

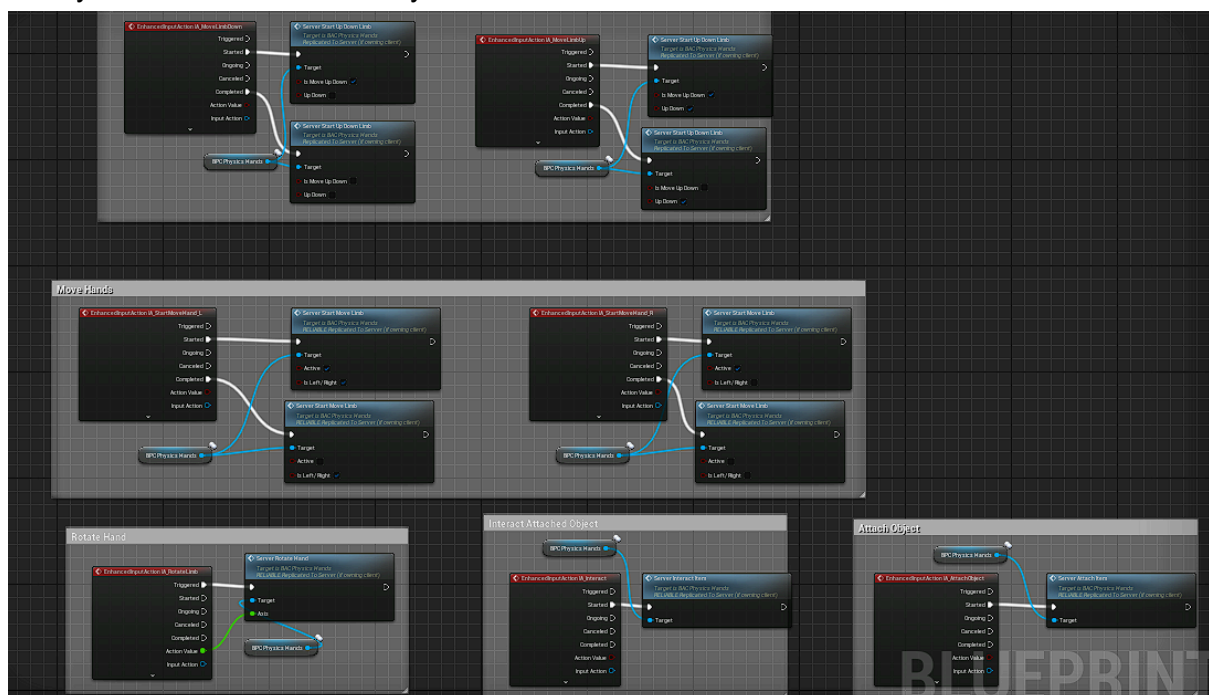
Multiplayer Physics Hands v1.0 - Documentation

This project consists for the most part of 2 components and actors, other blueprints designed to show how they work.

- **BAC_PhysicsHands** - the main component where the character physics setting is set and the logic of hand rotation is located.
- **BAC_ObjectProperties** - component responsible for the characteristics of objects that can be taken in the hand.

Character Blueprint

Here you can set the control keys:

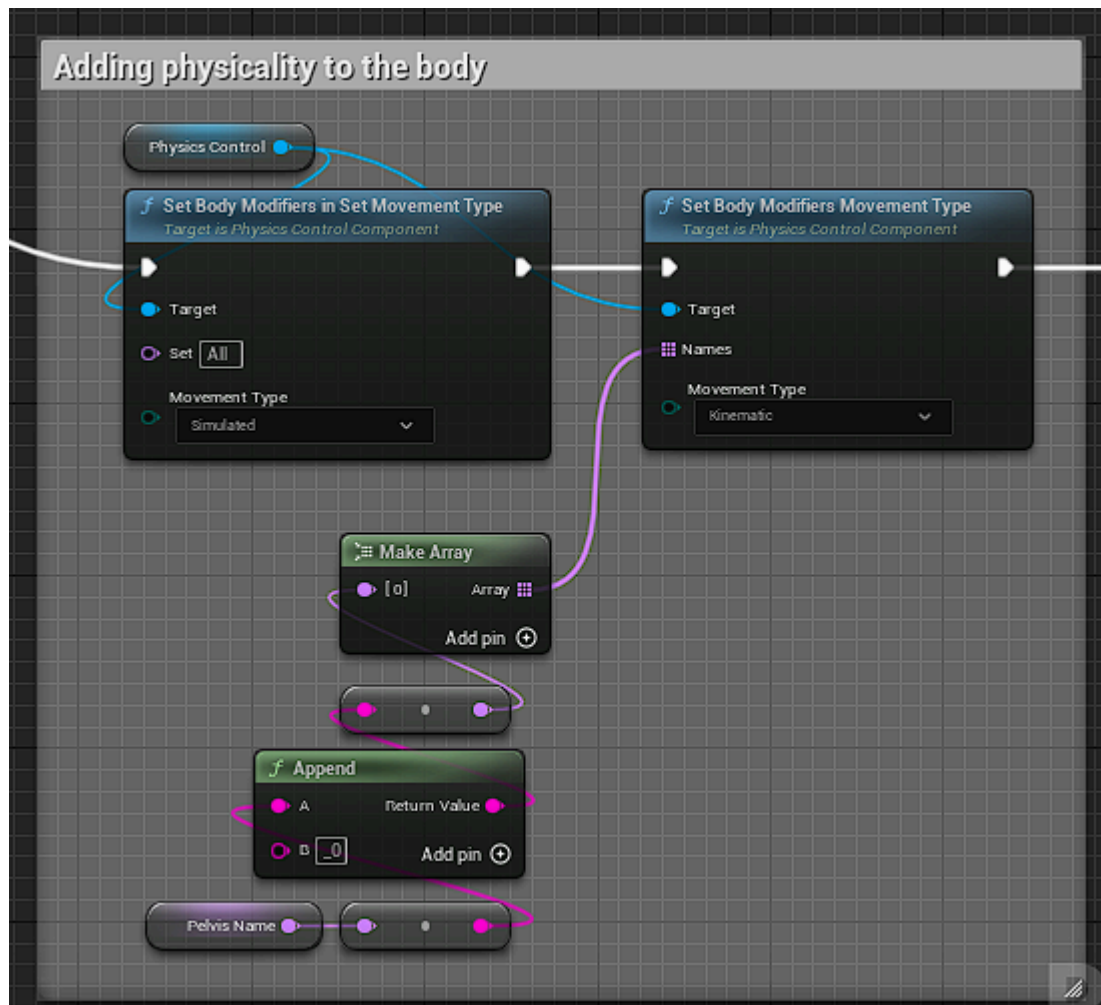


In the character in the component **BAC_PhysicsHands** you must define the name of the bones and other parameters.

Variable Name	BPC_PhysicsHands		
Tooltip			
Category	Default		
Editable when Inherited	☒		
▼ Sockets			
Parent Socket	None  		
▼ Initial			
▼ Limb Setup Data	6 Array elements		  
▶ Index [0]	3 members	▼	
▶ Index [1]	3 members	▼	
▶ Index [2]	3 members	▼	
▶ Index [3]	3 members	▼	
▶ Index [4]	3 members	▼	
▶ Index [5]	3 members	▼	
▼ Limbs Names	4 Map elements		  
hand_l	hand_l	▼	
hand_r	hand_r	▼	
foot_l	foot_l	▼	
foot_r	foot_r	▼	
▼ Limbs Attach Names	2 Map elements		  
hand_l	hand_lAttach	▼	
hand_r	hand_rAttach	▼	
Max Weight Of Object	100,0		
Clamp Hands XY	60,0		
▶ Clamp Hands Z	100,0	200,0	
▶ Clamp Hands Z World	100,0	200,0	
Pelvis Name	pelvis		

- **Limb Setup Data** - Adds physics to the assigned limbs
- **LimbsNames** - Sets the names of your character's palms and feet
- **LimbsAttachNames** - Socket names for attaching objects to the arm.
- **MaxWeightOfObject** - The maximum possible weight of an object.
- **ClampHandsXY** - X, Y boundary of hand movement relative to the mesh
- **ClampHandsZ** - Z boundary of hands movement relative to the mesh
- **PelvisName** - Name of the initial back bone

Also if you don't need physics of the whole body you can disable this block in Event Graph
BAC_PhysicsHands



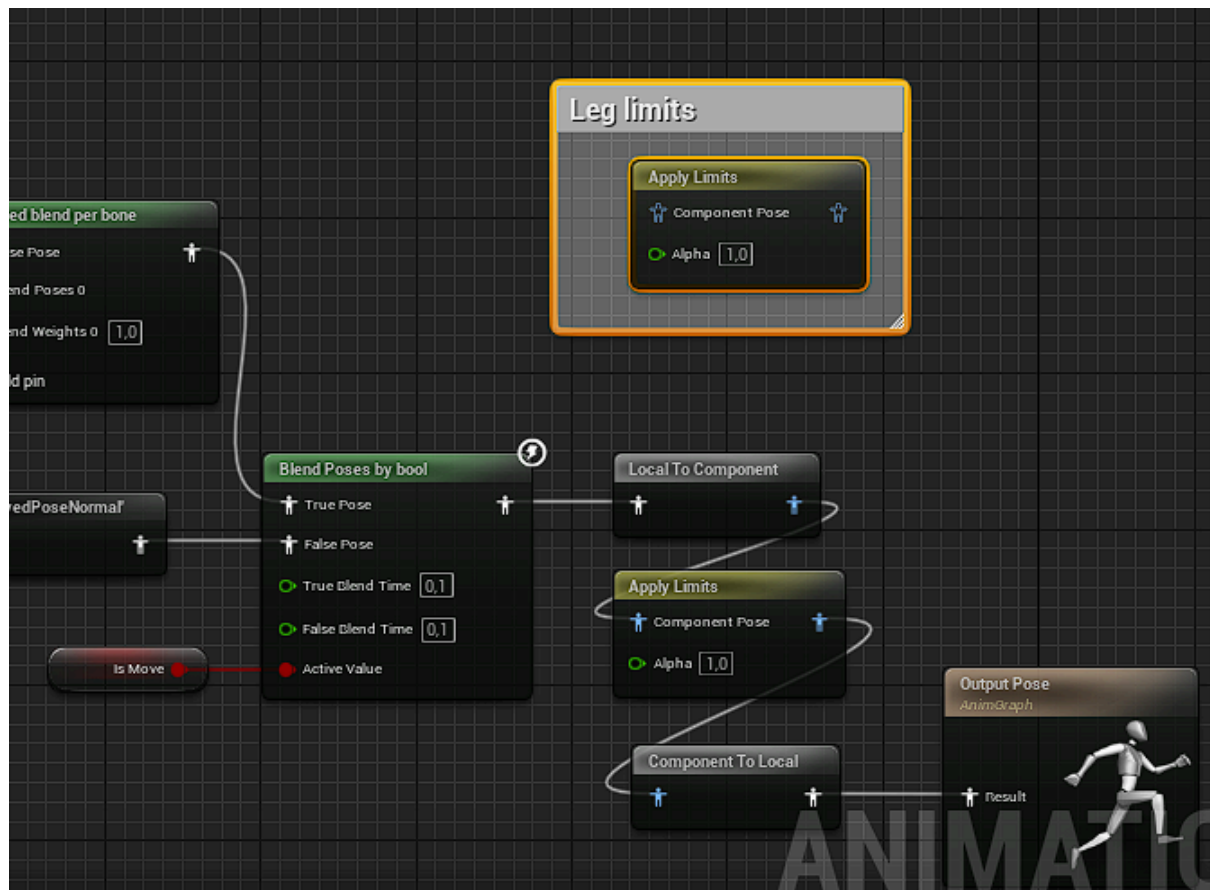
If you don't need limb physics in principle, you can disable this block. Moving hands, grabbing objects will also work, but without ragdoll.

Attaching items

In enum **EAttachModes** several modes of attaching objects are configured:

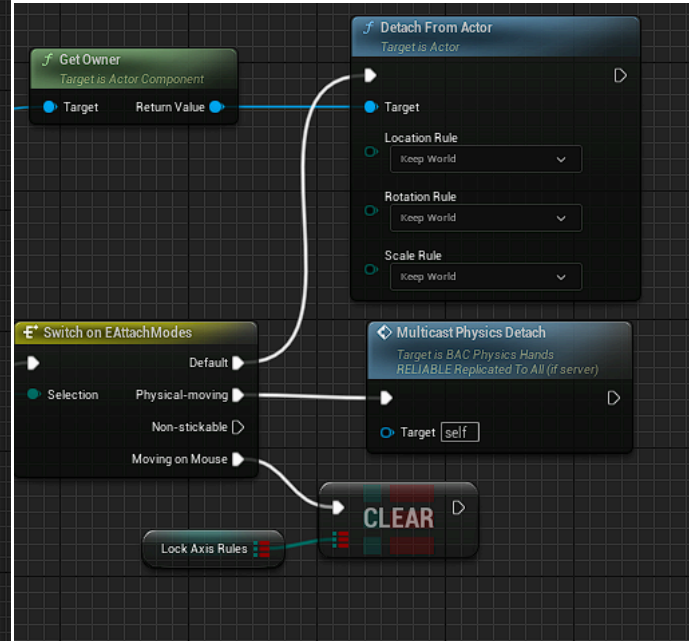
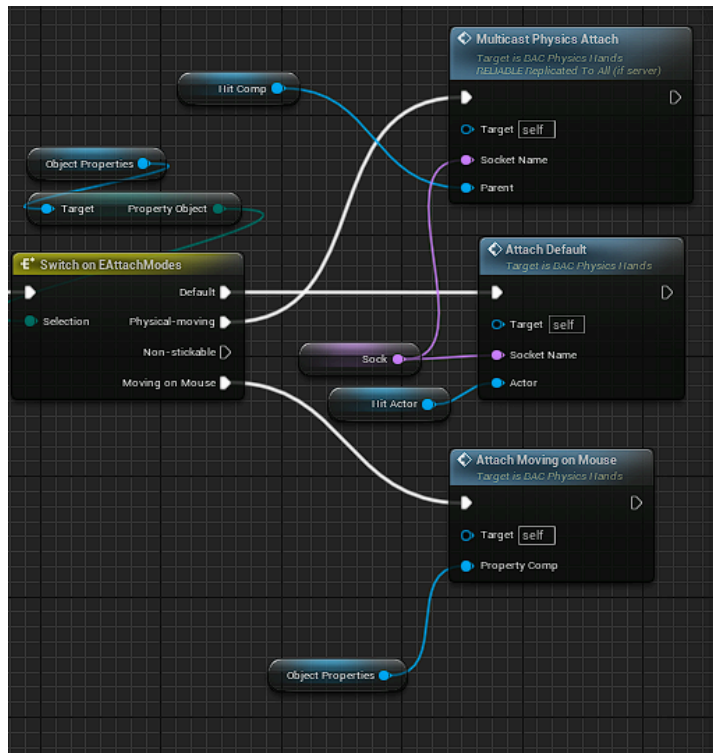
- **Non-stickable** - Item cannot be attached to the hand
- **Default** - Standard attachment to the hand, suitable for most objects.
- **Physical-moving** - Suitable for various moving platforms. The character attaches to the item and ragdoll physics is enabled.
- **MovingOnMouse** - Suitable for levers if you need to handle arm movements along certain axes, or block movement along those axes.

The character's animation blueprint is customized with limb rotation limits and logic to connect the normal animation and the required hand position.



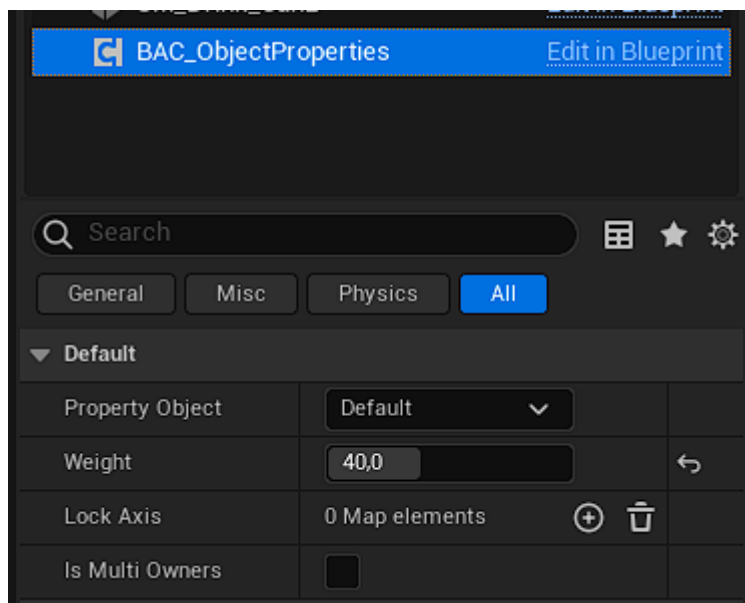
Adding your own item pickup logic and setuping actors

To add the new required logic when taking an object, add the appropriate category to **EAttachModes** and add the required functions to the **Attach Object** and **Detach Object** methods.



In order for an actor to be able to be taken in the hand you need to add the **BAC_ObjectProperties** component to it and subscribe to its dispatchers **InteractDispatcher**, **AttachDispatcher**, **DetachDispatcher** if necessary.

And also customize the item's attachment category, the need to lock the axes of arm movement, whether multiple characters can attach to this item, and the weight. The heavier the item, the heavier the arms will move.



Examples of use can be found on the initial map.