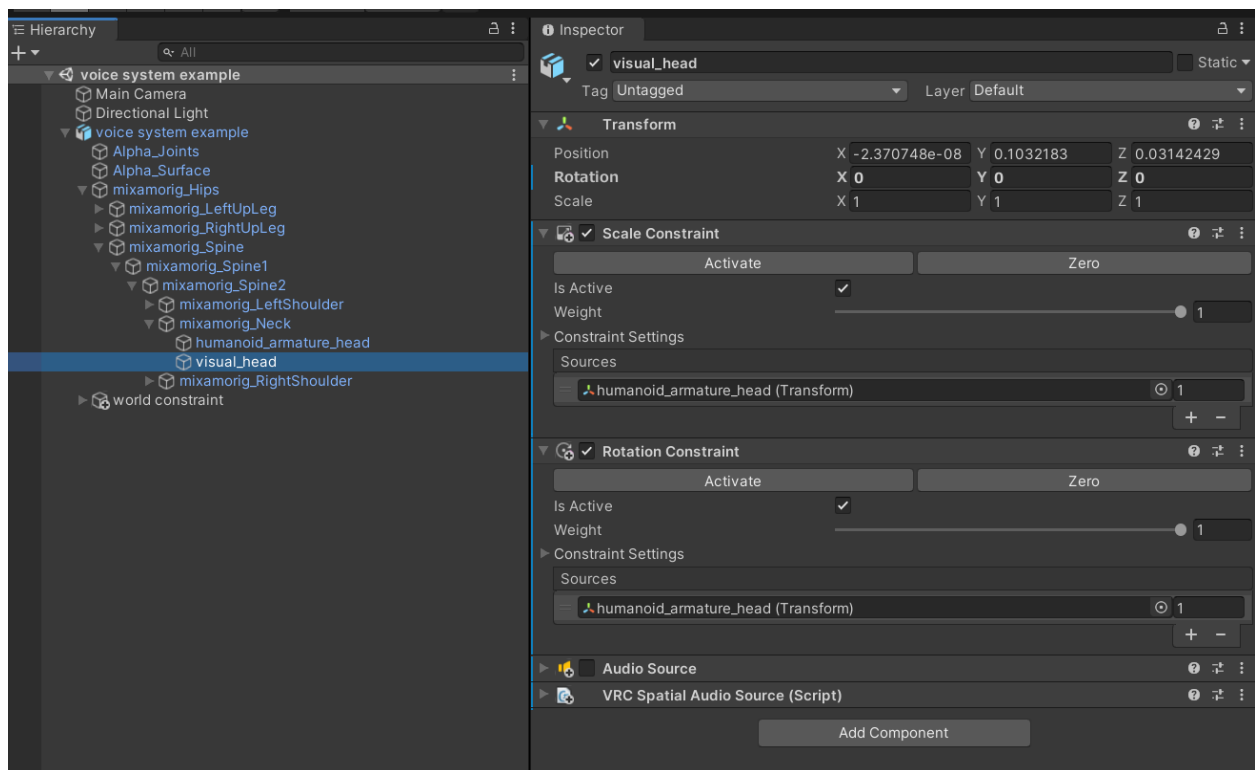


Voice system guide

By: [Jetdog8808](#)

Avatar Setup:

To be able to mute the player it will require some special changes to your avatar. Using blender you will need to duplicate your avatar's headbone. The original head bone will have the weight painting for your avatar's head. The duplicate will have nothing on it but will be set as the head in the unity humanoid armature setup.

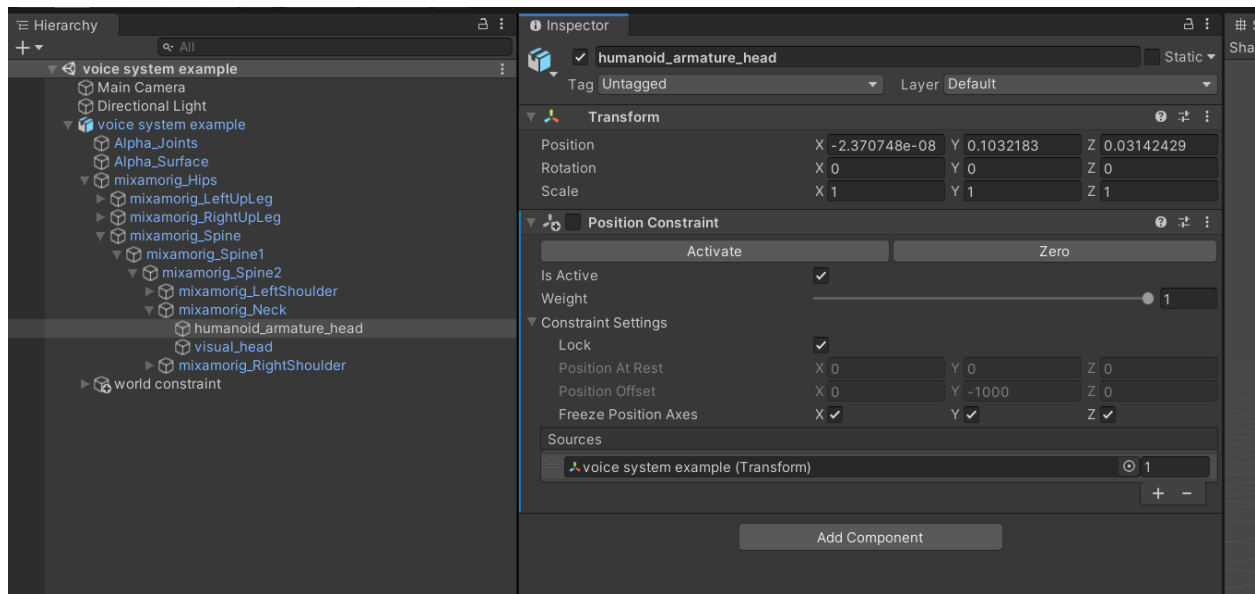


The scale and rotation constraints will sync up the head bone with the weight painting to the humanoid armature head.

Muting the player:

This works by moving the player's head far away. The player's voice audio source follows their humanoid armature head bone. So by moving it very far away it will make it so

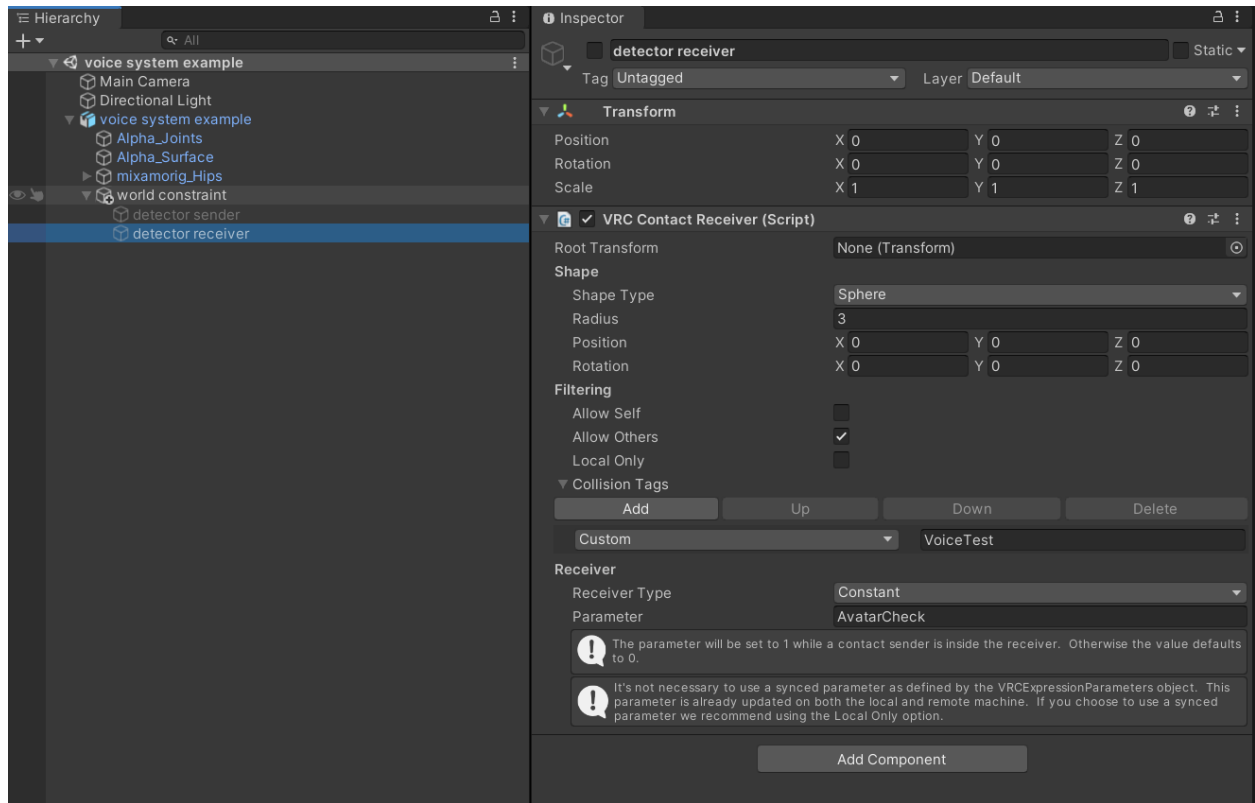
other users can't hear them.



I do this by using a position constraint to move the users head 1000 units below them.

Same avatar detection:

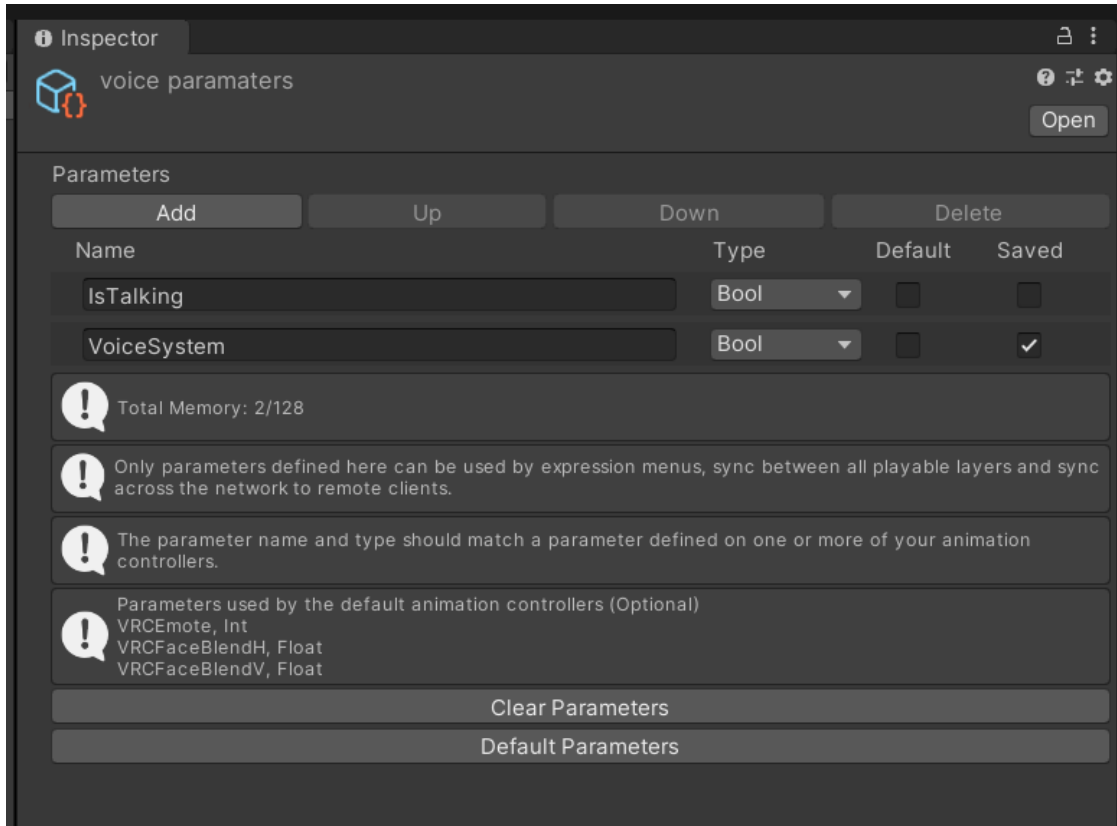
Using contact senders and receivers that came in the vrchat avatar dynamics update i can check for custom tags. One issue is that the radius is locked to 3 units long. To work around this restriction I use a world constraint to keep the contacts at 0,0,0. Allowing it to be the same for all the avatars.



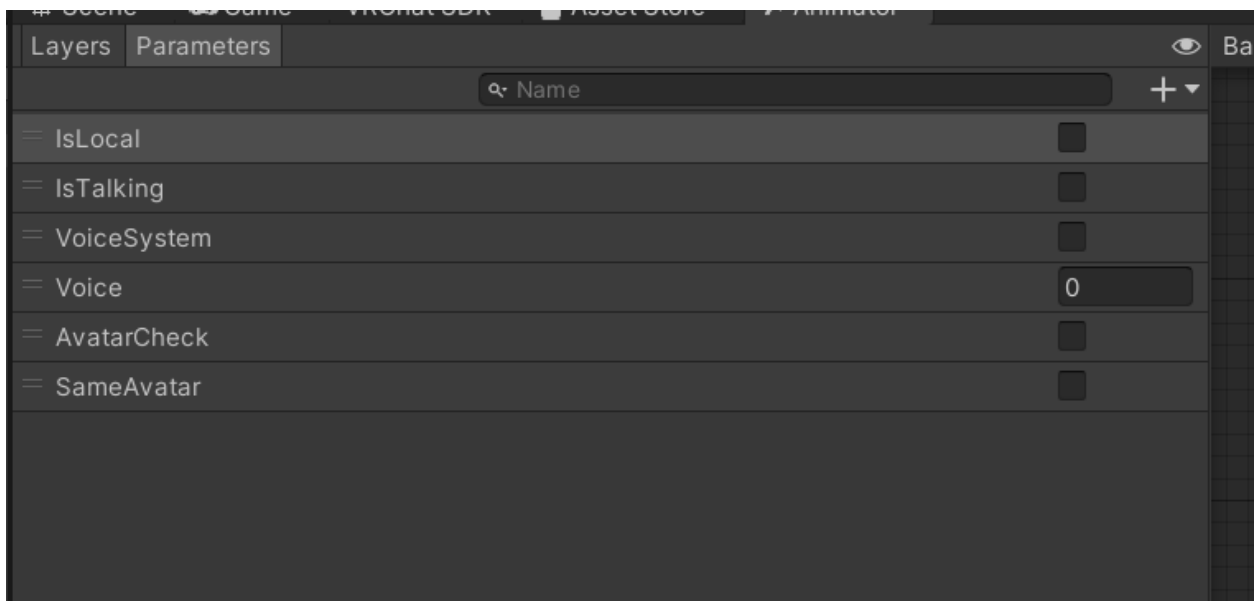
Then based on the islocal parameter in the animator it will turn them on and off. When true the sender is enabled, when false the receiver is enabled.

Animator:

Avatar needs two synced parameters. One to sync when the user is talking, and the other to turn the system on and off.



Parameters in the animator.



Islocal: (VRC parameter) True if the avatar is being worn locally, false otherwise.

IsTalking: Set to true when the user is talking, false when not.

VoiceSystem: Toggle for the system.

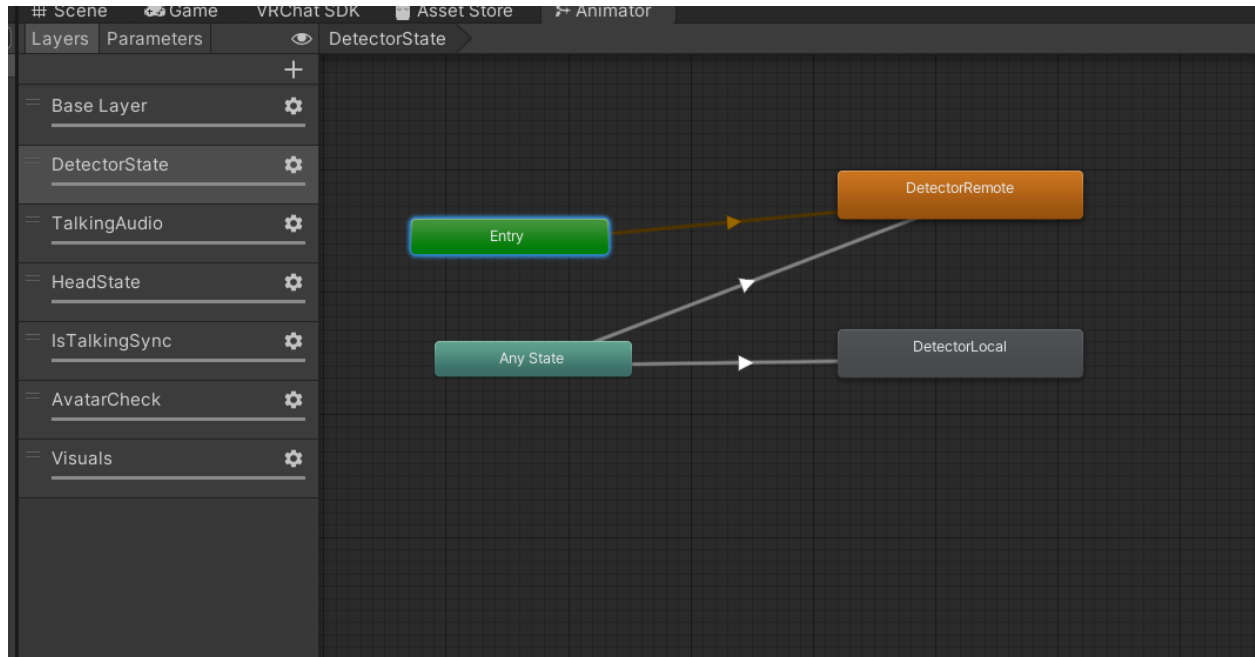
Voice: (VRC parameter) Microphone volume (0.0-1.0).

AvatarCheck: Receiver Parameter.

SameAvatar: True when the same avatar is detected.

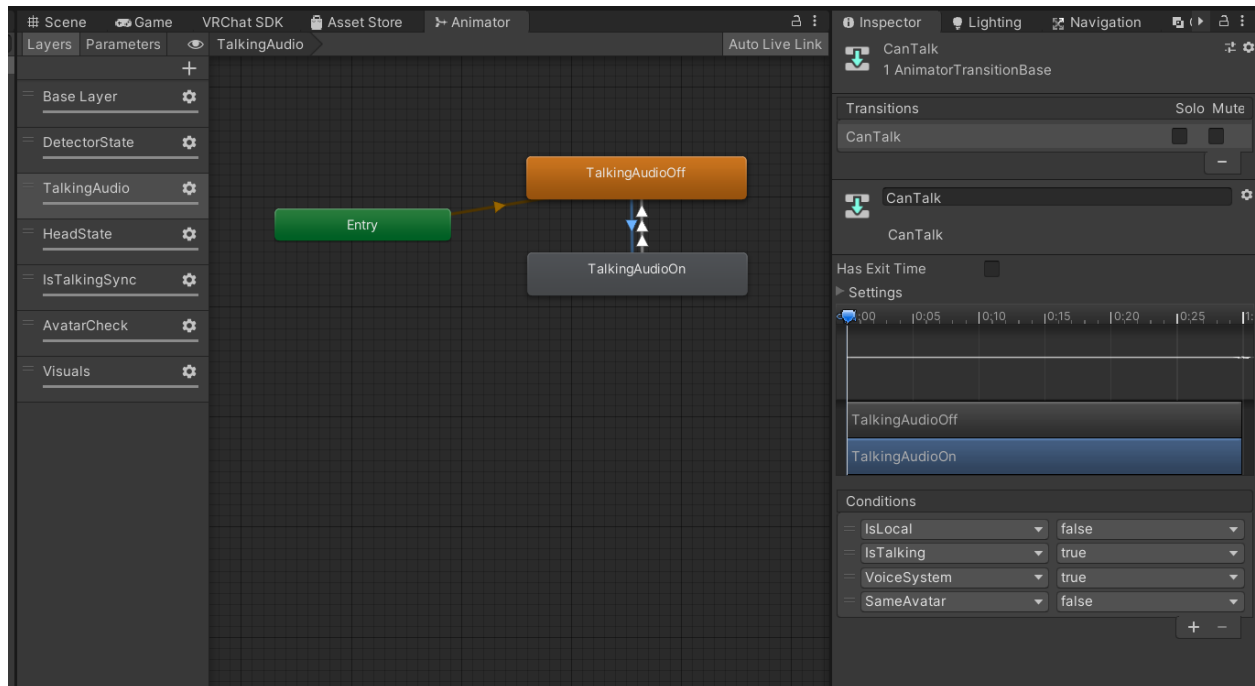
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DetectorState layer- Will turn the contact sender and receiver based on the IsLocal value.

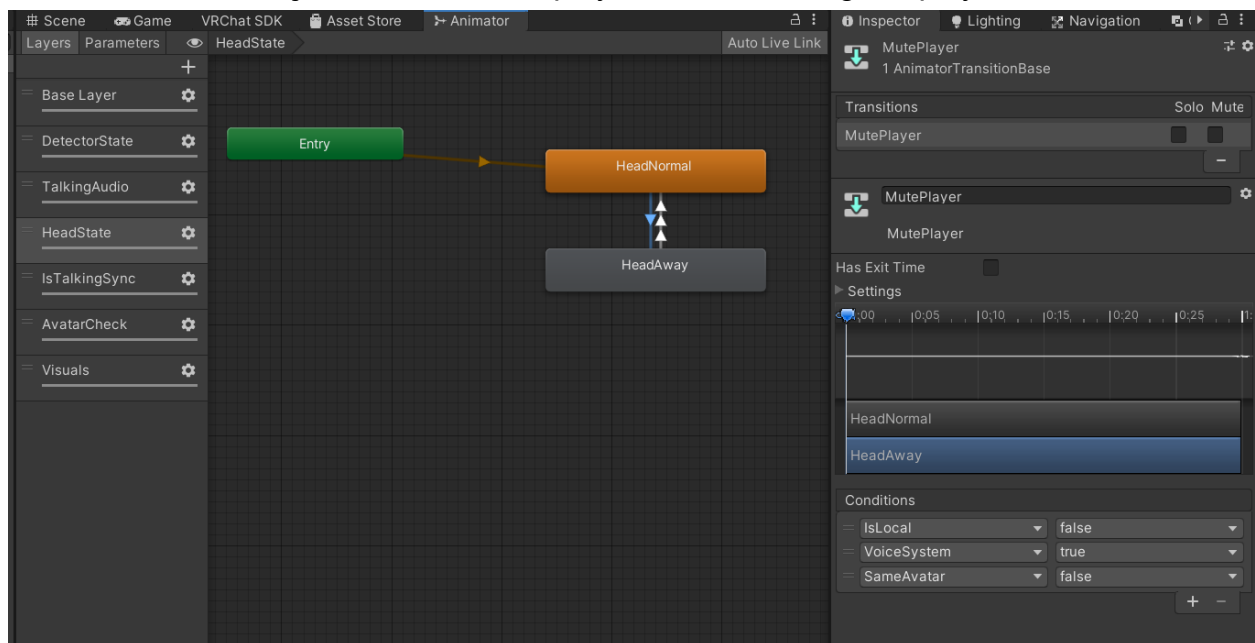


To help with making sure the sender is detected when enabled it animates going in and out of the receiver.

TalkingAudio layer- Will play the audio source replacing the users voice.

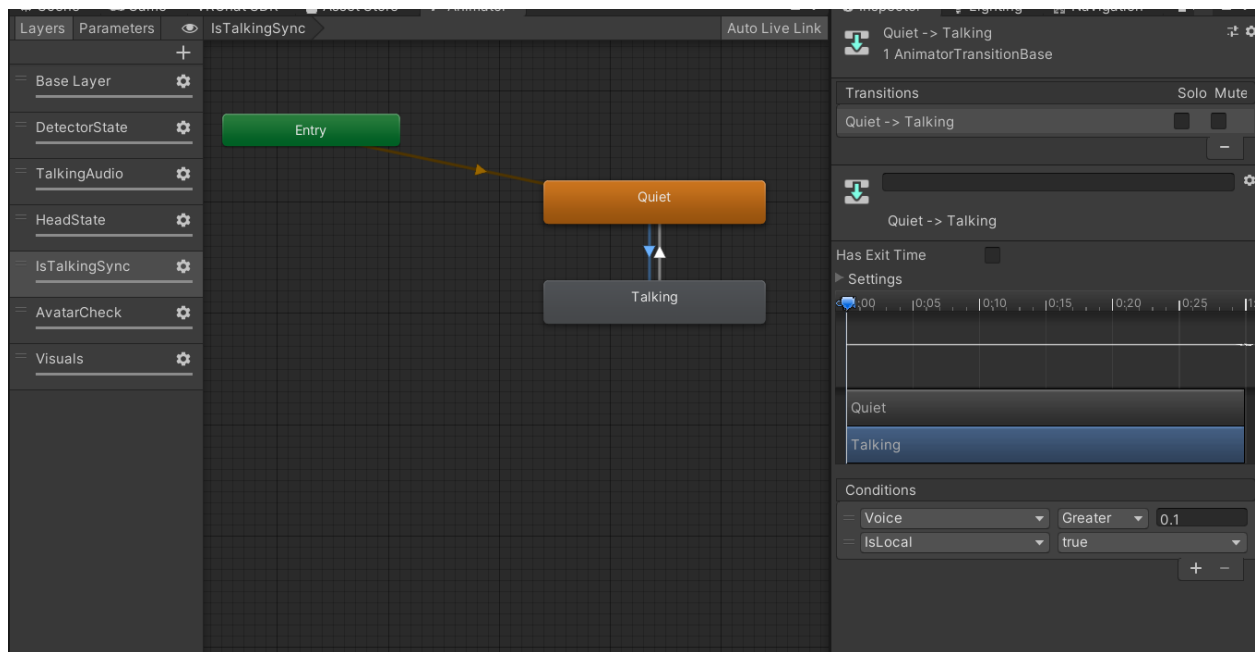


HeadState layer- will move the player's head, muting the player.

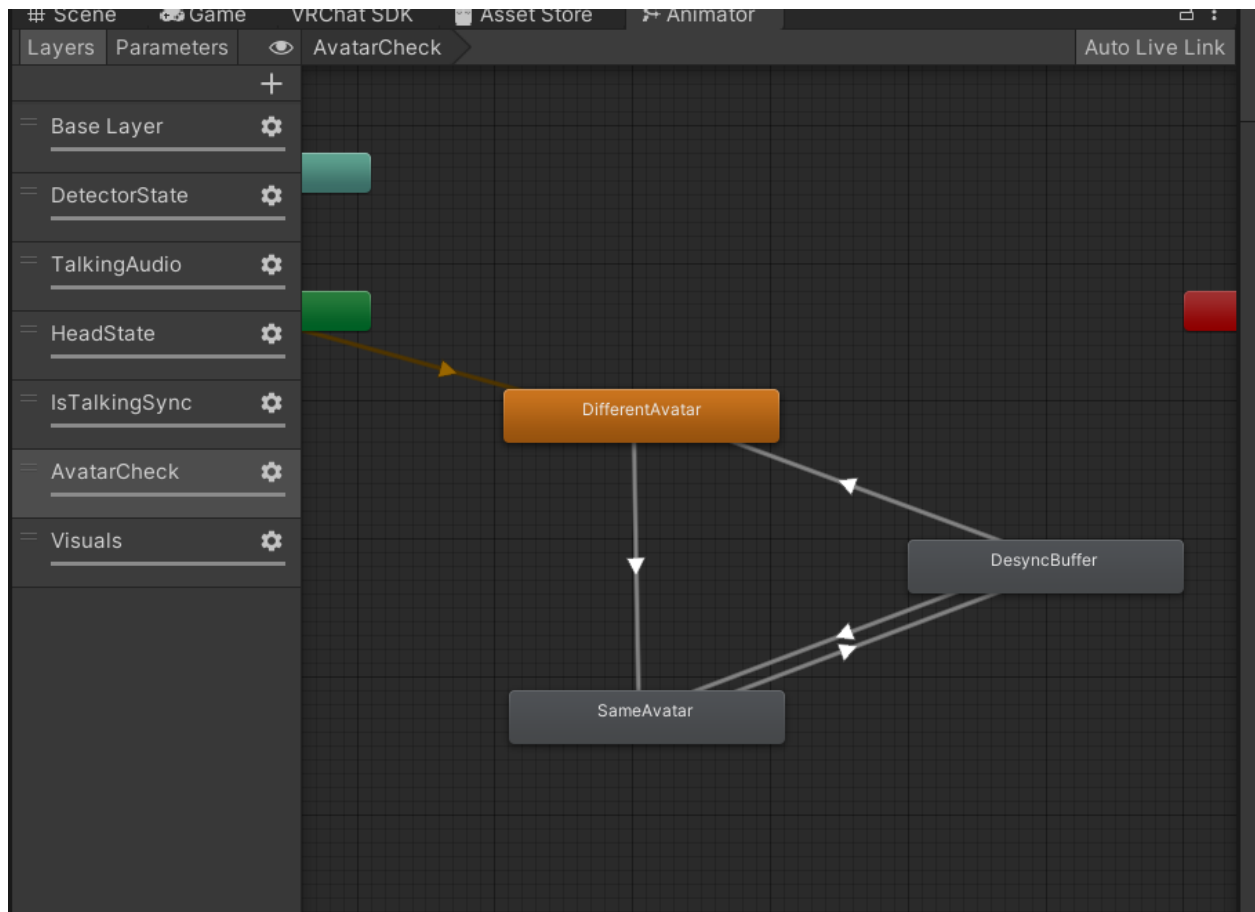


IsTalkingSync layer- Since the voice parameter only works while the user can be heard it has to be synced by the local user. This layer will set the IsTalking parameter

on and off based on the local users volume.

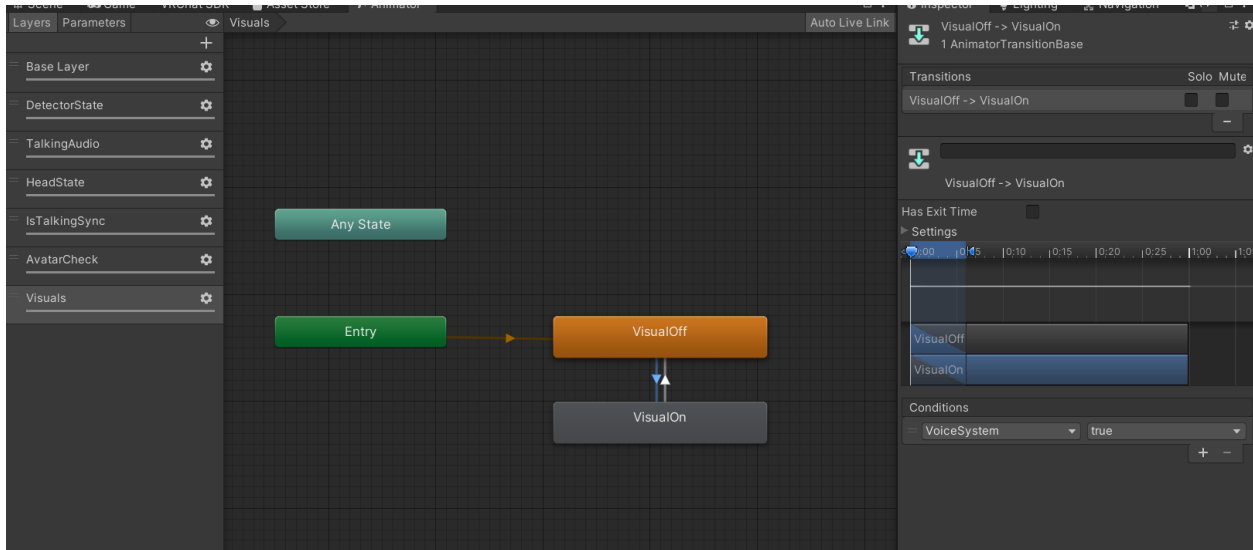


AvatarCheck layer- To help with world constraint jitter this layer puts a buffer to help know when the same avatar is detected.



When AvatarCheck is true it will set the SameAvatar to be true. When AvatarCheck is false it will take 5 seconds before SameAvatar is set to false. Timer is reset each time AvatarCheck is true.

Visuals layer- Is just used to indicate when the avatar has the system on and off.



WARNINGS/ISSUES:

1. Since the avatar needs a dummy head to make the head look normal it can cause issues.
 - a. Main issue is dynamics and contacts put on the head. Vrc scales down the head and compensates for those components. But since the dummy head with the weight painting is not the head specified in the humanoid armature there is no compensation. This is mainly a local avatar issue, remote viewing the avatar should be fine.
(there might be a way to work around it but have not done it yet)
2. Moving the player's head to mute can cause some issues.
 - a. While the player's voice does follow the head, the user's nameplate also follows the user's head. So while the head is moved to mute the user other users will not see a nameplate above the avatar.
 - b. Another issue caused by the nameplate moving is a flickering effect when looking away and back at the avatar. Caused by animation culling and how far away you move the head. To help reduce this, minimize how far away the head gets moved (1000 seems like a good number) and increase the avatar's bounds size so they don't get culled less.
3. VRC safety settings

- a. If a user has avatar animations turned off or your avatar is hidden that user will be able to hear you normally even if the system is on.
- b. If you are in the avatar with the system on and you don't have avatar interactions enabled for another user in the avatar the same avatar check will not work. Making it so you cant talk to each other when the system is on.
- c. For avatars that are uploaded on different accounts and/or/ different id's must use the same contact tag to work together. The example project uses the tag VoiceTest.