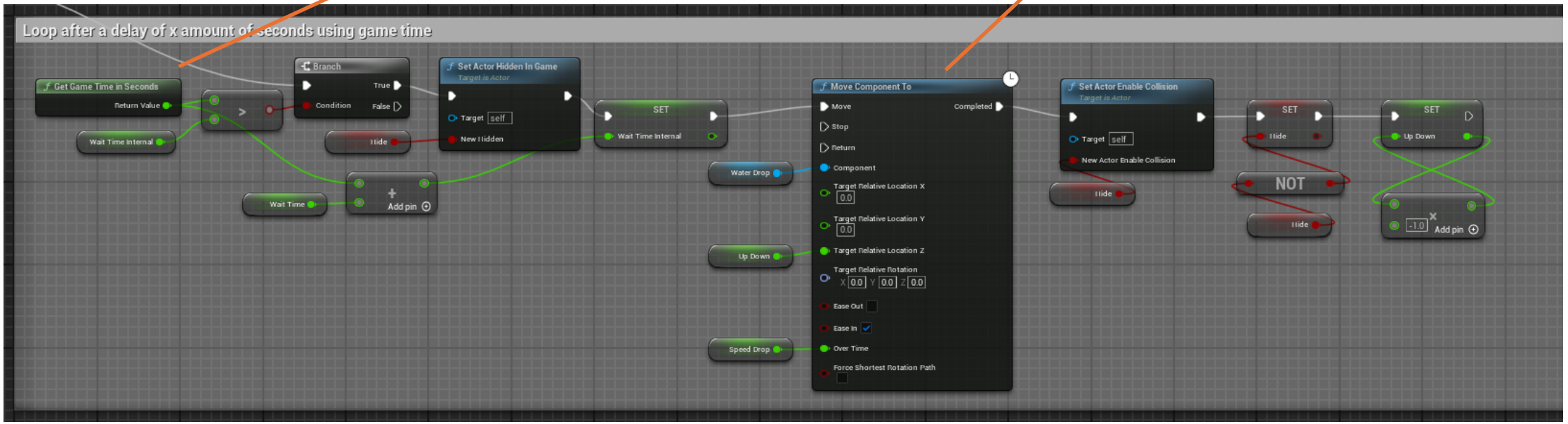


Find direction to move object

BP_Droplet

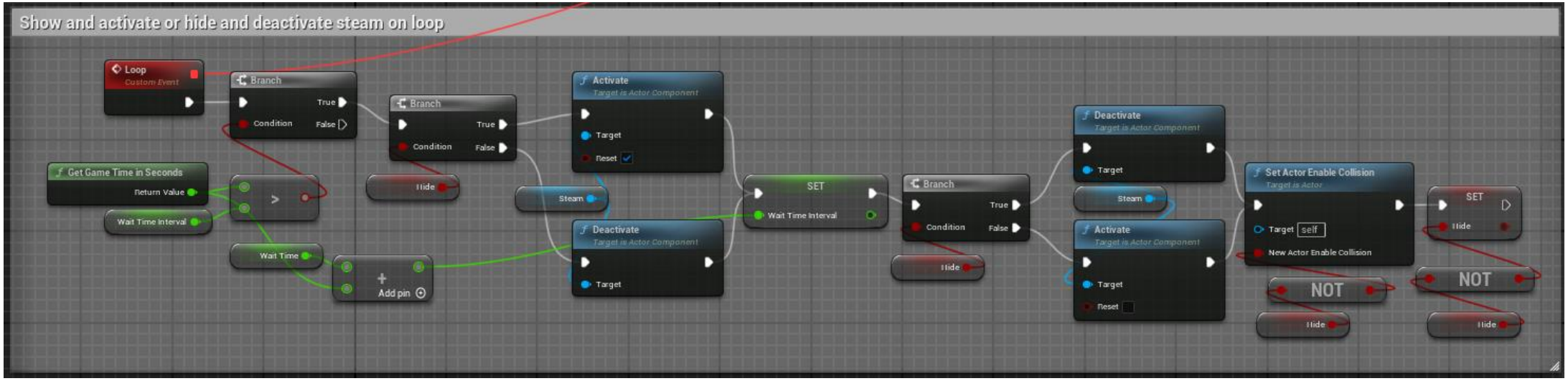
Delay using game time

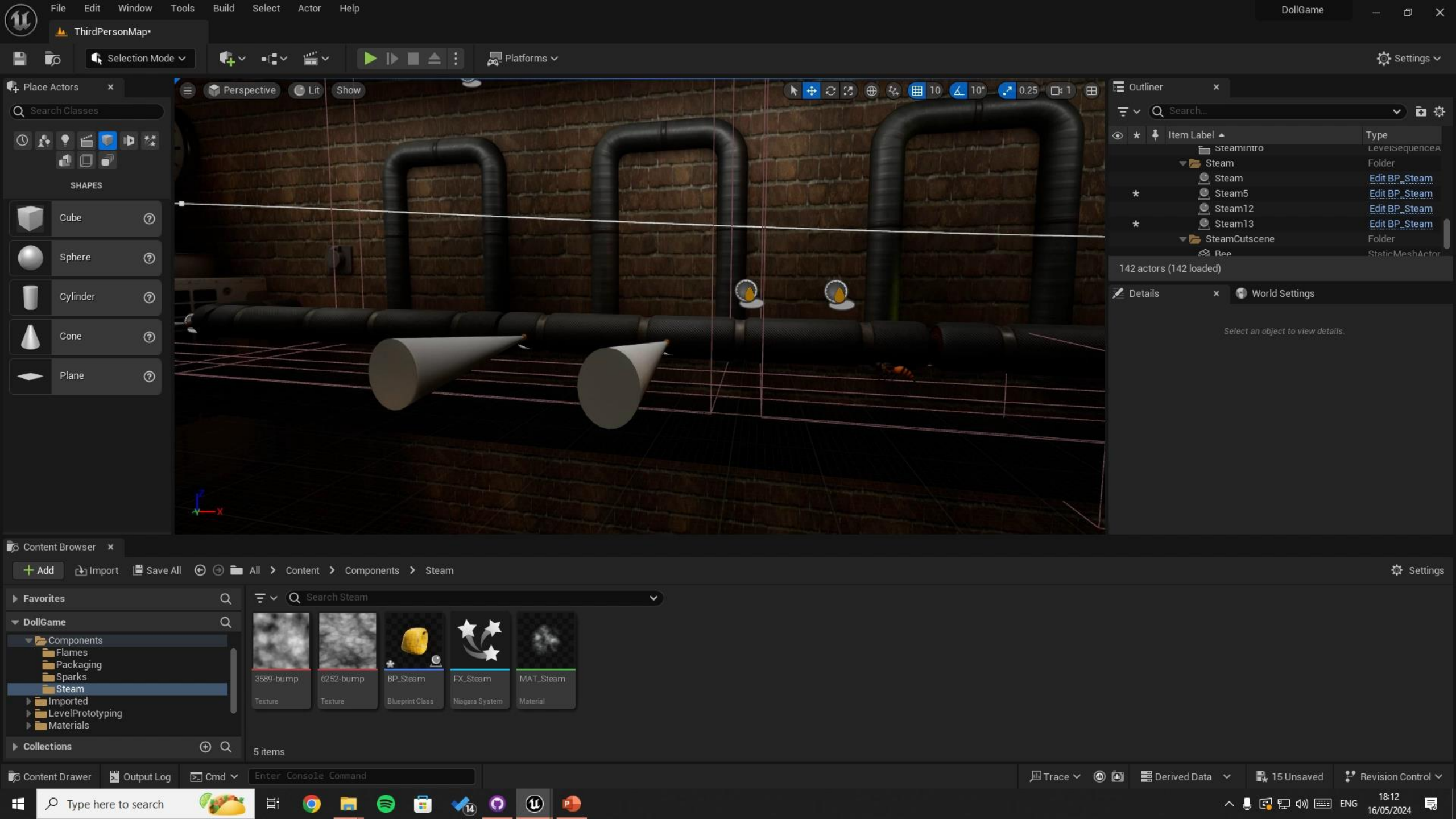
Change visibility and collision and make it fall down when visible and revert when invisible



BP_Steam

Same logic but activating steam FX instead of moving component




File
Edit
Window
Tools
Build
Select
Actor
Help
DollGame
ThirdPersonMap*
Selection Mode
Platforms
Settings
Place Actors
Search Classes
SHAPES
Cube
Sphere
Cylinder
Cone
Plane
Perspective
Lit
Show
Outliner
Search...
Item Label
Type
Steam
Folder
Steam
Edit BP_Steam
Steam5
Edit BP_Steam
Steam12
Edit BP_Steam
Steam13
Edit BP_Steam
SteamCutscene
Folder
142 actors (142 loaded)
Details
World Settings
Select an object to view details.
Content Browser
Add
Import
Save All
All
Content
Components
Steam
Settings
Favorites
DollGame
Components
Flames
Packaging
Sparks
Steam
Imported
LevelPrototyping
Materials
Collections
Search Steam
3589-bump
Texture
6252-bump
Texture
BP_Steam
Blueprint Class
FX_Steam
Niagara System
MAT_Steam
Material
5 items
Content Drawer
Output Log
Cmd
Enter Console Command
Trace
Derived Data
15 Unsaved
Revision Control
Type here to search
ENG
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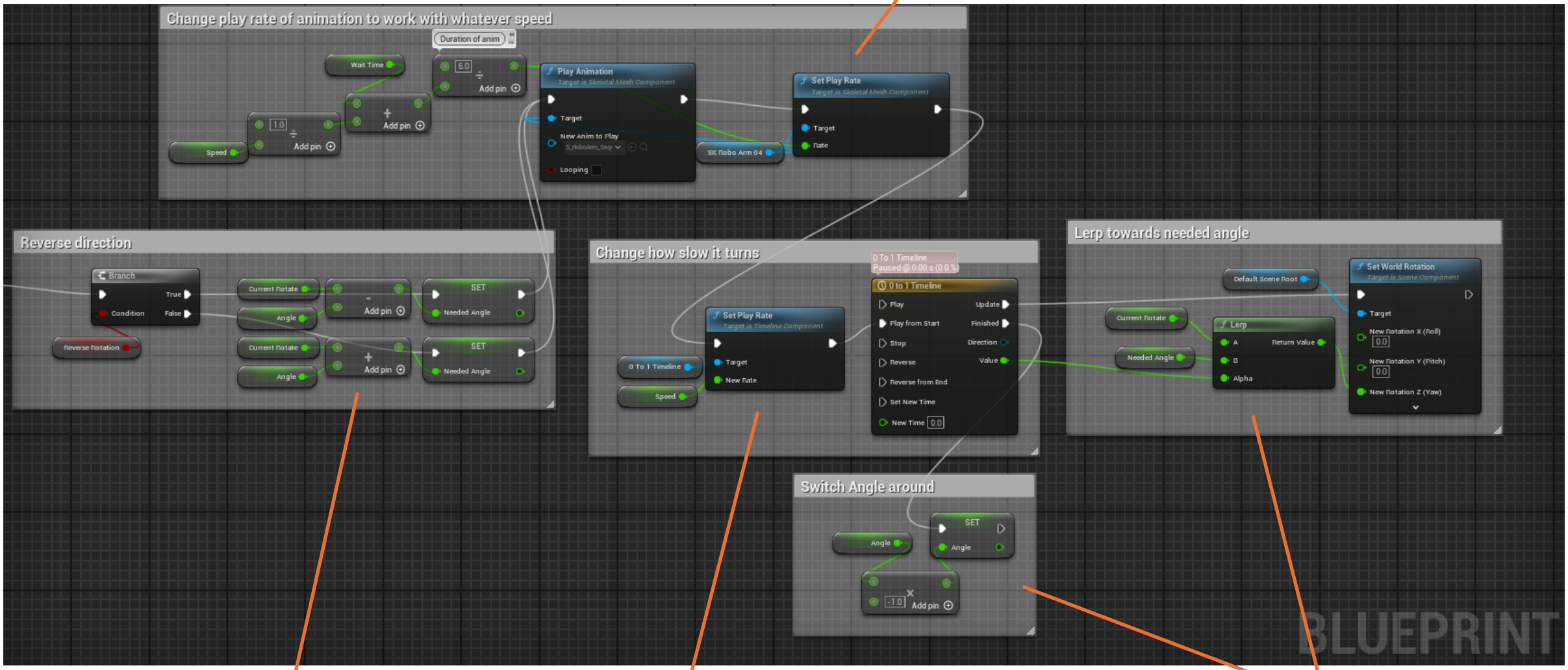
16/05/2024

BP_MechanicalArm

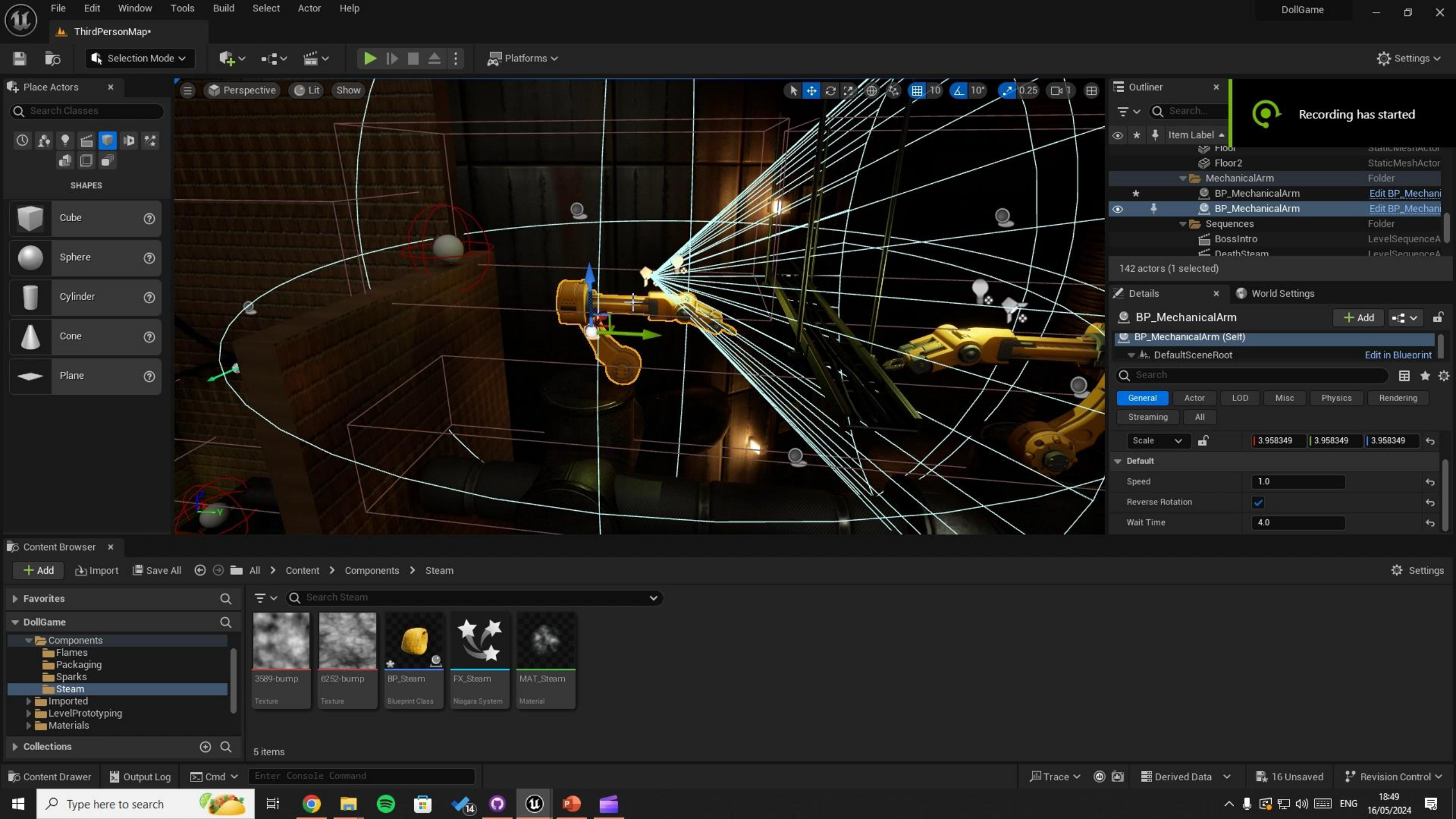
Change play rate of animation so it matches the speed set by the variable Speed



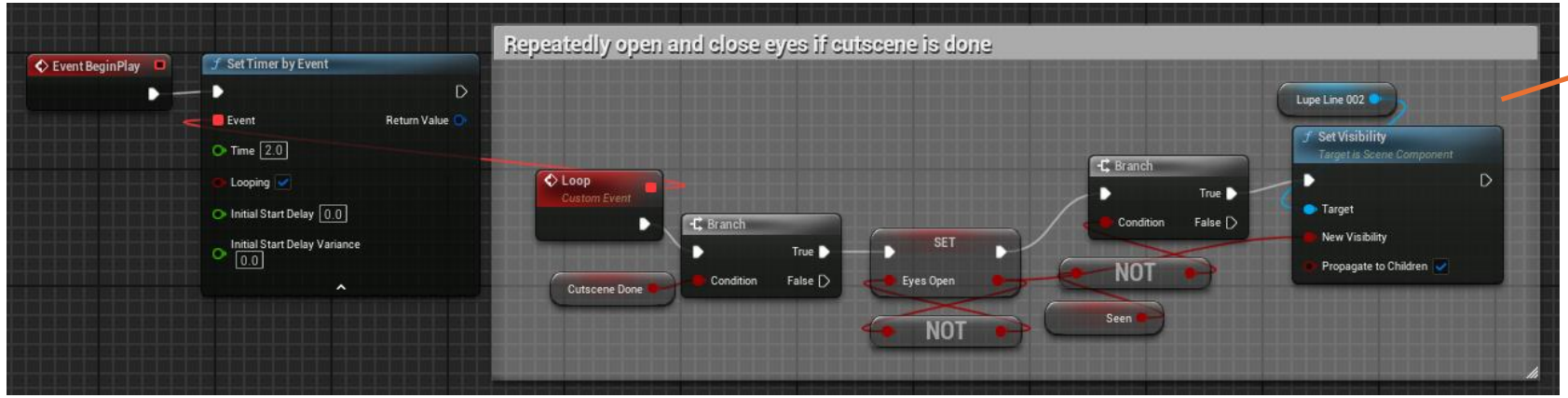
Work out needed angle based on turning direction

Change play rate to swing slower or faster using a timeline of 1s length values 0 to 1

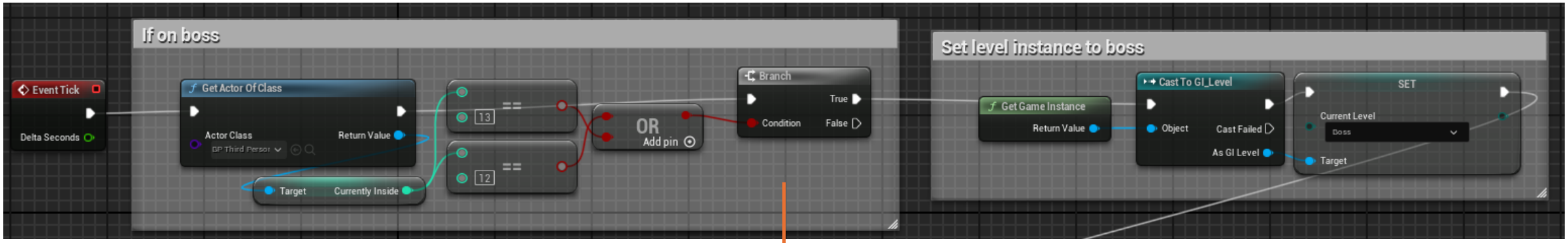
Rotate and then reverse angle


File
Edit
Window
Tools
Build
Select
Actor
Help
DollGame
ThirdPersonMap*
Selection Mode
Platforms
Settings
Place Actors
Search Classes
SHAPES
Cube
Sphere
Cylinder
Cone
Plane
Perspective
Lit
Show
Outliner
Search...
Item Label
Floor2
StaticMeshActor
MechanicalArm
Folder
BP_MechanicalArm
Edit BP_Mechani
Sequences
BossIntro
142 actors (1 selected)
Recording has started
Details
World Settings
BP_MechanicalArm
Add
BP_MechanicalArm (Self)
DefaultSceneRoot
Edit in Blueprint
Search
General
Actor
LOD
Misc
Physics
Rendering
Streaming
All
Scale
3.958349
3.958349
3.958349
Default
Speed
1.0
Reverse Rotation
Wait Time
4.0
Content Browser
Add
Import
Save All
All
Content
Components
Steam
Settings
Favorites
DollGame
Components
Flames
Packaging
Sparks
Steam
Imported
LevelPrototyping
Materials
Collections
Search Steam
3589-bump
Texture
6252-bump
Texture
BP_Steam
Blueprint Class
FX_Steam
Niagara System
MAT_Steam
Material
5 items
Content Drawer
Output Log
Cmd
Enter Console Command
Trace
Derived Data
16 Unsaved
Revision Control
Type here to search
ENG
18:49
16/05/2024

BP_Worker



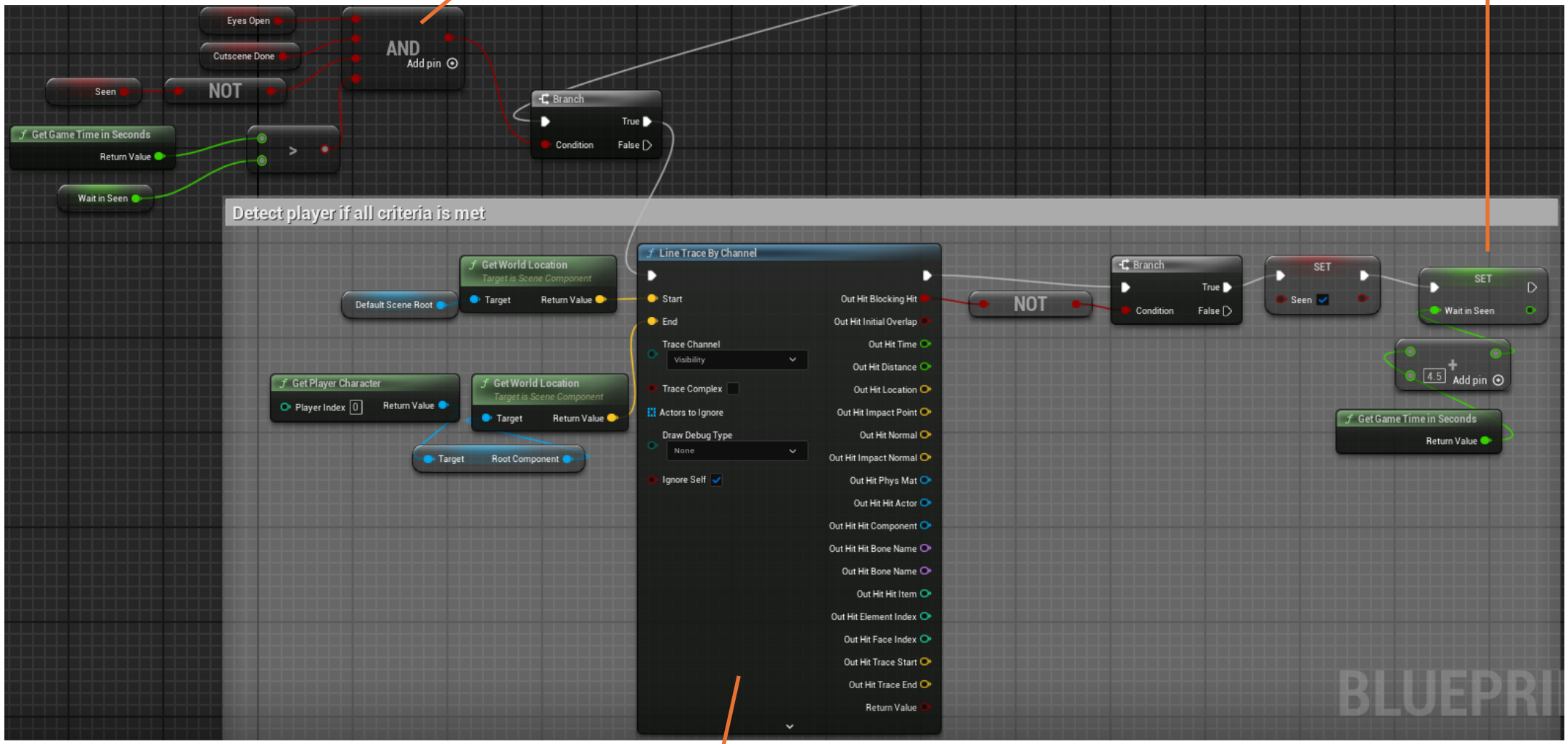
Loop to “open and close eyes” of worker, only triggers once no cutscenes are playing



Set level to Boss when on final BP_CameraTriggers

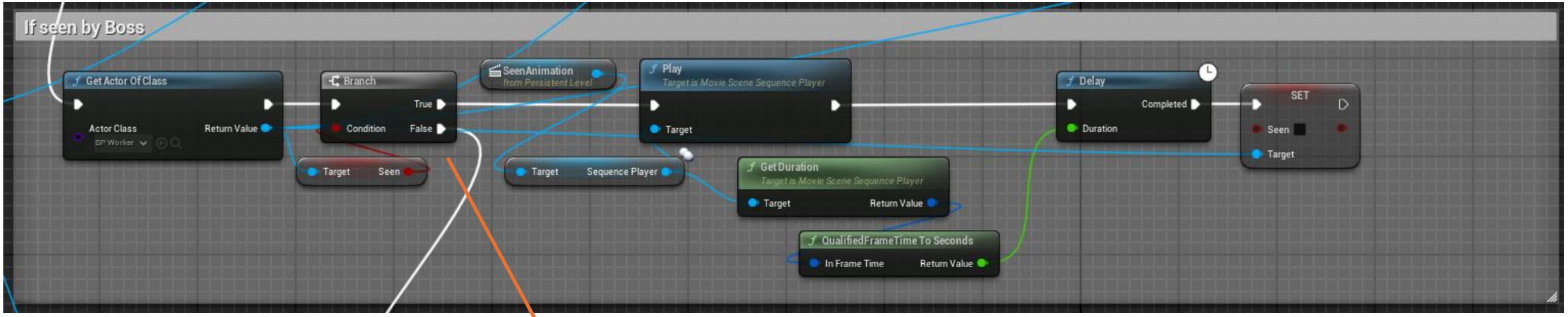
Check to see if ready to detect player, using previous loop and cutscene check as well as delay to prevent loop on death

Set delay



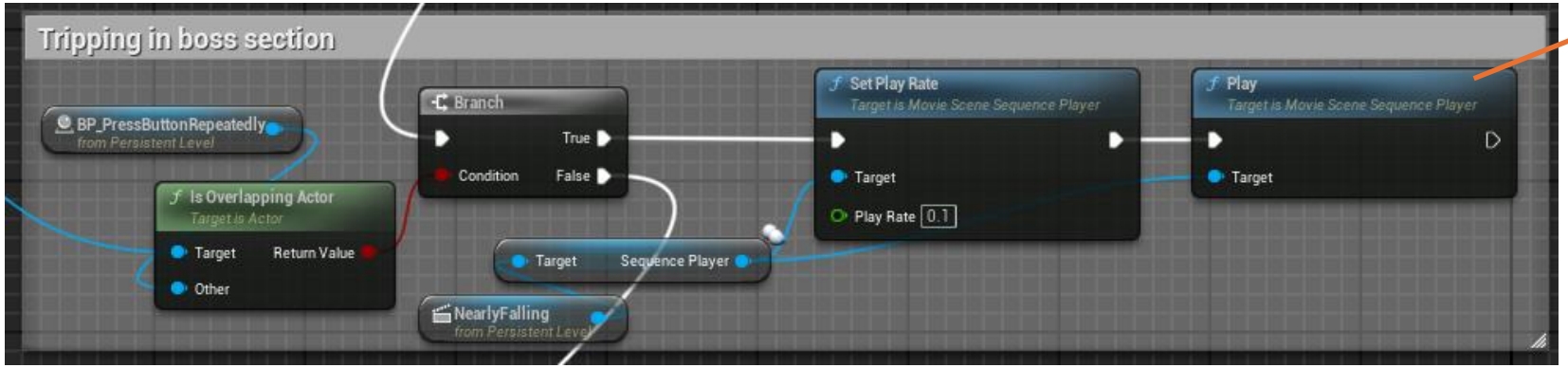
Cast a line trace to see if player is visible, if true set Seen to true

Level BP – Seen by boss



If seen then play LS_SeenDeath and then set Seen to false after sequence is done to prevent loop

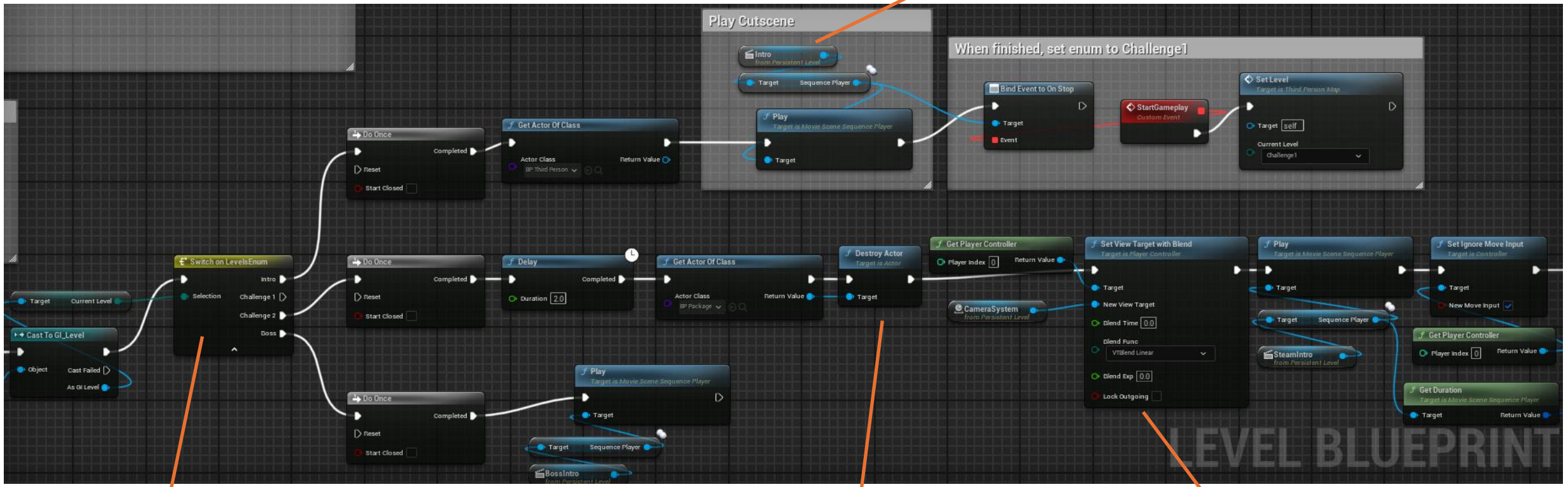
Level BP – Nearly falling



If overlapping the trigger for spamming E at the end, play sequence very slowly like its slowing time.
(If they fail to get out of the sequence in time by spamming E, the event trigger within it kills the player)

Level BP – Logic

Play cutscenes and set level to Challenge 1

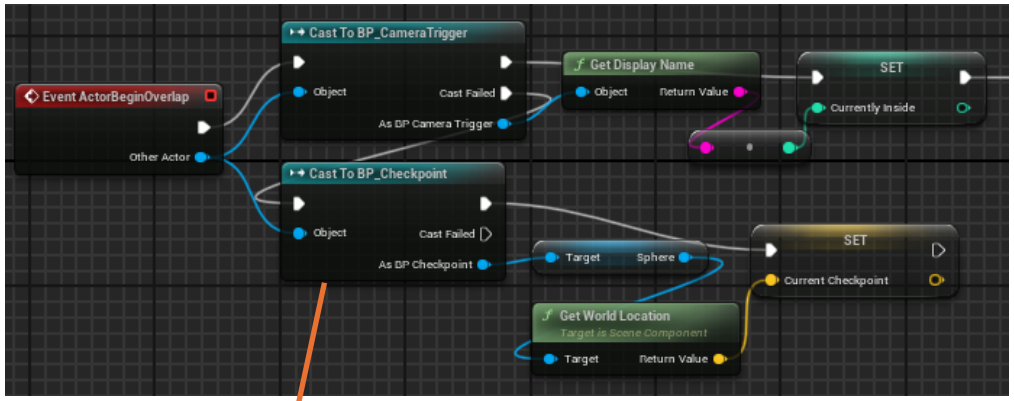


Uses a switch on enum around E_Levels. Easy to organise to do stuff based on each level

Wait 2s for fade to black and then destroy the toy package

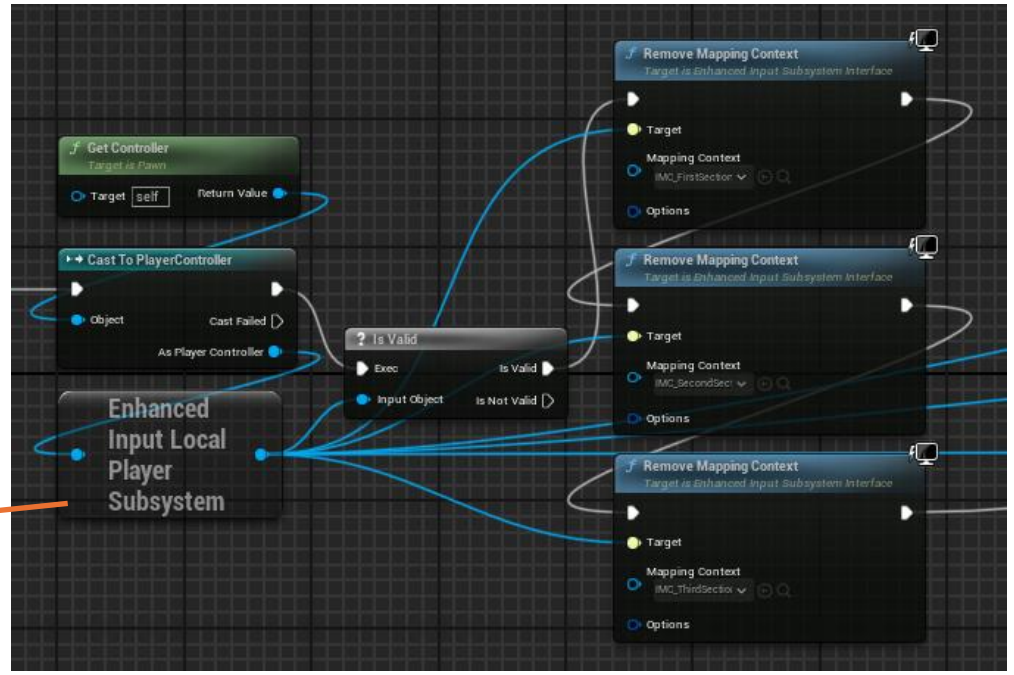
Switch camera and play new cutscene deactivating player movement

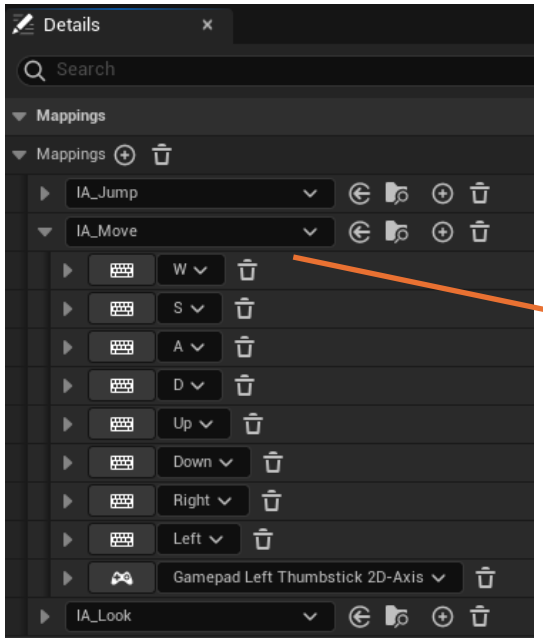
BP_ThirdPersonCharacter



Set up variables on an overlap so other BP are aware of where the player is

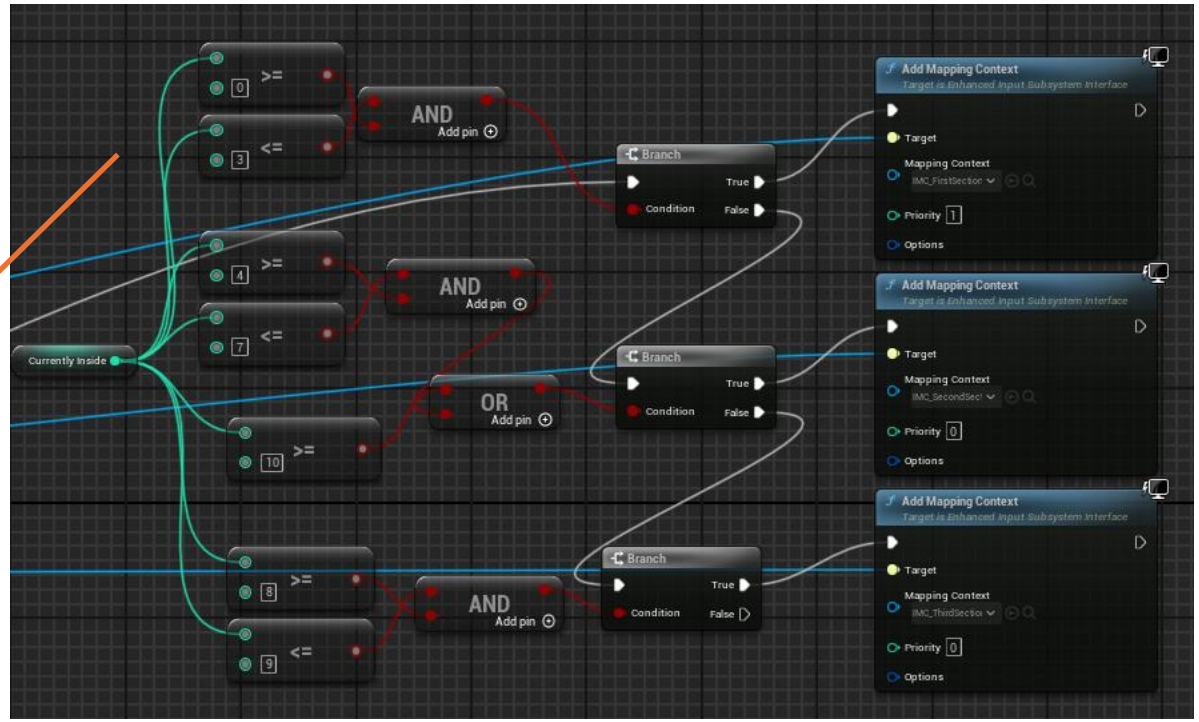
Remove all mapping context





Swapping W for A for instance if the camera rotated 90 degrees

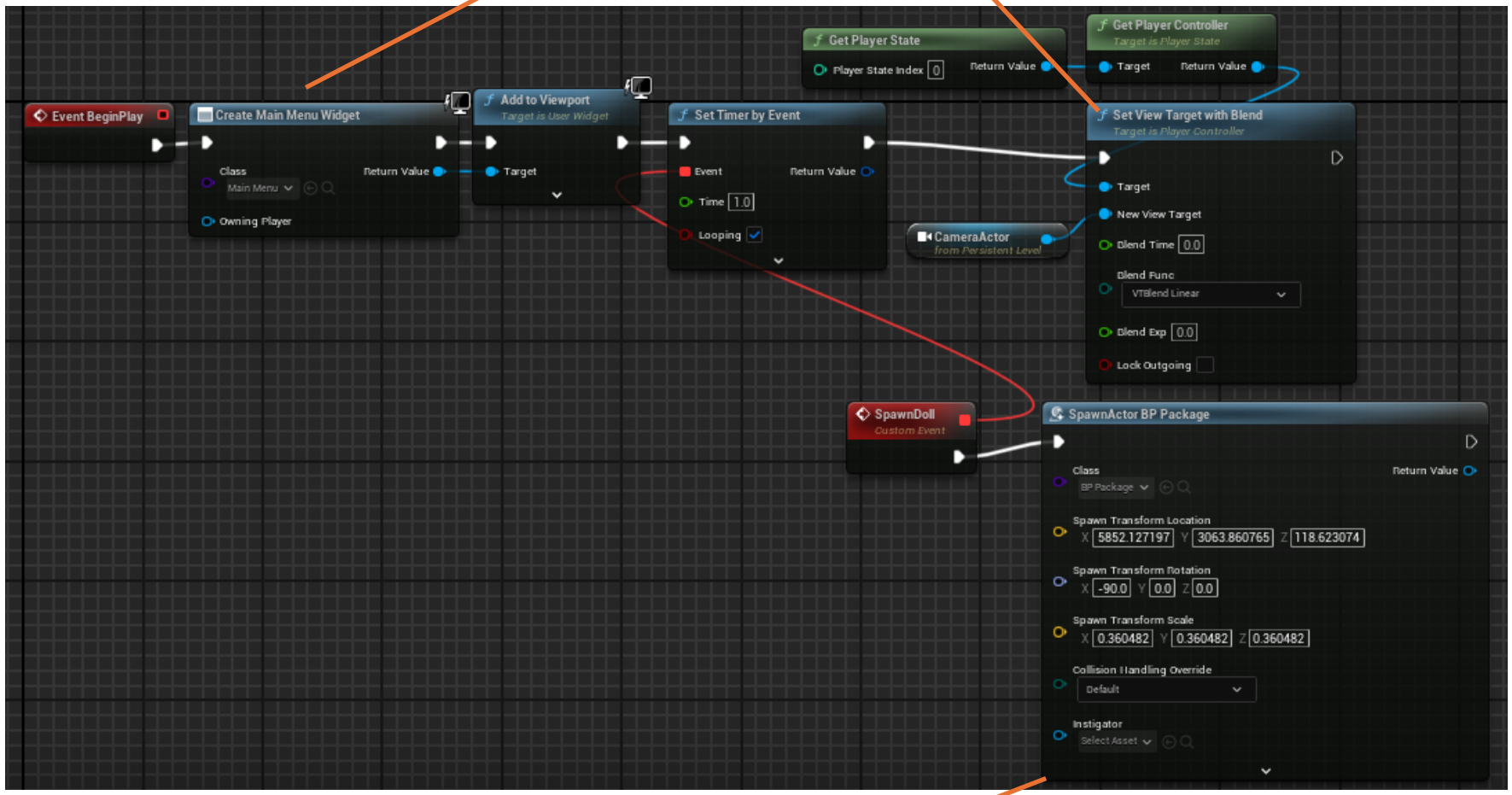
Remap to different version given which section the player is in so that the keys match the orientation of the camera

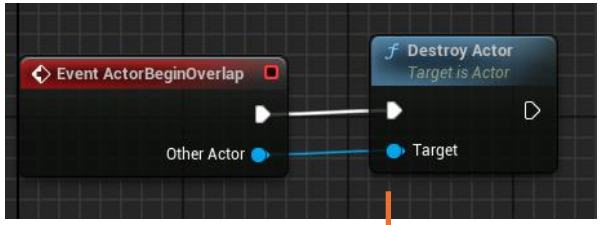


L_MainMenu

Add widget

Switch camera to correct one





When at the end hit a trigger that destroys them recycling them

Loop spawning toy packages at set coords on conveyor belt

Assets from:

- Mixamo (animation + character)
- Turbosquid (Bee)
- Unreal marketplace (Factory assets)