Bulge Detector

Dynamic Bulge for trans-inclusive AXL garments

a Tutorial by **PinkyDude** 🦝

Hey there! 👋
In this tutorial, I will show you how to use [Berdagon's Bulge Detector script](#)

This script detects the player V's genitals to use different meshes! The workflow will be the same for both feminine and masculine body frames

You will need:
- An AXL addition mod (preferably in the leg slot (underwears, pants))
- The [Bulge Detector](#) script

I assume you already know your way around AXL and won't go in depth about that in this tutorial

If your garment don't have a visible bulge, or if you don't plan on making it trans-friendly, you don't need this script and won't need this tutorial either

> The Bulge Detector script is now compatible with **DynamicAppearance**

(Codeware 1.11.2 + ArchiveXL 1.15.2)

This tutorial uses the **regular AXL addition method** (non-Dynamic) For a tutorial showcasing the use of a similar script using DynamicAppearance, check the **[Flat Chest Detector tutorial](#)**

1. Preparing Meshes

This goes without saying, but to make use of the bulge detector, you'll need two variants of your garment; One with a bugle, and one without!
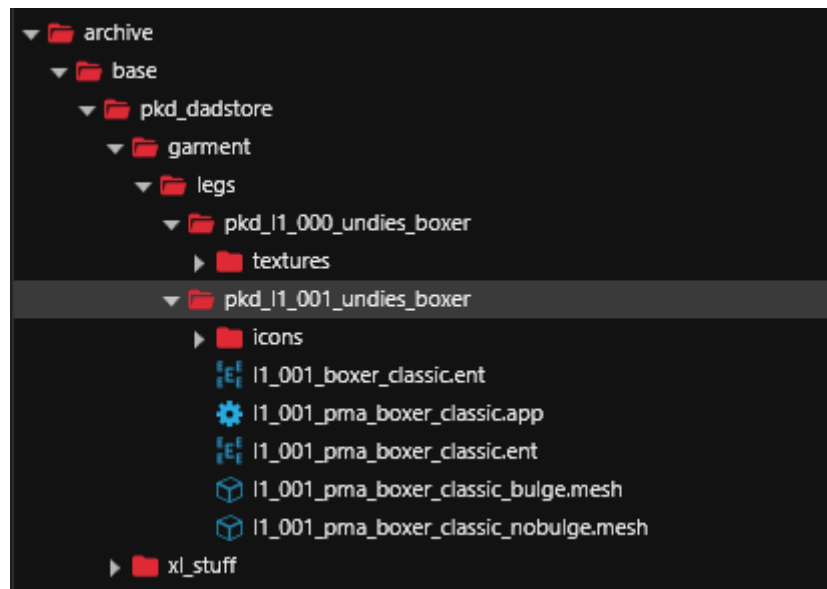
Other than that, there's nothing fancy to do in blender
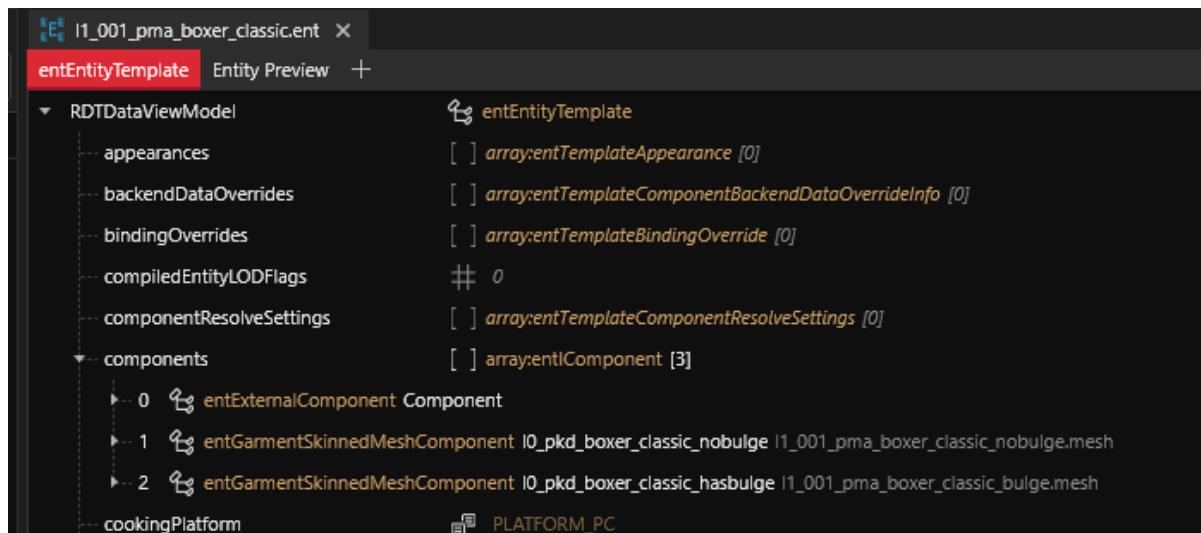The script is also compatible with Garment Support ✅

2. AXL Structure

⚠️ **Again, for this tutorial, I'll be using the Regular AXL addition method here, not a Dynamic One!**

Pack your two meshes, bulge and nobulge, in the same mod

Call for the two meshes in your **garment entity**
Make sure to give them distinctive names!

3. APP file

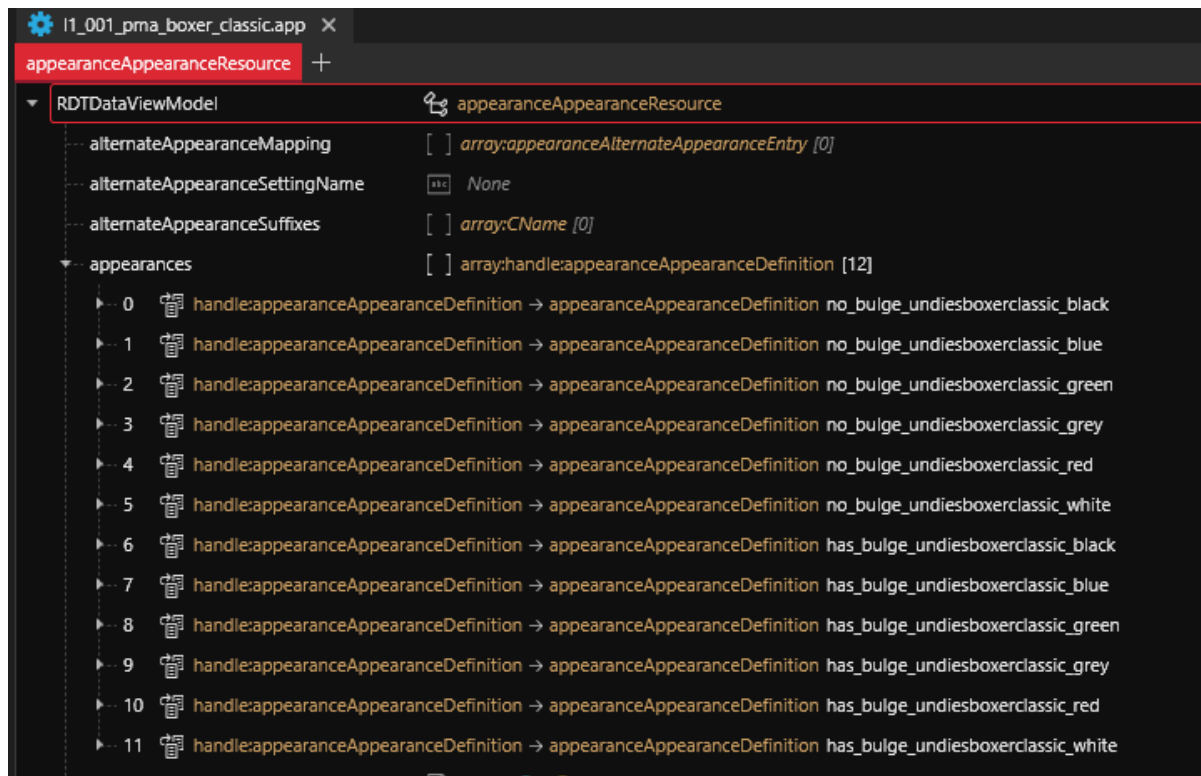Each mesh (no_bulge and has_bulge) will need a set of appearances
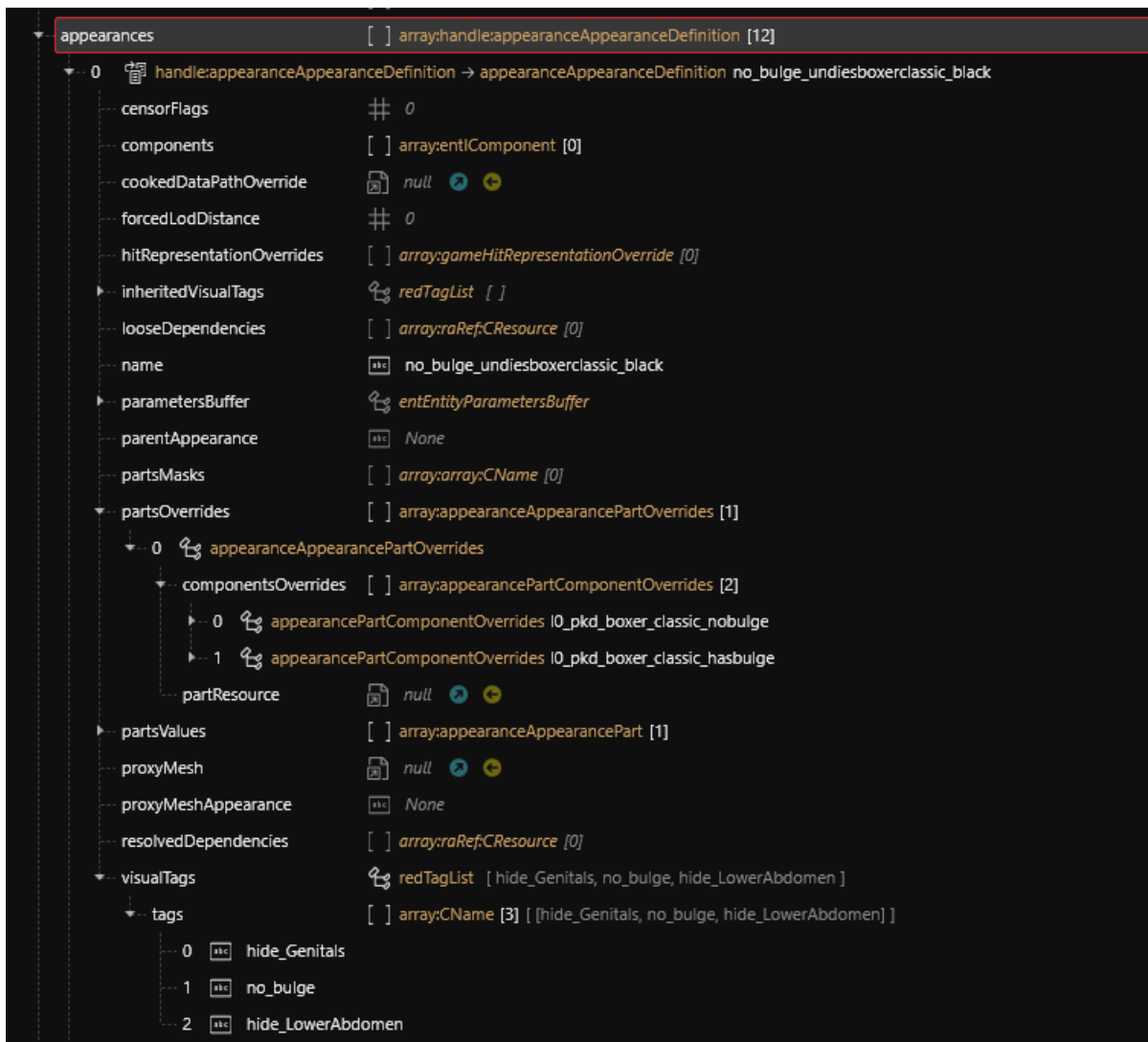If your mesh has 6 appearances, you will need 12 entries!

Give them distinctive and clear names;
I recommend putting **"no_bulge"** and **"has_bulge"** at the start!
We will re-use them in the root ent later

Make sure to call both the nobulge and hasbulge components from your garment entity in all the appearances to avoid rendering issue in game

▼ appearances   [ ] array:handle:appearanceAppearanceDefinition [12]
  ▼ 0   🗐 handle:appearanceAppearanceDefinition → appearanceAppearanceDefinition no_bulge_undiesboxerclassic_black
      censorFlags   ⌗ 0
      components   [ ] array:entIComponent [0]
      cookedDataPathOverride   🖾 null ◑ ↺
      forcedLodDistance   ⌗ 0
      hitRepresentationOverrides   [ ] array:gameHitRepresentationOverride [0]
    ▶ inheritedVisualTags   🏷 redTagList [ ]
      looseDependencies   [ ] array:raRef:CResource [0]
      name   🔤 no_bulge_undiesboxerclassic_black
    ▶ parametersBuffer   🏷 entEntityParametersBuffer
      parentAppearance   🔤 None
      partsMasks   [ ] array:array:CName [0]
    ▼ partsOverrides   [ ] array:appearanceAppearancePartOverrides [1]
      ▼ 0   🏷 appearanceAppearancePartOverrides
        ▼ componentsOverrides   [ ] array:appearancePartComponentOverrides [2]
            ▶ 0 🏷 appearancePartComponentOverrides I0_pkd_boxer_classic_nobulge
            ▶ 1 🏷 appearancePartComponentOverrides I0_pkd_boxer_classic_hasbulge
          partResource   🖾 null ◑ ↺
    ▶ partsValues   [ ] array:appearanceAppearancePart [1]
      proxyMesh   🖾 null ◑ ↺
      proxyMeshAppearance   🔤 None
      resolvedDependencies   [ ] array:raRef:CResource [0]
    ▼ visualTags   🏷 redTagList [hide_Genitals, no_bulge, hide_LowerAbdomen]
      ▼ tags   [ ] array:CName [3] [[hide_Genitals, no_bulge, hide_LowerAbdomen]]
          0 🔤 hide_Genitals
          1 🔤 no_bulge
          2 🔤 hide_LowerAbdomen

⚠ **Don't forget to chunkmask the component that isn't used by the appearance** (for the no_bulge appearances, chunkmask the hasbulge component and chunkmask the nobulge component for the has_bulge appearances)

acceptDismemberment	✔		
chunkMask	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, .. ▼	9223372036854775807	
componentName	I0_pkd_boxer_classic_nobulge	2923650051470868226	
initialTransform	🏷 Transform		
meshAppearance	black	5430726161698111972	
useCustomTransform	☐		
visualScale	X 0,0000	Y 0,0000	Z 0,0000

acceptDismemberment	✔		
chunkMask		▼ 0	
componentName	I0_pkd_boxer_classic_hasbulge	17964307944152020647	
initialTransform	🏷 Transform		
meshAppearance	black	5430726161698111972	
useCustomTransform	☐		
visualScale	X 0,0000	Y 0,0000	Z 0,0000

Once your appearances are set, you need to add two **visualTags!**
[no_bulge] to your NoBulge appearances
[has_bulge] to your HasBulge appearances
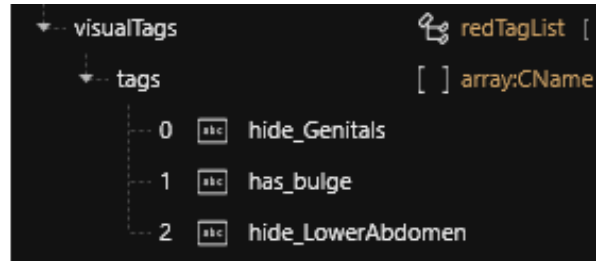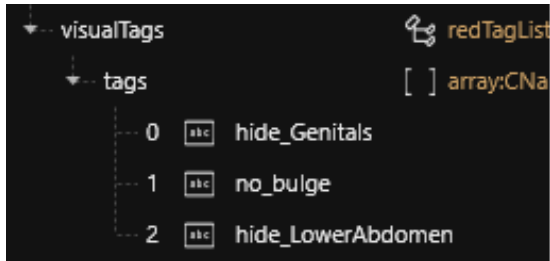
4. Root Ent File

Just like the appearances in our .app file, we will need a set of entries for each variant; nobulge and hasbulge
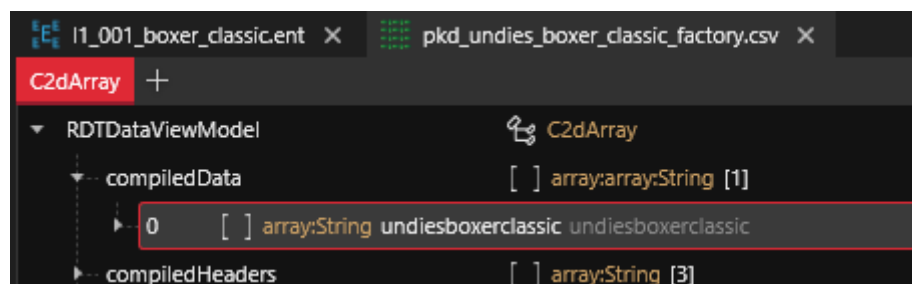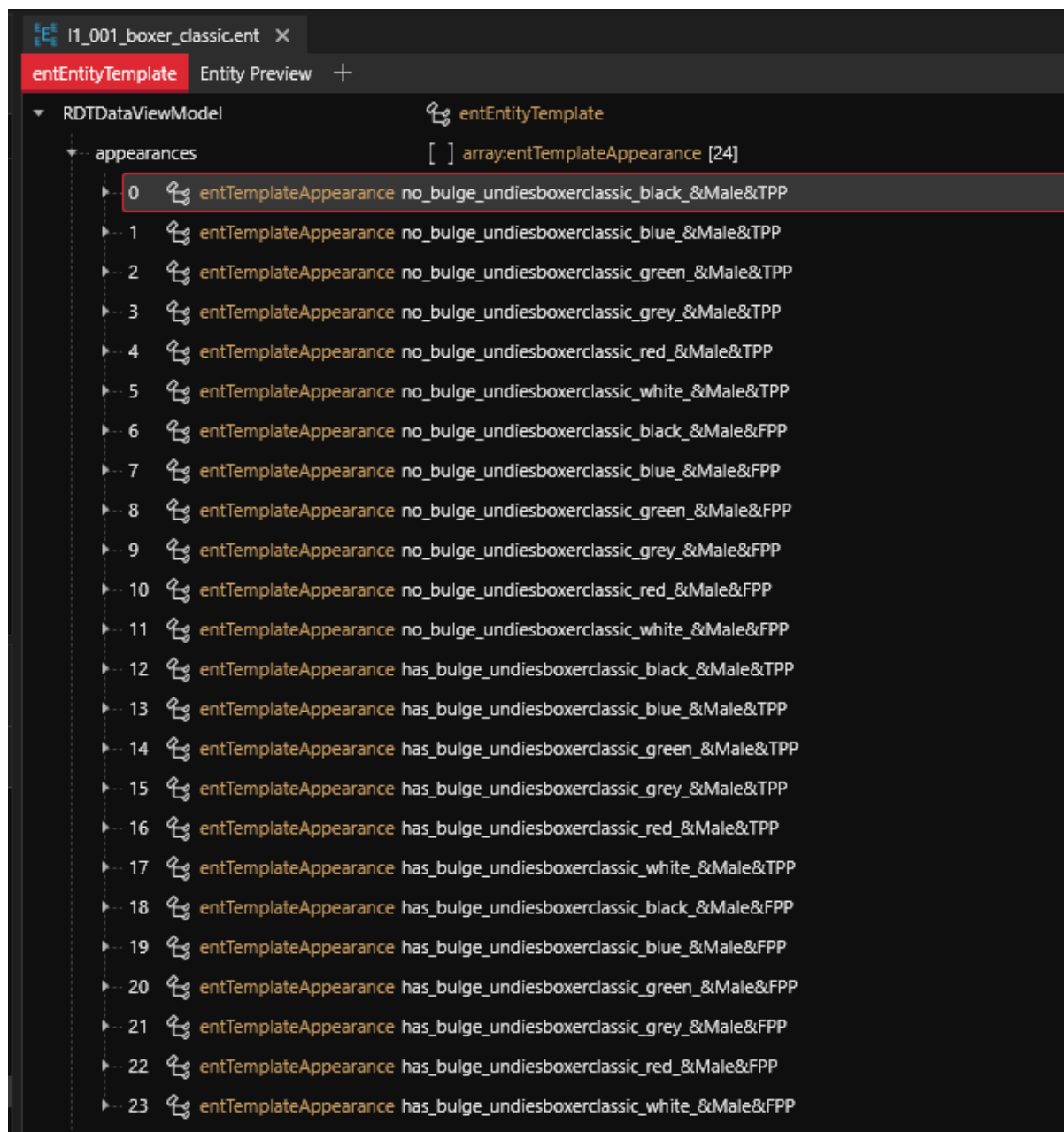
As said previously, I used the legacy AXL structure for my garments
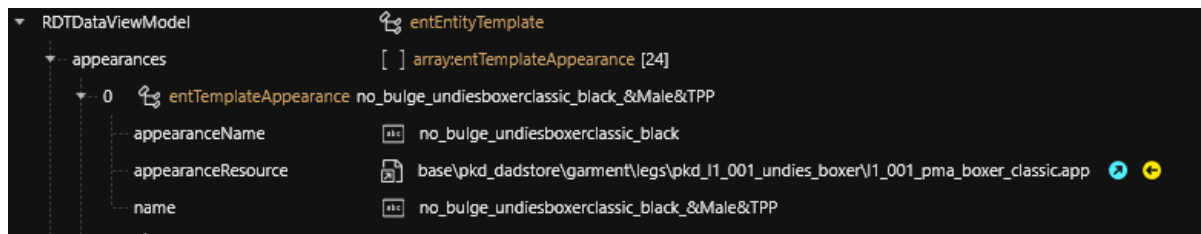So in my case, I had to fill 24 entries;
-   6 no_bulge TPP
-   6 no_bulge FPP
-   6 has_bugle TPP
-   6 has_bulge FPP

Your entries need to start with **"no_bulge_"** and **"has_bulge_"**
Don't worry about the Factory, it will still detect the entity name!

Call the correct apearanceNames from your .app for each entries

RDTDataViewModel   entEntityTemplate
  appearances   [ ] array:entTemplateAppearance [24]
    0   entTemplateAppearance no_bulge_undiesboxerclassic_black_&Male&TPP
     appearanceName   no_bulge_undiesboxerclassic_black
     appearanceResource   base\pkd_dadstore\garment\legs\pkd_l1_001_undies_boxer\l1_001_pma_boxer_classic.app
     name   no_bulge_undiesboxerclassic_black_&Male&TPP

5. YAML File

Despite our files having twice the entries (one set for each variant of the mesh) this isn't necessary here; we'll only need to list one set!

I personally listed the "no_bulge" set because this is the first listed in my AXL files, but you can choose either one; the Script will use the correct mesh depending on V's junk regardless of what name is listed in the Yaml

```yaml
################# CLASSIC #################

## Game.AddToInventory("Items.PinkyDude_Undies_Boxer_Classic_Black",01)
Items.PinkyDude_Undies_Boxer_Classic_Black:
  $base: Items.GenericLegClothing
  placementSlots:
    - !append OutfitSlots.LegsInner
  entityName: undiesboxerclassic
  appearanceName: no_bulge_undiesboxerclassic_black_
  appearanceSuffixes: [ itemsFactoryAppearanceSuffix.Gender, itemsFactoryAppearanceSuffix.Camera ]
  displayName: boxer_classic_black_name
  localizedDescription: undiesboxer_desc
  quality: Quality.Legendary
  statModifiers:
    - !append Character.ScaleToPlayerLevel
  icon:
    atlasResourcePath: base\pkd_dadstore\garment\legs\pkd_ll_001_undies_boxer\icons\classic.inkatlas
    atlasPartName: slot_1

## Game.AddToInventory("Items.PinkyDude_Undies_Boxer_Classic_Blue",01)
Items.PinkyDude_Undies_Boxer_Classic_Blue:
  $base: Items.GenericLegClothing
  placementSlots:
    - !append OutfitSlots.LegsInner
  entityName: undiesboxerclassic
  appearanceName: no_bulge_undiesboxerclassic_blue_
  appearanceSuffixes: [ itemsFactoryAppearanceSuffix.Gender, itemsFactoryAppearanceSuffix.Camera ]
  displayName: boxer_classic_blue_name
  localizedDescription: undiesboxer_desc
  quality: Quality.Legendary
  statModifiers:
    - !append Character.ScaleToPlayerLevel
  icon:
    atlasResourcePath: base\pkd_dadstore\garment\legs\pkd_ll_001_undies_boxer\icons\classic.inkatlas
    atlasPartName: slot_2

## Game.AddToInventory("Items.PinkyDude_Undies_Boxer_Classic_Green",01)
Items.PinkyDude_Undies_Boxer_Classic_Green:
  $base: Items.GenericLegClothing
  placementSlots:
    - !append OutfitSlots.LegsInner
  entityName: undiesboxerclassic
  appearanceName: no_bulge_undiesboxerclassic_green_
  appearanceSuffixes: [ itemsFactoryAppearanceSuffix.Gender, itemsFactoryAppearanceSuffix.Camera ]
  displayName: boxer_classic_green_name
  localizedDescription: undiesboxer_desc
  quality: Quality.Legendary
  statModifiers:
    - !append Character.ScaleToPlayerLevel
  icon:
    atlasResourcePath: base\pkd_dadstore\garment\legs\pkd_ll_001_undies_boxer\icons\classic.inkatlas
    atlasPartName: slot_3

## Game.AddToInventory("Items.PinkyDude_Undies_Boxer_Classic_Grey",01)
Items.PinkyDude_Undies_Boxer_Classic_Grey:
  $base: Items.GenericLegClothing
  placementSlots:
    - !append OutfitSlots.LegsInner
  entityName: undiesboxerclassic
  appearanceName: no_bulge_undiesboxerclassic_grey_
  appearanceSuffixes: [ itemsFactoryAppearanceSuffix.Gender, itemsFactoryAppearanceSuffix.Camera ]
  displayName: boxer_classic_grey_name
  localizedDescription: undiesboxer_desc
  quality: Quality.Legendary
  statModifiers:
    - !append Character.ScaleToPlayerLevel
  icon:
    atlasResourcePath: base\pkd_dadstore\garment\legs\pkd_ll_001_undies_boxer\icons\classic.inkatlas
    atlasPartName: slot_4

## Game.AddToInventory("Items.PinkyDude_Undies_Boxer_Classic_Red",01)
Items.PinkyDude_Undies_Boxer_Classic_Red:
  $base: Items.GenericLegClothing
  placementSlots:
    - !append OutfitSlots.LegsInner
  entityName: undiesboxerclassic
  appearanceName: no_bulge_undiesboxerclassic_red_
  appearanceSuffixes: [ itemsFactoryAppearanceSuffix.Gender, itemsFactoryAppearanceSuffix.Camera ]
  displayName: boxer_classic_red_name
  localizedDescription: undiesboxer_desc
  quality: Quality.Legendary
  statModifiers:
    - !append Character.ScaleToPlayerLevel
  icon:
    atlasResourcePath: base\pkd_dadstore\garment\legs\pkd_ll_001_undies_boxer\icons\classic.inkatlas
    atlasPartName: slot_5

## Game.AddToInventory("Items.PinkyDude_Undies_Boxer_Classic_White",01)
Items.PinkyDude_Undies_Boxer_Classic_White:
  $base: Items.GenericLegClothing
  placementSlots:
    - !append OutfitSlots.LegsInner
  entityName: undiesboxerclassic
  appearanceName: no_bulge_undiesboxerclassic_white_
  appearanceSuffixes: [ itemsFactoryAppearanceSuffix.Gender, itemsFactoryAppearanceSuffix.Camera ]
  displayName: boxer_classic_white_name
  localizedDescription: undiesboxer_desc
  quality: Quality.Legendary
  statModifiers:
    - !append Character.ScaleToPlayerLevel
  icon:
    atlasResourcePath: base\pkd_dadstore\garment\legs\pkd_ll_001_undies_boxer\icons\classic.inkatlas
    atlasPartName: slot_6
```

6. Test ingame

Teleport yourself to your favorite Ripper Doc and switch V's genitals to see if everything works as expected

Selecting the Vagina should switch the mesh to the no_bulge version

And vice-versa with the Penis

⚠️ You might need to re-equip the garment for changes to take effect in FPP

And voila!
Your garment is now adapting itself to V's junk 👌

When doing refits as mesh replacers, simply pack two meshes (with and without bulges) to replace your OG variants

> Huge thanks to **Berdagon** for the script!

Have fun and happy modding! 🙌

Thank you for reading -Pkd