Howdy, in this guide I'll attempt to walkthrough an outfit replacement in Hogwarts Legacy.

To begin:

Prerequisites:

Fmodel
https://github.com/narknon/FModel/releases/tag/4.4.4.4

Narkanon's Custom Uproject (Use clone method)
https://github.com/narknon/PhoenixUProj

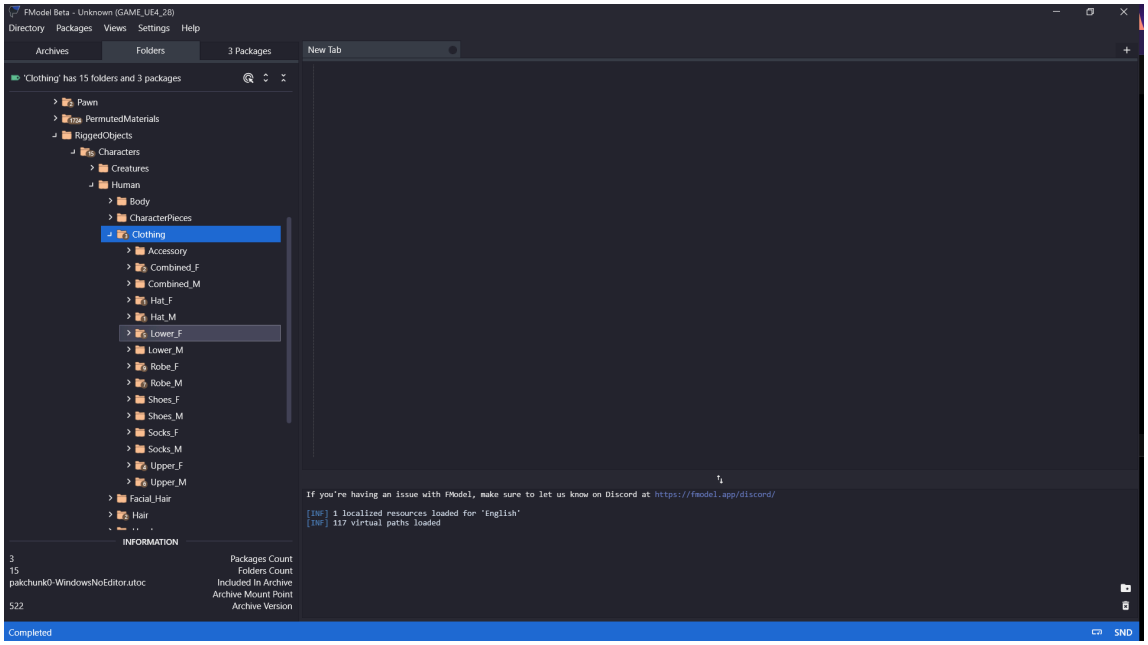
Blender
https://www.blender.org/download/

Blender .psk import addon
https://github.com/matyalatte/blender3d_import_psk_psa/

This write up will assume you can use the above tools, information on usage can be found at the Hogwarts Legacy Modding Discord https://discord.gg/hogwartslegacymods

Step 1a: FModel

Open FModel, point it toward your game files, and open up pakchunk0~~~.utoc, ~12gb. You can find clothing items under Content > RiggedObjects > Characters > Human > Clothing

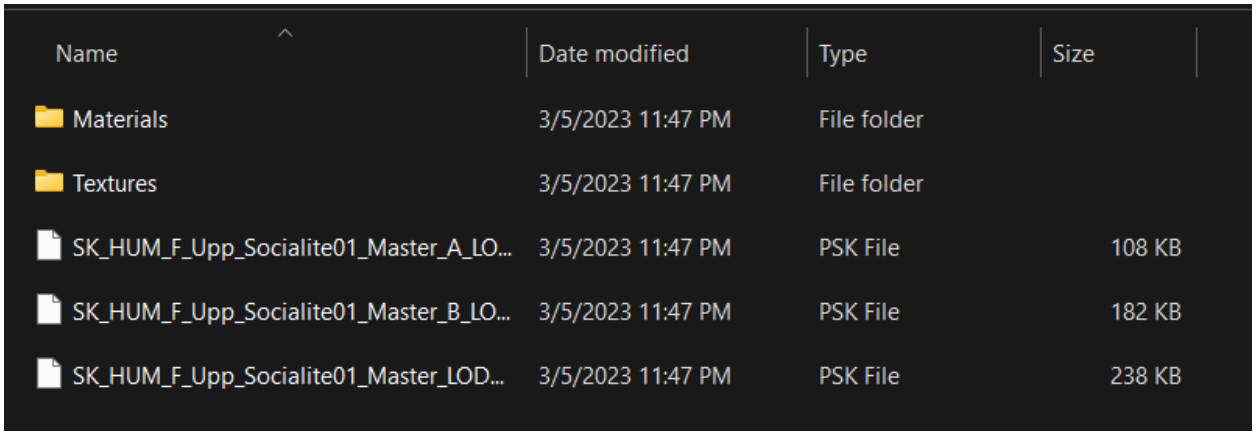


I recommend exporting all the clothing items at once so you don’t have to open FModel again if you do another mod or a mesh isn’t working out.

1b: Find or build the mesh (clothing piece) you want to appear in game, for this guide i'll be using Mona’s mesh

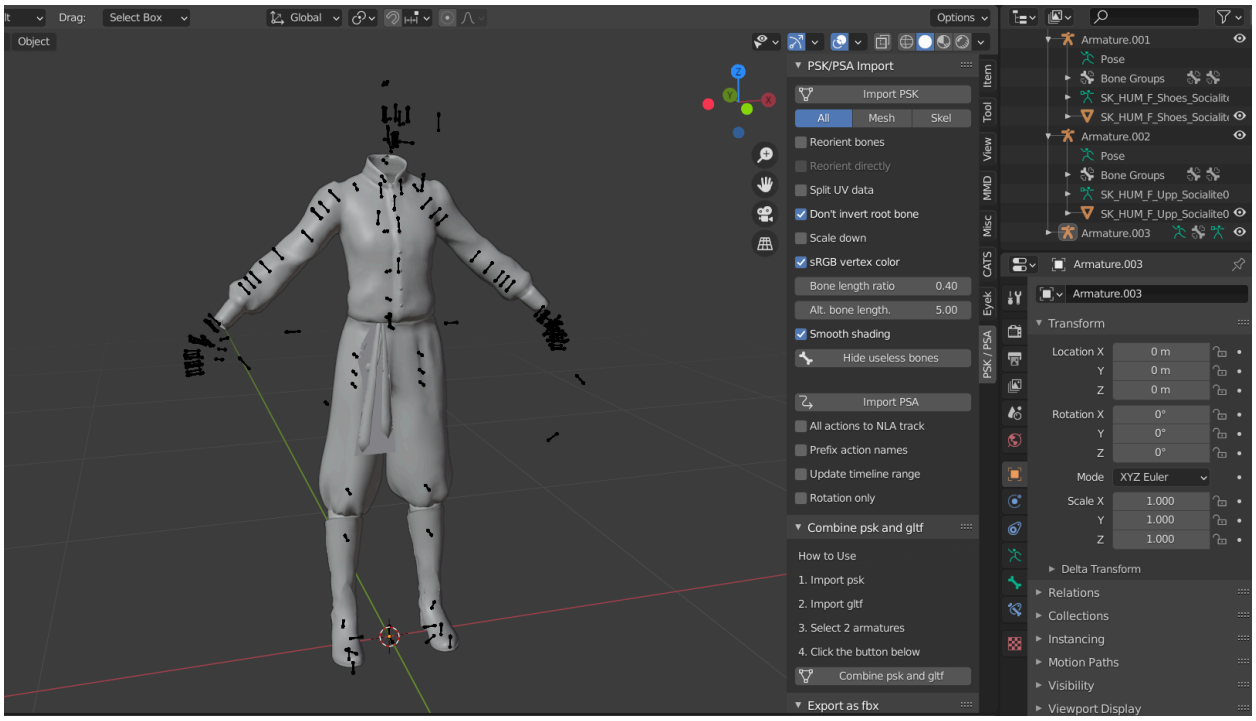
1c: In your export from FModel, find an outfit to replace; Most are separated into 3 parts - Upper, Lower, and Shoes, with relatively matching names. Many names are not as they appear in game, and I can't find a list detailing what's what, so to be sure you can load a .psk into blender and compare that to an outfit as it appears in game.

I’d recommend using the special outfits, or at least outfits that have a materials and textures folder inside. In this example, we will modify Jacket_Socialite01 under Upper_F, as well as its corresponding lower and shoes parts. Keep in mind the clothes are gender specific.

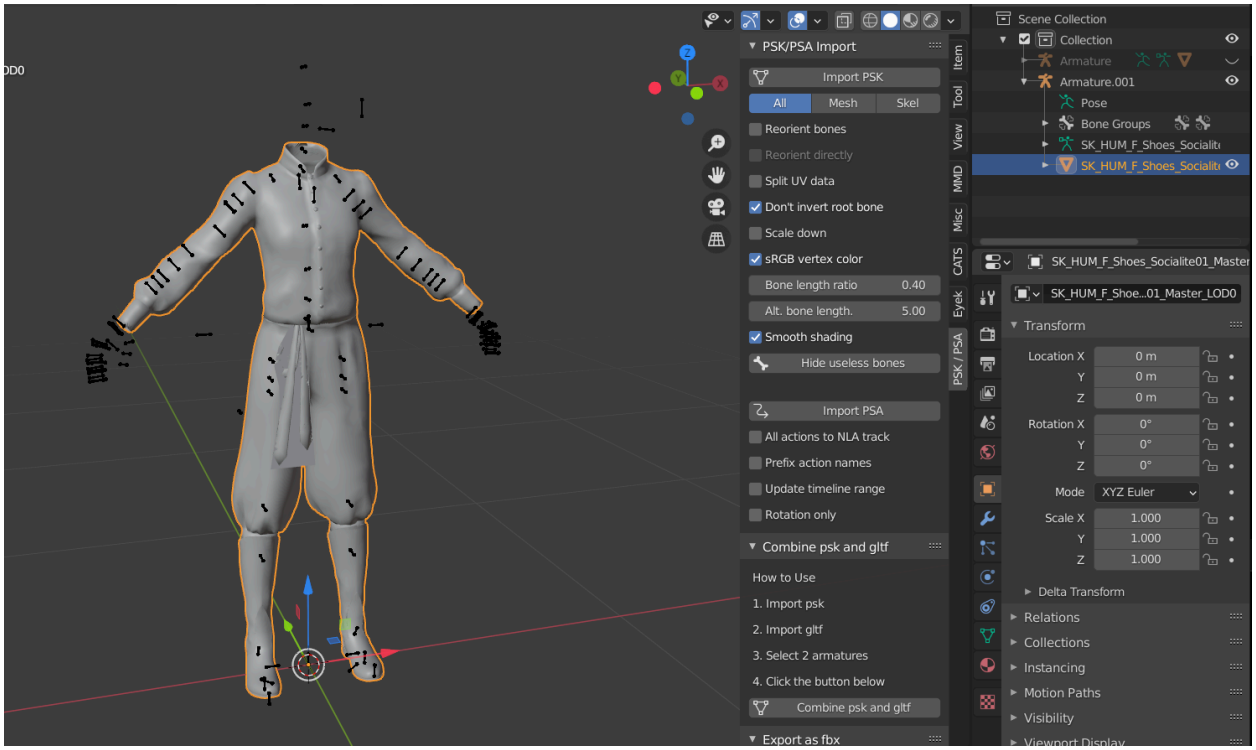


Step 2a: Blender

Begin by importing your .psk files from FModel export using the .psk import addon (I have found that on outfits with multiple .psk's, you can get away with just modifying the _Master file)

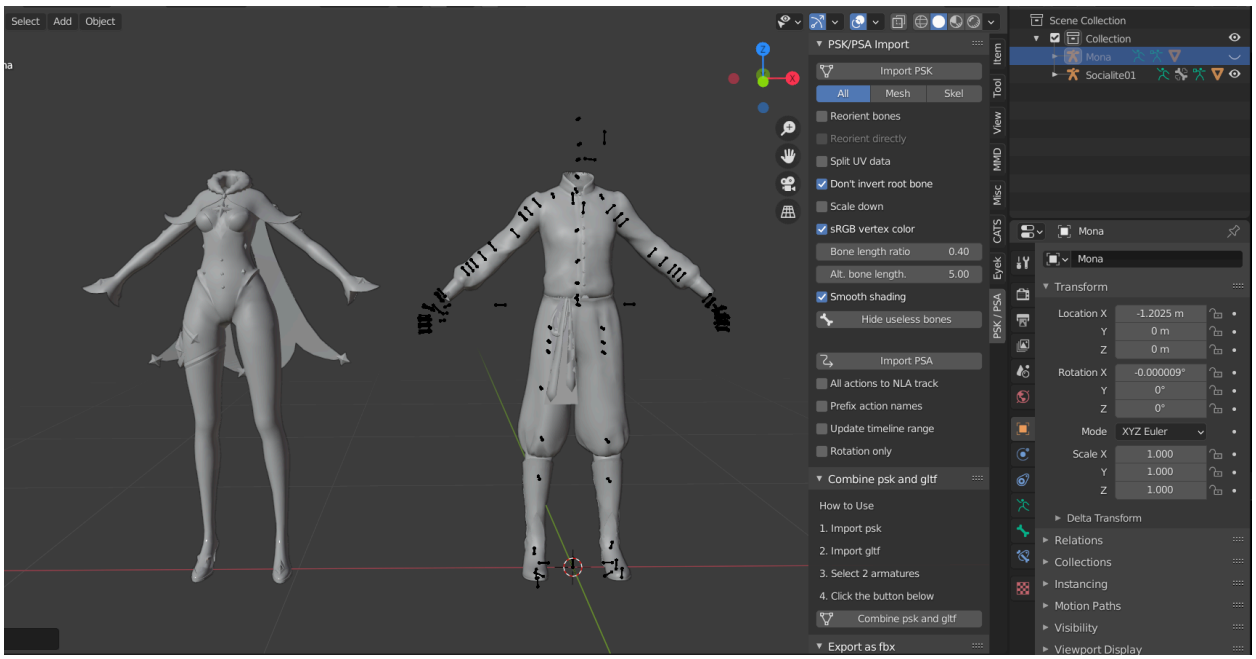


Here we have all 3 socialite .psk's, Upper Lower and Shoes, and to make life easier, you can delete the skeleton on two of them, then shift click the 3 meshes together, and control+J to join (Select the mesh still within an armature first when shift clicking) Parent the legs and shoes to the top (upper) armature. We'll path to the Upper in UE4. In other words, delete the lower and shoes skeleton



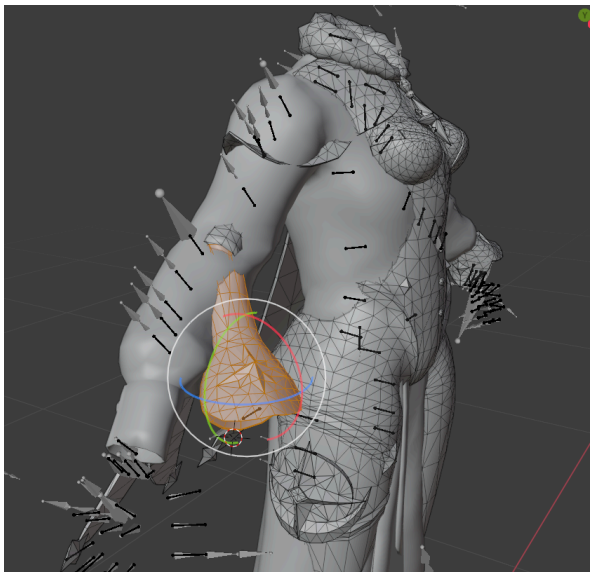
Joined Meshes

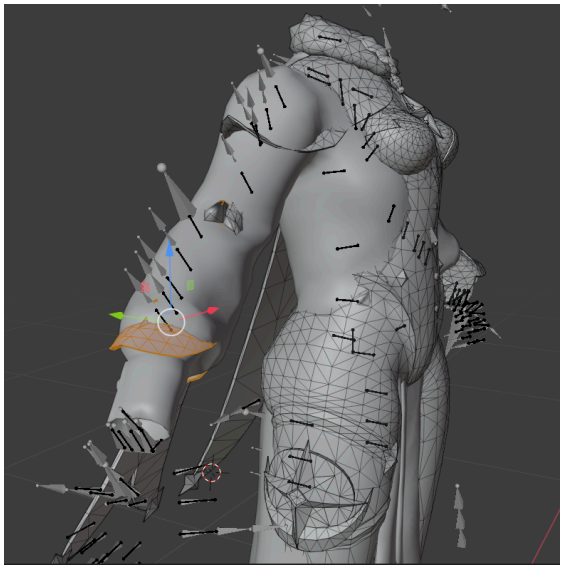
2b: Import your desired mesh (my mona.fbx) alongside. Size it correctly using scale options, make it so both models feet and neck are level with each other.

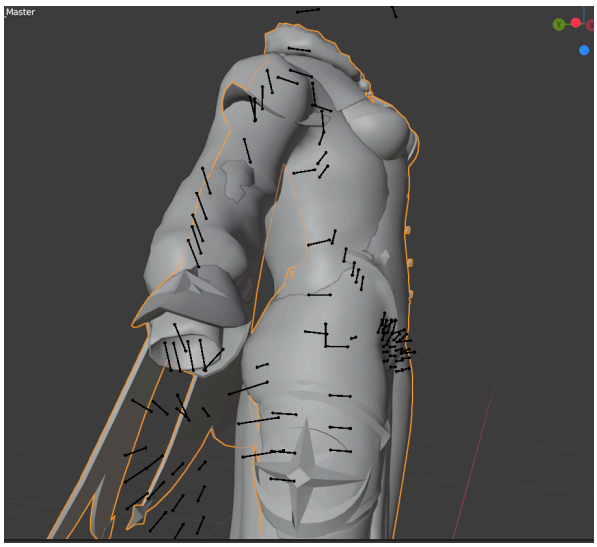


If your desired mesh is attached to an armature, you can delete that skeleton, leaving you with just a mesh mesh. Next, you need to get your mesh in the same pose as the .psk mesh from the game.
Line them both up on 0,0,0, and here I prefer to edit vertices/faces, as maybe your arms aren't long enough, so you can move your mesh around to match. Plus no pose mode nonsense

Important to note: Hogwarts Legacy models, vanilla, are like ray-man. Its just a Head+neck/upper chest, and hands. If your mesh shows any skin, you will need the body with it, but don't worry about hands



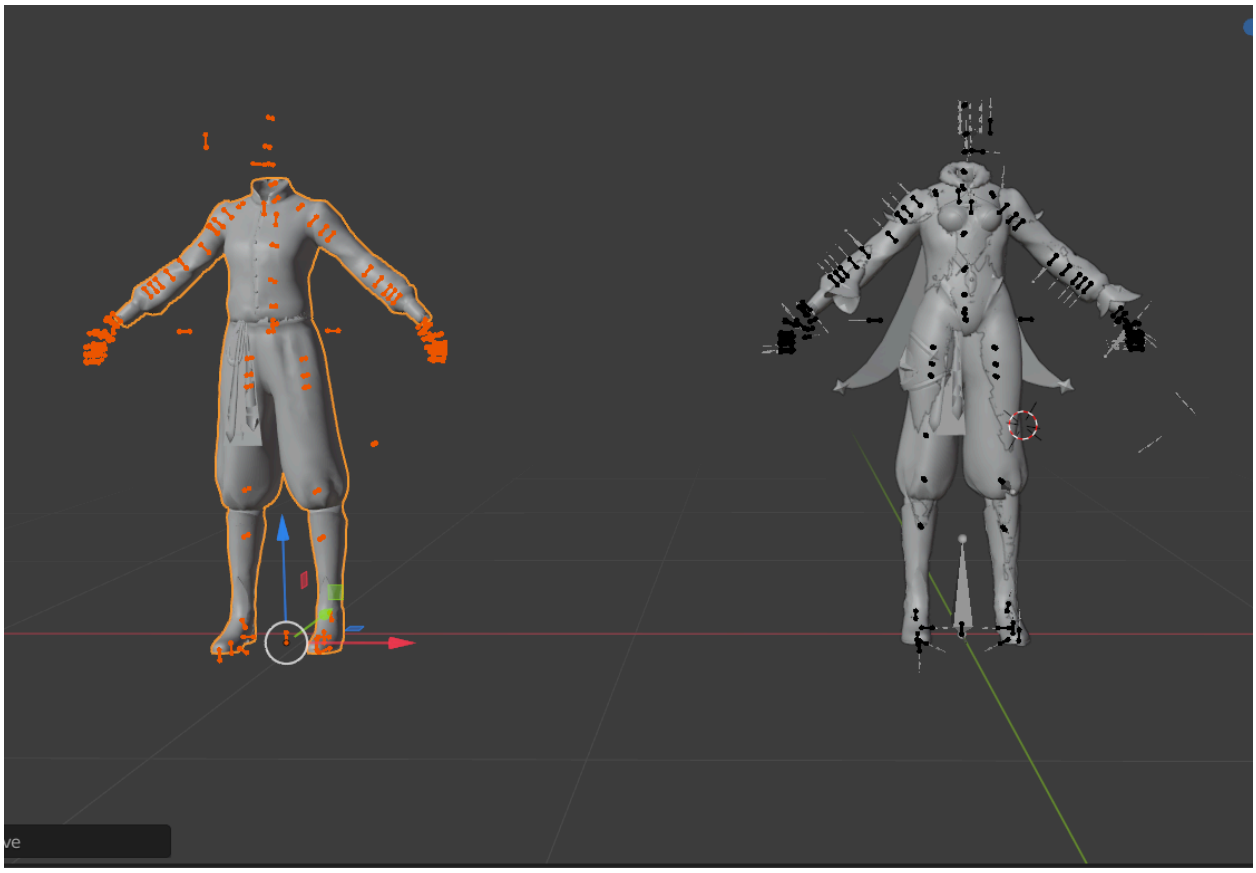




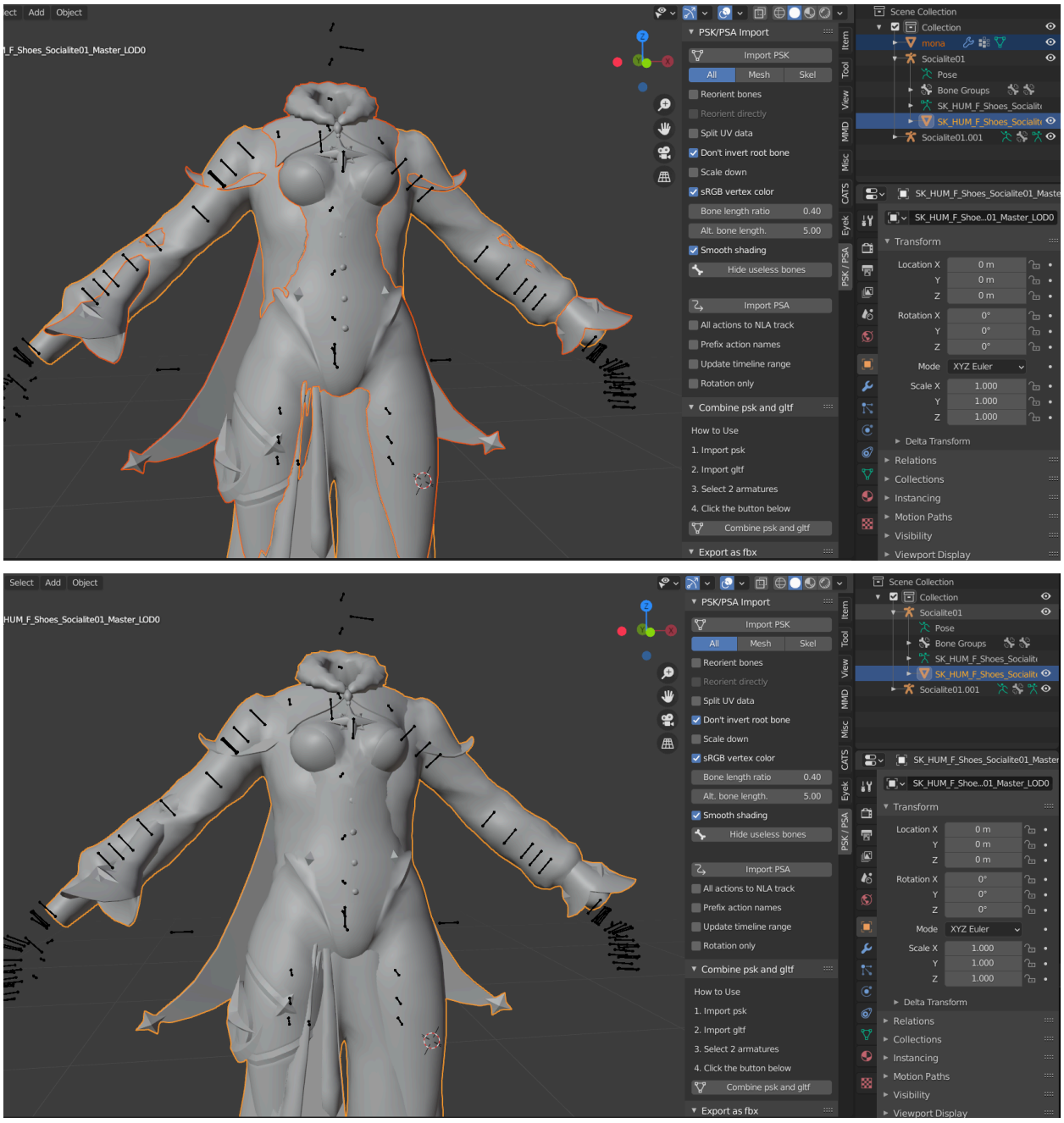
Do this until your mesh matches the vanilla pose, don't forget to angle the feet in your mesh to be flat after moving legs

2c: Binding

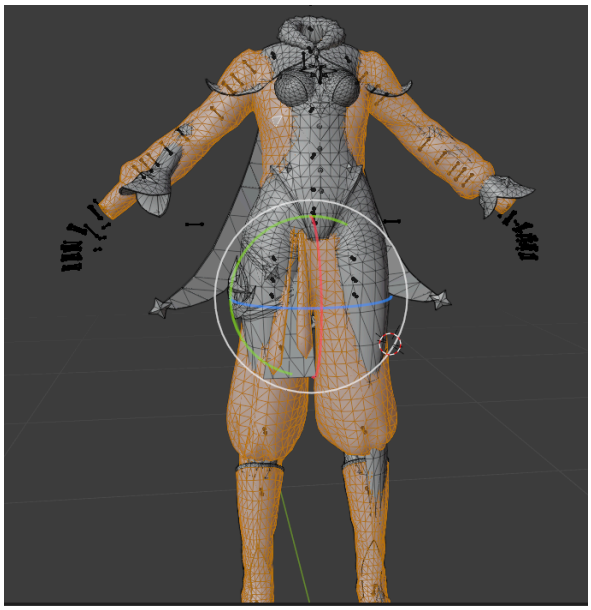
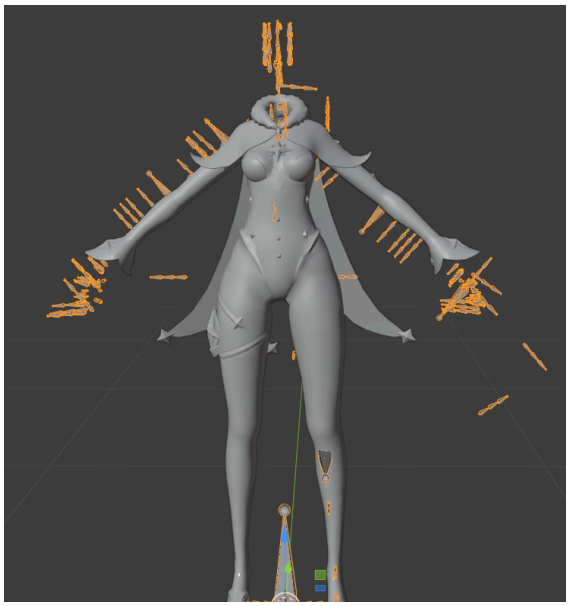
Select the games armature, shift click the games mesh, shift+D to duplicate it, and move it to the side for later reference. Forget about it for a minute.



Return to our 2 meshes overlapped. Click your desired mesh, then shift click the games mesh. Control+J to join them. Resulting mesh should be under games armature



Enter edit mode, top left, with the joined mesh selected. Hover over the games mesh and press L to select the whole part. Do this for the Top, Pants, and Shoes, and delete them, leaving you with your desired mesh bound to the games armature. They should be parented correctly, but it won't hurt to parent your mesh to the armature. Select both, then control+P, and select armature deform with empty groups

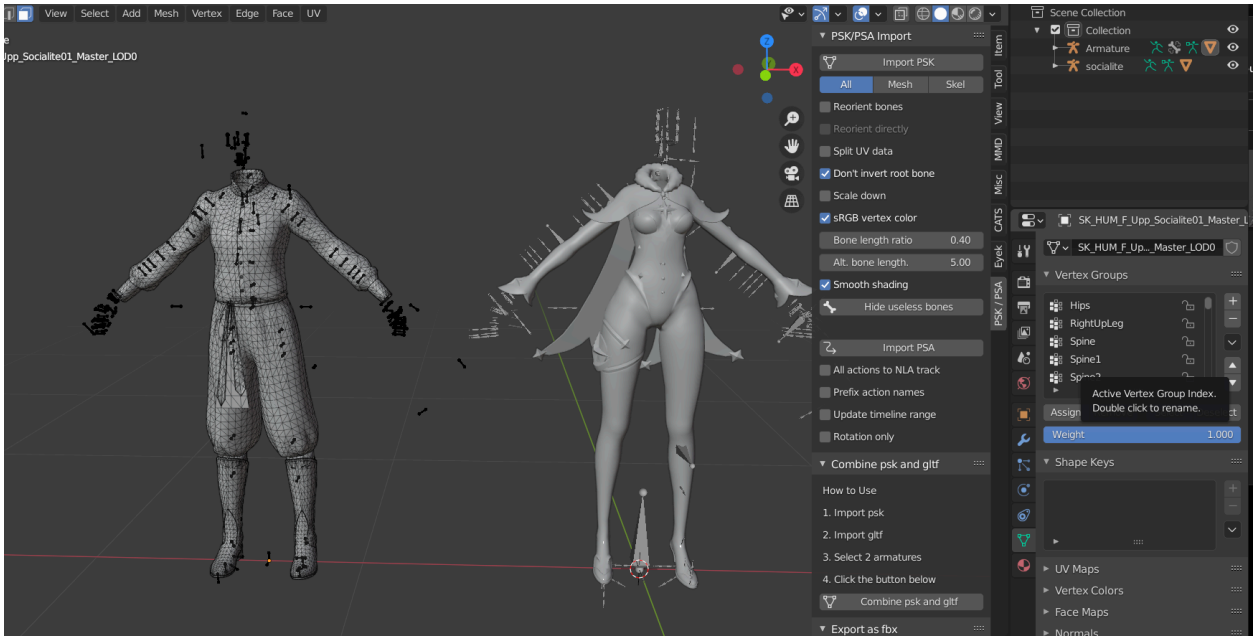
The change in bone type is due to an export to .fbx I did, its easier to see the bones for the next steps so I suggest at this point you export to .fbx and reimport into blender

2d: Vertex Weights

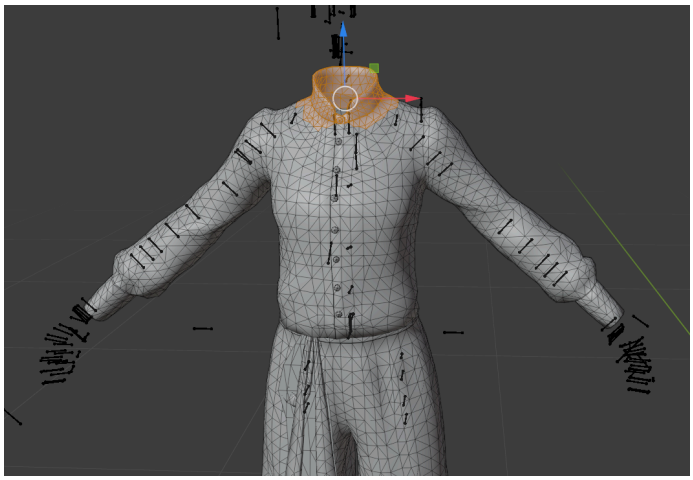
So you've exported to .fbx, reimported that .fbx, and deleted the original. You now have your new fbx, and off to the side you have the duplicate of the game armature you made in the last step.

Select the duplicate's mesh, enter edit mode, and on the properties bar in the right hand window click object data properties (green triangle)

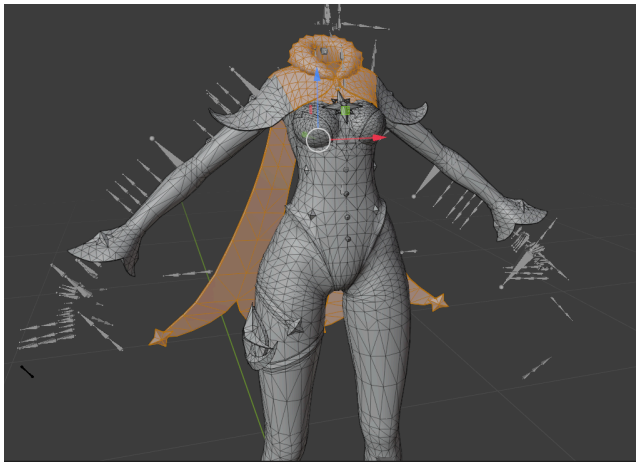
Look at all these vertex groups; your new mesh will need to contain the same vertex groups



When you parented your mesh to the armature, it should have created many if not all of these vertex groups, however you will need to assign vertices manually, and its really gonna be trial and error. Even if you can do a data transfer modifier to assign them, 90% chance it won't be correct for your mesh. For example, see the neck group for the old game mesh?



Compared to the final neck group of my mod:



It’s going to depend on your mod, and I wish you luck. Heres some tips:

1. Use the old mesh vertex groups as a guideline

2. The arms groups(hands, forearm, arm) should not overlap with another group or one another, with the exception of arm and shoulder

3. Pin everything above waist to the neck, the hips to hips, and start splitting off the other groups from there. The game’s “neck” includes like, 4 inches of chest that is prone to clipping

4. Make use of control+i, to invert your selection, and x-ray near the top-right when assigning groups; Every vertex must be part of a group or it will not move with the skeleton

5. Use pose mode to see how your mesh deforms, it will deform as expected if done right

6. If a part of the mesh is making weird creases when deforming/posing, you can try overlapping the groups by including some faces from one group in another vertex group; They should deform ~half as much as before. Obviously dont add the toes faces to the neck group, but maybe to the foot.

7. Make a bunch of .blend saves trying different things

8. I was able to skip some of the twist groups eg; rightlegtwist1 and 2

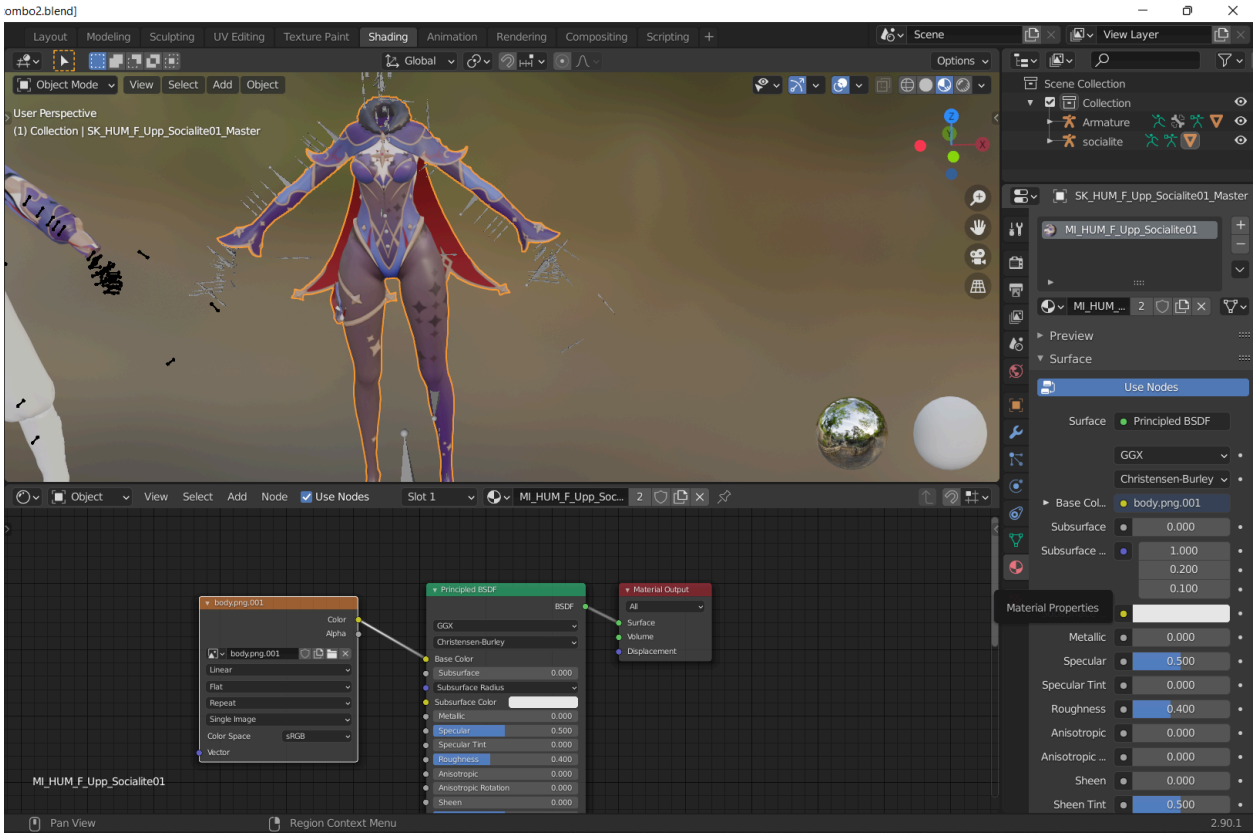
9. You can merge vertices with “M” if you mesh was made weird, else a hole may open up when deforming

Let's pretend it didn’t take you as long as it took me.

2e: Textures

Should be quick. You should have a texture that came with your desired model.

Open the shading tab. Select your mesh. Select material properties (red circle) from the properties bar.
In the material properties tab, you should have a material at the top, if not then create one and select use nodes



In the graph area (node editor) you'll see "add" near the top. If your texture isn't already applied, select add > texture > image texture. You'll get that orange node; click the folder icon on it and go find your texture. Connect color to base color.

If it doesn't look right, you may have generated or inherited a new uv map. Navigate back to the green triangle where the vertex groups are, and scroll down to UV Maps. Try deleting one at a time and see if it fixes it (control z/undo if it doesn't).

If you don't have a UV Map at all, god help you, im not covering UV's, but there are tutorials.

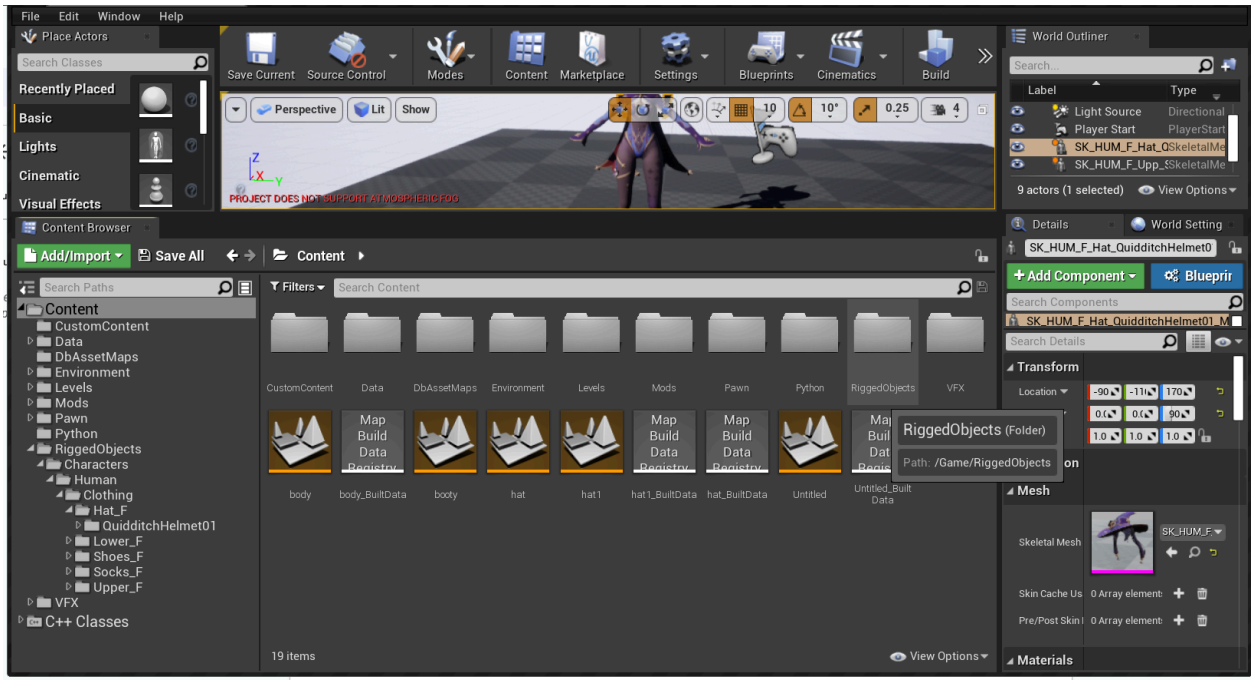
Make sure your textures look right; To change a texture later on, you have to come back to blender and assign it in the shader tab before you export.

Congration, you done it. Delete the old game armature you used for reference, export your Model as an fbx and lets open Narkanons Custom UE4 Project. Its really not too bad from here.

One more thing: After exporting once, select your mesh and delete all but one face in edit mode. Move it back just a little. Export this as another .fbx and name it blank.fbx. We'll need it to ghost the pants and shoes in ue4

Step 3a: Narkanon Custom Unreal Engine Project - keep file explorer open with your fmodel export path, we'll be referencing the .psk and material names often

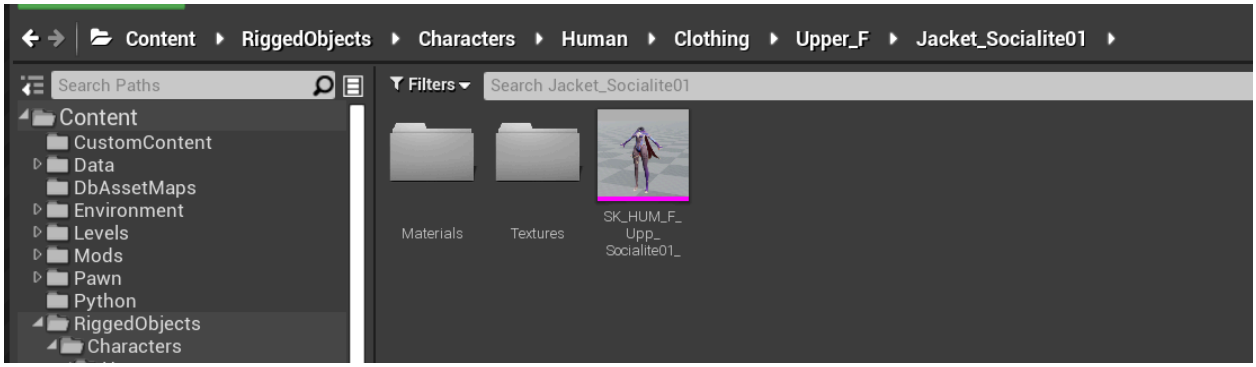
Open the project. If you have problems with narkanons install guide, and did it the git clone way (required), search the discord for "hermes". A post from BigDave in modding support describes editing a dependencies text file. Maybe it's fixed. Anyway,



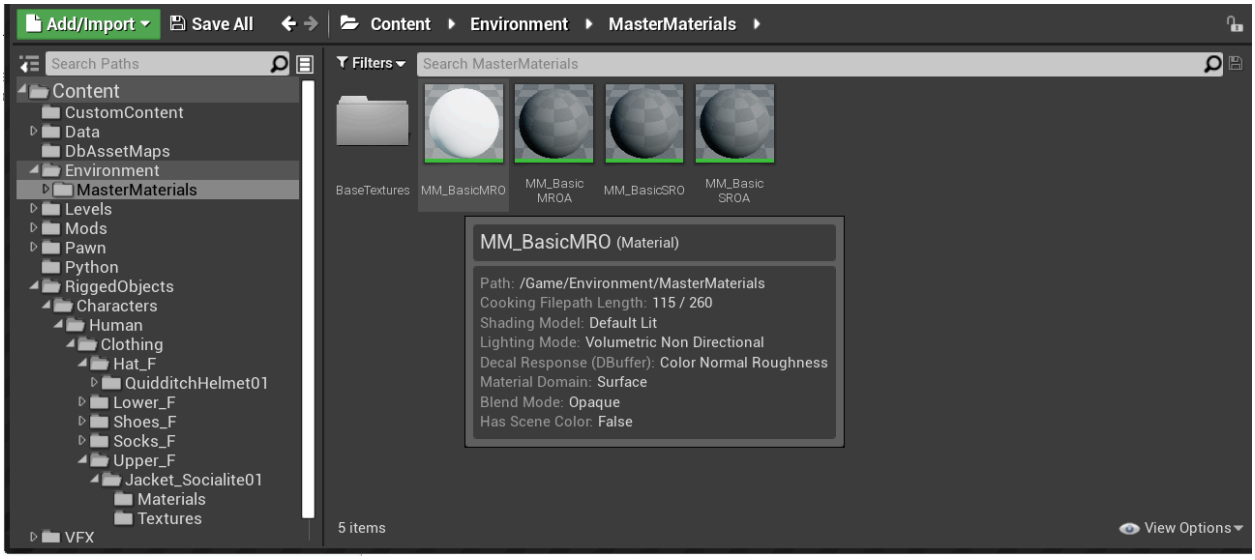
Find your Fmodel export path in file explorer, where you got the model to edit. We're going to recreate the path to the .psk in the UE4 project, starting with a new folder you'll name "RiggedObjects" under Content

Full path will be RiggedObjects > Characters > Human > Clothing > "whatever folders you modified". Remember when we parented the legs and shoes meshes to the upper armature in step 2? Recreate the path to the upper .psk, so in this guide the full path is RiggedObjects > Characters > Human > Clothing > Upper_F > Jacket_Socialite01

In Jacket_Socialite01 (or the end of your path), create two more folders named Materials and Textures.



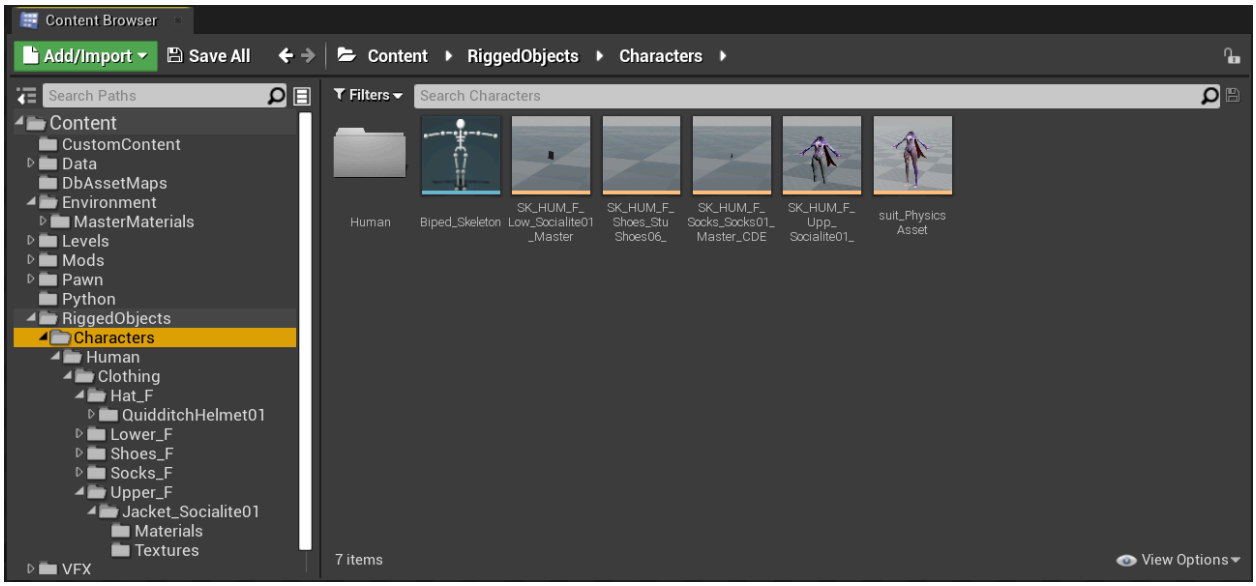
Now, left hand window, go to Environment, then Master Materials



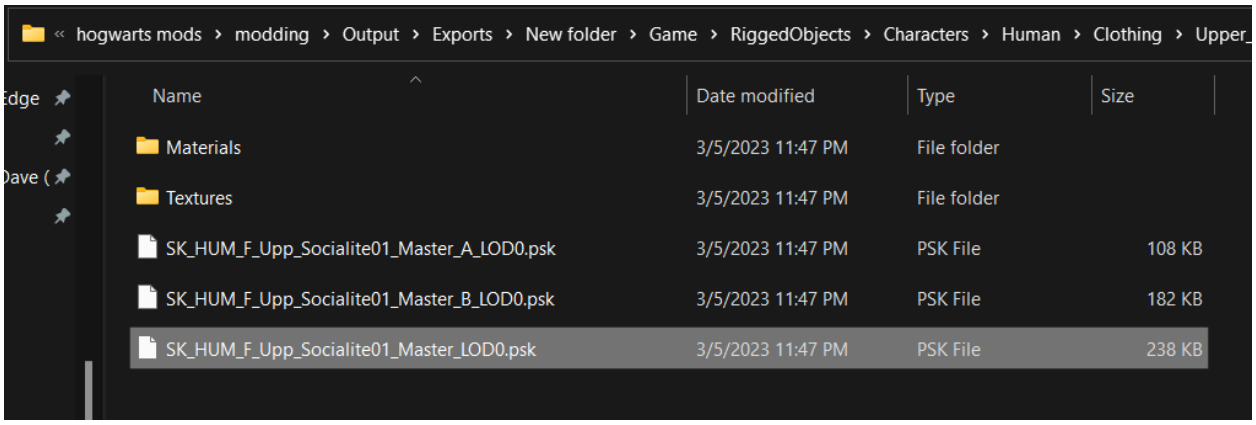
Right click the white sphere, and select create material instance. Name it. Then drag it to the side into that materials folder you just made.

Now, go back to Jacket_Socialite01 (or your path). Drag your .fbx (not the blank .fbx yet, the first one with your whole mesh) into the gray area, click import all.

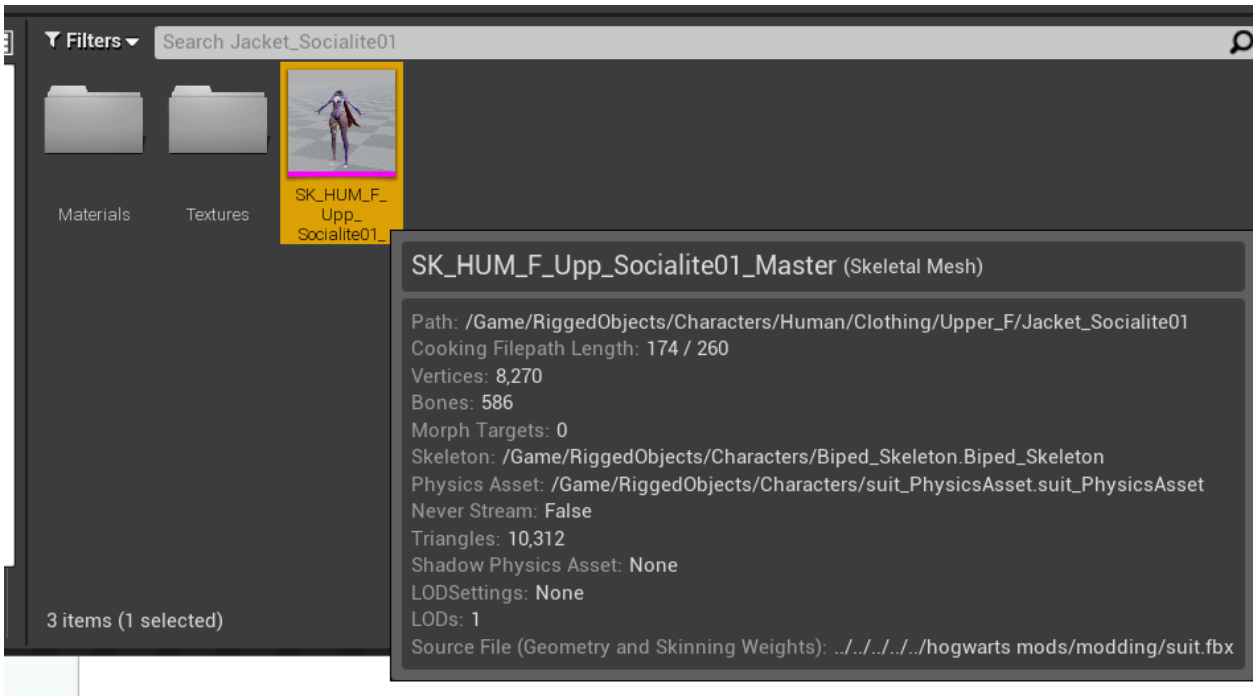
It will give you: your skeletal mesh(purple), a physics asset(yellow), a skeleton(blue), and a texture. Take the physics asset (Yellow) and the skeleton(blue), and drag them to the side into the characters folder, then open the characters folder



Rename the skeleton to Biped_Skeleton. Open in file explorer your fmodel export, where you got your .psk

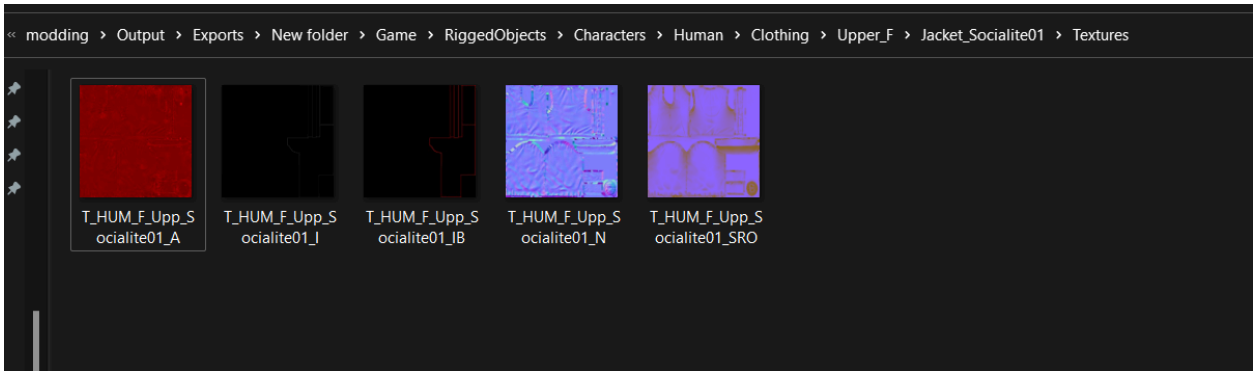


You'll name the physics asset in Characters the same as the psk, but delete _LODO. The fbx skeletal mesh back in Jacket_Socialite01 also gets the same name, minus _LODO. Very important

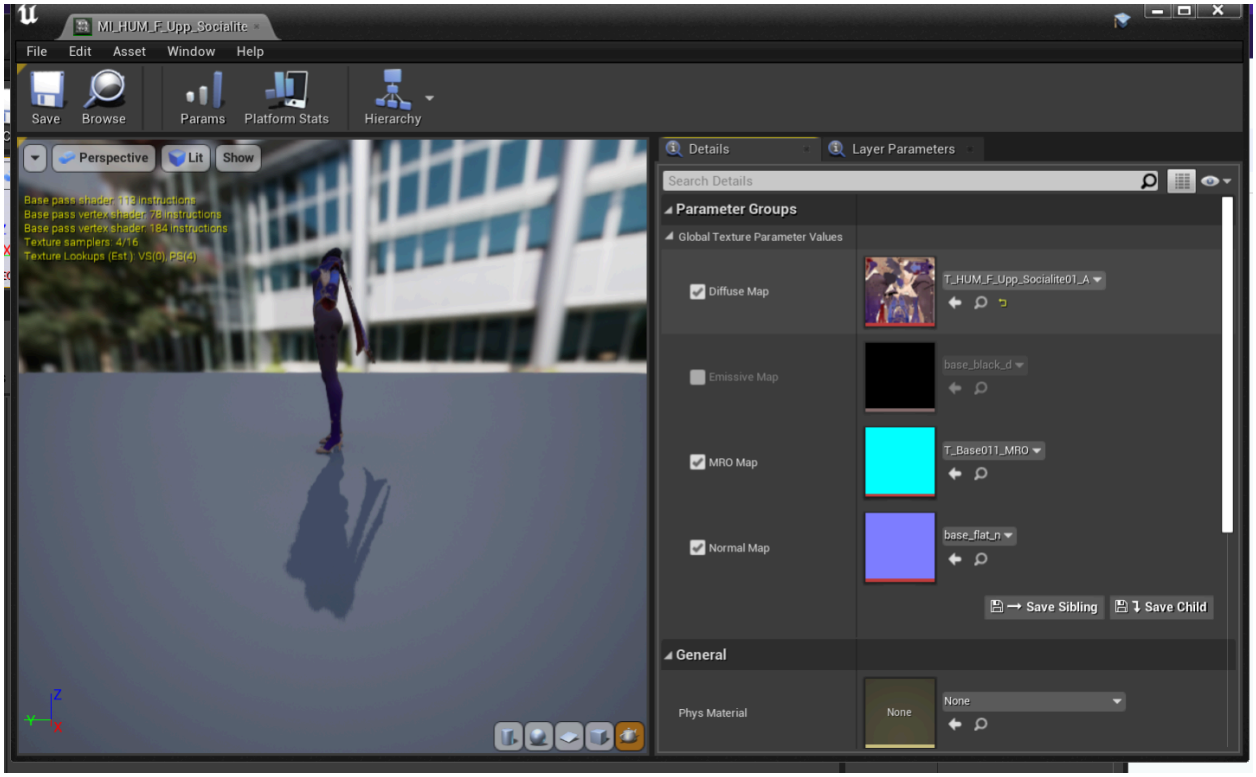


The texture file goes into textures of course. Rename it according to the fmodel export, some are diffuse and end with _D, which is great, but name it something the game looks for, I named

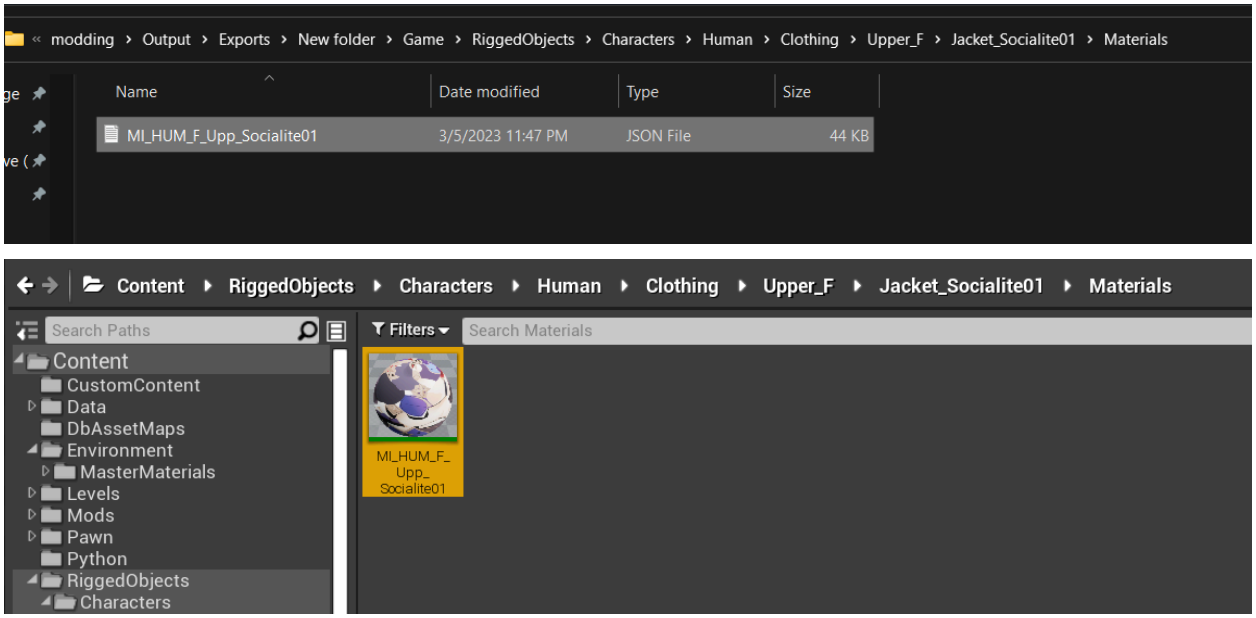
after the texture ending in _A



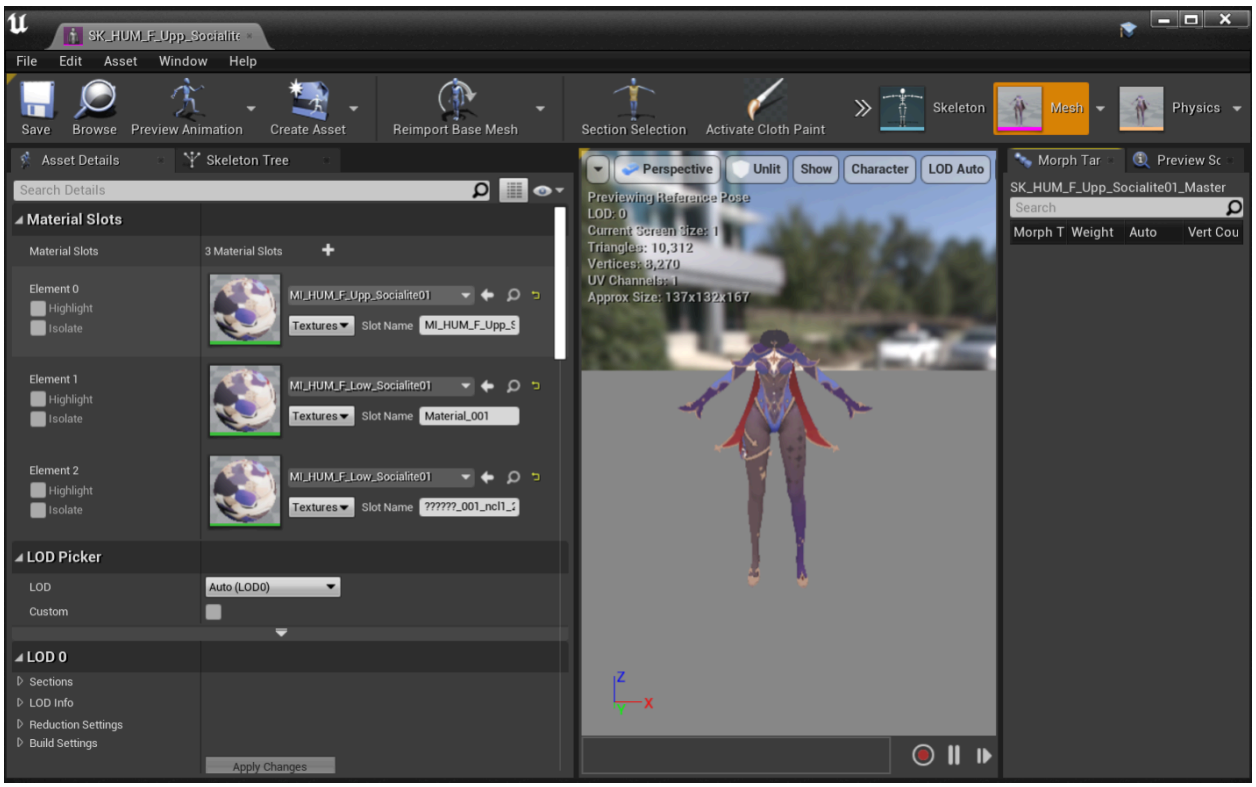
Open materials folder in UE4, and double click your material instance. Select your texture under diffuse map, check mro and normal boxes



Close that window, and rename your material instance according to what the material in your fmodel export is called



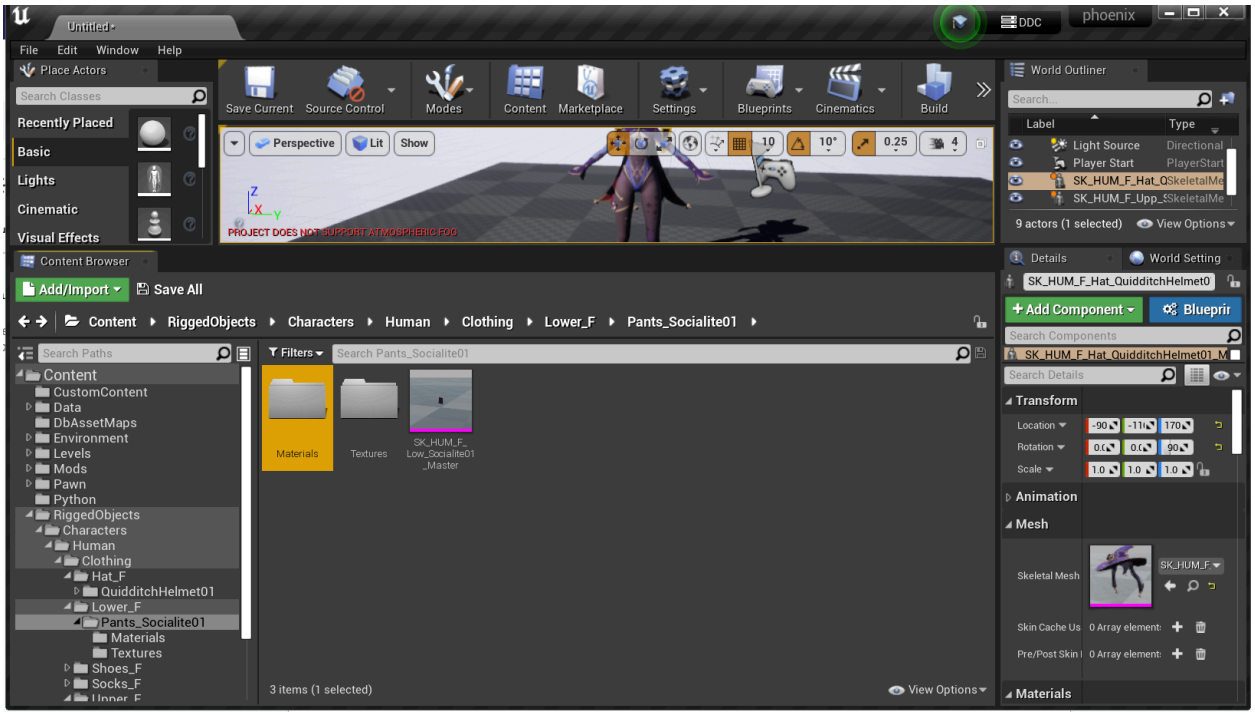
Back to Jacket_Socialite01 where your fbx skeletal mesh is. Double click your .fbx, and assign your material instance to it



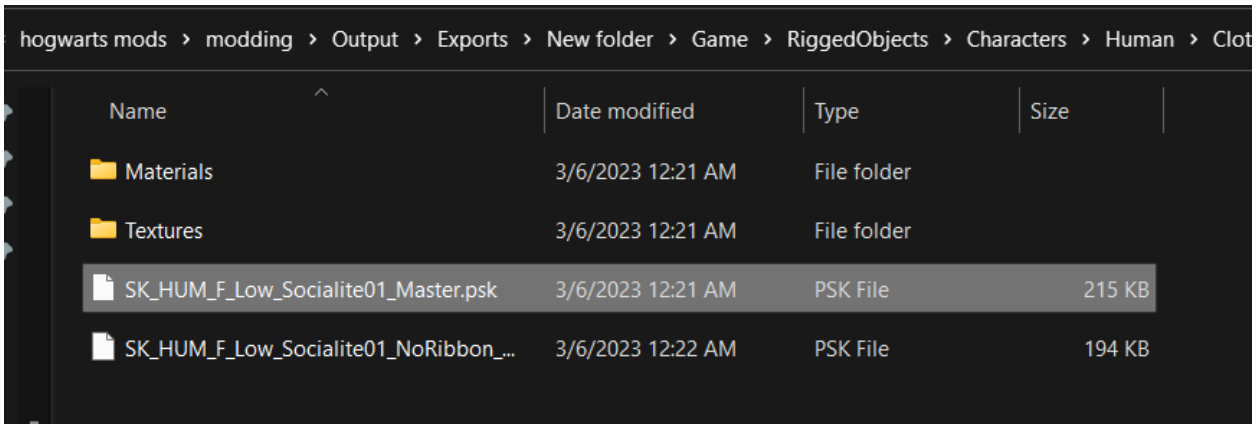
You may have more than one material, just remember every different texture needs its own material texture. Mine here uses two materials, but really only needs one, same UV Map same texture

3b: Ghosting legs

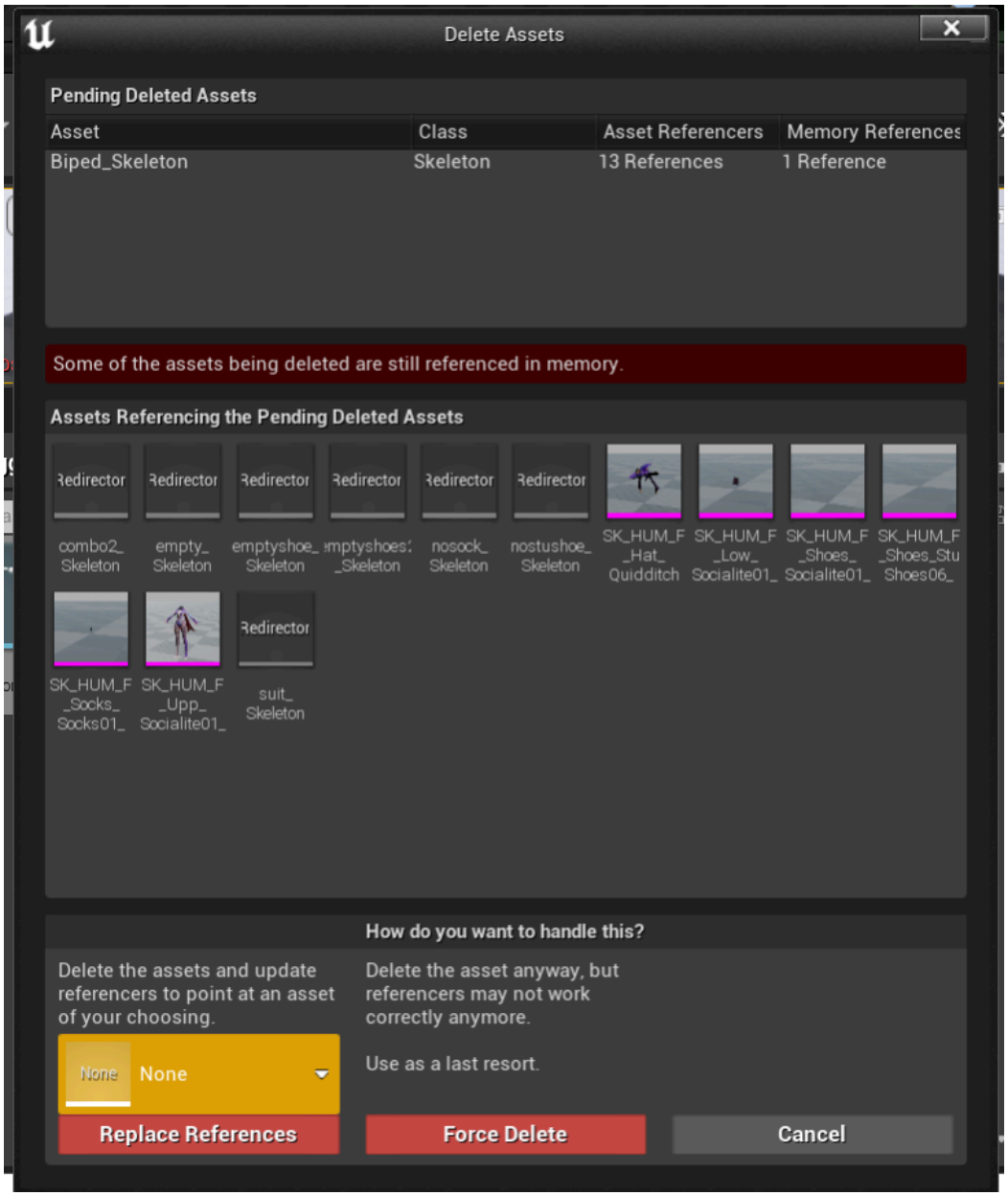
We're now going to repeat that for the legs and shoes, but they don't need textures or materials. Create the path for the legs (lower) and import that blank.fbx we made



Name it according to what you see in the fmodel export, remember its the lower, so this one is under lower_F > Pants_Socialite01



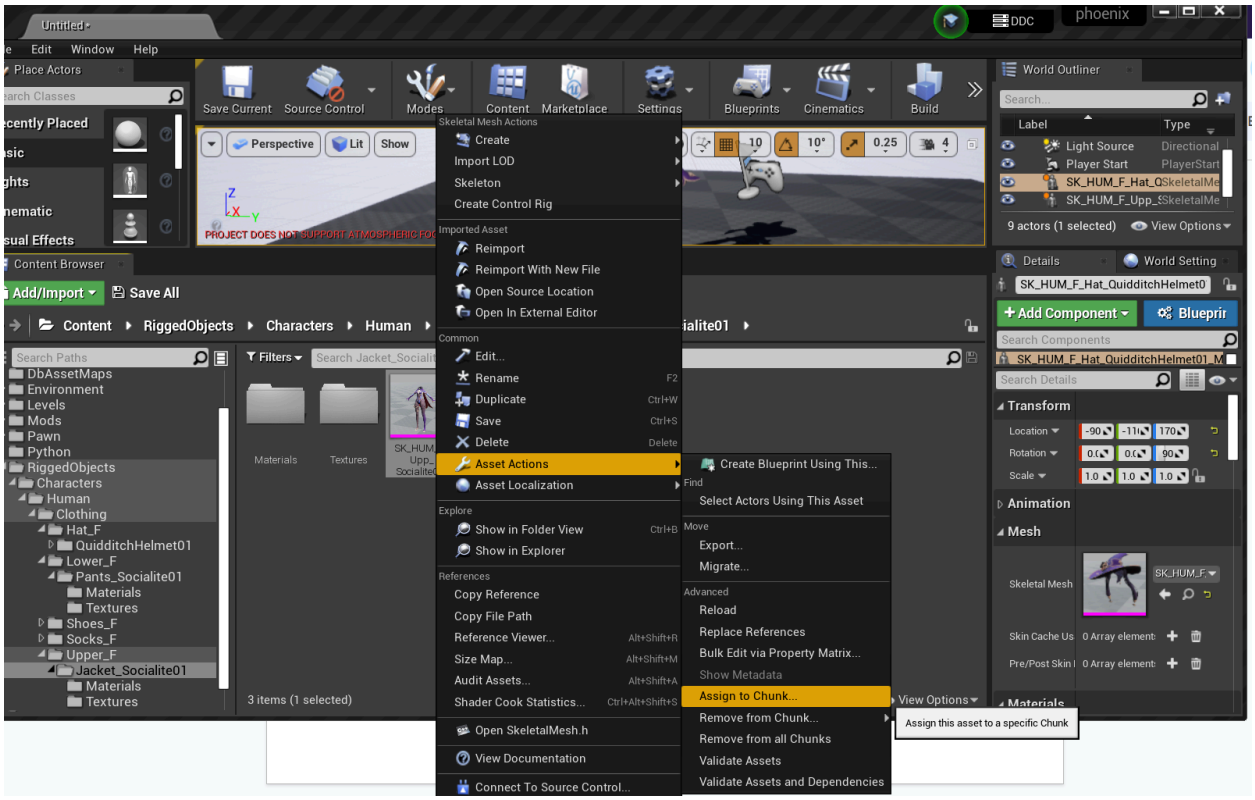
Right click >Delete the skeleton that came with blank.fbx, and select replace references, replace the reference with Biped_Skeleton in this window that pops up



Repeat for the shoes, import blank.fbx, name it what the matching shoes are (SK_HUM_F_Shoes_Socialite01_Master in this case), delete skeleton and replace references with Biped Skeleton. Remember to always delete _LODO from the names

3c: Assign chunks

Almost there, right click your skeletal mesh, the fbx you imported in Upper_F or Upper_M, and select asset actions > assign to chuck. Pick a number 100-300. All imports should be assigned the same chunk, the legs, the shoes, the top, as well as all textures, and material instances. Assign the same chunk id. The wiki says not to assign material instances a chunk, but i did and it worked.



Now, hit File > package project > build configuration and select shipping. Then hit File, package project, windows. Pick a path to export to and it will build the mod. Where exported, it will be name pakchunkXXX, where XXX is the chunk id you assigned. Should start looking familiar, take those 3 files that generated with your chunkID (a pak, a utoc and a ucas), rename them all as z”Yourmodname”_P, and place them in your mods folder.

3D: aRmATuRE MAcHIne bROke

You may load in, don your outfit and see that its not deforming right. Congratulations, you're in vertex group hell and no one can save you.

But for real, go back to blender, adjust your vertex group assignments, export, and reimport into UE4. Delete the broken skeletal mesh already there, Rename the new skeletal mesh you just imported, assign the material to it, assign chunk, delete the newly imported skeleton and replace the skeleton reference to Biped_skeleton, build project. Most of everything is already done in the uproject and you'll get the hang of it. I was only in Vertex group hell for about 3 days.

Message the modding support group in the discord if you have issues, or me at BigDave#7347, ill try and respond and also revise this guide throughout the week

Oh and I almost forgot the blackjack and hookers