RPG Attributes

# Initialise Attributes from a Data table

So far attributes have been initialised by calling init functions. This works, but it’s not the only way. Here’s an alternative

To make things more interesting we’ll add some more attributes to the AttributeSet

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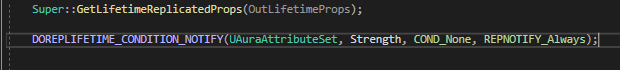
Example: Strength. Just copying the vital but changing the specifics. Note the On\_Rep for a notif that does not yet exist

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And then we apply for the other attributes

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So, the purpose of this exercise is to initialise from a datatable. To do this we need to expose the ability system component to BP, so that we can set a specific asset, the datatable, on that component

To od this we need to open the Aura Player State, where the ASC is located

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The ASC properties are now exposed in the player state:

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To use a data table to initialise some attributes, we have to add an element to the array Attribute Test called Default Starting Data

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You can choose attributes

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And a data table to use

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But you can’t just use ANY data table – it needs the correct row structure.

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Row name is specified by the Attribute Set, a dot, and the attribute name



Base value:

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And now back in the player state:

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And now in-game:

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The struct:

From the parent AttributeSet.h:

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Currently it’s mostly useful for setting the initial value of attributes; it implements no functionality for a minimum or maximum, it just inits the values

It’s limited in application, but this can be pretty useful for some cases; You just fill in the values and the ASC does the rest

Most people prefer to initialise using a Gameplay Effect on game start though

# Initialising Attributes with Gameplay Effects

After disabling the data table previously used, go to AuraCharacterBase.h

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So, we have a DefaultPrimaryAttributes, now we need a way to apply these attributes

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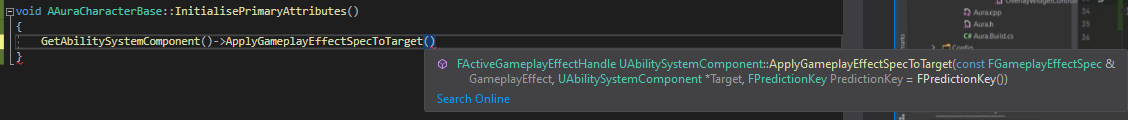
How to define.

First, if we’re going to call something like ApplyGameplayEffectToSelf() or toTarget, we’ll need a GameplayEffectSpec to apply. Which we can create because we have a class for our DefaultPrimaryAttributes

So work backwards.

Call the fn to apply the effect

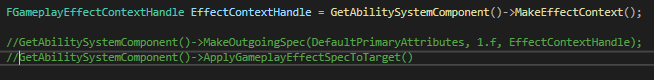
We can always get our AbilitySystemComponent, assuming that it’s valid at the time of calling, and from it call ApplyGameplayEffectToTarget()



To apply the Gamepla Effect we need a GameplayEffect Spec. Asa reminder, the function for this is MakeOutGoingSpec(), taking in a UGameplayEffect, a level and a context handle.



To get a context handle:

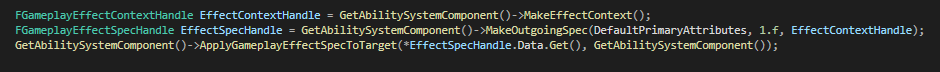


Now we have our Context we can pass it into the next line:

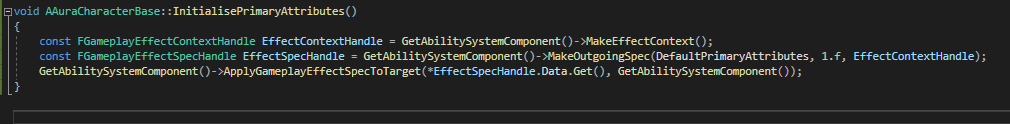


This returns a Spec Handle, which we can pass into the next time. However, it’s not enough to just pass in the handle, we need to use the internal variable Data. Data is a wrapper, so we need to then call Get(). This returns a pointer, but the function does not take in a pointer, so we have to dereference it!

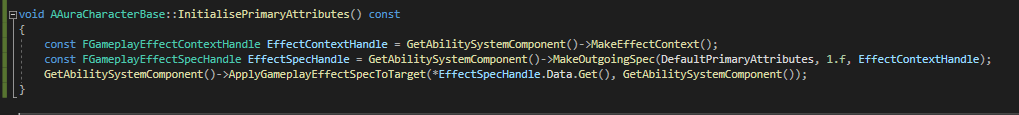
Finally the second argument required is the ASC



Finally these can be made consts



This applies a GameplayEffectSpec to a target Abilitysystemcomponent



There should be no problem as long as all these values are correct, and we can check them

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Now we have the function, where do we call it?

It can be called in different circumstances, depending on if we are the aura character or the enemy

For the moment, we’ll do it for the character

Since we created this effect in the base character class we can inherit it in the character class

Unlike the InitAbilityActorInfo this does not need to be done on both sever and client, it only needs to be done on the server, because all of the attributes are marked to be replicated, so if we change them on the server they change on the client as well. We can do it locally as well to save waiting for replication, either is fine

If we do this in InitAbilityActorInfo, we know that the ASC is valid at this point. So we know it’s safe to call it here; lets do it after the Hud

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Now all that remains is to make sure we have that effect and set some default values

Run in Debug mode

Error: 1 Remember to forward declare the UGameplayEffect class

Error 2: DefaultPrimaryAttributes is not a function! Change line to:

Check(DefaultPrimaryAttributes);

Now in the editor we need a GameplayEffect to initialise the PrimaryAttribute values

This will be specific to the Aura Character, and eventually we’ll have different types of characters that start with different values

For now, we’ll create just 1 GE; an instant, applied once, with 4 modifiers, one for each primary attribute

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Modifier opp is not add, it’s Override

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Once this is done we need to set the GE effect on the aura character(otherwise game will crash)

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