

Cartoon Animator 4 G3 & G3 360 Character Creation White Paper

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Chapter 1 Getting Started – Assets Introduction

In this whitepaper, you will learn how to generate **Cartoon Animator 4 G3 Characters** with your favorite **PSD** editor, including Standard, or Free Bone characters. With this approach, you can create unlimited **G3** characters in a short time.

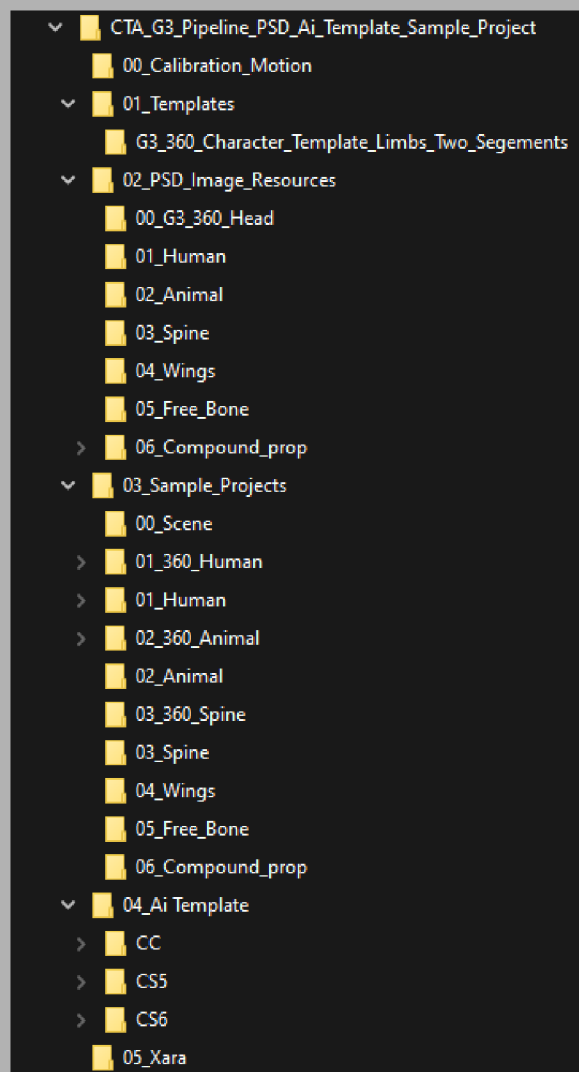
In addition to this whitepaper, you can view related tutorial videos by clicking [here](#).

Before you start reading this document, make sure that you have downloaded the resource pack, **CTA_G3_Pipeline_PSD_Ai_Template_Sample_Project.zip**, from the **Official Reallusion Website**. In this pack, you will find the contents you need to practice throughout this whitepaper.

The structure of the contents in the pack are shown below:

There will be seven main folders:

- **00_Calibration_Motion:** Contains one motion for testing the hand gestures of a custom G3 character.
- **01_Templates:** Contains different templates with formal structures for creating human, four-legged animals, spine, wings, and free bone characters. Use them to avoid building **G3 character** structures from scratch.
- **02_PSD_Image_Resources:** Contains source images for human body, head, and others in PSD format. You may use them to practice how to create a G3 character.
- **03_Sample_Projects:** Contains PSD files where all elements and poses are set. These files are ready to be loaded into **Cartoon Animator**.
- **04_Ai_Templates:** Contains different templates with formal structures for creating human, four-legged animals, spine, and wings. Use them to avoid building **G3 character** structures from scratch. Along with source images for human body, and others in Ai format. You may use them to practice how to create a G3 character with **Illustrator**.

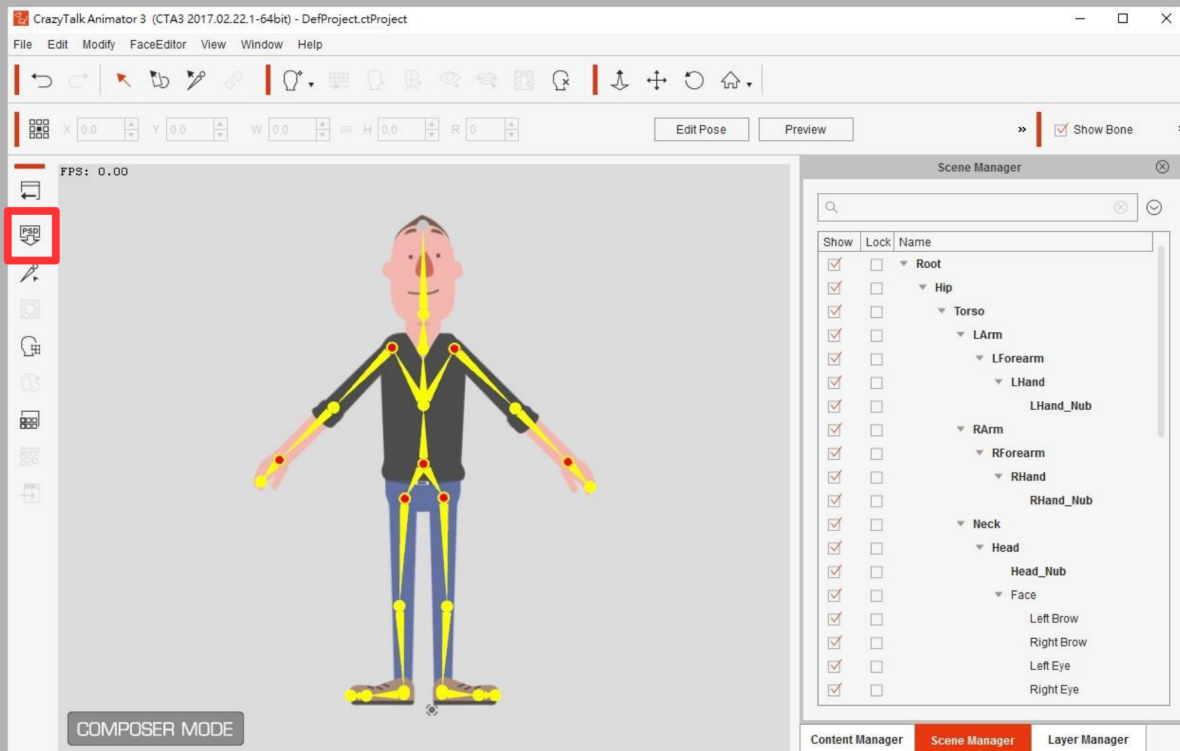


- **05_Xara:** Contains special PSD templates for **Xara** users. There are different templates with formal structures for creating human, four-legged animals, spine, and wings. Along with a **Readme** file for instructions on building **G3 character** structures with **Xara**.
- **06_Tutorial:** Contains quick access to an online tutorial “Creating a G3 Character in Illustrator” and the link to the **Cartoon Animator Learning Center**.

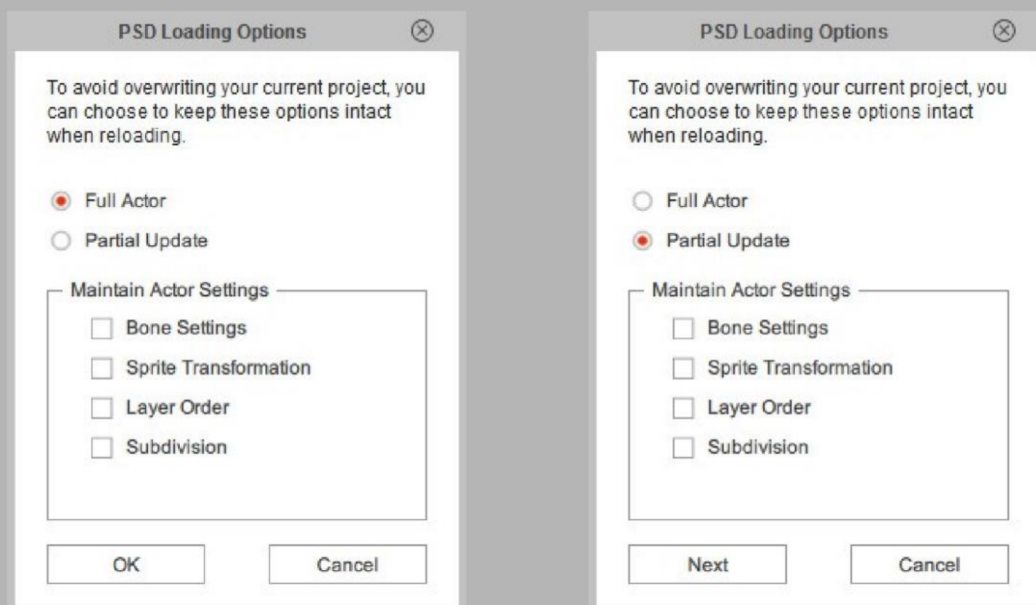
Chapter 2 Options for Importing PSD Assets

Each loaded character created with a **PSD** file can be used to create a **G3 character**. Once the character is created, you can adjust the parts in the **PSD** source file and then update the created character by using the **Import PSD Assets** feature in the **Composer Mode** of **Cartoon Animator**. You are allowed to update the entire character or specific parts of it with options.

To import the **PSD** file, you need to switch to **Composer Mode** and then click the Import **PSD** Assets button on the Toolbar.



After the button is clicked, you need to first pick and load a PSD file and then choose the importing method:



- **Full Actor:**

This is chosen when you wish to create a new character or update a created character from a **PSD** file. You can determine whether to **Maintain Current Actor Settings** or not.

- **Partial Update:**

It only updates or adds pose images in accordance with the image layers in the **PSD** file. You can pick one bone in order to update the images of this bone, or its sibling bones only. When you wish to create a custom talking head, then you choose this radio button.

- **Maintain Actor Settings:**

- **Bone Settings:** Activate this box in order to maintain the bone's transformation when the character is being updated.
- **Sprite Transformation:** Activate this box in order to keep the transformations for all sprites.
- **Layer Order:** Activate this box to keep the layer order you have set to the current character.
- **Subdivision:** Activate this box to keep the subdivision level for each body part.

Chapter 3

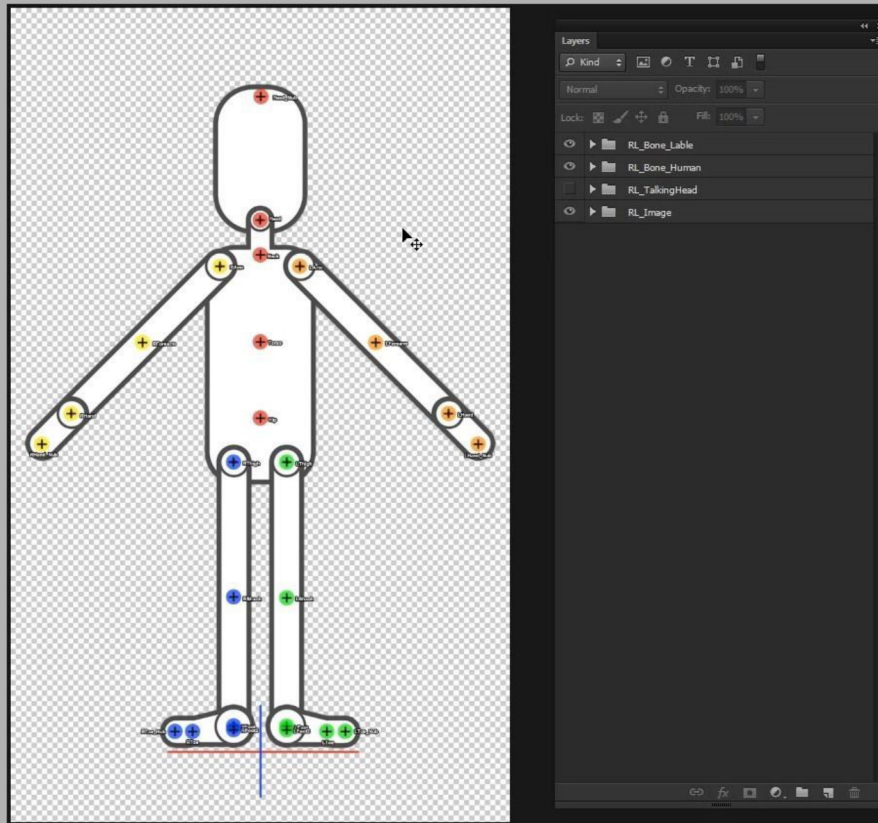
Creating Standard G3 Characters

This chapter describes the method to combine 6 simple and prepared body parts, with the Human Template replacements technique, to generate a **Cartoon Animator** animate-able character. The context will focus on the **Body Parts**. For a talking head, please refer to **Chapter 5** and **6**.

3.1 The Introduction of the Human Template

File Utilized: CTA_G3_Pipeline_PSD_Template_Sample_Project\01_Templates\

When the human PSD template file, **Human_Front_Full_Template.psd**, is opened in your favorite PSD editor, you will see four groups:



RL_Bone_Lable:

The contents in this group are not to be imported into **Cartoon Animator**. They are used for placing the bones, the name of the bones, and other elements.

RL_Bone_Human:

This group is used for placing the **Bone** layers.

RL_TalkingHead:

This group is used for placing the data related to the head, such as the eyes, nose, mouth and any other facial features (described in **Chapter 5** and **6**).

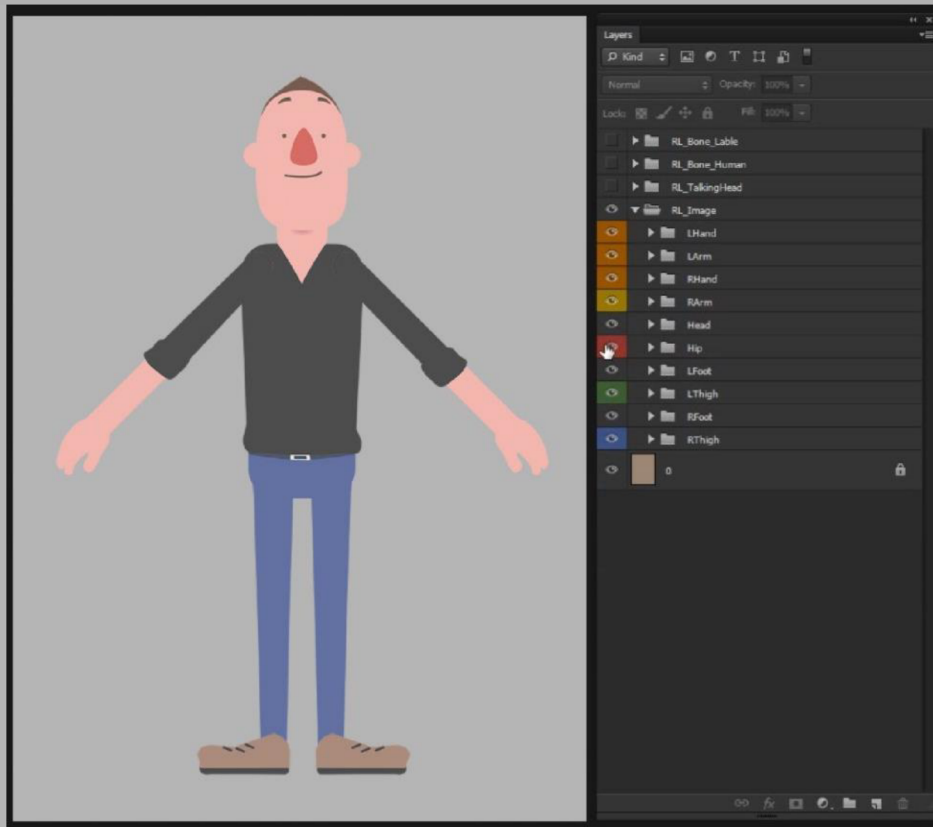
RL_Image:

This group is used for placing the image data related to the body.

3.2 The Introduction of the Human Materials Template

File Utilized:	CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_Human\1_Elastic_Folks_Simple_Front & Side
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In order to create a basic character with 10 parts, you need to first open the **Elastic_Folks_Front_Simple.psd** file, where the individual image groups and body part layers, for creating a default front facing character, are prepared.



The data related to the body include:

1 Heads (without facial features), **1 Face** (painted with facial features), **1 body**, **1 left and 1 right arms**, **left and right hands**, **left and right legs** and **left and right shoes**.

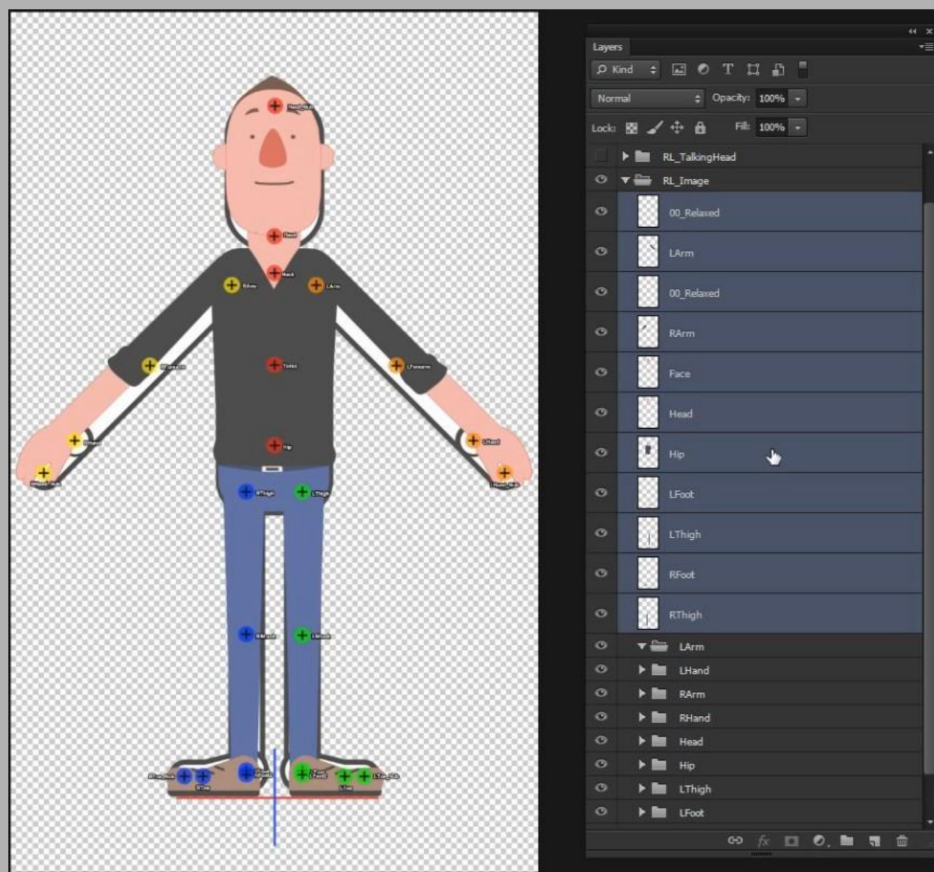
3.3 Human Body Creation

File Utilized:

- CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_Human\1_Elastic_Folks_Simple_Front & Side
- CTA_G3_Pipeline_PSD_Template_Sample_Project\01_Templates

To create the body of a G3 character, you simply need to insert images into certain layers and slightly adjust these images.

1. Drag and drop the 10 body part layers from the **Elastic_Folks_Front_Simple.psd** document into the **RL_Image** group of the **Human_Front_Full_Template.psd** document.
2. Transform these layers together to fit to the approximate proportion of the dummy. Please note that it is highly suggested that the **Hip** of the imported image layers is aligned to the **Hip** of the dummy.



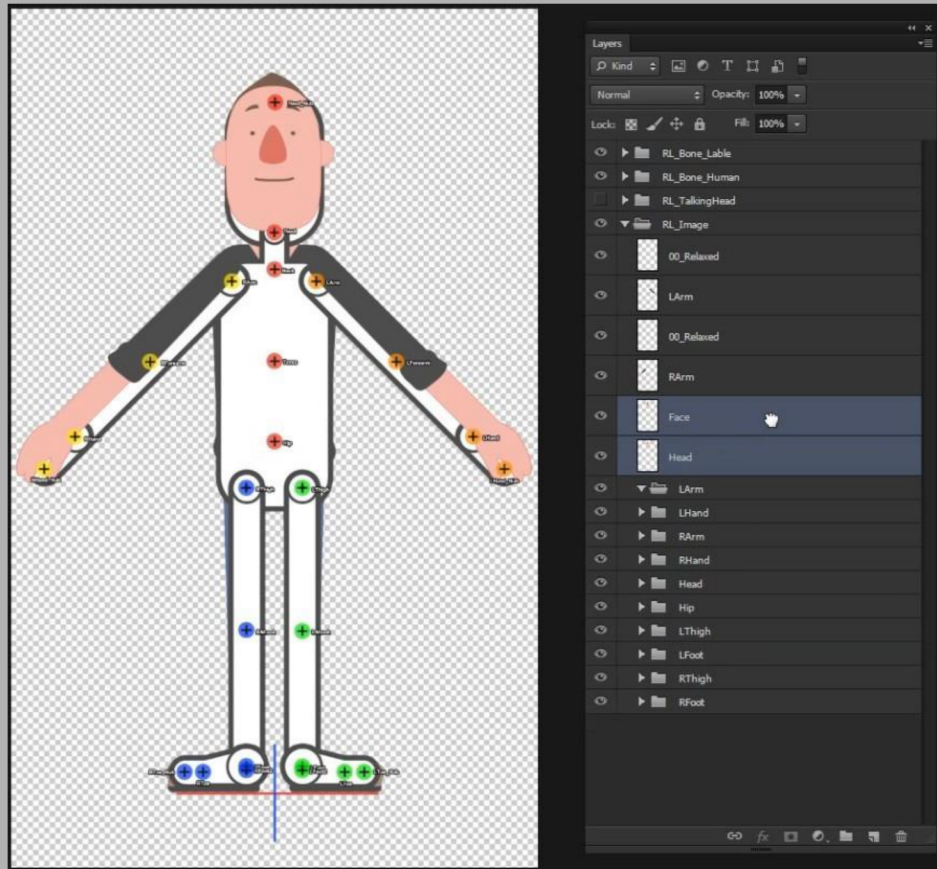
3. Move the body part images to specific bones by dragging them to corresponding folders.

For example:

- **Hip** image layer to the **Hip** group.
- **LArm** image layer to the **LArm** group.
- **RArm** image layer to the **RArm** group.
- **00_Relaxed** left hand image layer to the **Lhand** group.
- **00_Relaxed** right hand image layer to the **RHand** group.



4. Temporarily move the **Face** and **Head** image layers into the **Head** group under the **RL_Image** group folder.



5. When the steps are finished. The white dummy image layer can be removed (deleted).

3.4 Aligning Bones

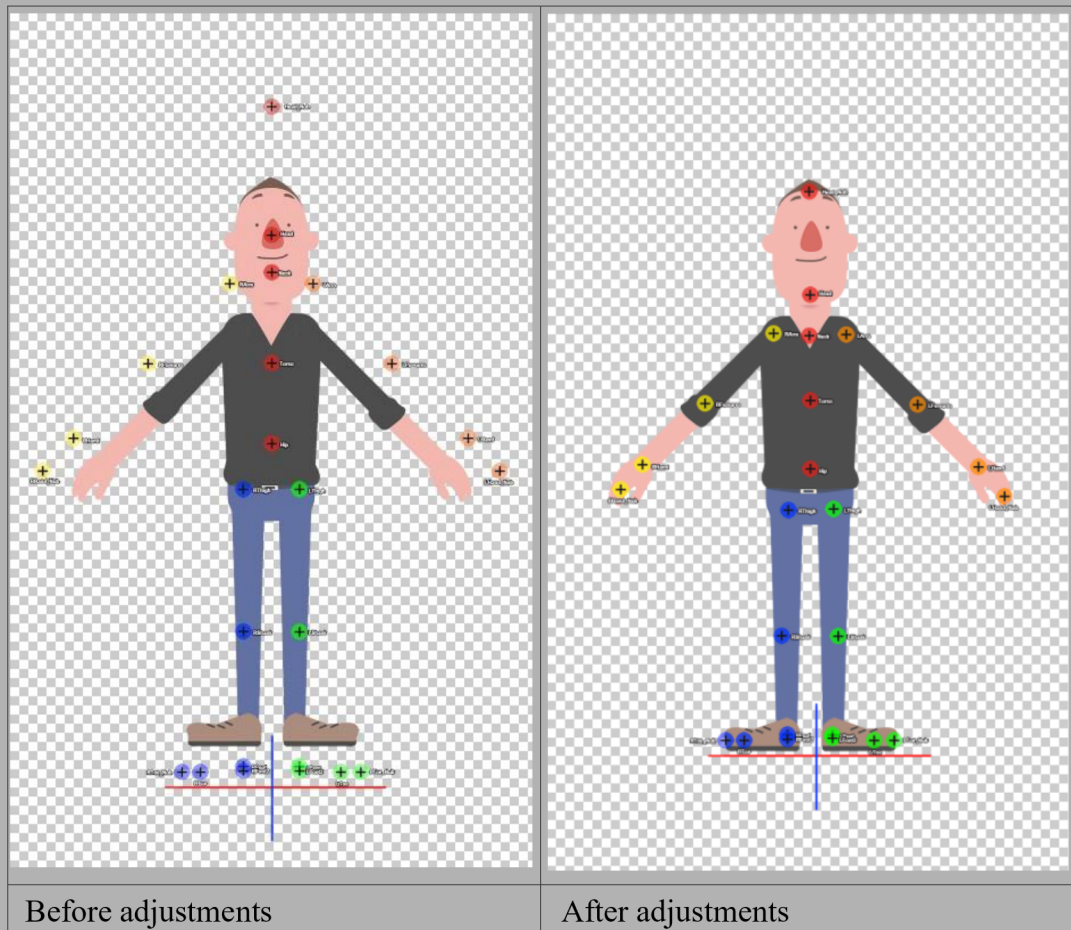
The bones are the rotating center of the body parts in **Cartoon Animator**. Therefore, it is crucial to align the bones in the **PSD** template to their adequate positions. Once the individual body image layers are correctly moved to the corresponding folders, then the bones can be used as references when being moving the layered parts to their appropriate positions.

Take the example after the final step in the previous section, follow the steps below:

1. Turn on the **Auto-select** feature if your **PSD** editor (in this case, **Photoshop**) provides one.



2. In accordance to the name next to the bones, drag and move these bones to their appropriate body positions in the working area.

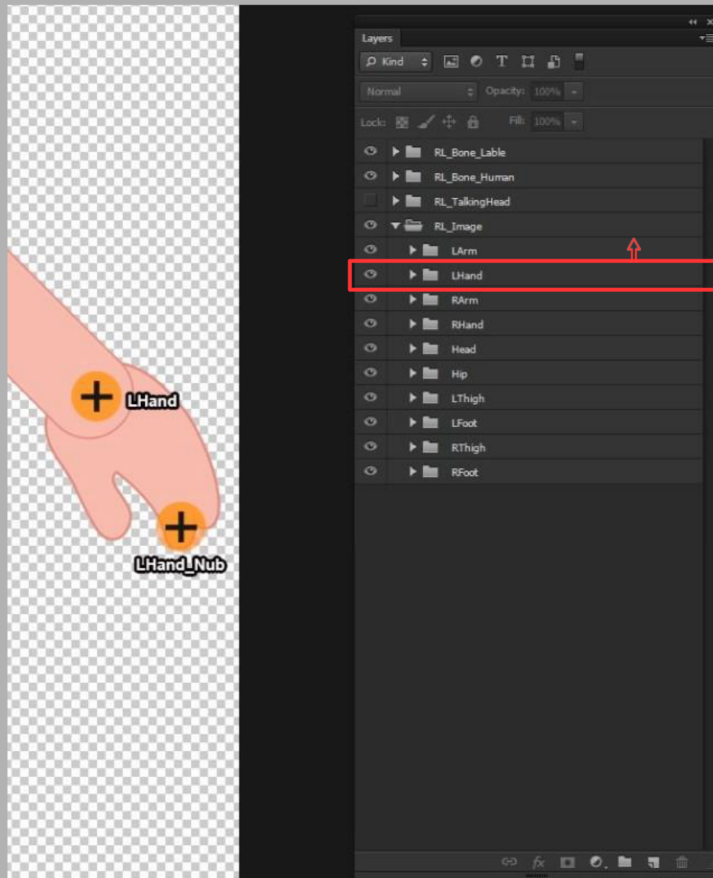


3.5 Layer Order Rearrangements

If you encounter any layer order issue, then adjust the order in the **PSD** template document before it is loaded into **Cartoon Animator**. **Cartoon Animator** will list the body parts in accordance with the order specified in the **PSD** file.

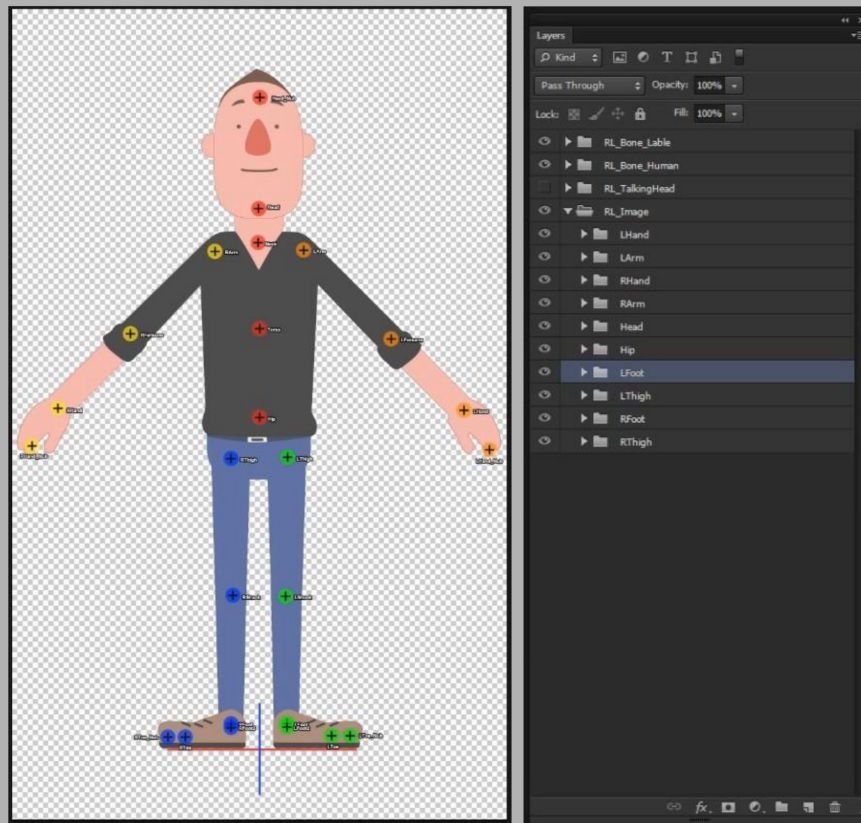
Take the example after the final step in the previous section, follow the steps below:

1. Drag and move the **LHand** group layer above the **LArm** group layer.



2. Repeat the same steps to the **RLHand**, **LFoot** and **Rfoot** group layers.

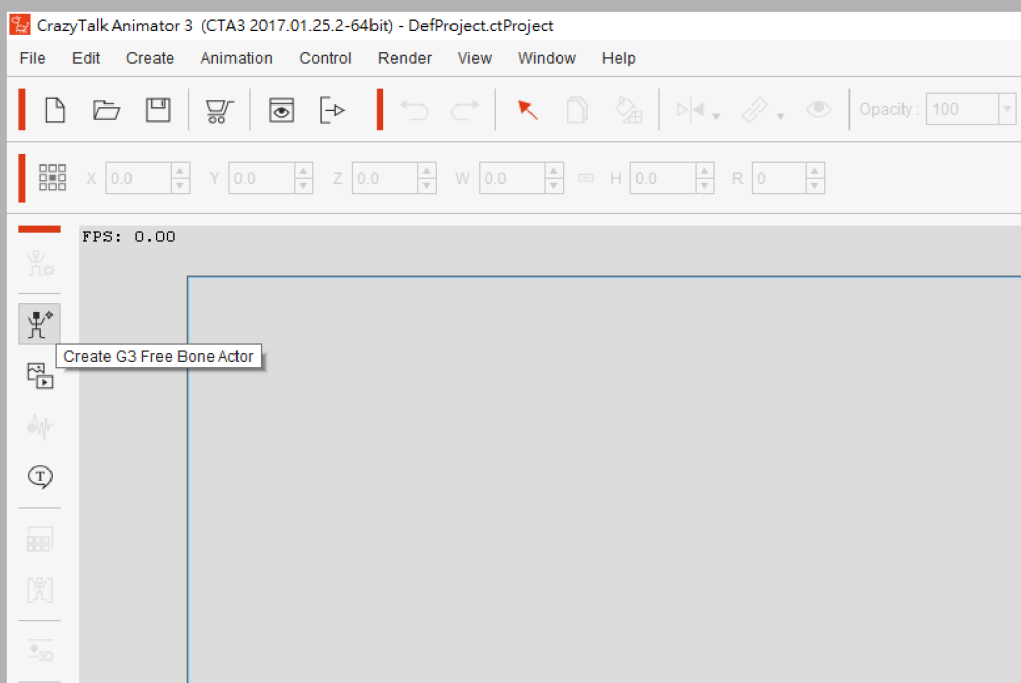
3. Save the document (in **PSD** format) after the adjustments are finished.



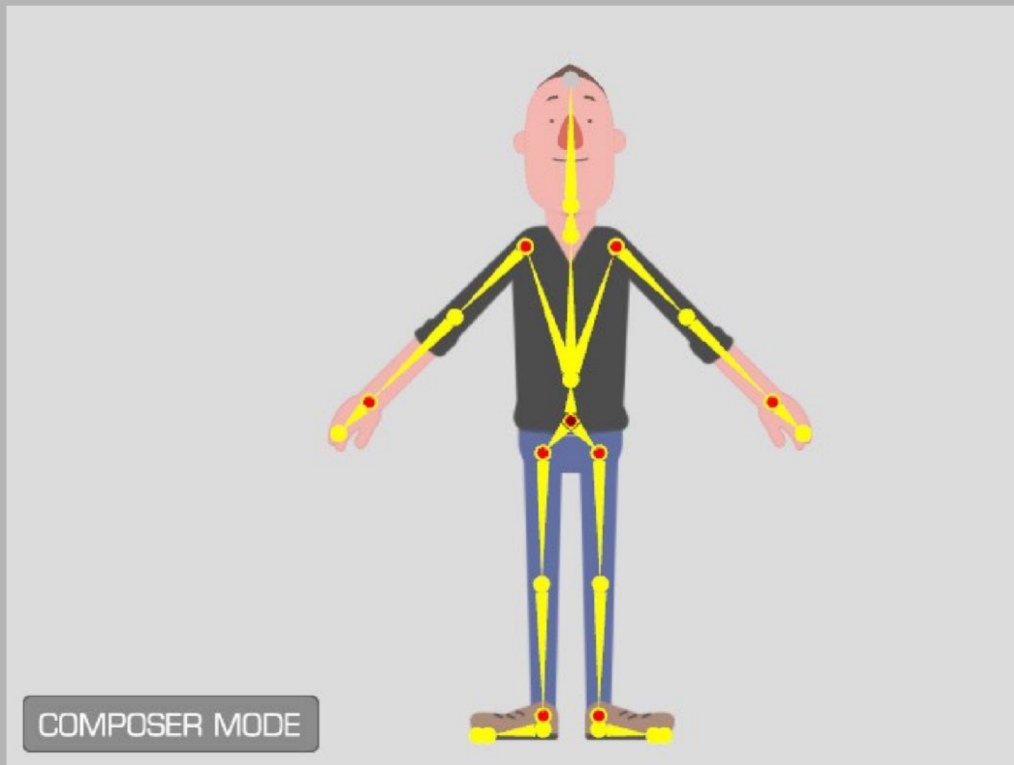
3.6 Loading PSD Template to Cartoon Animator

After a PSD file with a custom character is prepared, you are able to load it into **Cartoon Animator** to form a new **G3** character.

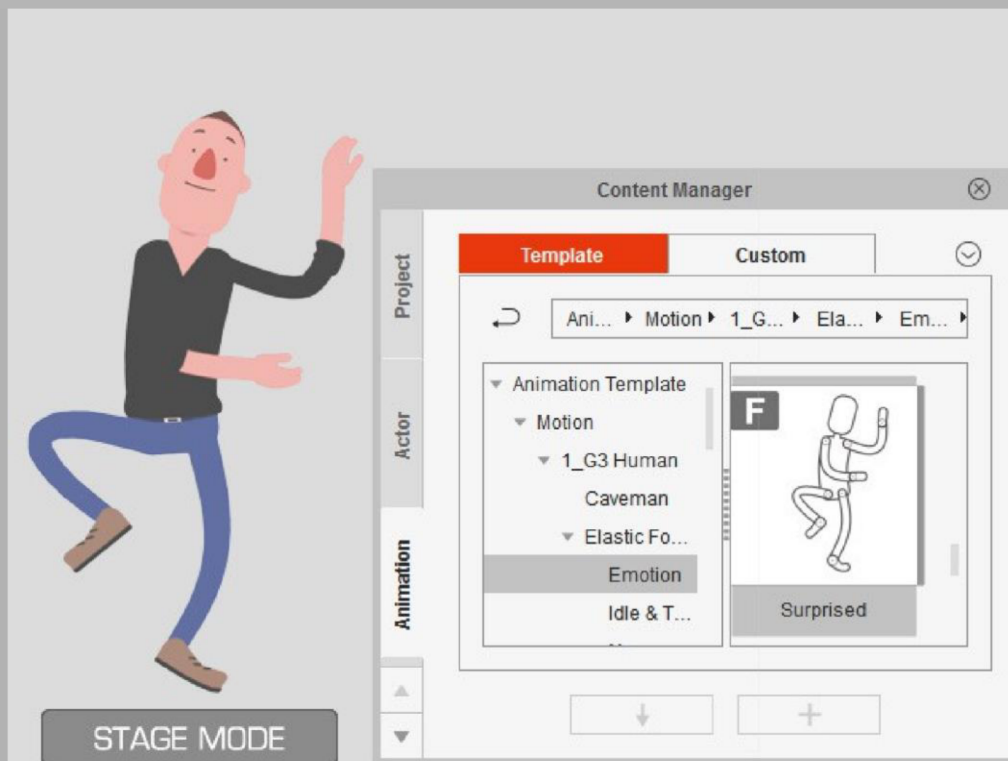
1. Launch Cartoon Animator.
2. Click the **Create G3 Free Bone Actor** button on the **Functional Toolbar** (or alternatively drag and drop the PSD file into the working area).



3. When the loading is done, the character will appear in the **Composer Mode**.



4. Click the **Back Stage** button to bring the character to the stage for applying motions.



Chapter 4 Setting up Multi-pose Sprites for Body Parts

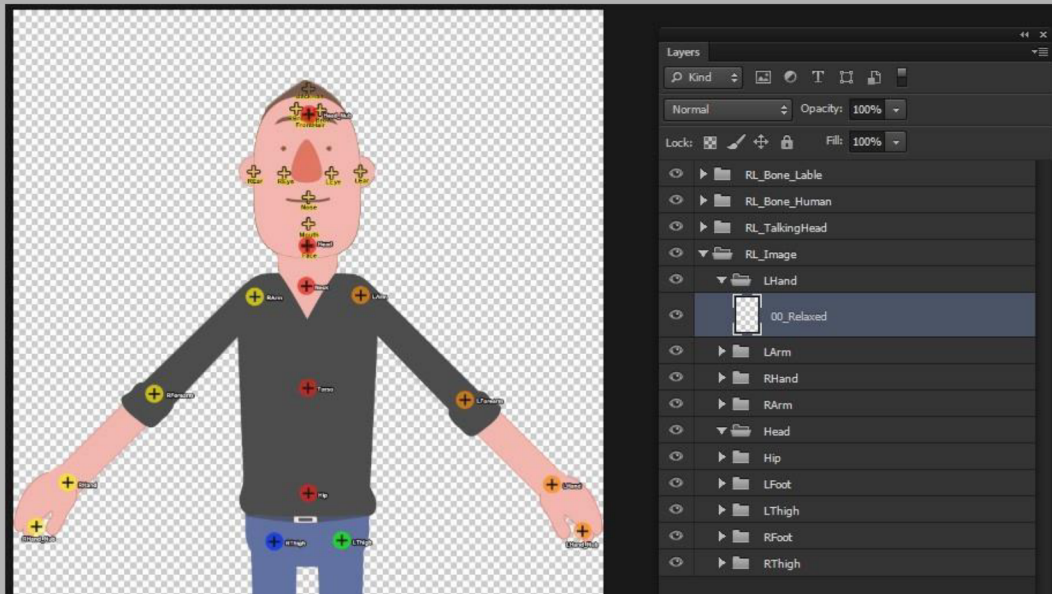
In this chapter, the hands will be taken as an example to describe how to set multiple element poses for sprites inside the **PSD** template file.

4.1 Creating Hand Poses

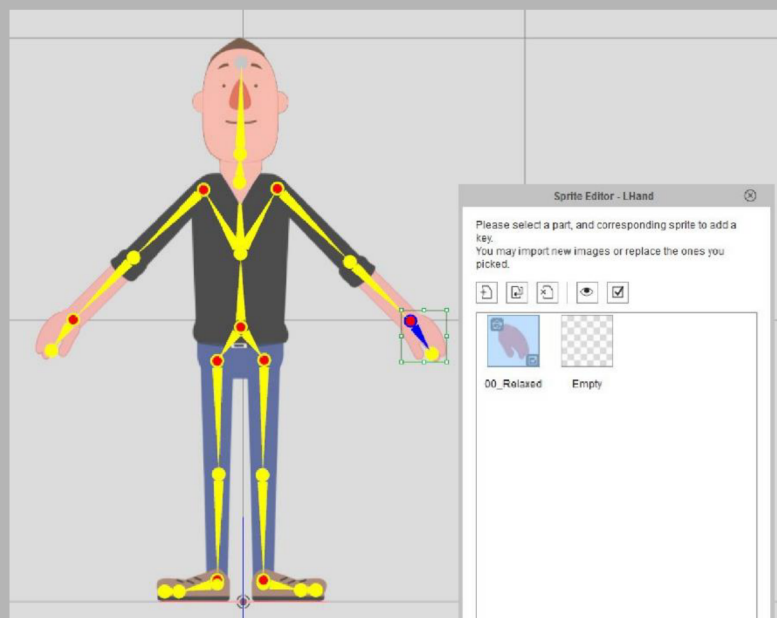
File Utilized:

CTA_G3_Pipeline_PSD_Template_Sample_Project\02_PSD_Image_Resources\01_Human\Hand_Gesture.psd

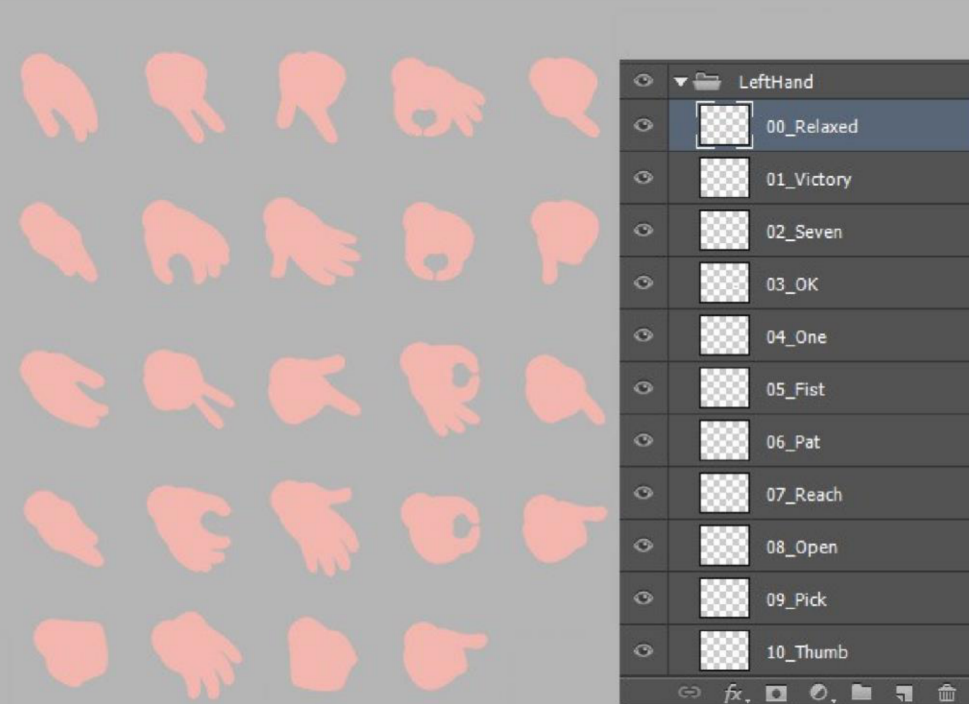
The hand of the character created in the previous chapter only contains one pose, **00_Relaxed**, as the default pose.



Therefore, when the character's hand sprite is opened by the **Sprite Editor**, there is only one element pose. In the following steps, the rest of the 29 hand poses will be shown.

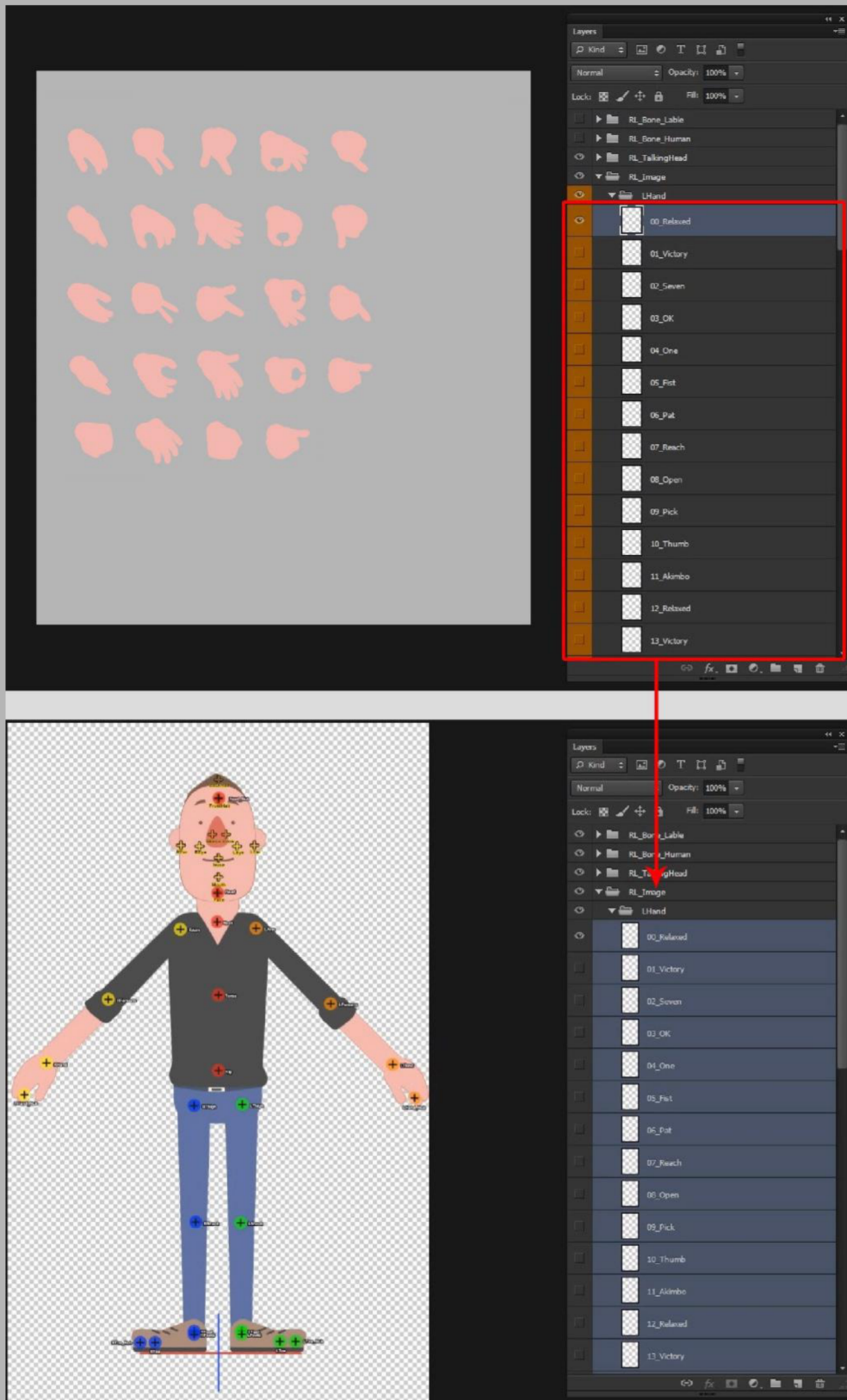


1. Open the **Hand_Gesture.psd** file with the PSD editor. You will see 30 hand poses in the **RL_Image > LHand** group folder.

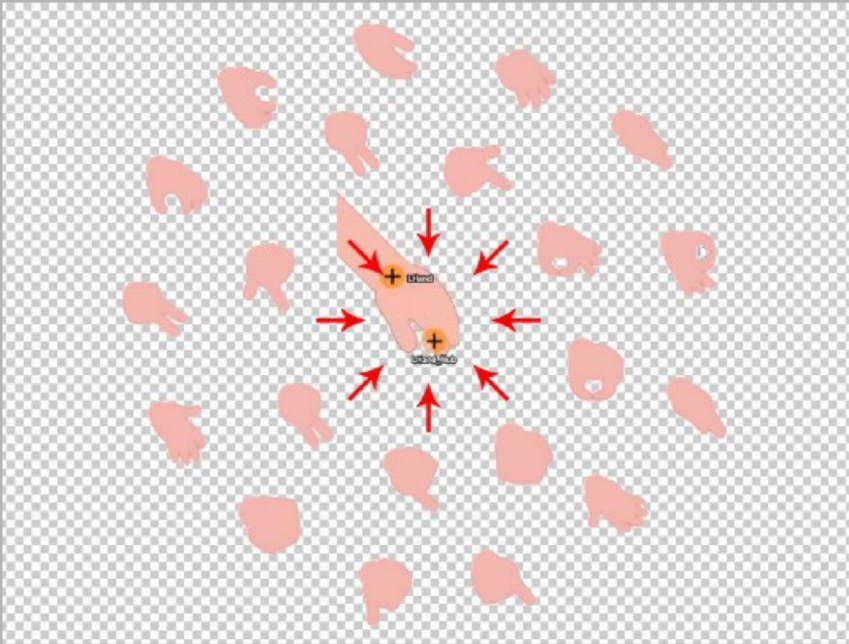


*** Please note that the sequence for each layer is unique in order for it to be identified by Cartoon Animator. Therefore, you should NOT change the order sequence.**

2. Select all pose layers of the left hand; drag and drop them into the **LHand** group folder of the character **PSD** template document.



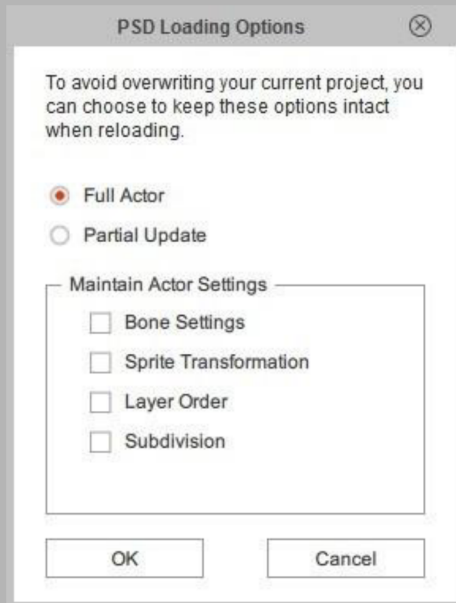
3. Transform each layer image to their appropriate position.



4. Repeat the same steps to the other hand and save the **PSD** template document.
5. In **Cartoon Animator**, select the character created in the end of the previous chapter and switch to the **Composer** mode.

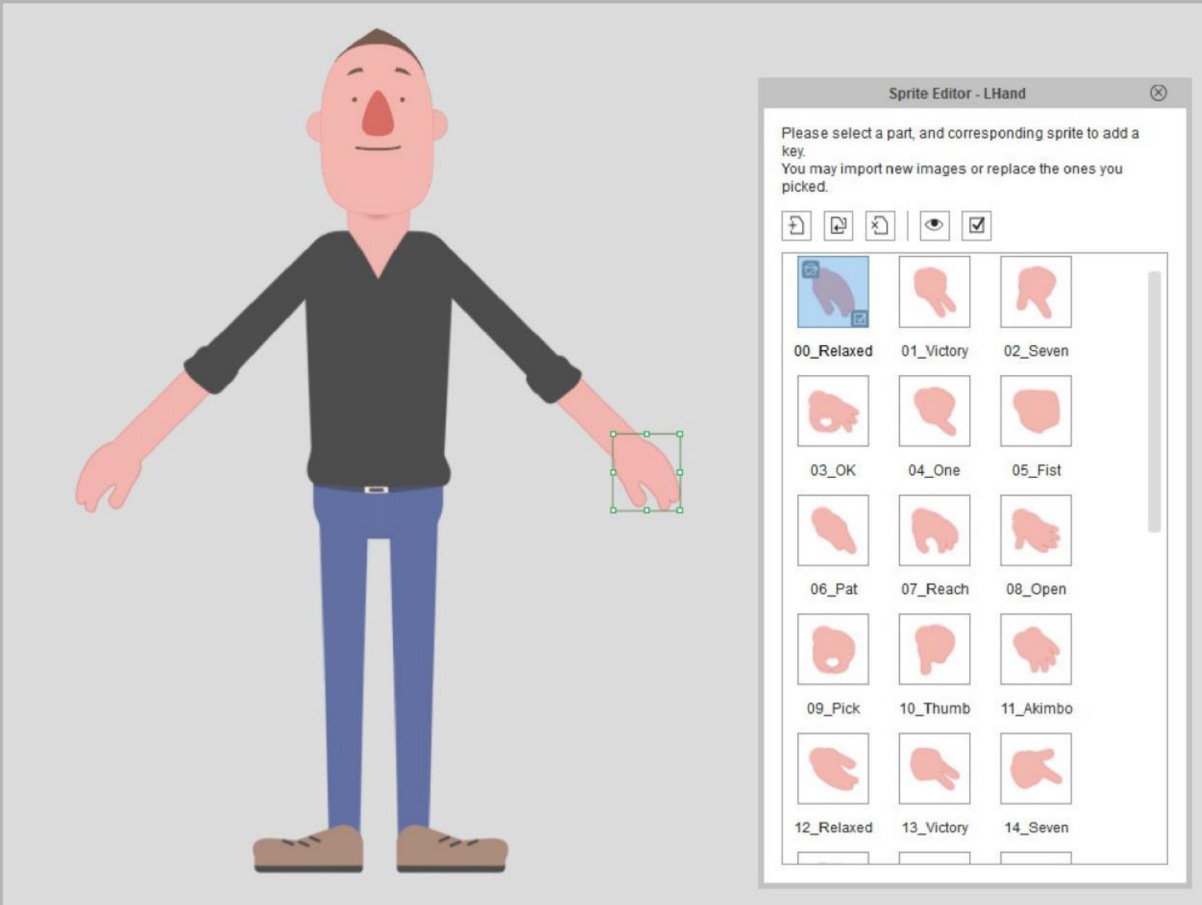


6. Click the **Import PSD Assets** button to open the **PSD Loading Options** panel.

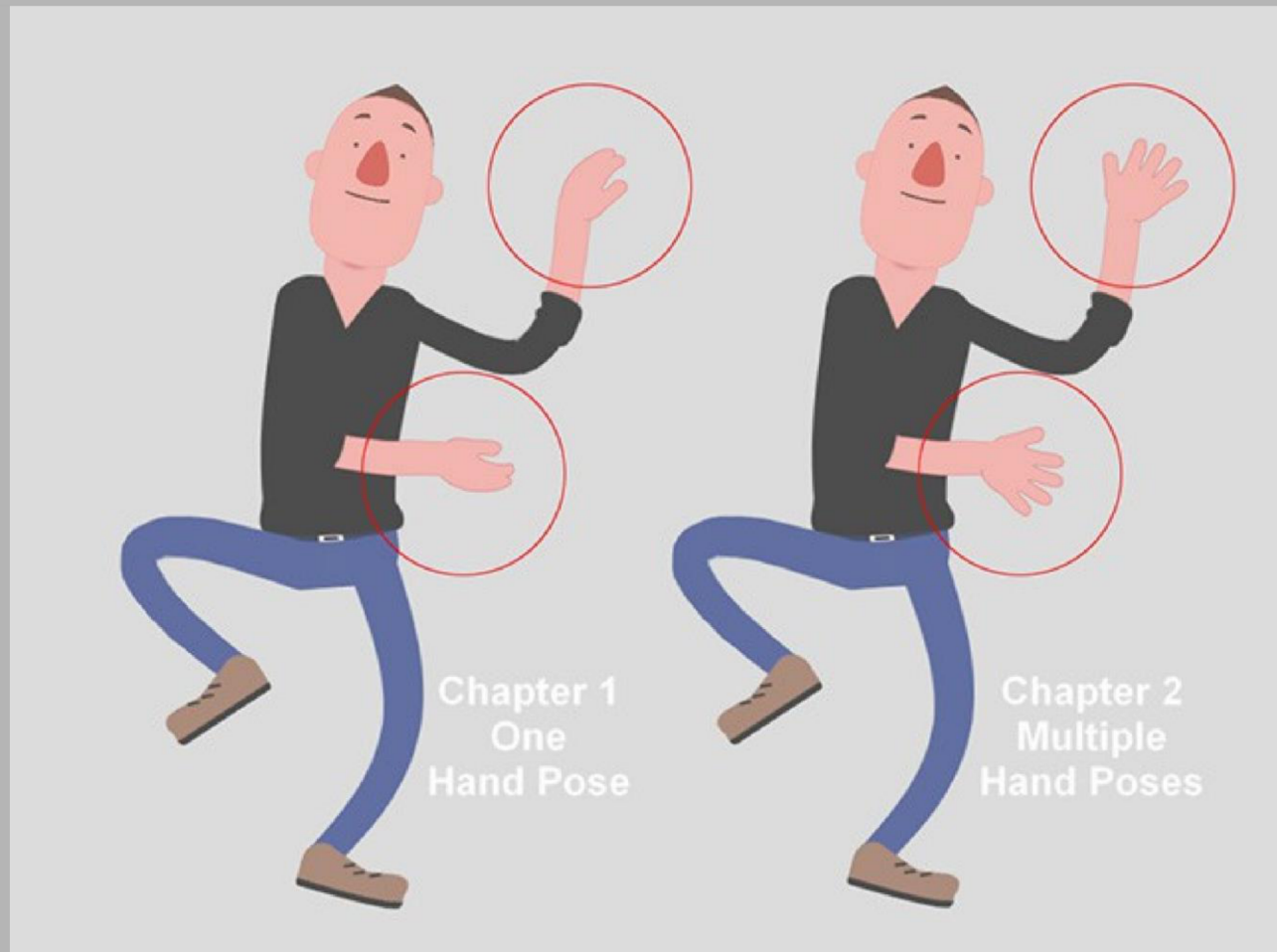


7. Choose the **Full Actor** button and load the **PSD** template file created in Step4.

8. Select one of the hands and open the Sprite Editor. The 30 blank poses are now filled up with the corresponding images from the **PSD** file.



9. If you apply hand-gesture-changing motions to the character, then you will see different hand pose performances.



Chapter 5

Creating Bone Hands

5.1 Bone Hand Introduction

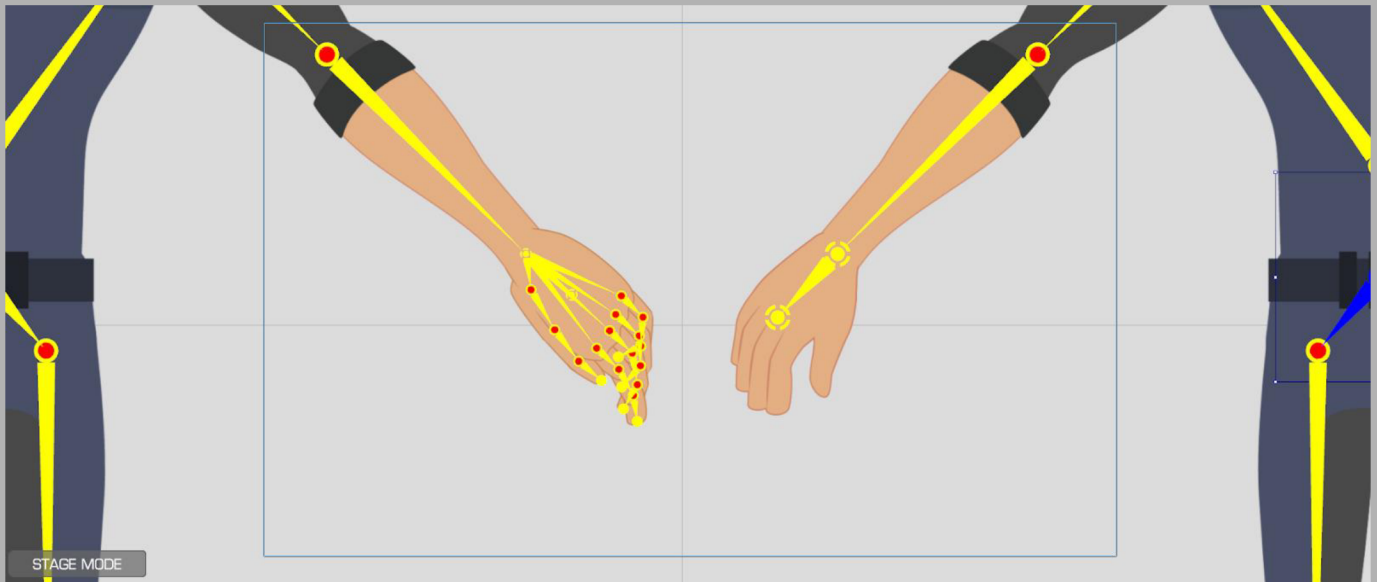
What are Bone Hands?

Bone Hands are skeleton driven hand rigs with the ability to control individual finger joints or use ready-made motions for livelier hand gesture performances.

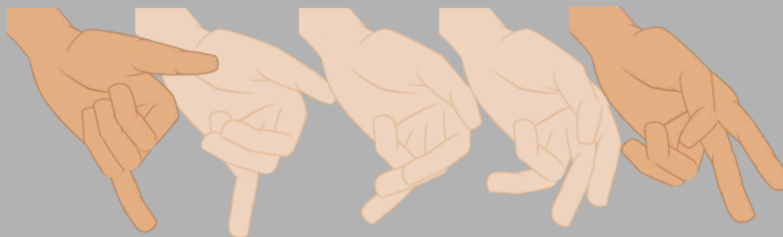


Bone Hands vs Sprite Hands

Compared to the Bone Hand, Sprite Hands' specialty is its ability to switch out images to change hand gestures, which is an arguably simpler method. Although Sprite Hands can flexibly change to any conceivable gesture image, they are still limited in the range of possible dynamic performances.

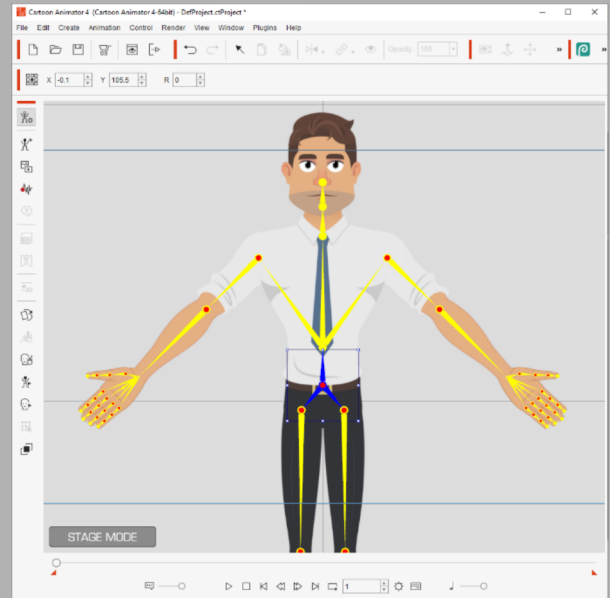
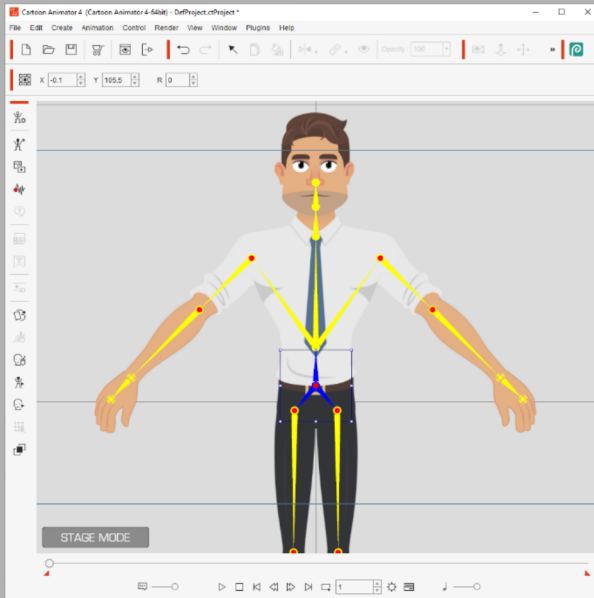


Bone Hands emphasize the ability to control individual finger joints and palms as expressive elements to achieve specific hand gestures. As in the following illustration, both hands of the character can take on different states in the Hand Pose Editor. With the application of different gesture states, smooth blending can be achieved within the Timeline.

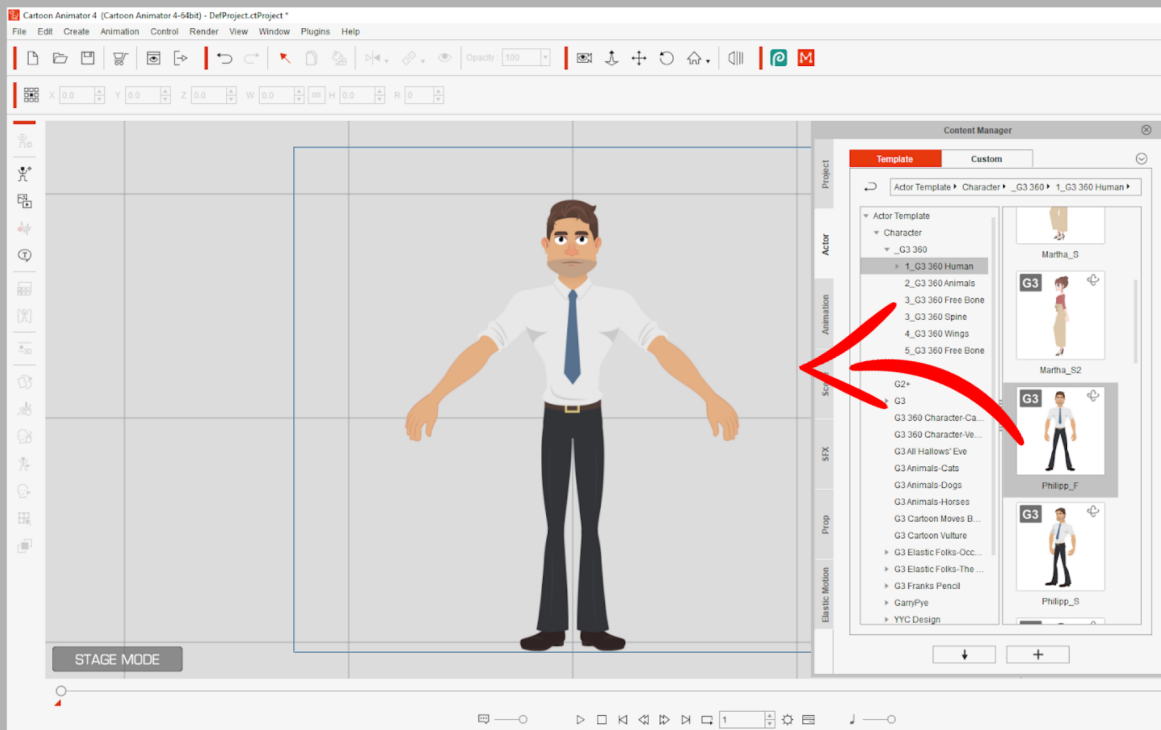


5.2 Structuring the Bone Hand

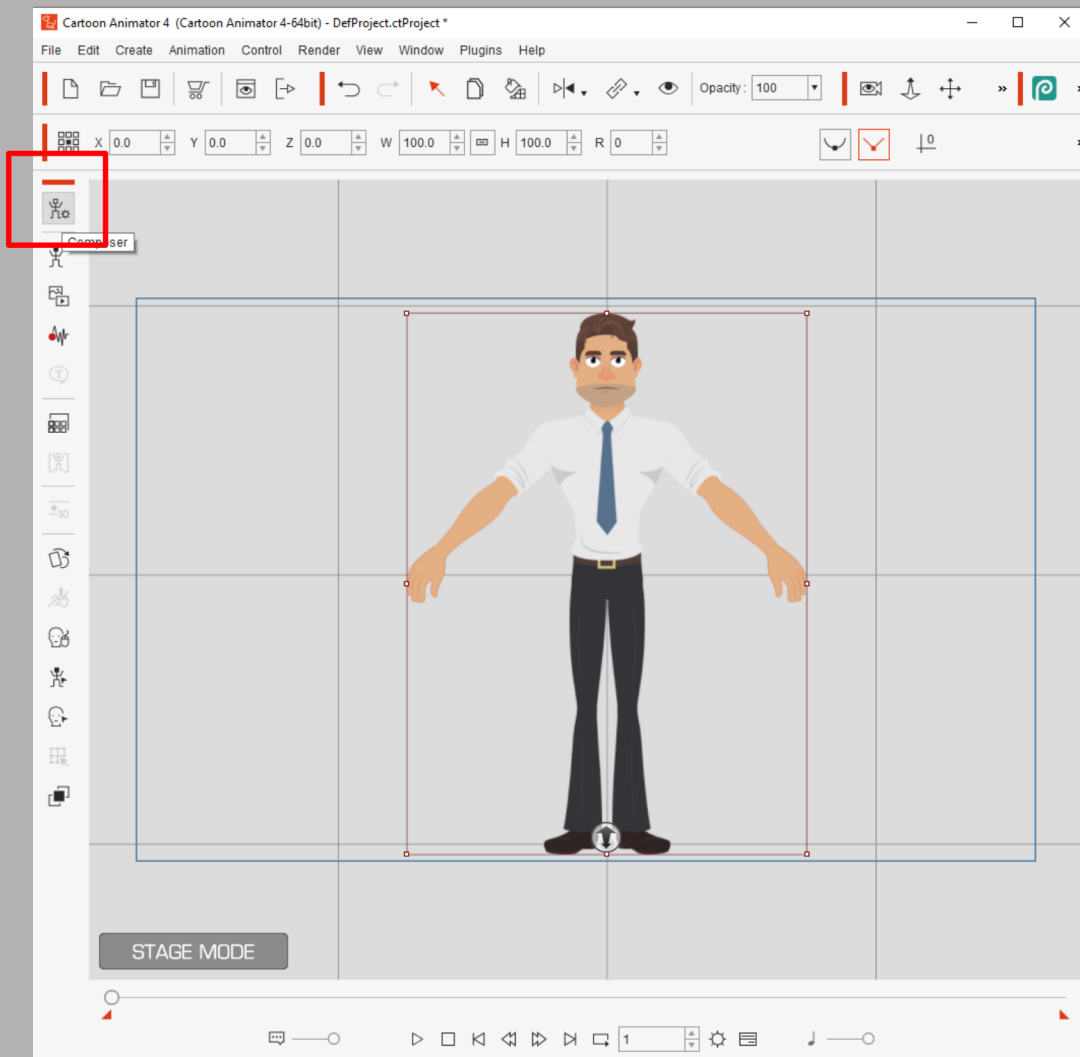
In this article you will learn how to use a PSD editor to switch out Sprite Hands for Bone Hands on a specific character.



1. Find the embedded character: **Philipp_F** from the Content Manager and import him into the Stage (location: **Content Manager > Actor Template > Character > 1_G3 360 Human > Philipp_F**).

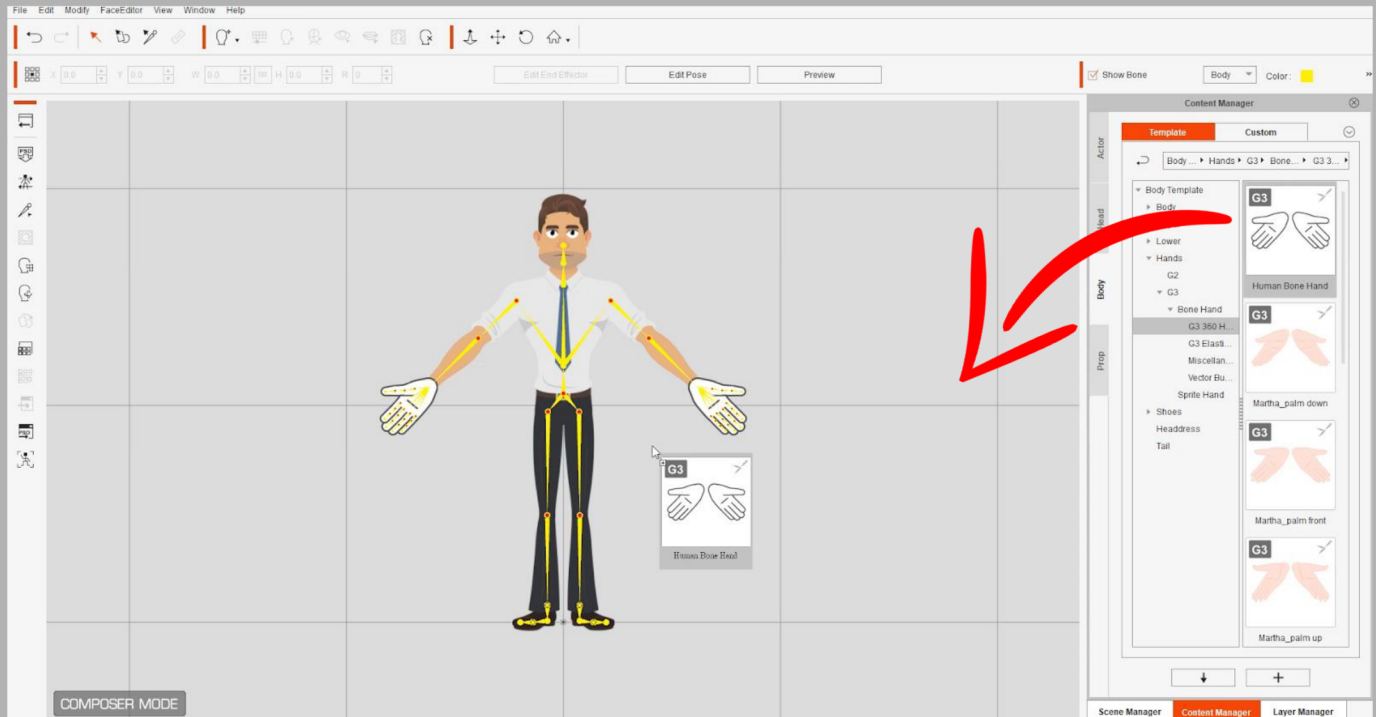


2. Select the character and enter Composer mode.



3. Apply the template Bone Hands to the character.

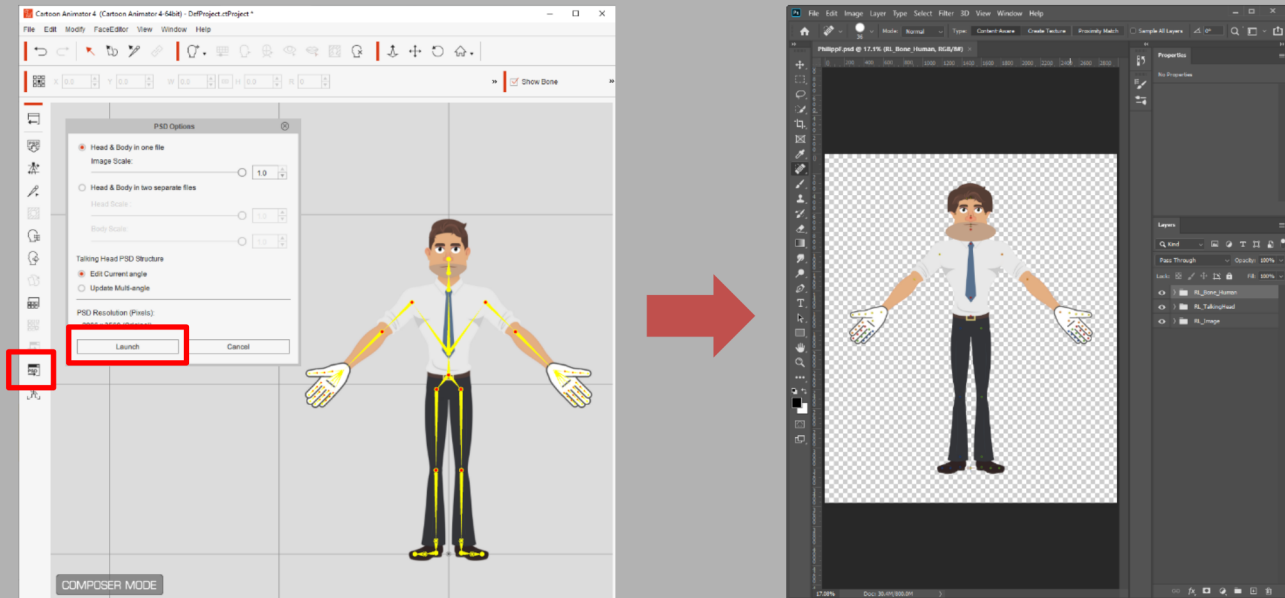
From the official asset directory, find the **Human Bone Hand.ctBhand** file and drag and drop it directly onto the character (location: **Composer > Content Manager > Body Template > Hands > G3 > Bone Hand > G3 360 Human > Human Bone Hand**). You'll notice that the character's Sprite Hands will be replaced by the white template Bone Hands.



4. Launch to PSD Editor

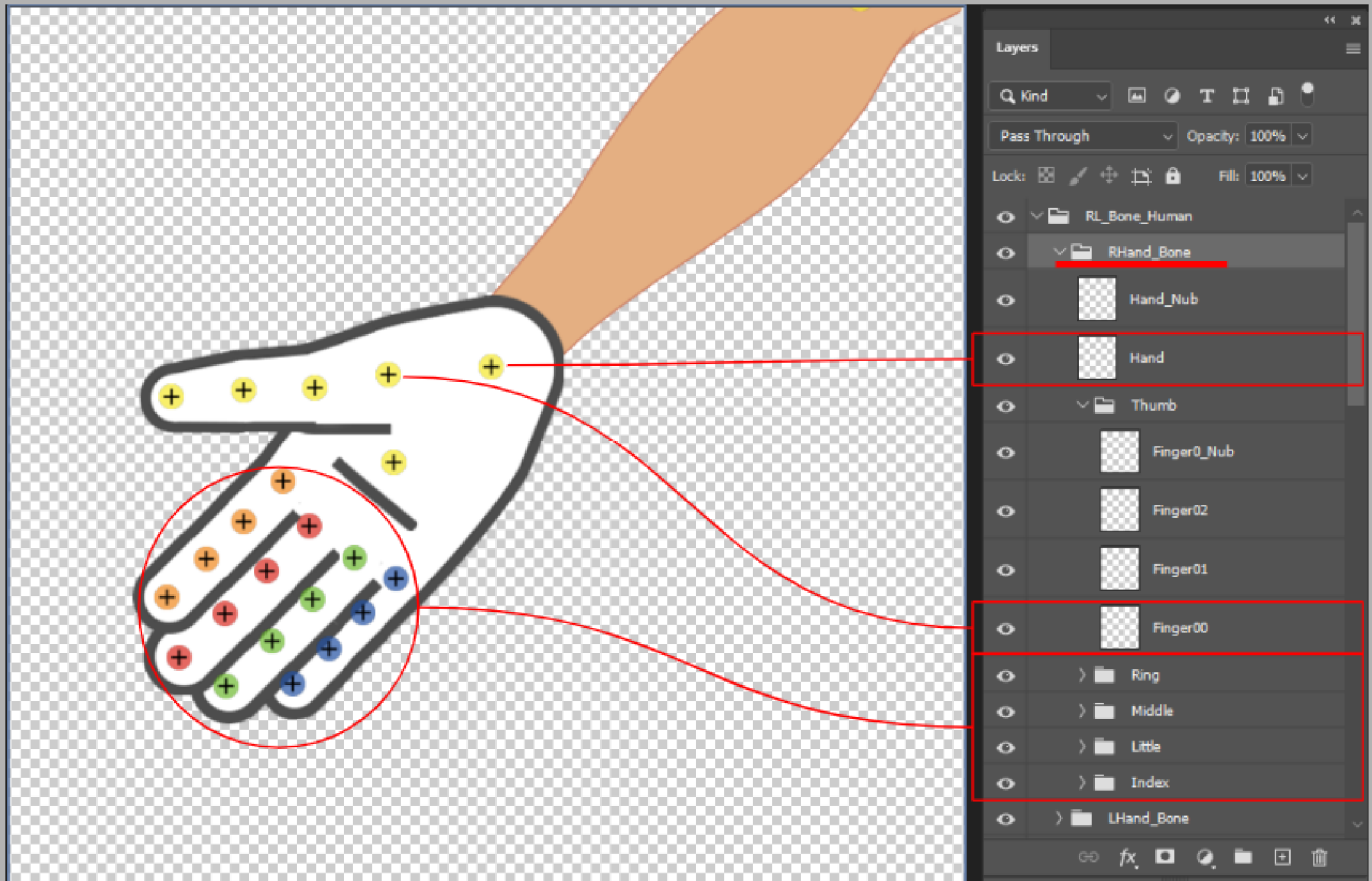
Click on **Launch PSD Editor** button in the Functional Toolbar to launch the **PSD Option** dialog window. Click on the **Launch** button to bring the character into a PSD editor for modifications.

Note: You'll notice that the beard is no longer masked by the shape of the face. For more information, see Section 8.4.



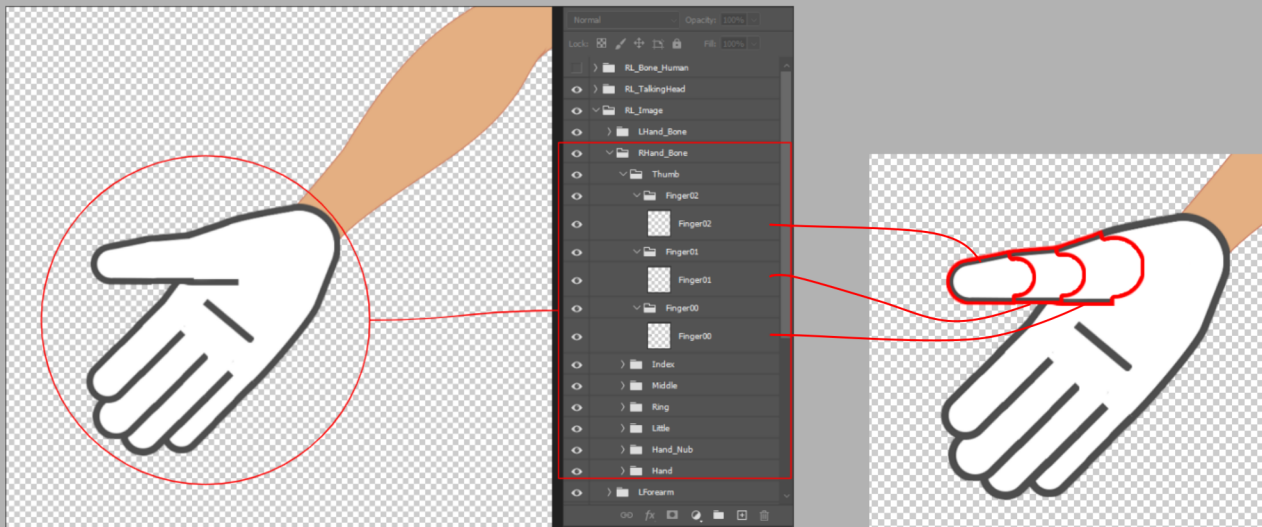
5. About Bone Hand PSD Structure

Let's first take a look at the colored nodes on the regions of the hand, which can be found under the **RL_Bone_Human** folder within Photoshop. These node points will eventually dictate the ordering of the hand joints in CTA.



6. About Bone Hand PSD Structure

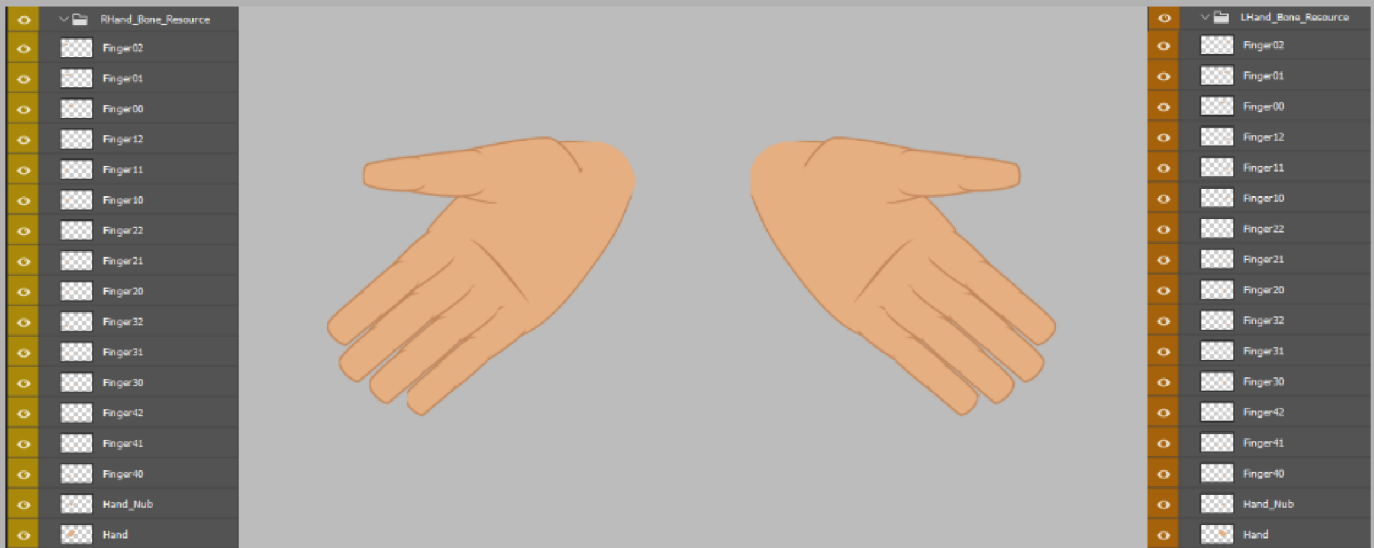
Let's examine the assigned locations of the source images which are all located under the **RL_Image** folder, illustrated by the following images. From this folder, you can inspect the assigned locations for each finger joint, the palm, and the palm line. Take note of the names for each folder within the hierarchy structure, and notice that each joint is a separate image.



7. About Bone Hand Resource Images

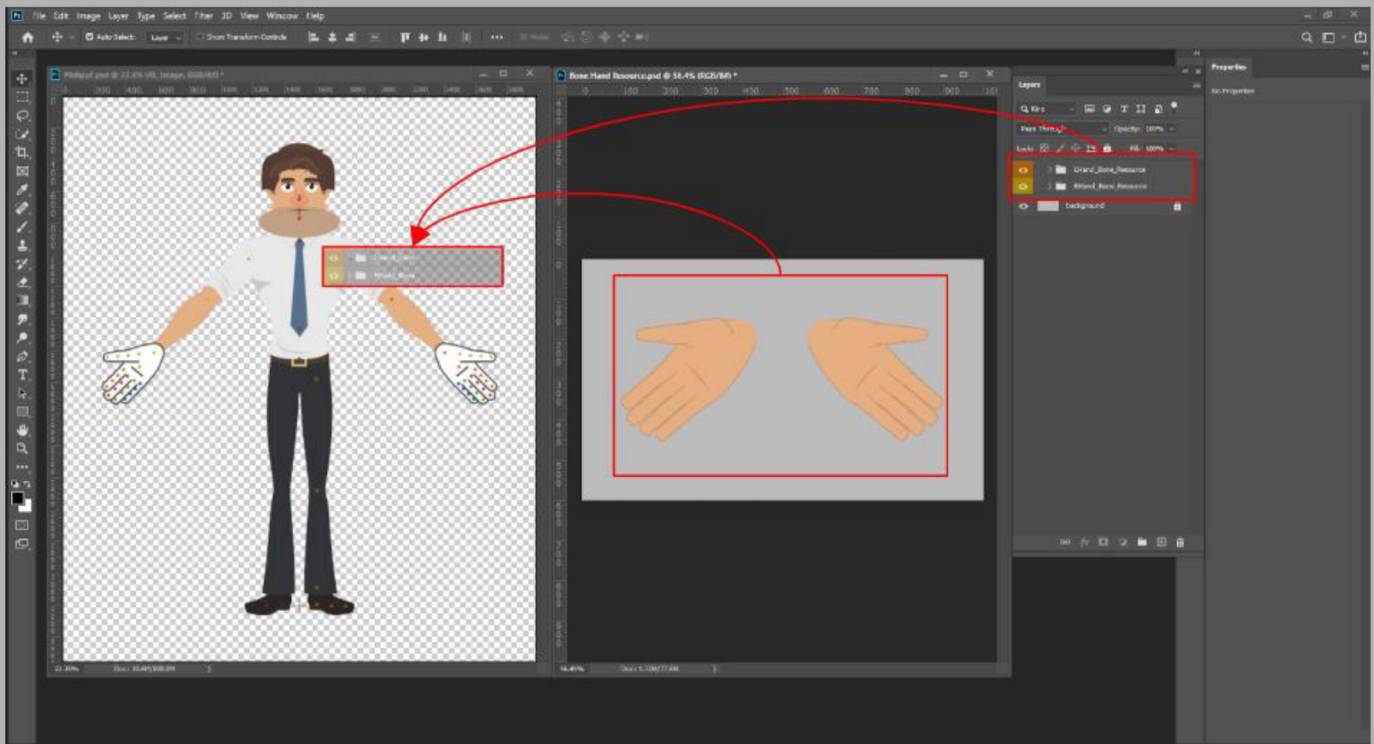
File Utilized: CTA_G3_Pipeline_PSD_Template_Sample_Project\02_PSD_Image_Resources\01_Human\Bone Hand.psd

Launch **Bone Hand.psd** in Photoshop. This file is used to simulate users making their own custom source hand images. From the following illustration, you can see that image layers are divided between the left and right hand sides. In later steps, we'll need to take these images and replace the contents within the **Philipp_F.psd** file.



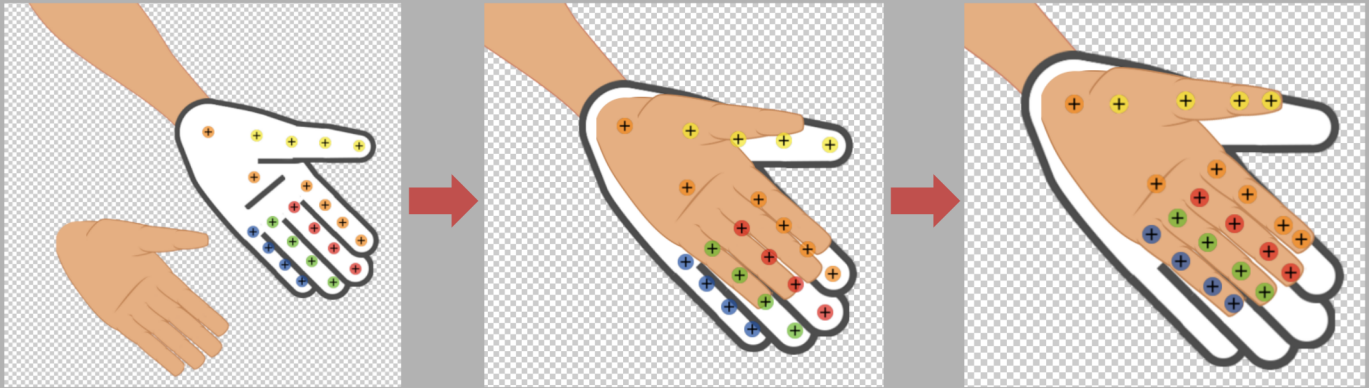
8. Apply Resources to the Main Character

Drag and drop the **Bone Hand.psd** file into **Philipp_F.psd**.



9. Adjust Images and Bone Positioning

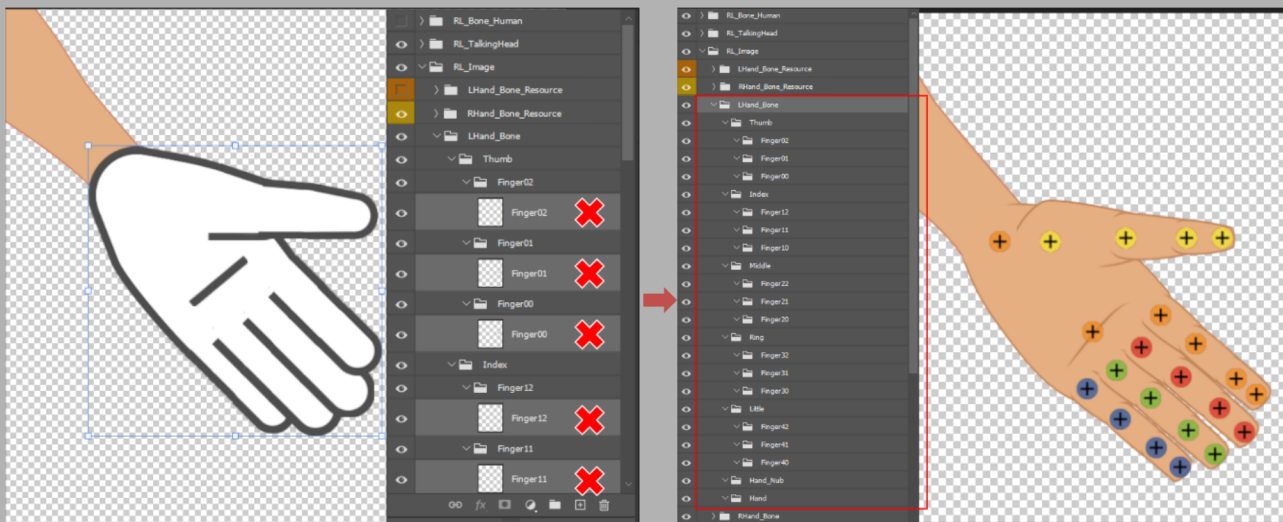
Drag select the palm source image and drag it to match the wrist position of the template hand. Move each bone node of the template hand to their appropriate positions based on the joint images of the replacement hand.



10. Delete the Template Images

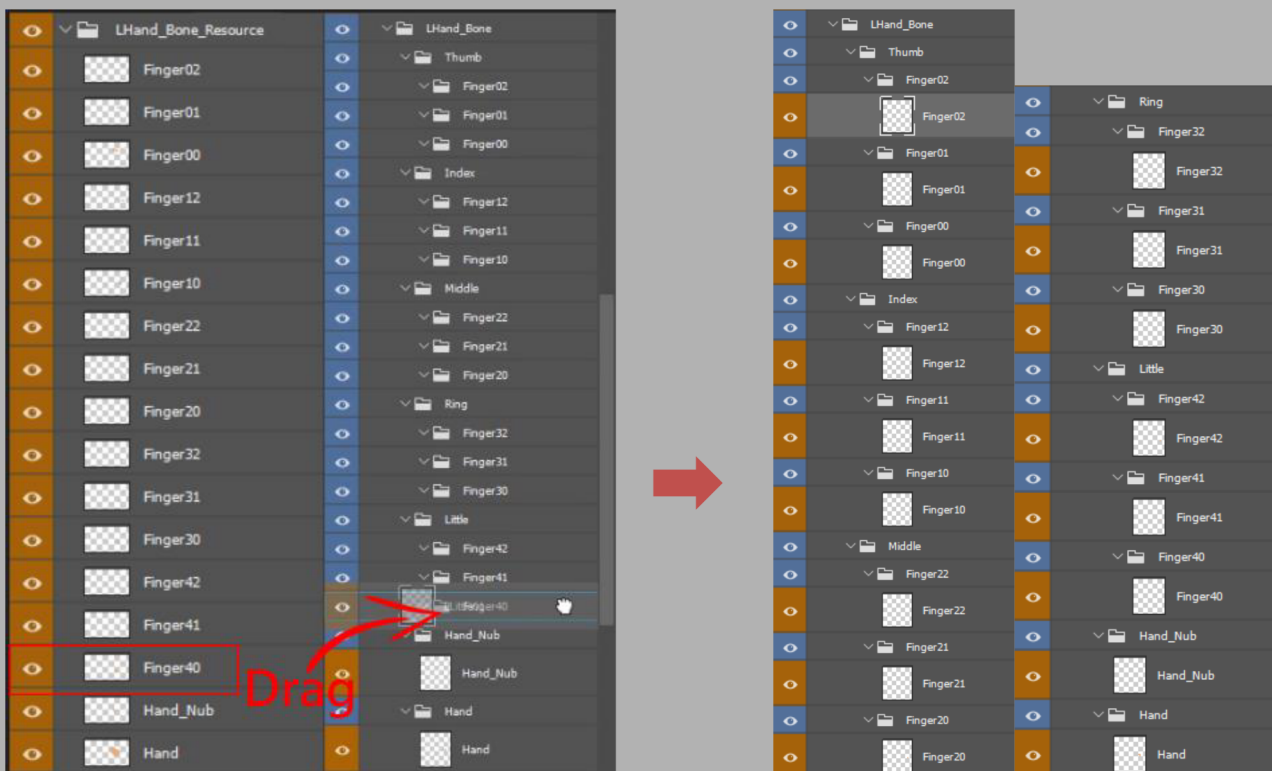
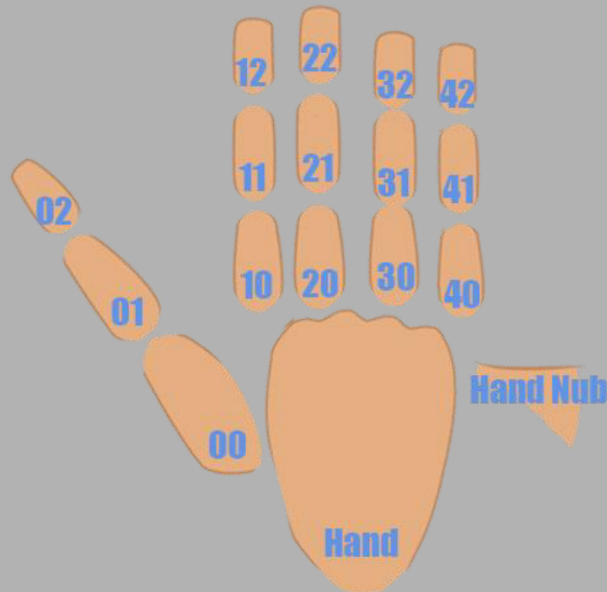
Drag select all of the template images for both hands and delete. Make sure to only erase the image layers and keep the folder structures intact.

*Note: You can hide the **RL_Bone_Human** and **Resource** layers to make it easier to drag select the elements of the white template hands.*



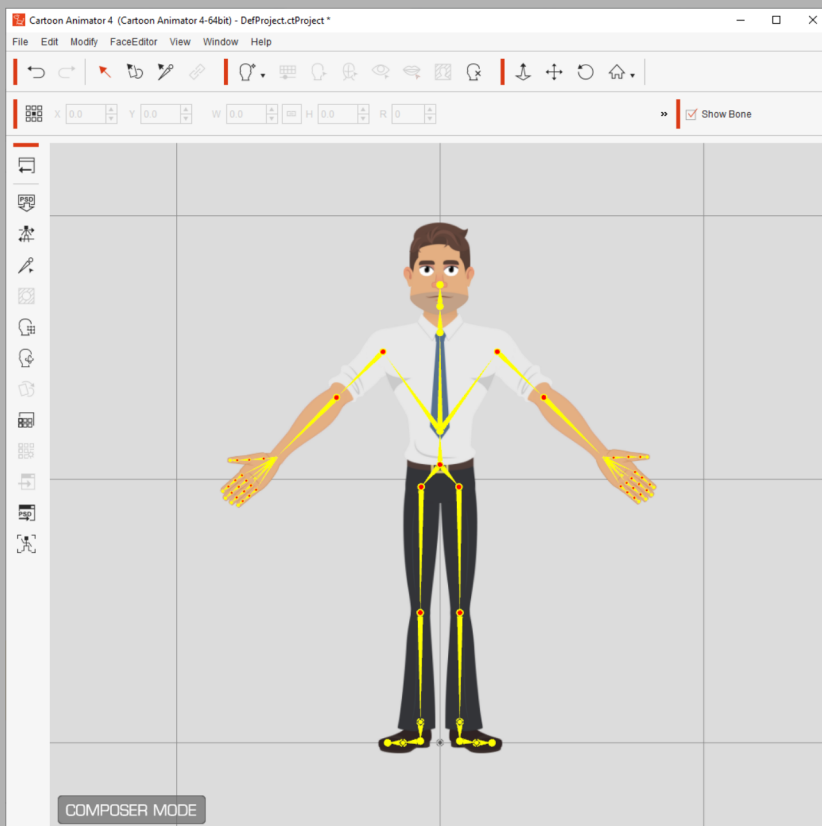
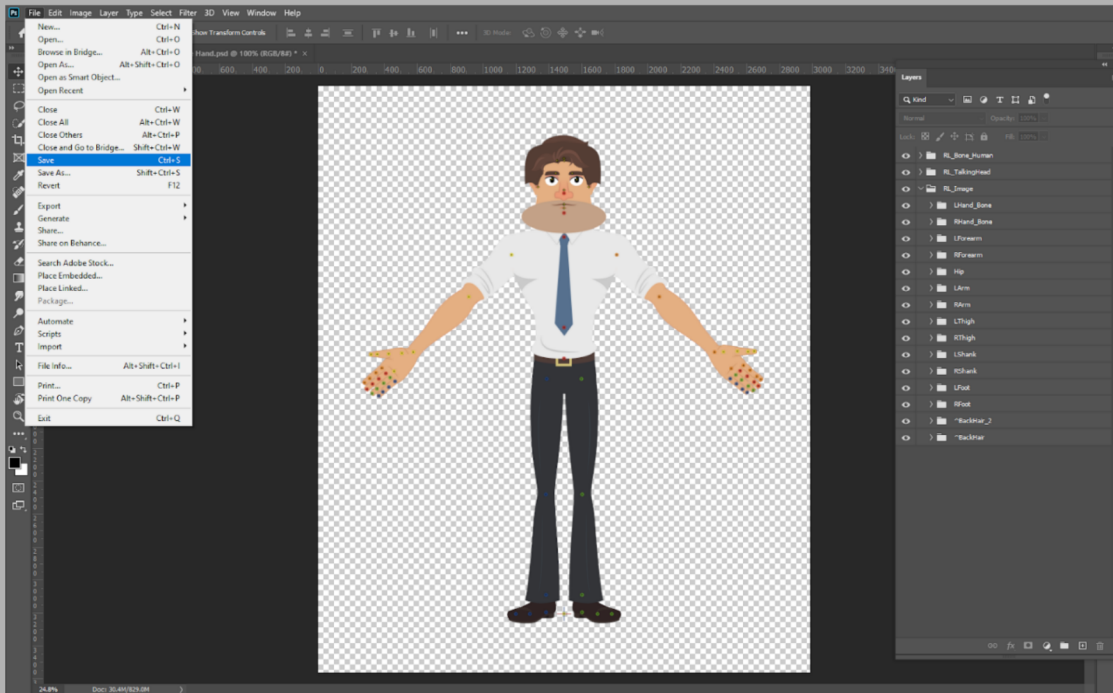
11. Drag Resources into the Template Finger Structure

Move the image layers of the left and right Bone Hands into their appropriate folders within the template hand hierarchy (by name). When complete, delete the empty **RHand_Bone_Resource** and **LHand_Bone_Resource** folders.



12. Save the File and Import into CTA

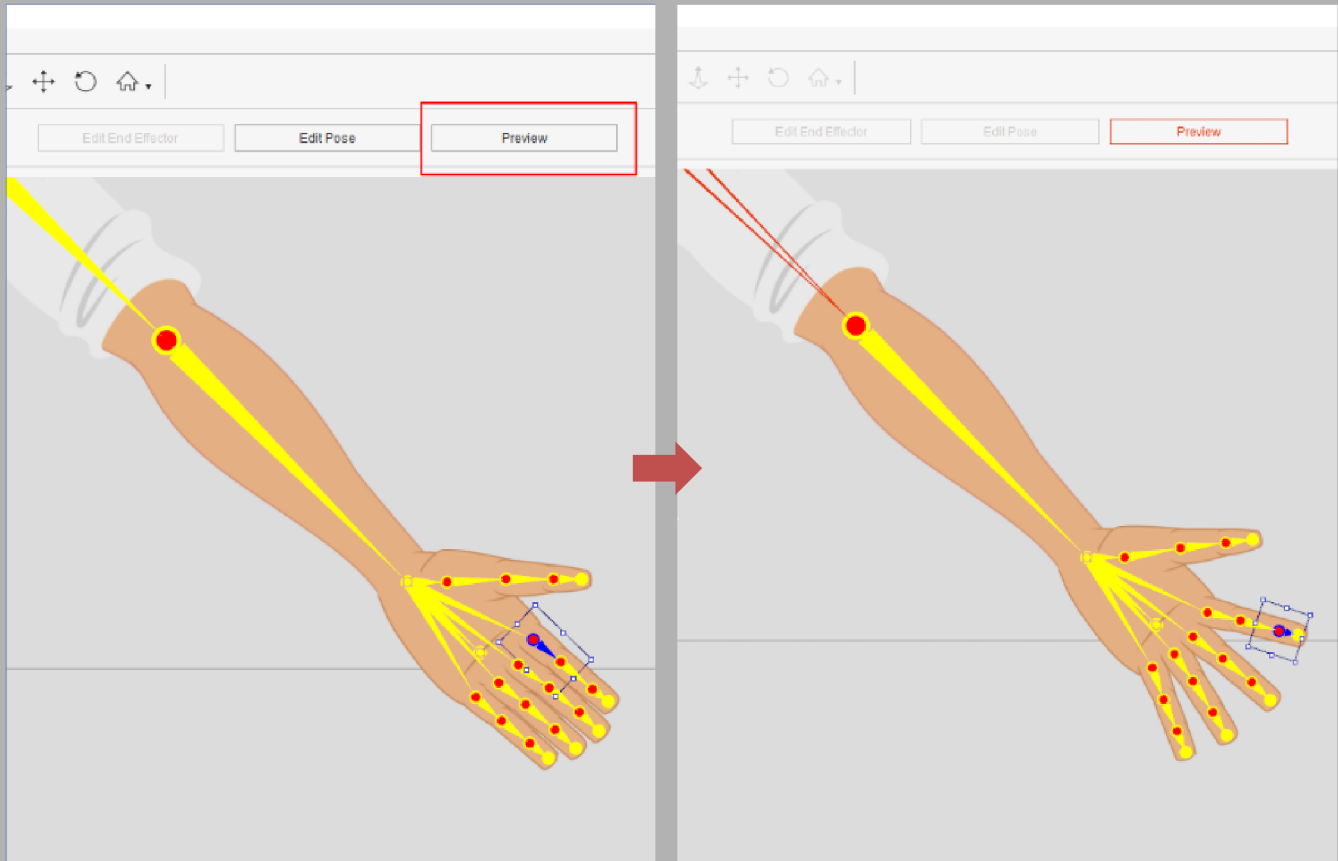
When finished, you'll have a character that resembles the following illustration. Save the file and the character will automatically update in CTA.



13. Preview the Final Result

Remember to check the results of the operation for errors, such as inspecting the **Layer Manager** to make sure the layer ordering is correct.

Use the **Preview** utility to try out various rotations on the hand joints, and make sure they are in line with the expected behavior.

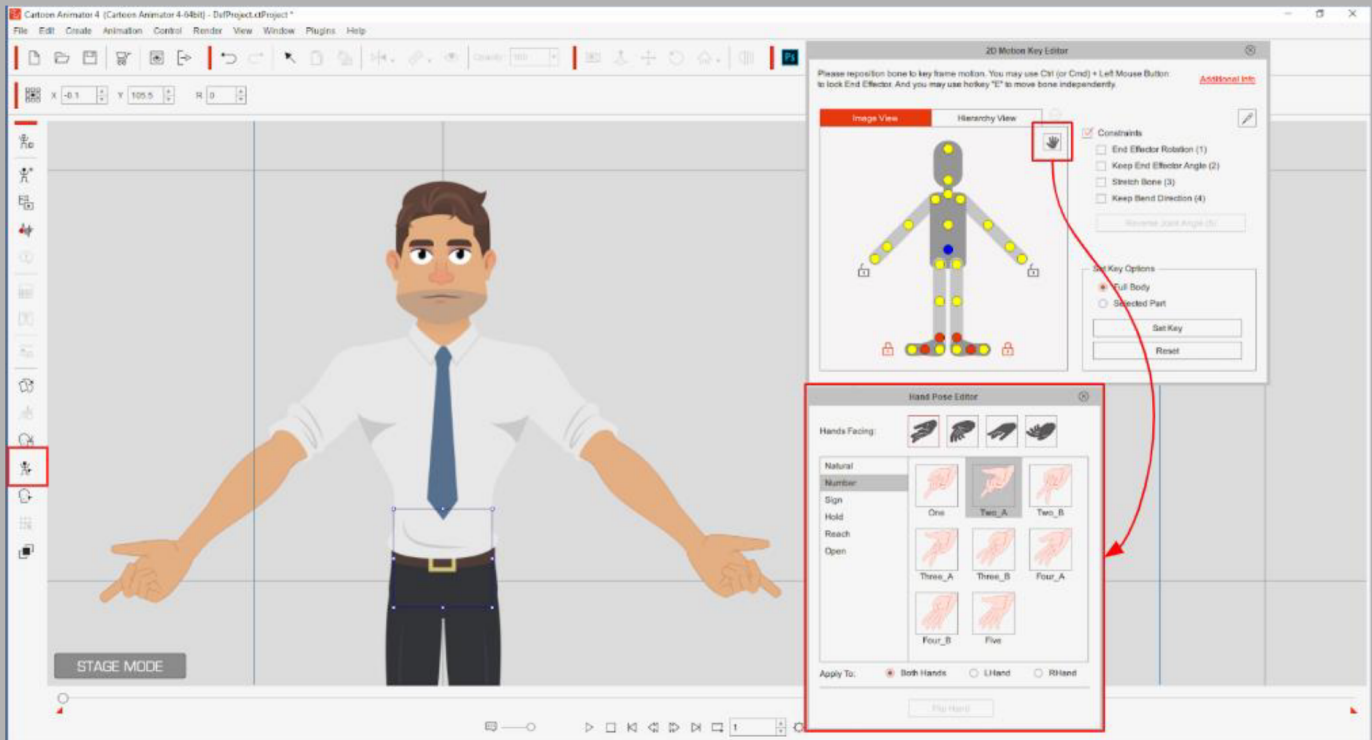


14. Apply Hand Poses for the Final Result

Go back to the **Stage** mode, select the character, launch the **2D Motion Key Editor**, and notice that therein contains a palm icon.

Click on this icon to launch the **Hand Pose Editor**.

At this step, one apply available hand gestures to the character.



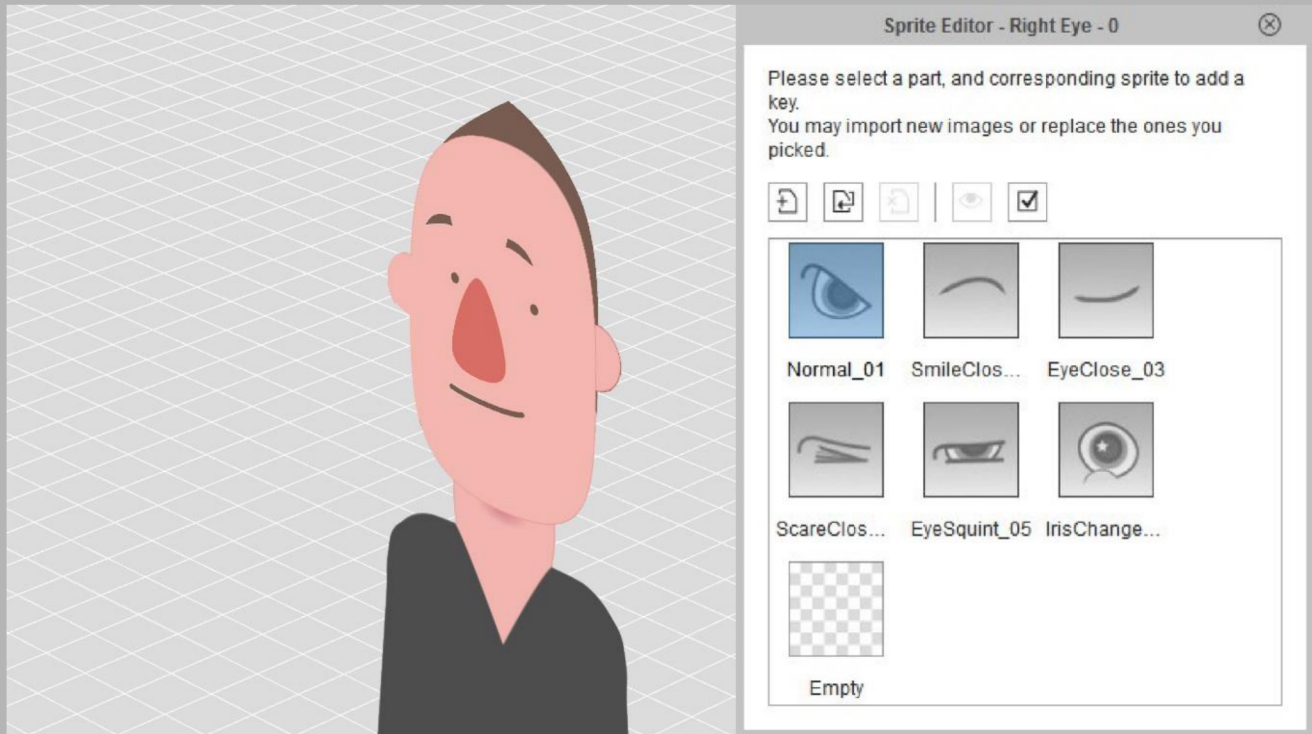
Chapter 6

Creating Talking Head – Assembling with Embedded Facial Feature Sprites

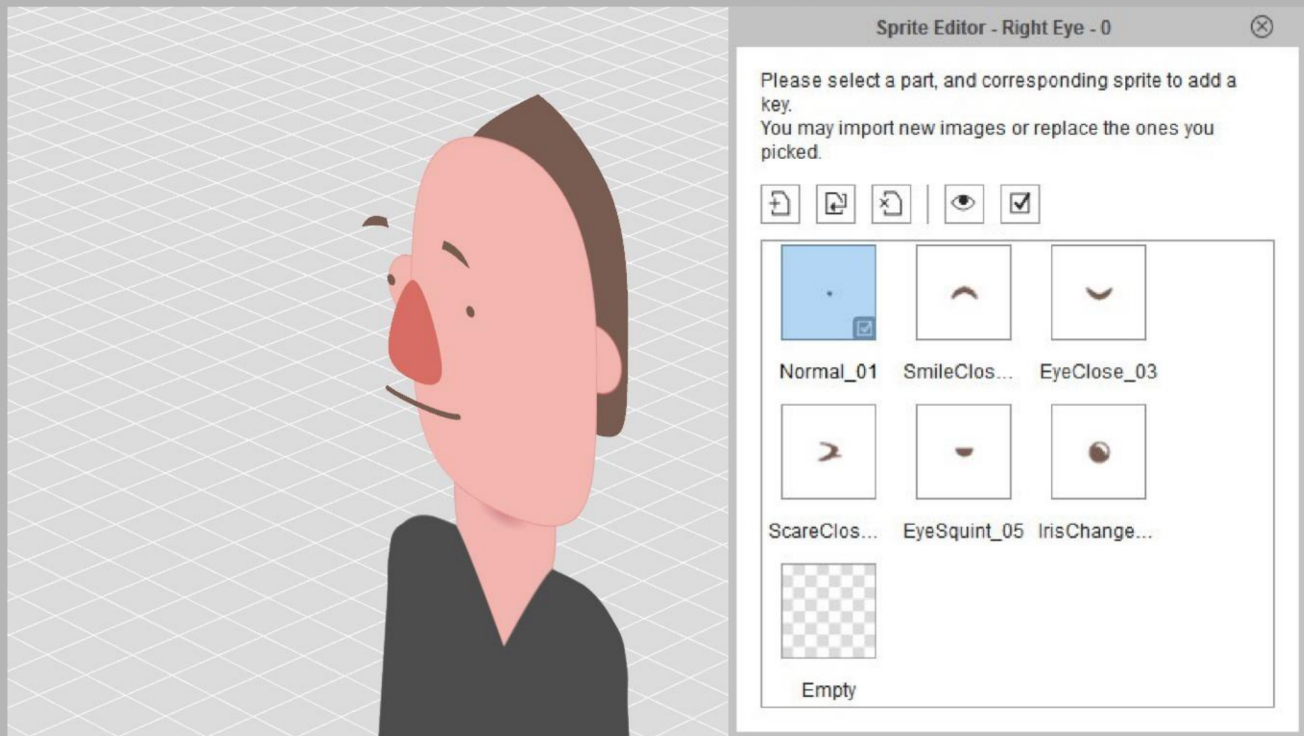
In this chapter, you will learn how to compose a perform-able talking head with existing facial feature contents. These facial features can be individually saved as re-usable templates for any other characters.

6.1 Faces Puppeteer-able

The character created in the previous chapter can not perform any facial expressions or rotate its head when puppeteered with the **Face Puppet** panel. It is because the character head is simply an image in the **Head** body part (as shown in the illustration below), but not in the **Head** sprite of the facial features animate-able by the **Face Puppet** panel. All pose slots for every facial feature sprite (take the eye sprite as an example) are empty:



The facial feature sprites of a head that are animate-able by the **Puppet Panel** should be layered; all pose slots of every facial feature sprite (take the eye sprite as an example) should be filled up as shown below:

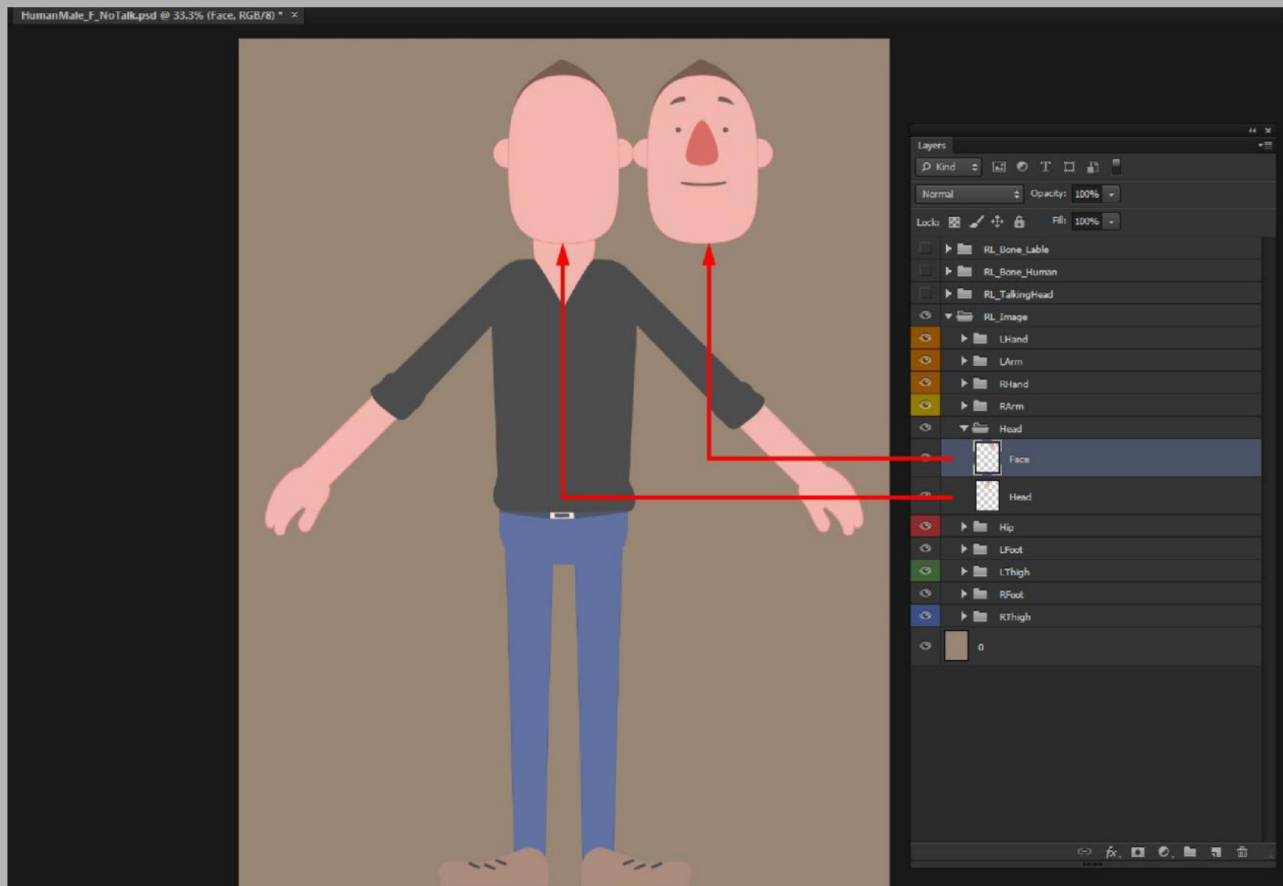


6.2 Applying Embedded Facial Features

File Utilized: **Completed character PSD from Chapter 4**

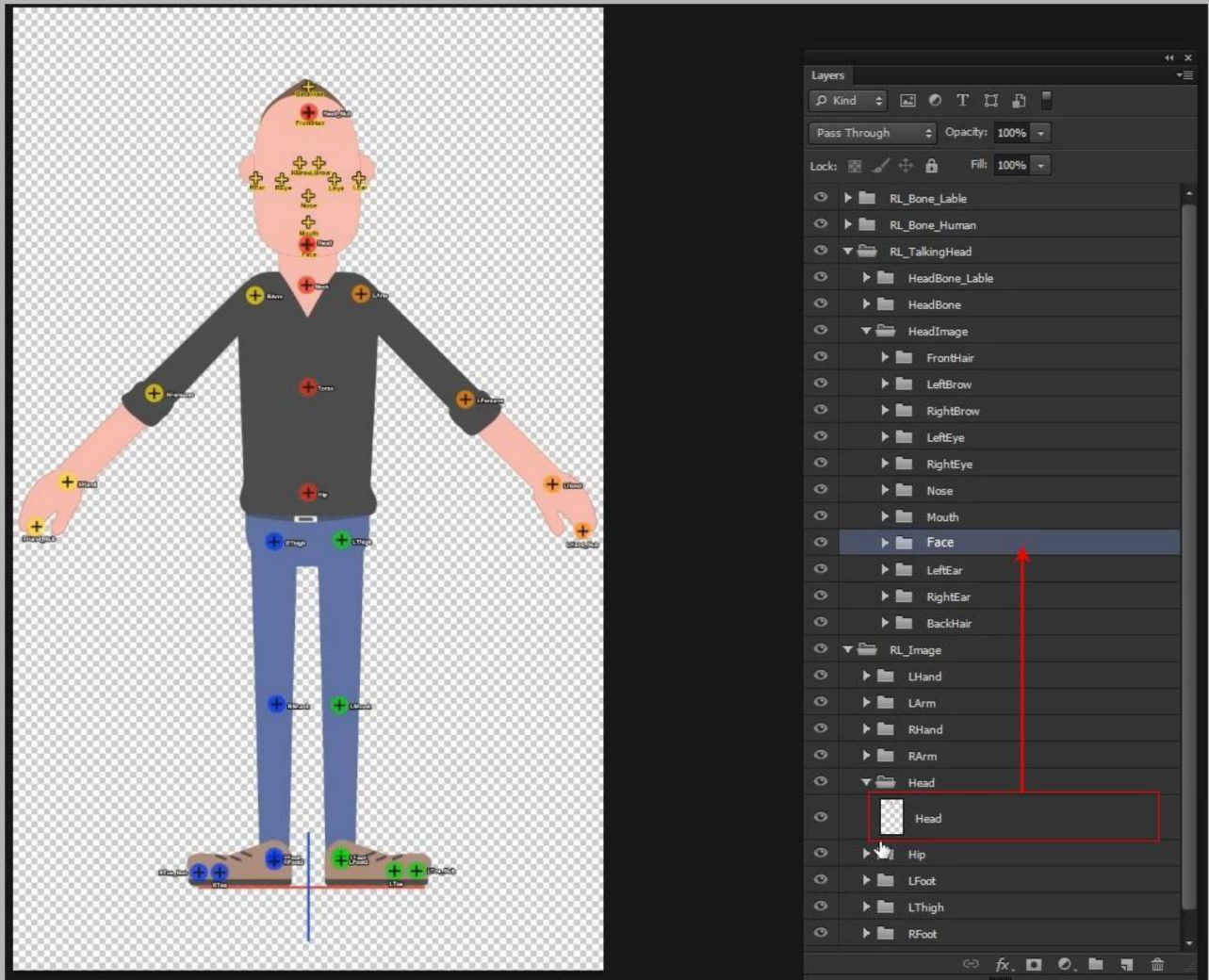
In this section, the G3 character PSD template will be used and modified so that the face sprite is the only facial feature being loaded into **Cartoon Animator**. The rest of the facial features will be composed by the embedded templates from the **Content Manager**.

1. Open the **RLImage > Head** folder. There are **Face** image layers painted with facial features, and a **Head** layer containing just the face.



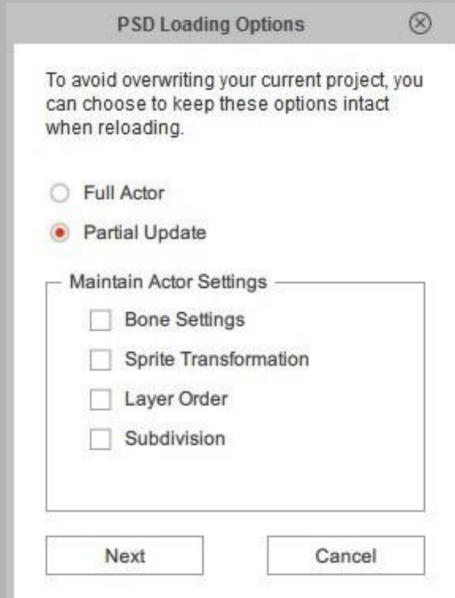
2. Delete the **Face** layer because although it has facial features, they cannot be puppeteered.

3. Drag and move the **Head** layer into the **RL_TalkingHead > HeadImage > Face** folder.

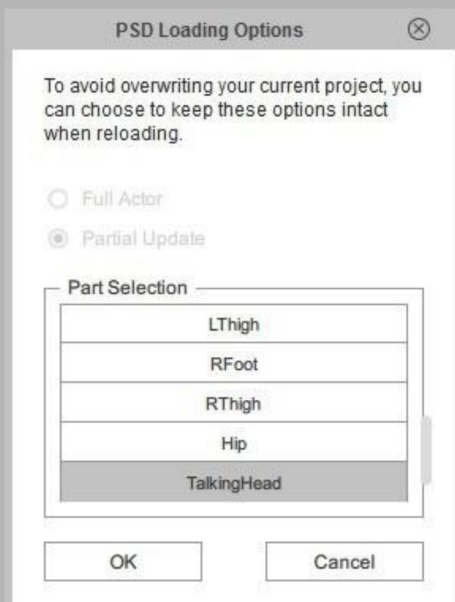


4. Save the PSD template document.

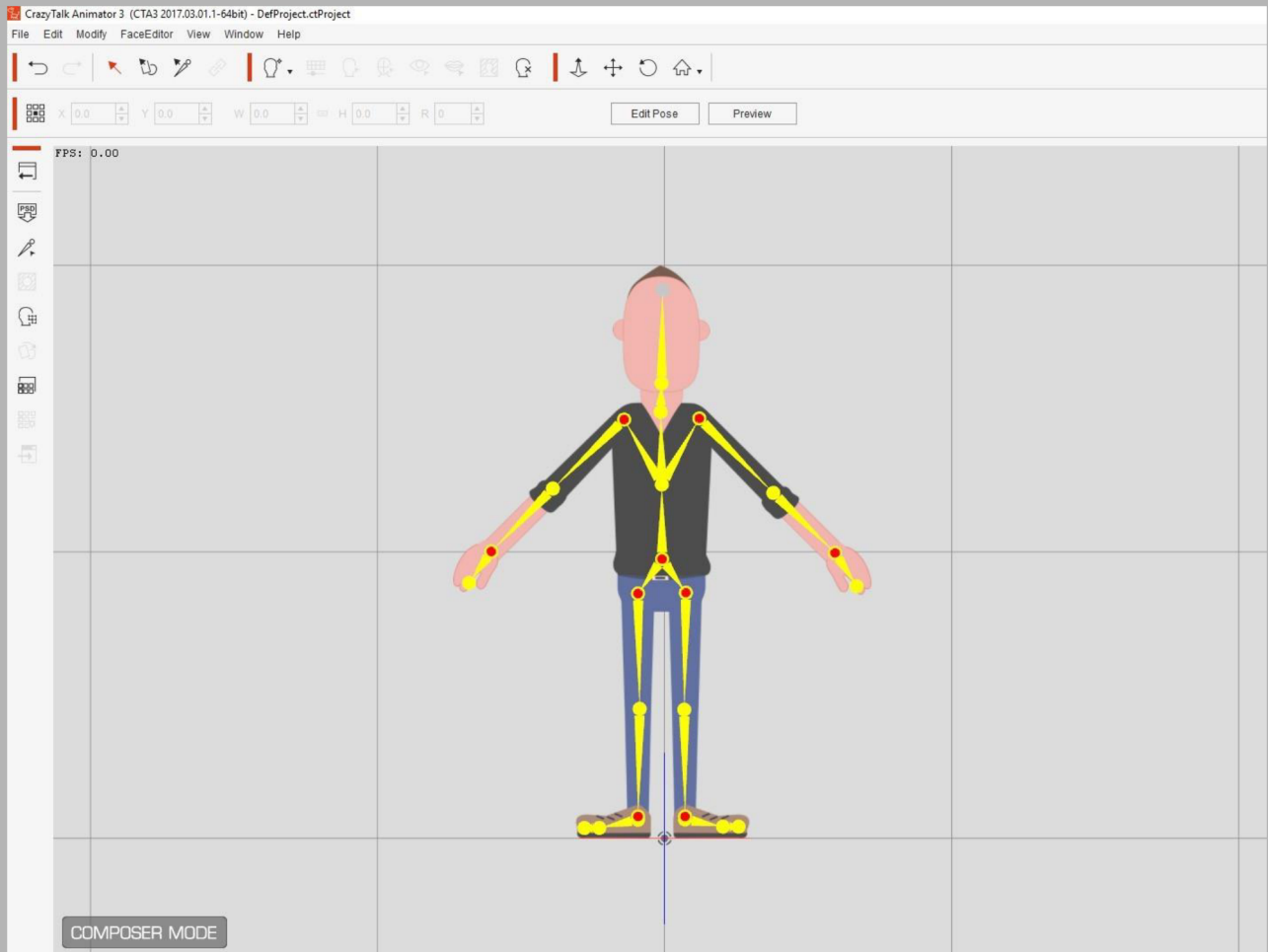
5. Go back to **Cartoon Animator**, select the character being created in the previous chapter and switch to the **Composer Mode**.
6. Click the **Import PSD Assets** button and load the **PSD** template file adjusted after Step 4. You will be asked the importing method.



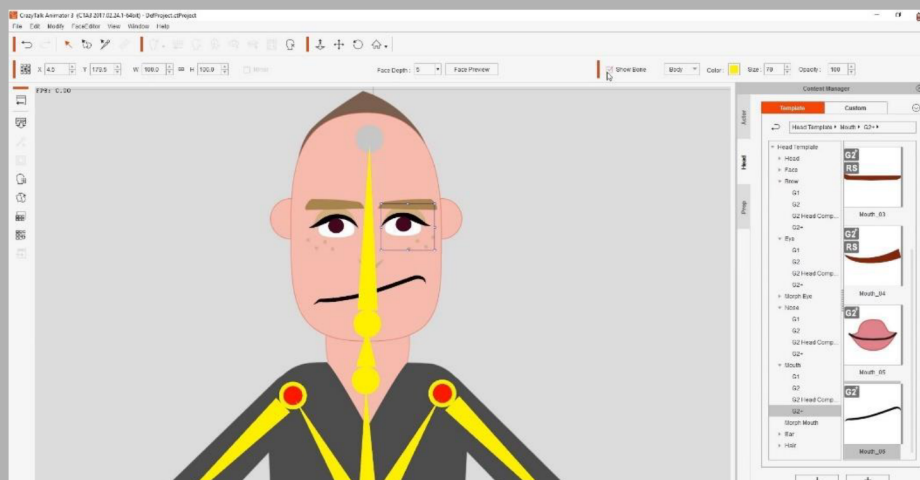
7. Choose the **Partial Actor** button but do not check the boxes because you only need to update the head and keep the settings for the other body parts. Click the **Next** button.
8. You will be asked to choose a bone for updating the sprites, and the sprites of the sibling bones. Select the **TalkingHead** from the list. Click the **OK** button.



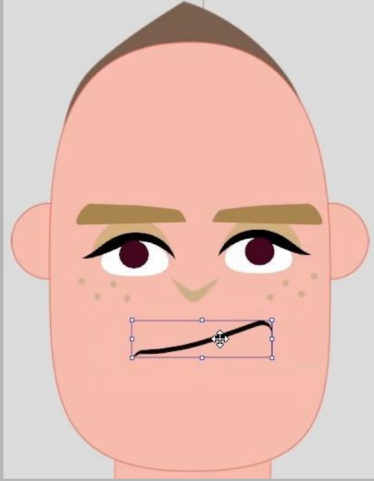
9. The character's face will be updated into an empty one without any facial features.



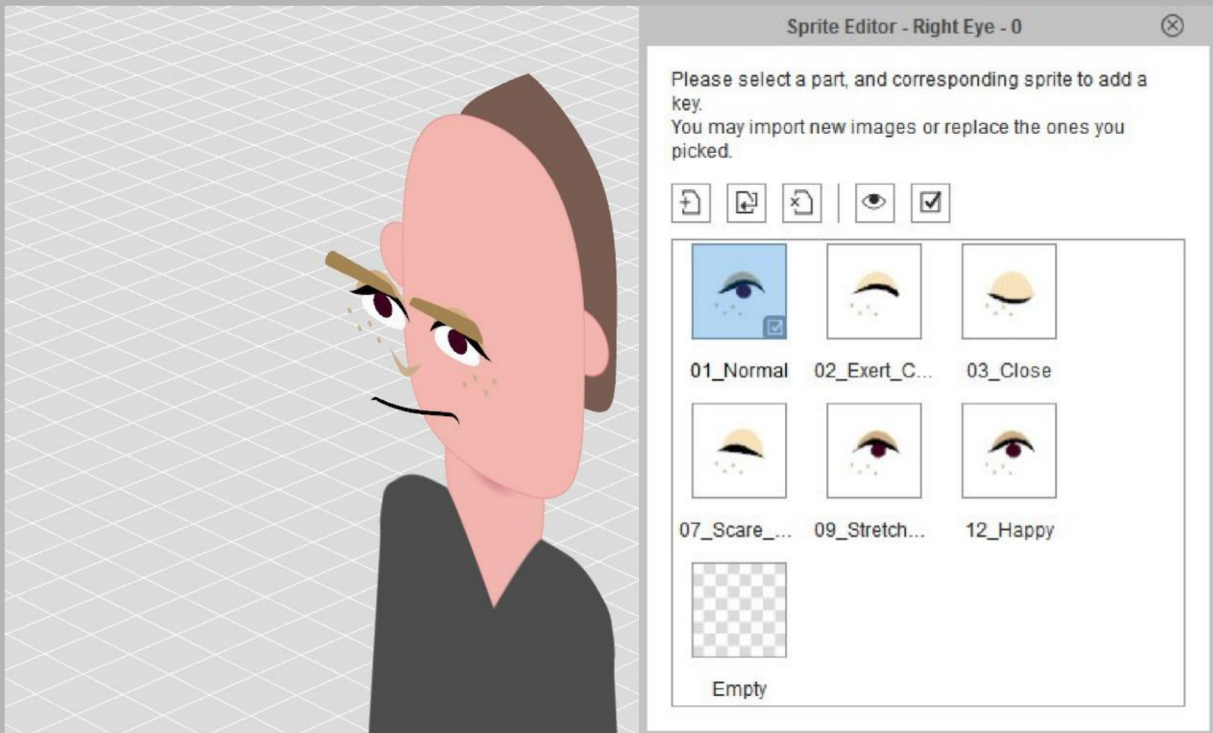
10. In the **Content Manager**, find the **Head > Head Template** folder and apply the **G2+** facial features.



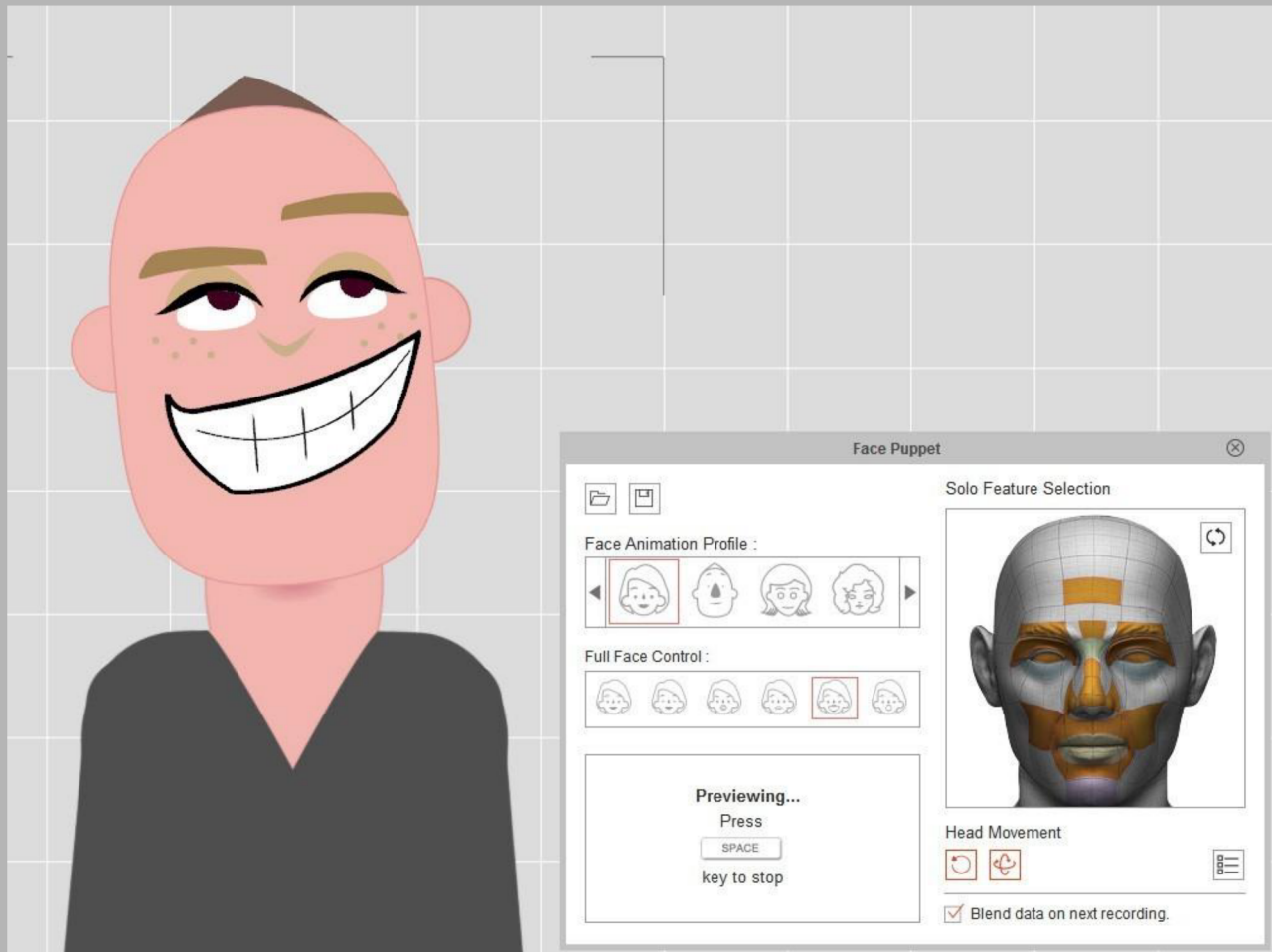
11. Transform the facial features if necessary.



12. Return to the **Stage** mode. The facial features are now in different layers with depths. And the poses of each facial feature sprite (take the eye as an example) are completely filled.



13. You can then use the **Face Puppet** panel to animate the face for creating facial expressions.



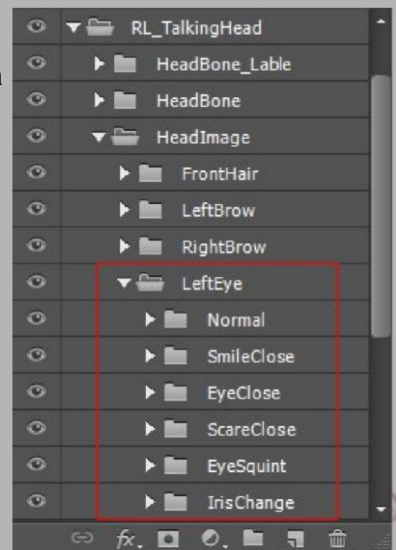
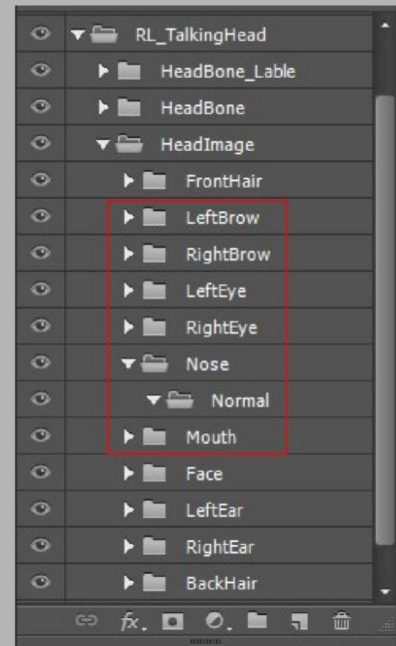
Chapter 7

Creating Talking Head – Loading Facial Features from PSD Image Resource

In this chapter, you will learn how to create a perform-able talking head by loading facial features from the PSD image resource file. Thus you can create unlimited custom facial features instead of using the templates from the **Content Manager** in **Cartoon Animator**.

7.1 About the Facial Features

- “**Normal**” pose in a sprite:
 - The first pose found in **brows, eyes, nose, and mouth**, is named **01_Normal**. And the **01_Normal** pose is the initial pose for the sprite.
 - The **Smooth Facial** technique in **Cartoon Animator** generates expressions for facial features by deforming the **01_Normal** pose.
 - The template files include the **Elastic_Folks_Front.psd** and **Low-res_Talking_Head.psd**, and they must be under the **Normal** folders for brows, eyes, nose and mouth groups.
- More required poses for a sprite:
 - When the expressions cannot be done by deforming the “**Normal**” pose, more pose images are required. You are allowed to add more element poses to the **Eyes** and **Mouth** sprites.

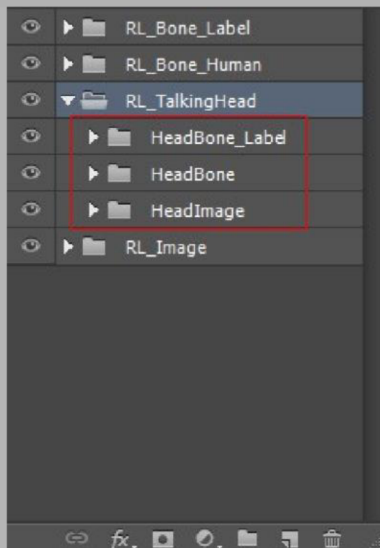


7.2 The Introduction of Template and Element Sourced PSD's

File Utilized:	01_PSD_Templates / Human_Front_Full_Template.psd
	02_PSD_Image_Resources / 01_Human / Low-res_Talking_Head.psd

In the **RL_TalkingHead** group folder of the **Human_Front_Full_Template.psd**, there are three sub-group folders:

- **HeadBone_Label**: The labels of names for each bone are stored in this group folder.
- **HeadBone**: The bones themselves are stored in this group folder.
- **HeadImage**: The facial feature images are stored in this group folder.



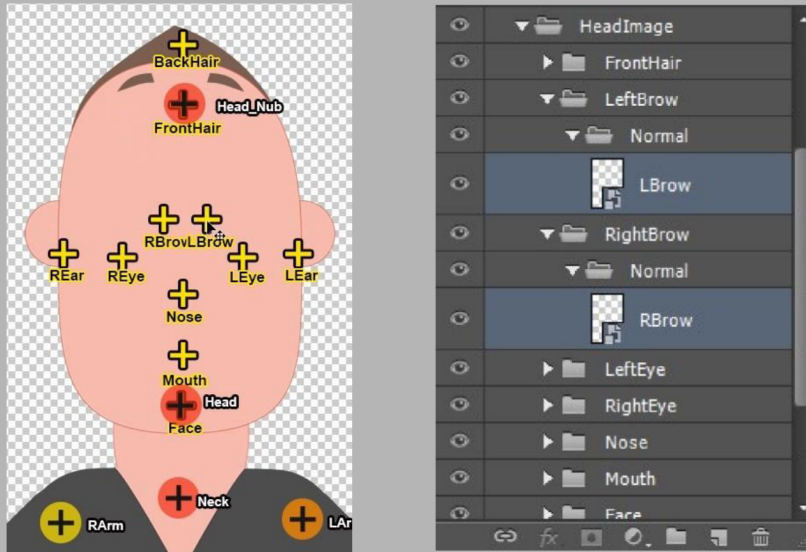
As for the **Low-res_Talking_Head.psd**, you can see all the necessary source images for forming the facial features and expressions. In this chapter, you will learn how to move the source elements into the correct folder in the character **PSD** template file. The first facial feature to be taken as an example is the brow.

Facial Elements

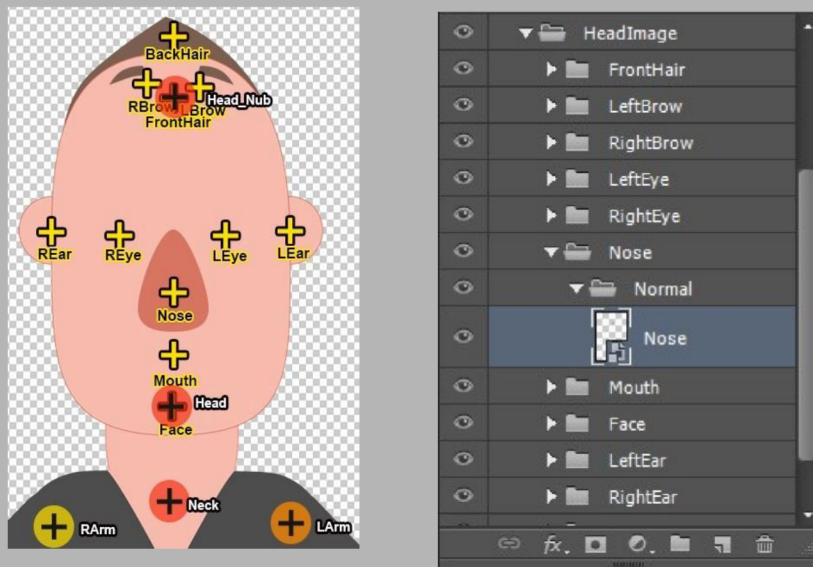


7.3 Setting Brows and Nose Sources

1. Drag and drop the left and right brows from the **HighResolutionHeadElement.psd** into the corresponding folder, **HeadImage > LeftBrow > Normal** and **HeadImage > RightBrow > Normal** group folders in the human PSD template document.



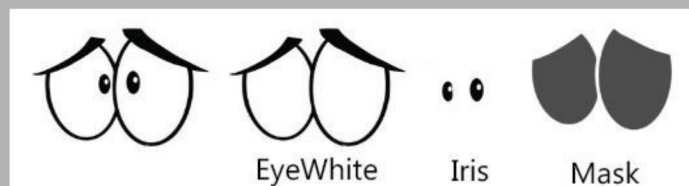
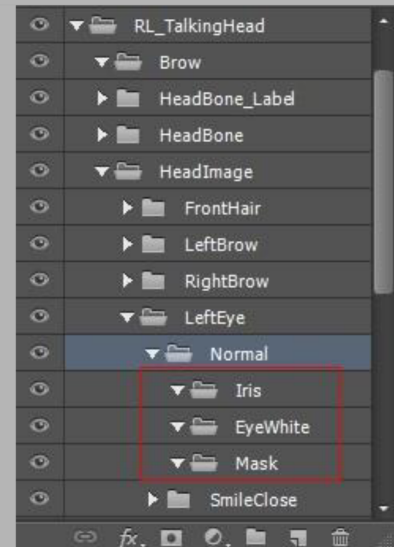
2. Drag and drop the nose element to the **HeadImage > Nose > Normal** folder.



7.4 The Basics of Eyes

The procedure for creating an eye element is somewhat different from the other facial features; you need to follow a specific workflow to generate one eye that is able to roll the eyeball in **Cartoon Animator**.

- An eye basically consists of three parts: The **white**, the **iris**, and the **mask**. Therefore, you will see three sub-folders in a pose group folder.
 - **Mask**: It is used to determine the range for displaying the iris when the iris is rolling.
 - **EyeWhite**: This folder stores the image layer of the eye white.
 - **Iris**: The Iris folder stores the iris image layer.
- The **Mask** and **EyeWhite** folders can be empty.
- If only the **Iris** and the **EyeWhite** are filled with an image, then the one in the **EyeWhite** will automatically be taken as the mask.
- To fill up the three groups is the standard, and the best policy.

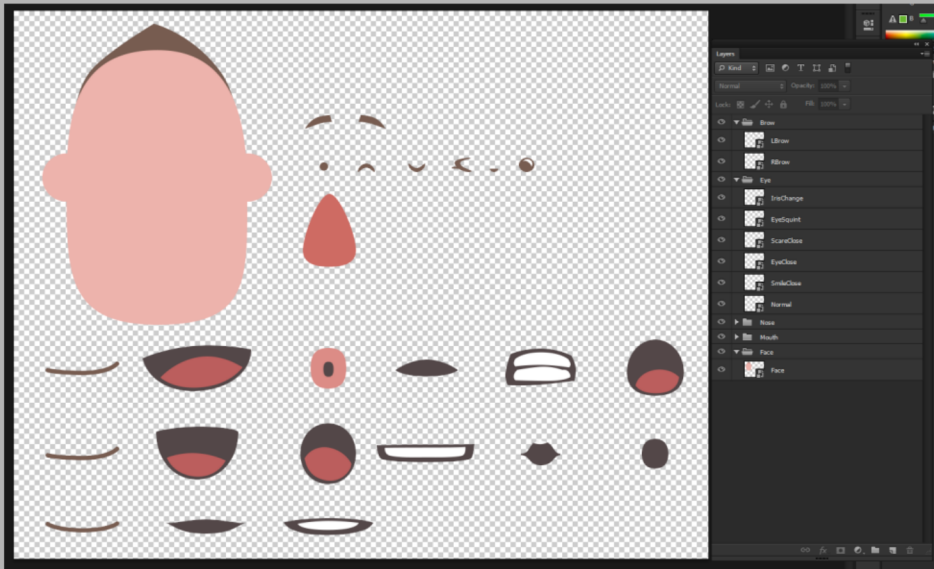


Each of the eyes is composed of three layers

7.5 Setting and Creating Eyes

File Utilized: 02_PSD_Image_Resources / 01_Human / Low-res_Talking_Head.psd

Taking the **Low-res_Talking_Head.psd** as an example, there is only iris for the character's eyes. Therefore, the creation is as shown in the steps below:



Select all these iris pose layers.







Horizontally align them to the center by using the feature provided in the image editor.



These layers will look as the illustration below.

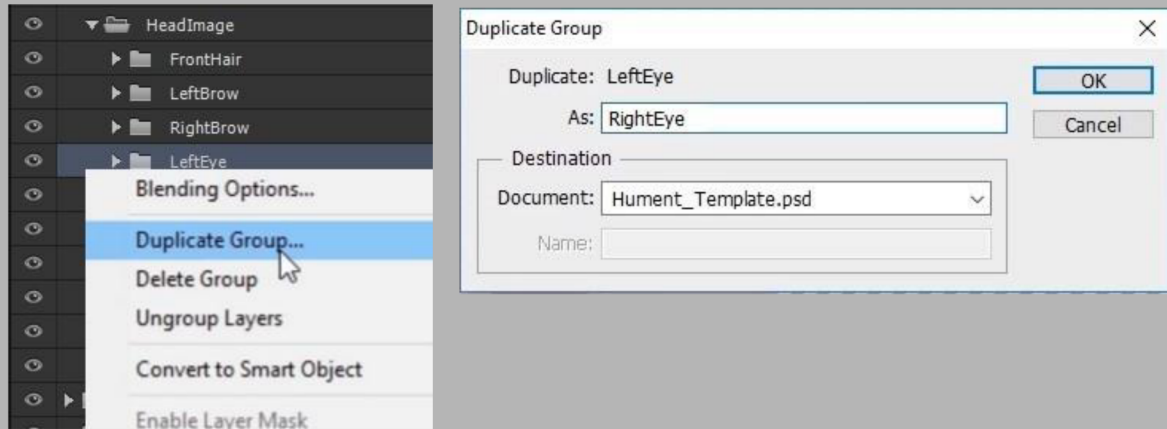


👁	▼	LeftEye
👁	▼	Normal
👁	▼	Iris
👁		 Normal
👁	▼	EyeWhite
👁	▼	Mask
👁	▼	SmileClose
👁	▼	Iris
👁		 SmileClose
👁	▼	EyeWhite
👁	▼	Mask
👁	▼	EyeClose
👁	▼	Iris
👁		 EyeClose
👁	▼	EyeWhite
👁	▼	Mask
👁	▼	ScareClose
👁	▼	Iris
👁		 ScareClose
👁	▼	EyeWhite
👁	▼	Mask
👁	▶	EyeSquint
👁	▶	IrisChange

In this case, the right eye and the left eye all look the same, so the right eye data can be duplicated from the left eye.

Delete the **RightEye** folder.

Duplicate the **LeftEye** group folder and rename it to **RightEye**.



Rename the newly generated folder into **RightEye**.

Transform the left and right eyes appropriately in accordance with the position of the eye bones.



7.6 Setting Mouth

The mouth-creating procedure is almost the same as the eye-creating one, all you need to do is to align the source pose images and then put them into the adequate folders in the human **PSD** template document.

1. Select all mouth pose layers in the **Low-res_Talking_Head.psd**.
 - Default Mouth for Facial Expression



- Viseme for Lip-sync



2. In order to make mouth animations look smoother, kindly follow the below guidelines:

- Alignment Guidelines :

1. Draw a horizontal reference line for the alignment of the mouth position.



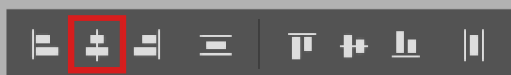
2. For all the mouth shapes that show teeth, align the lower limb of the upper teeth with the reference line.

3. For the other mouth shapes that do not show the teeth, align the upper limb of the upper lip with the reference line.

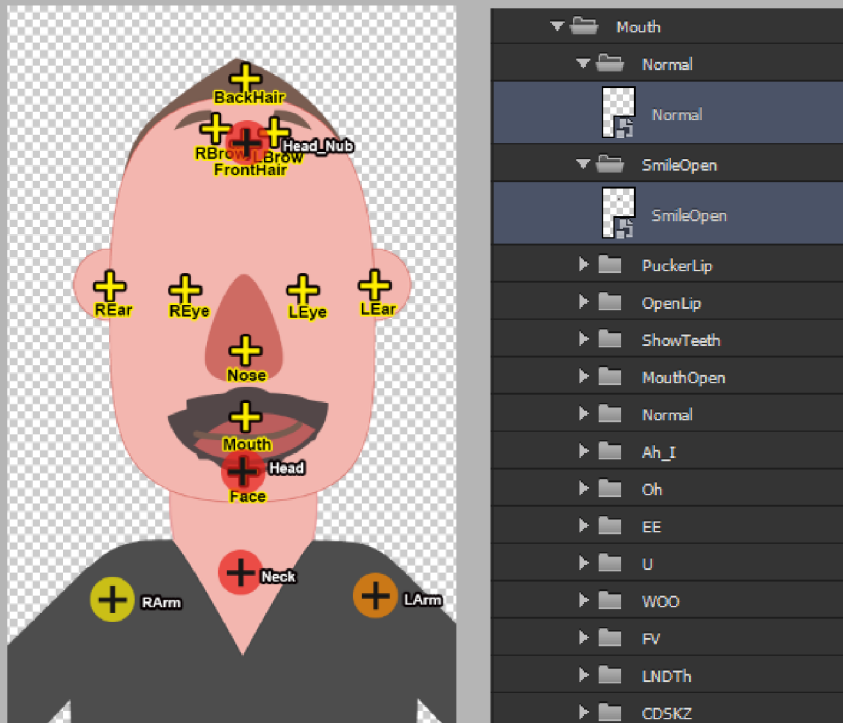
As shown below:



3. Horizontally align them to the center by using the feature provided in the image editor.



4. Drag and drop these layers into the **Elastic_Folks_Front.psd** document. Make sure that they are individually moved into the corresponding folders.



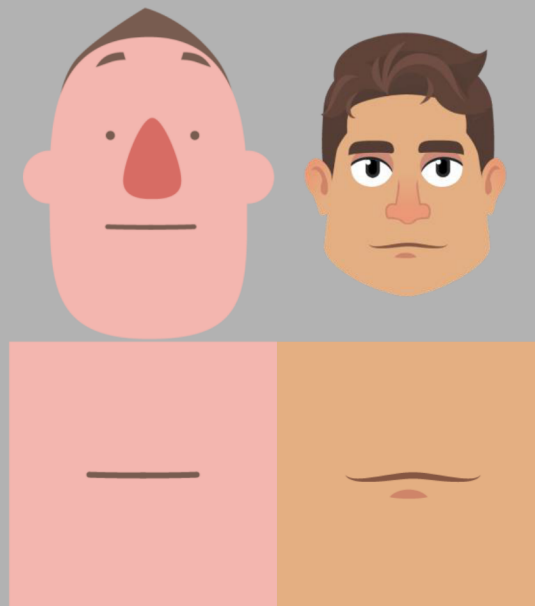
- Reference of drawing viseme for lip-sync:
 - There are two different mouth systems for facial expression performance in Cartoon Animator. One set of 9 is the viseme mouth for lip-sync (Figure 1.) Another set of 6 is the default mouth for facial expression (Figure 2.)
- Figure 1. Default Mouth for Facial Expression



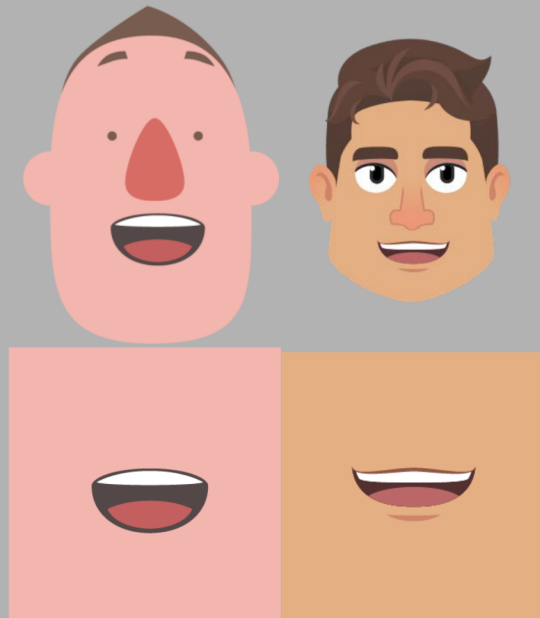
- Figure 2. Viseme for Lip-sync



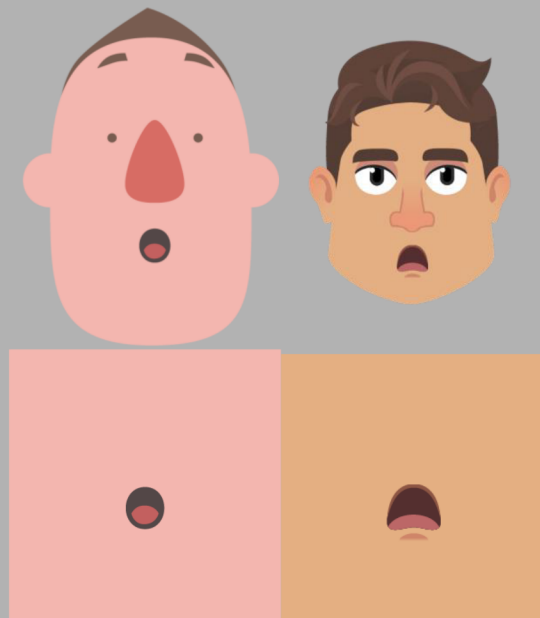
- The facial expression will be applied to the mouth when enabling the face expression function in Cartoon Animator. When drawing a mouth/viseme, please note that you do not draw expressions for the mouths.
 - Normal



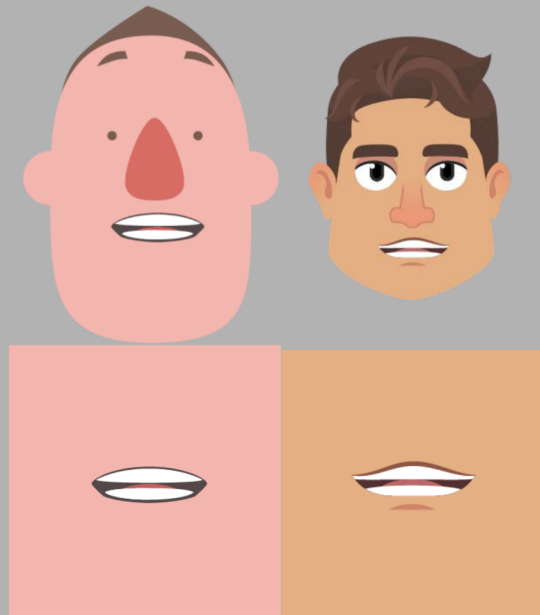
- Ah_I



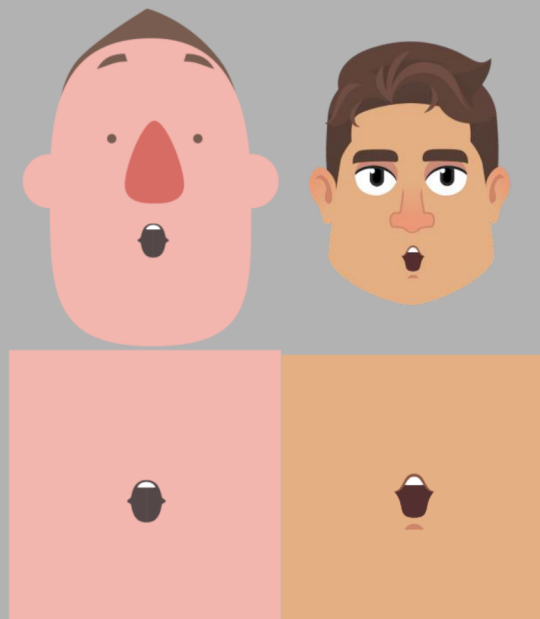
- Oh



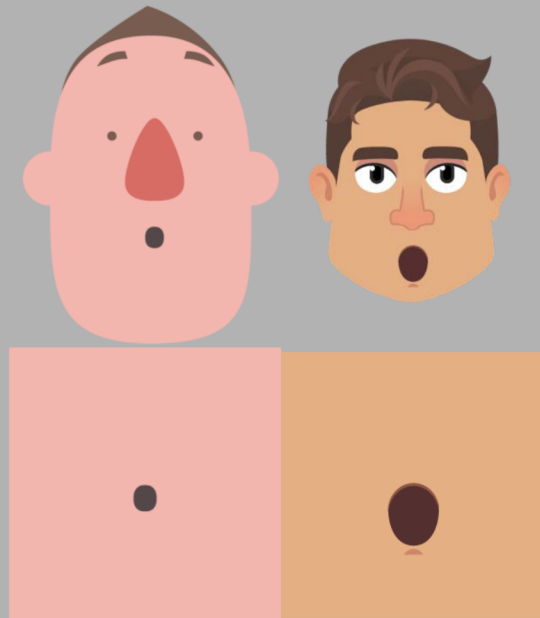
- EE



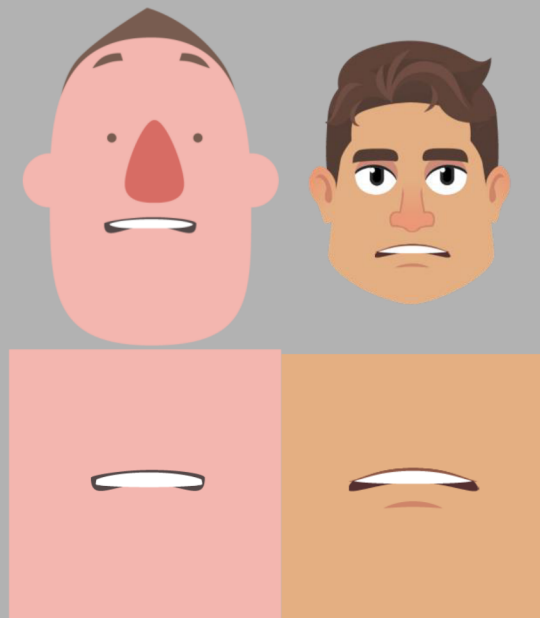
- U



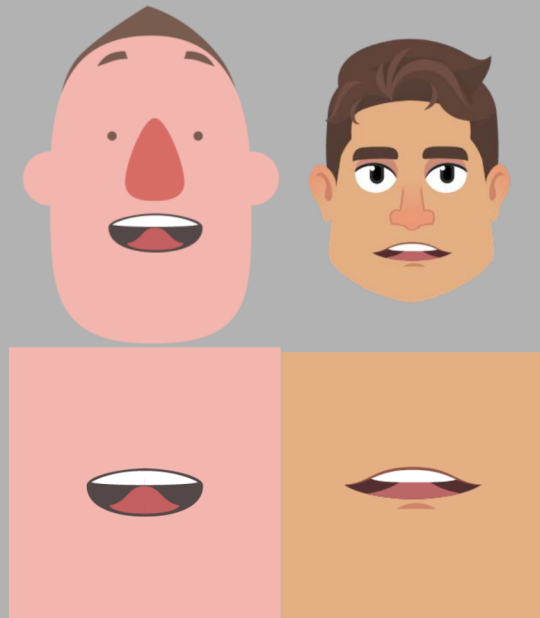
- WOO



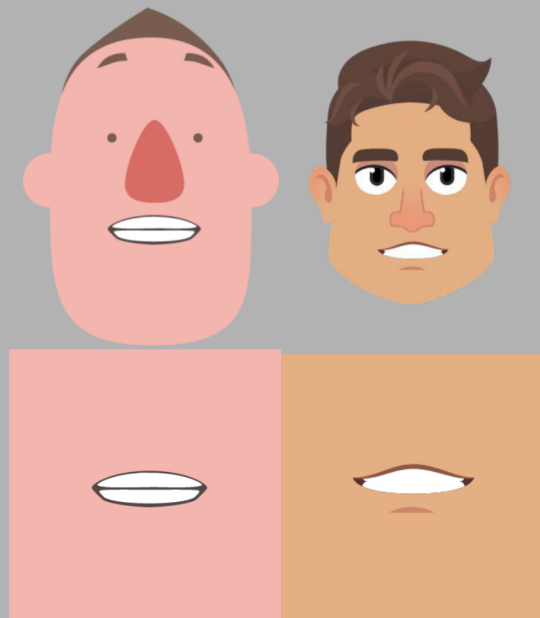
- FV



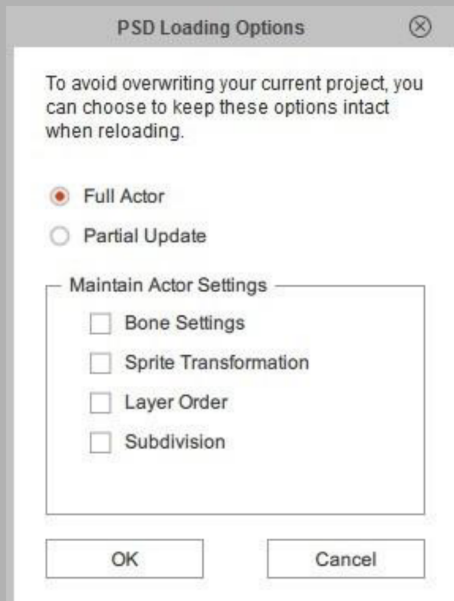
- L_TH



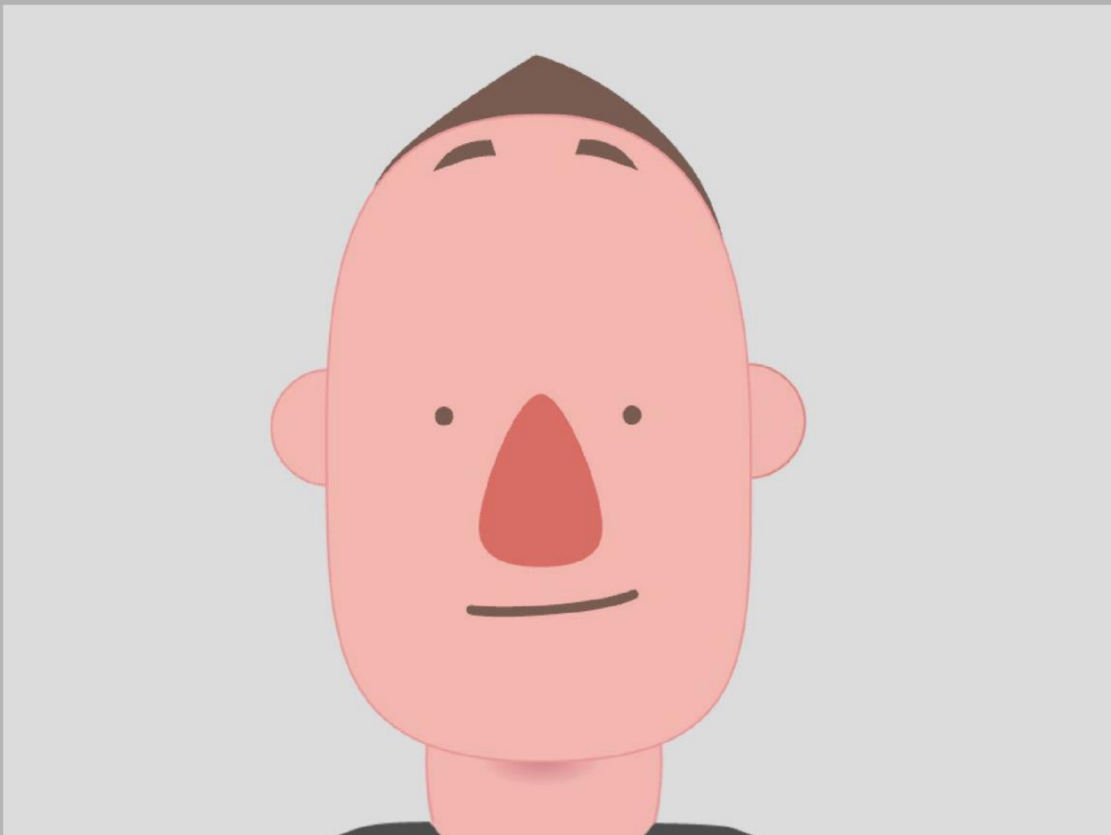
- CDKNSTZ



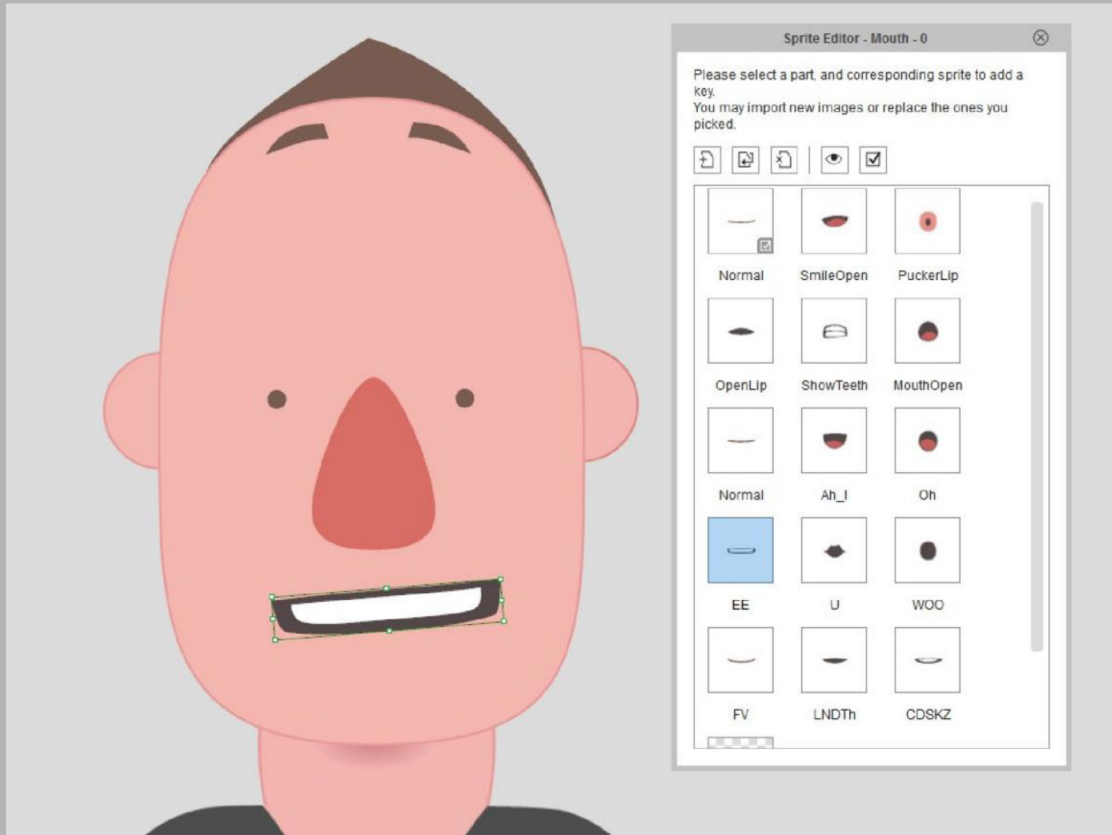
5. Go back to **Cartoon Animator**, select the character created in Chapter 3 and then switch to the **Composer Mode**.
6. Click the **Import PSD Assets** button and choose the **Full Actor** radio button to reload the PSD template.



7. The character will instantly be updated.



8. Open the **Sprite Editor** and check the poses for each facial feature (in this case, the mouth).

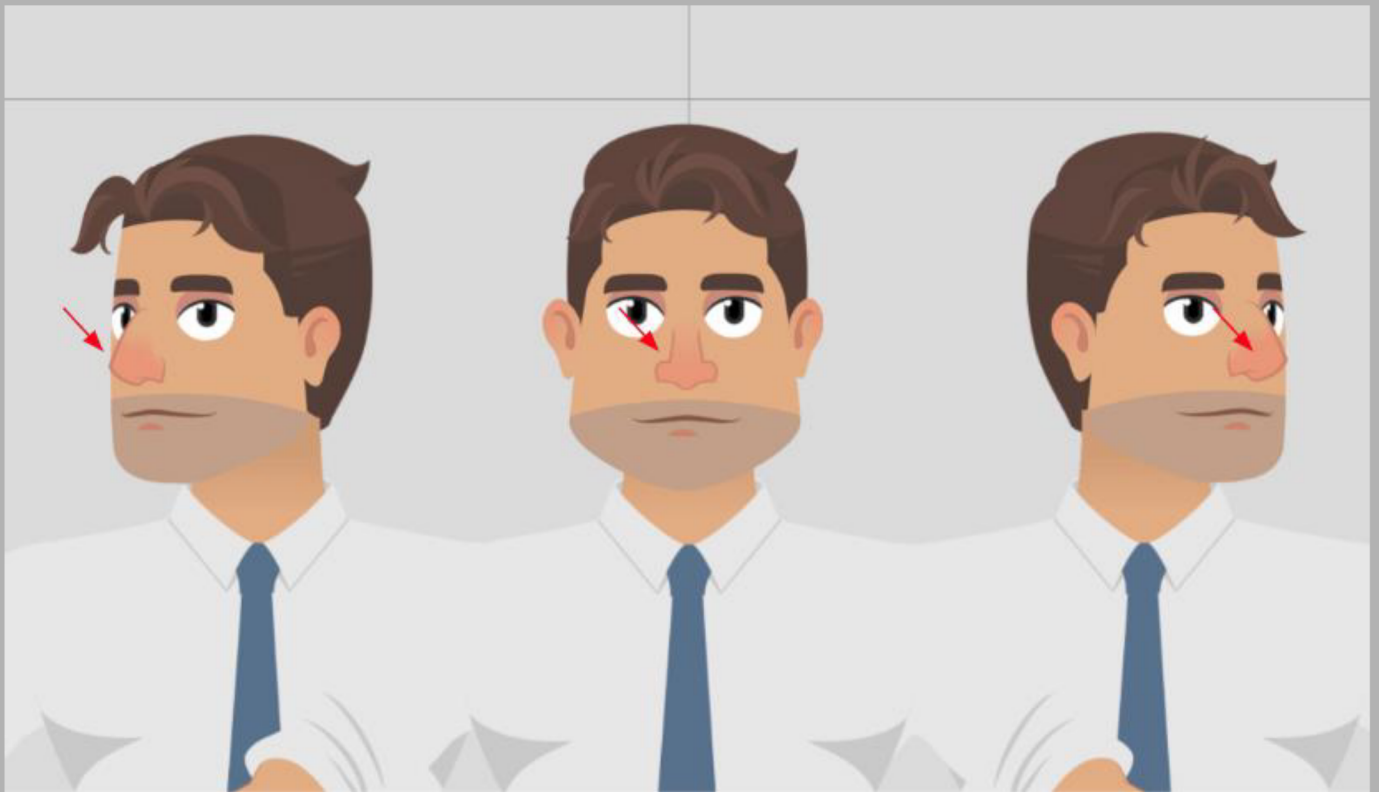


Chapter 8 Advance Creating 360 Talking Head

In Chapter 7, we taught you how to put a single angle image for the Talking Head in Photoshop.

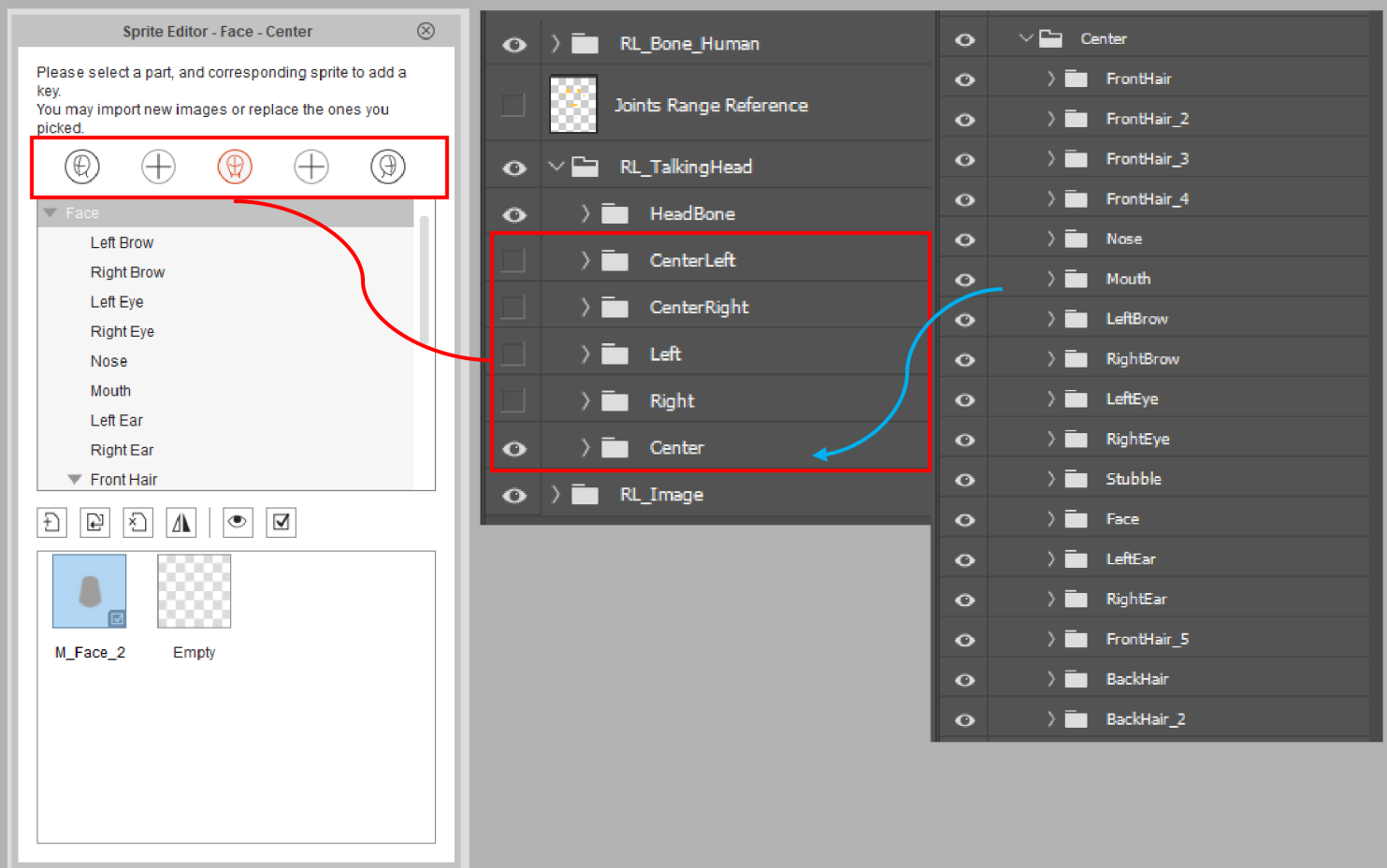
Chapter 8 will start with learning how to place sprite maps for different angels.

Take the following illustration as an example: when the same figure turns, the image for the nose will switch to three different pictures. Next, I will teach you how to put the corresponding textures into the right folders.

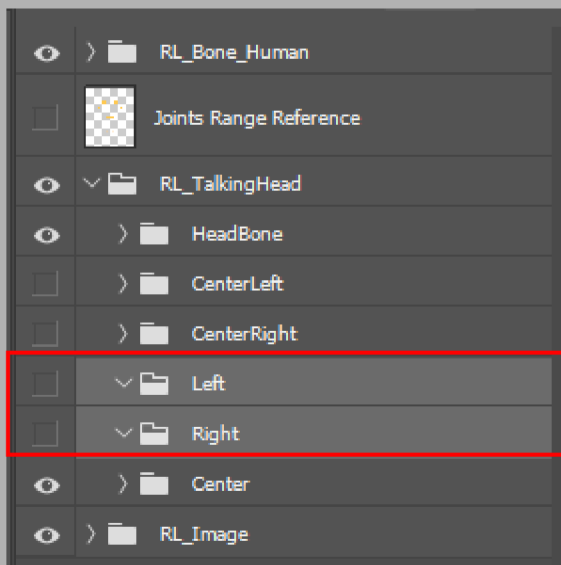


8.1 Creating Multi-Angles Character

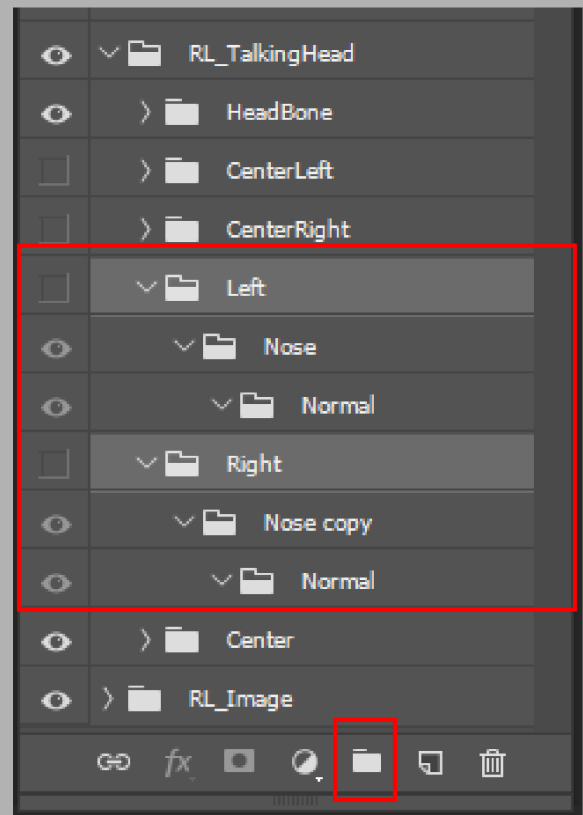
- Open **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Creating Multi-Angles Character\Philipp_F_Start.psd**
- Inside the **RL_TalkingHead** folder, you will see five additional folders for **Center Left, Center Right, Left, Right, and Center**. These five folders correspond with the five angles inside Composer's Sprite Editor.
- The new PSD workflow will address the five different angles and rename the "HeadImage" to "Center" while maintaining equivalence.
- Open the **Center** folder and we will see all of the images that make up the front-facing angle.



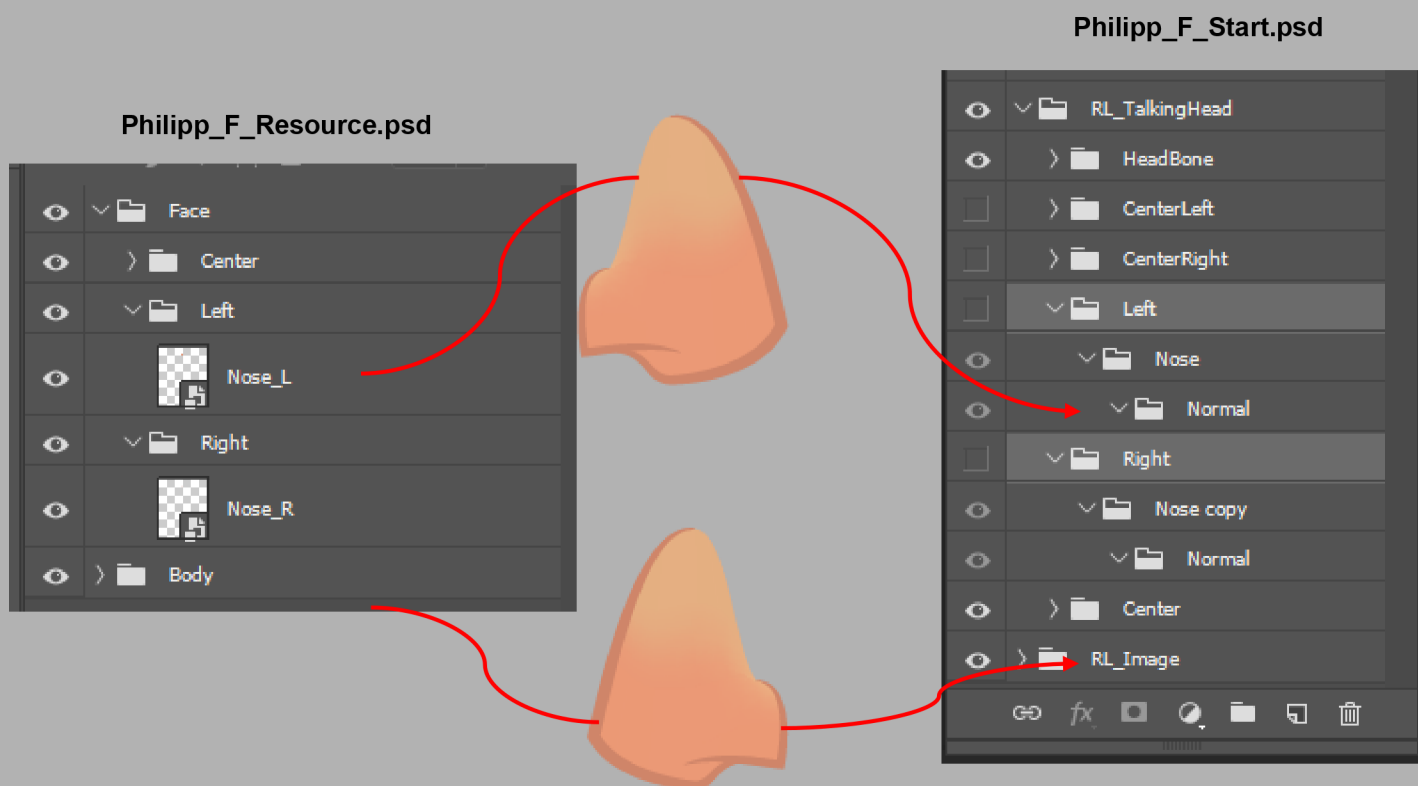
- Open **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Creating Multi-Angles Character\Philipp_F_Resource.psd**
- Open the **Left** and **Right** folder under the **Face** layer to access to the left and right nose angles.
- Go back to **Philipp_F_Start_psd** as we'll need to add the nose hierarchy to the **Left/Right** folders.
- Note: We'll only need to add a new layer structure for the five features; There is no need to create a completely new structure.



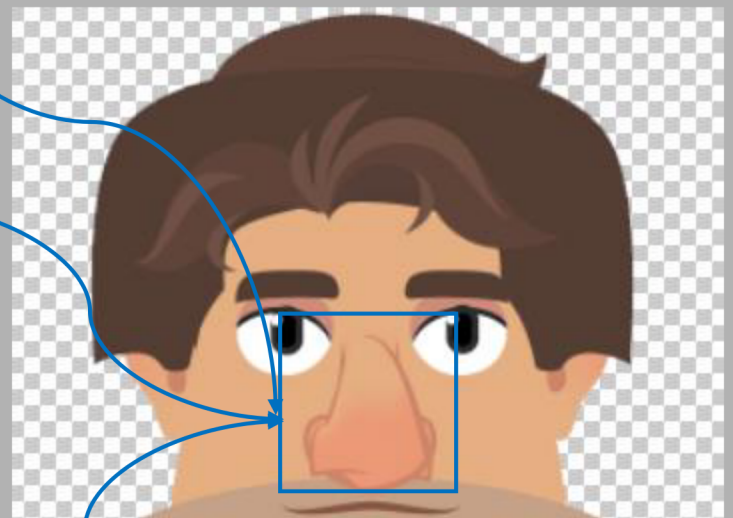
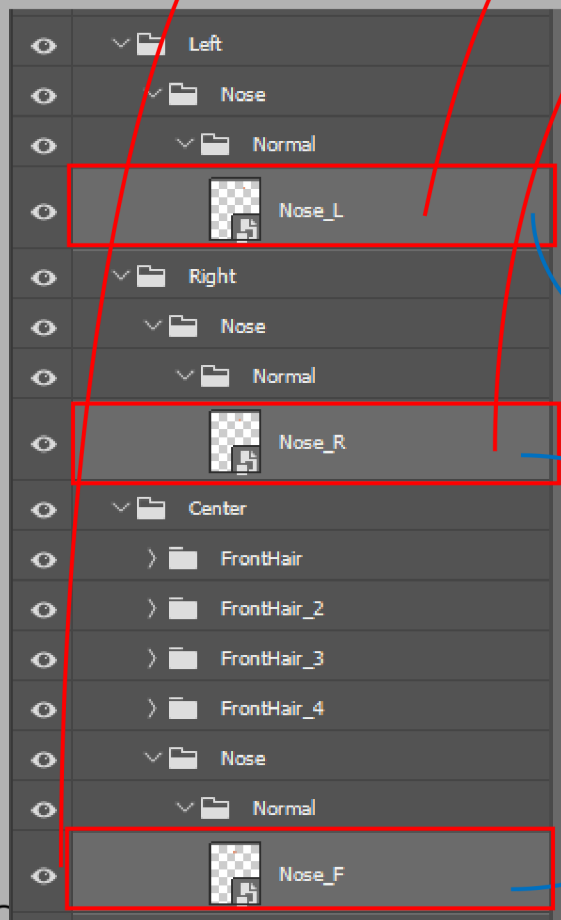
Philipp_F_Start.psd



- Copy **Nose_L** and **Nose_R** from **Philipp_F_Resource.psd** and paste into their corresponding folders inside **Philipp_F_Start.psd**.



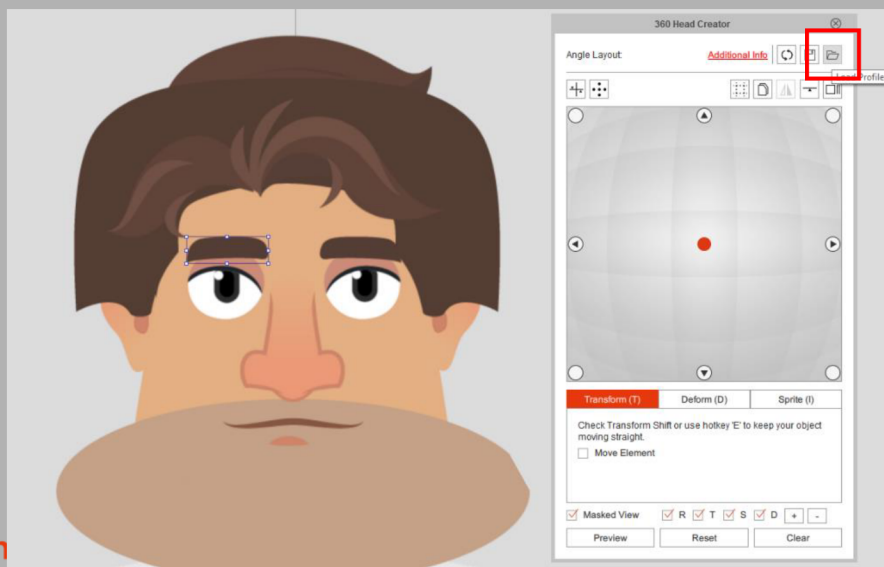
- Align the **Nose_L** and **Nose_R** images to the face according to the following illustration.
- Save the file.



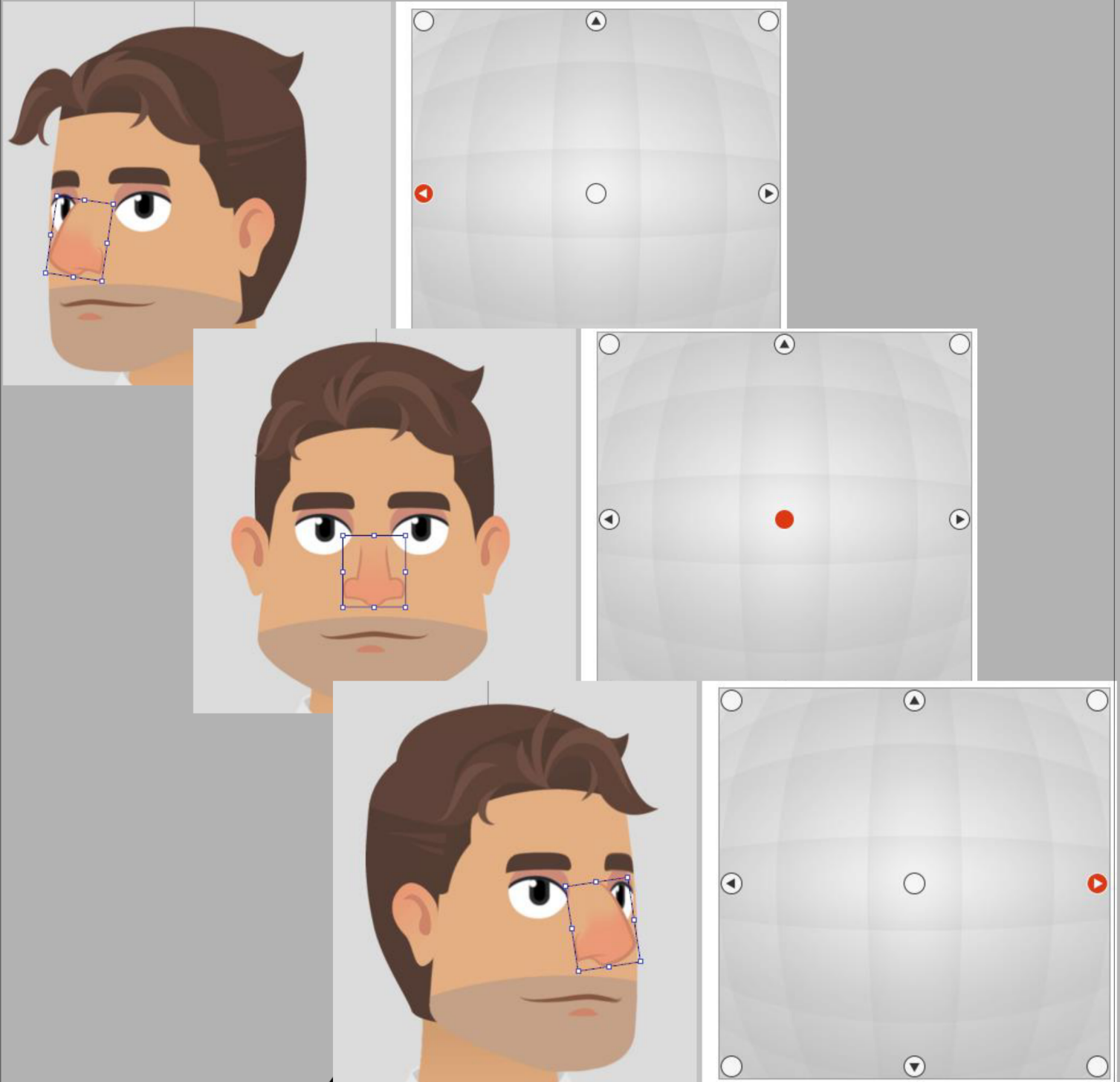
- Creating Multi-angle Characters
- Drag and drop the configured file into CTA.
- Open **360 Head Creator** tool while in **Composer Mode**.



- Click on **Load Profile** to import pre-configured head turn data file: **PhilippF.sad**
 - File location: **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Creating Multi-Angles Character\PhilippF.sad**
 - This **.sad** file contains a pre-configured Mask, therefore, you will notice that the beard is partially occluded by the shape of the face.
 - For detailed steps, see section 8.4

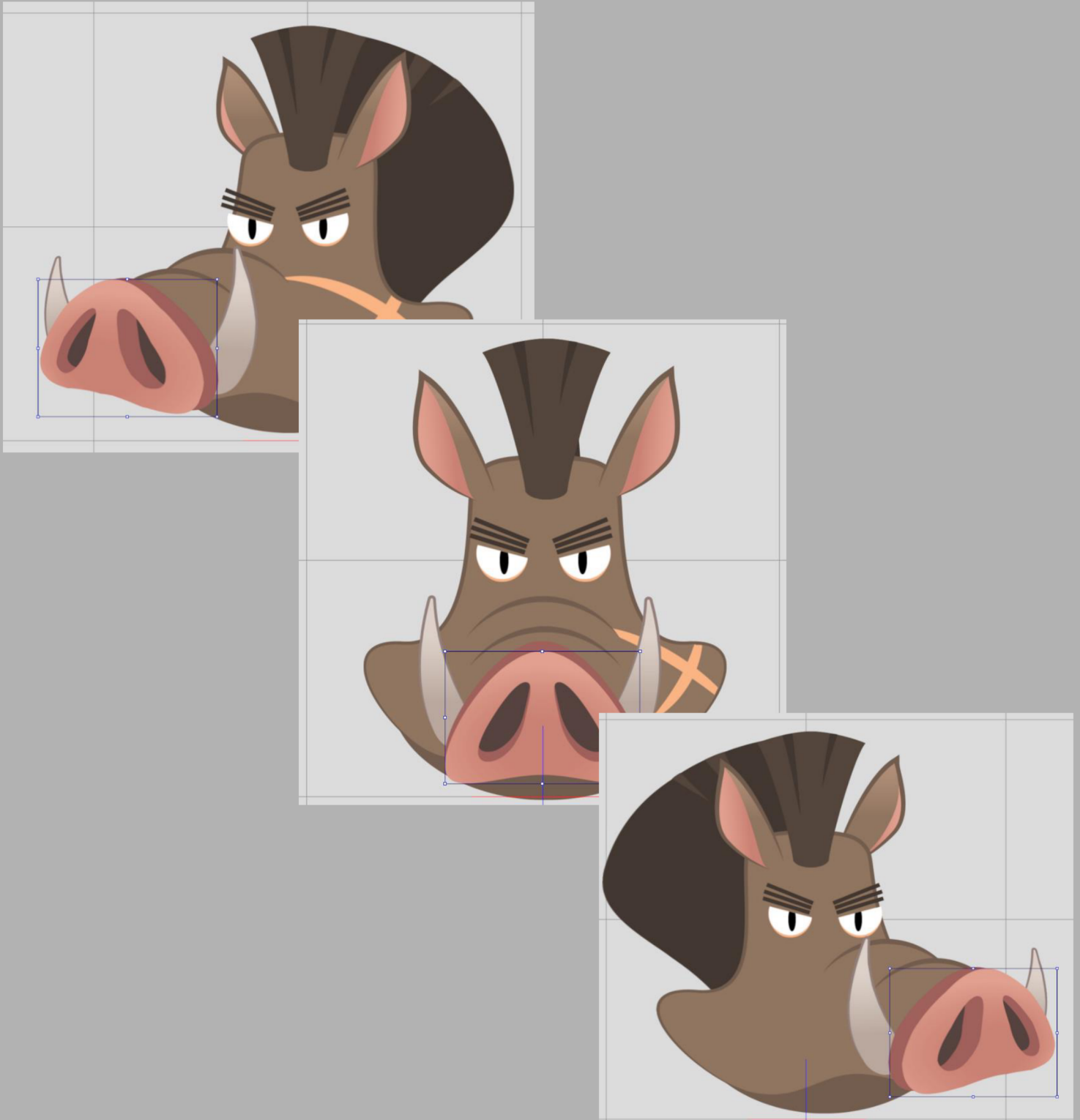


- Click on the center, left and right **Angle Points** to observe the switching of the nose image.
- Press **Preview** to see the head turn in action.
- The completed example is located here:
CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Creating Multi-Angles Character\Philipp_F_Finish.psd



8.2 Creating Multi-Layers Facial

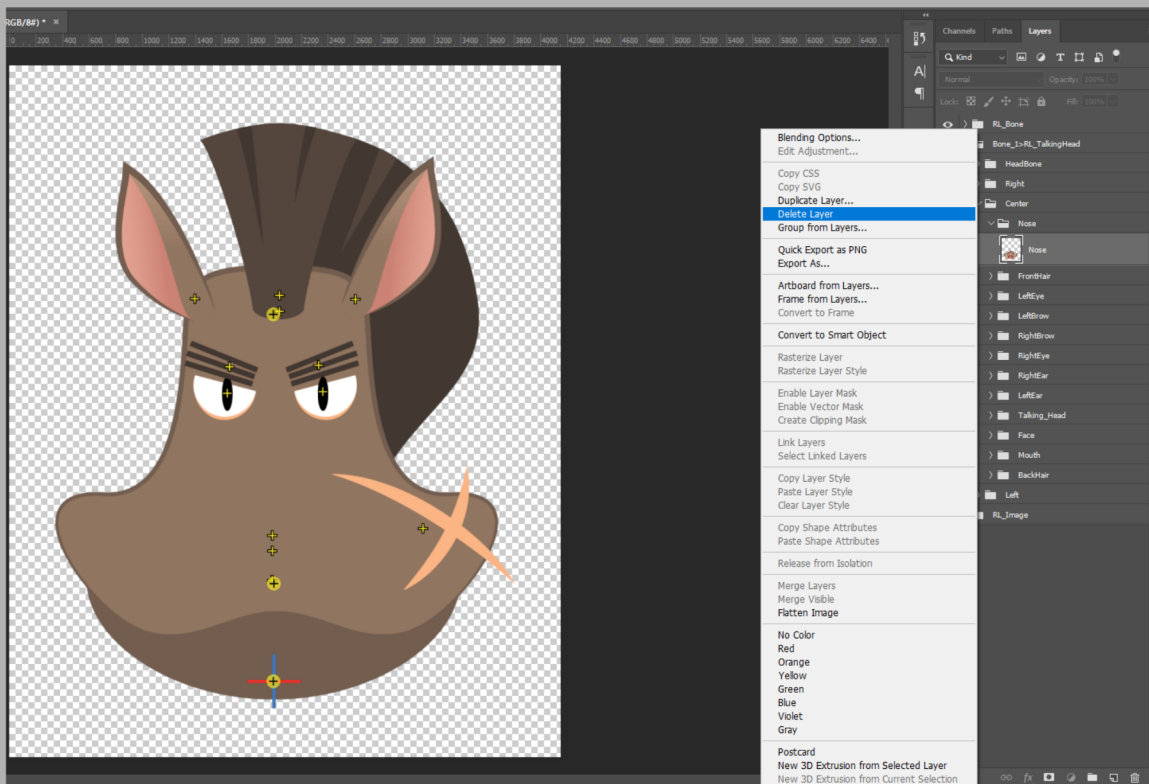
This article will go over correlating the different Sprite layers inside Photoshop without having to use the manual **Attach** method in CTA4 to quickly assemble and setup the head turn.



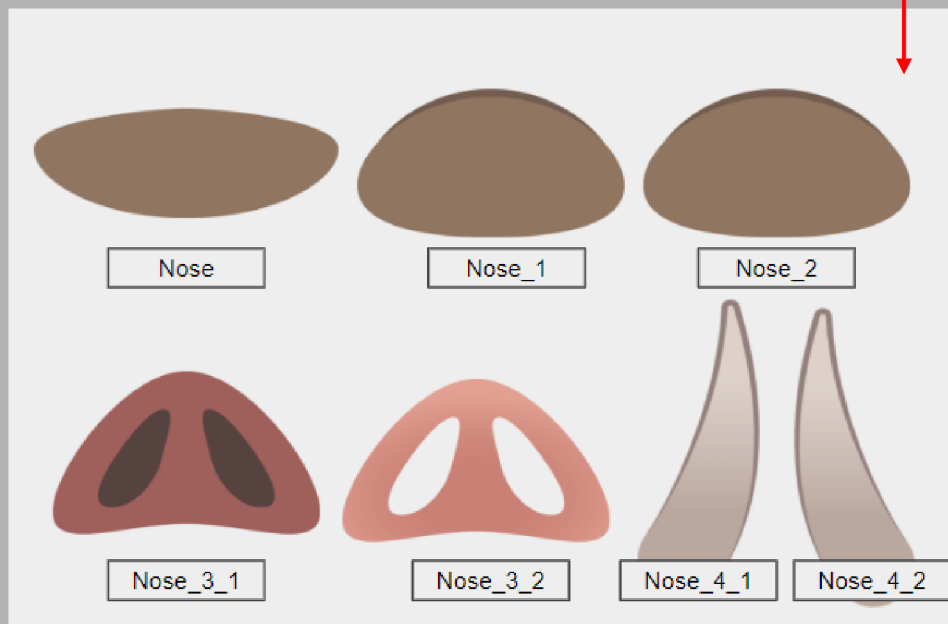
- Open CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\02_360_Animal\Creating Multi-Layers Character\Scrofa_Start.psd
- We will use this file for the following exercise.



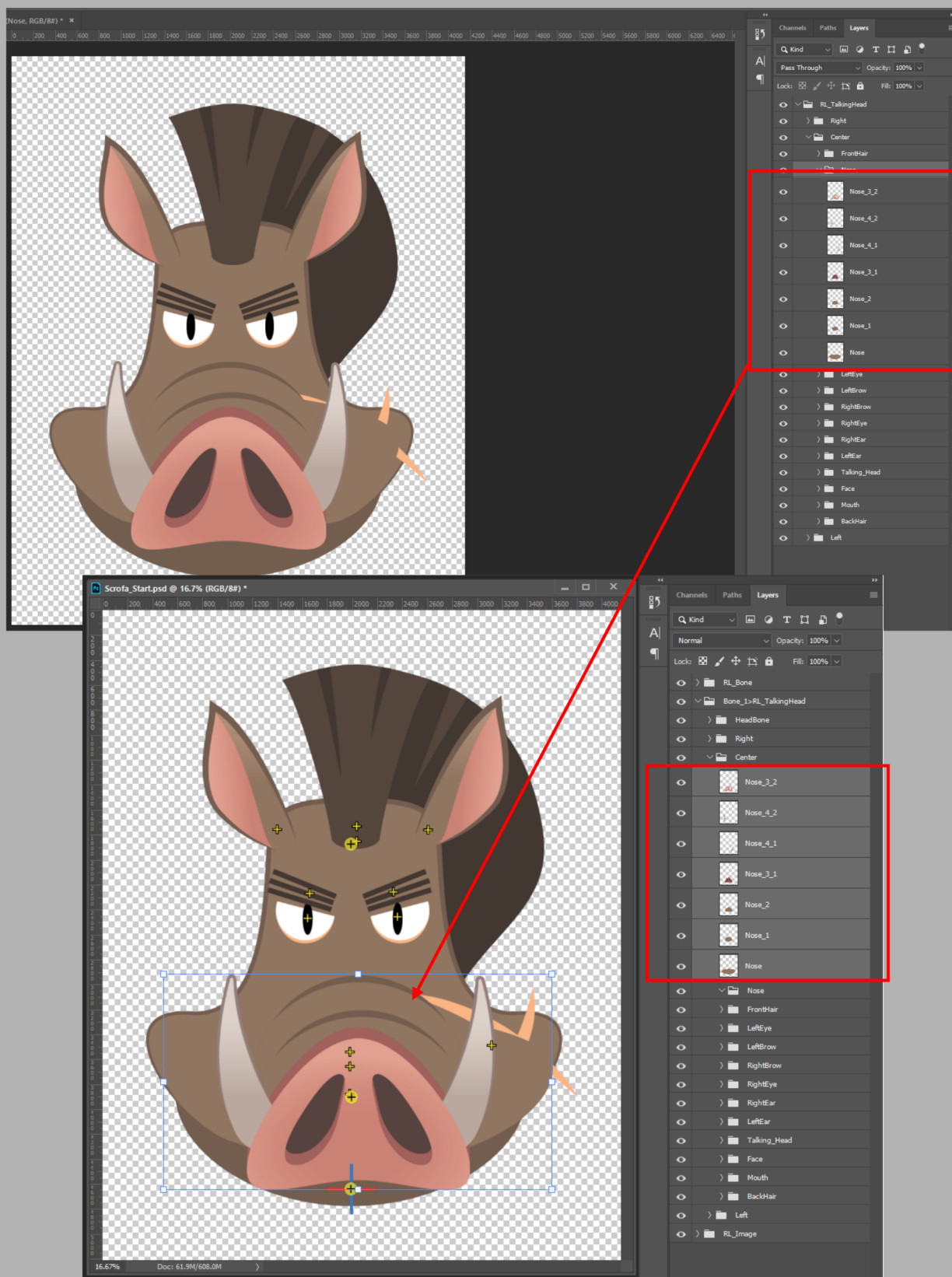
- Click the nose to assign it to the layer folder **Bone_1 > RL_TalkingHead > Center > Nose > Nose**.
- This image just shows the position of the nose; Please delete this image.



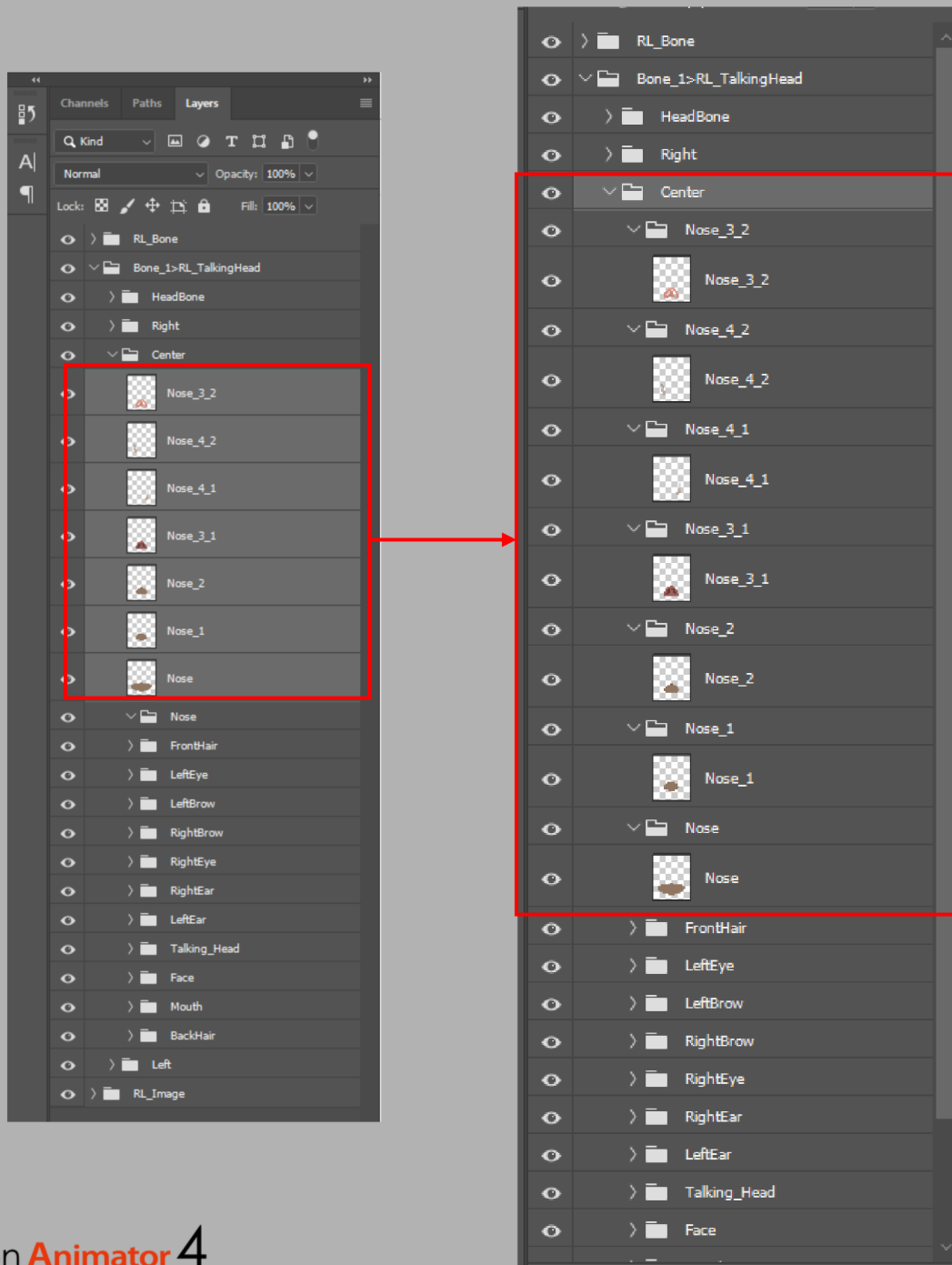
- Open CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\02_360_Animal\Creating Multi-Layers Character\Scrofa_Resource.psd
 - This is the source file for all the images of the nose.
- Destination layer folder: **Bone_1 > RL_TalkingHead > Center > Nose.**
- Inside the **Nose** folder you'll find all of the source images for the nose.



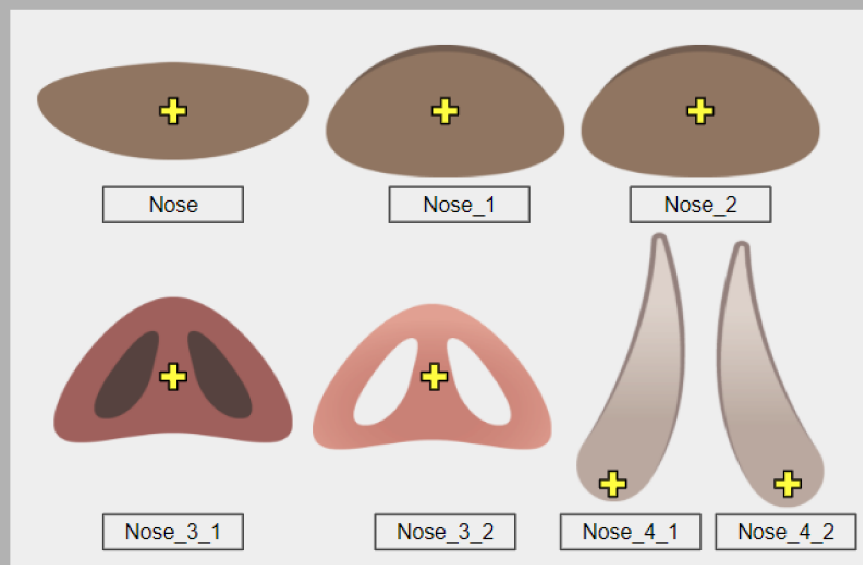
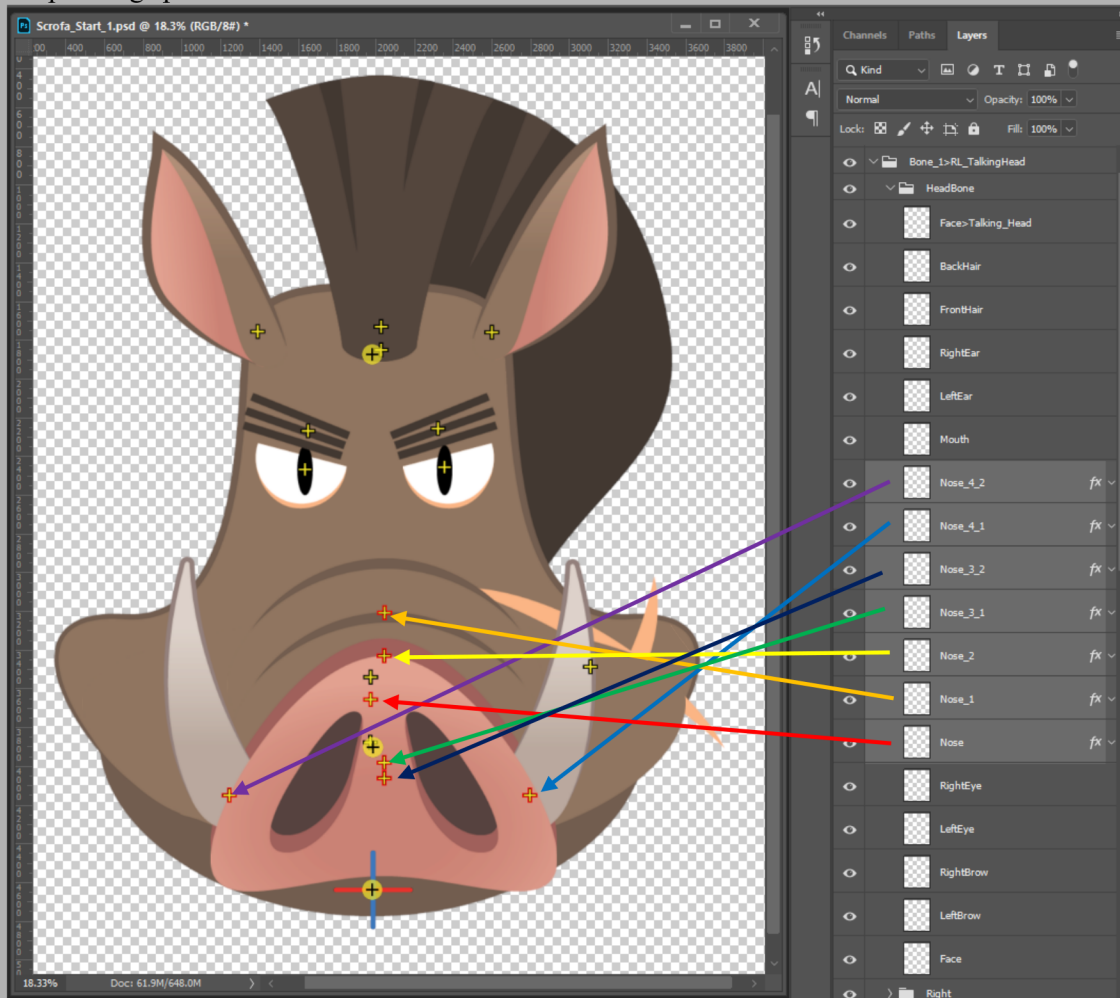
- Copy the 7 nose images from **Scrofa_Resource.psd** and paste them into **Scrofa_Start.psd** under **Bone_1 > RI_TalkingHead > Center**.



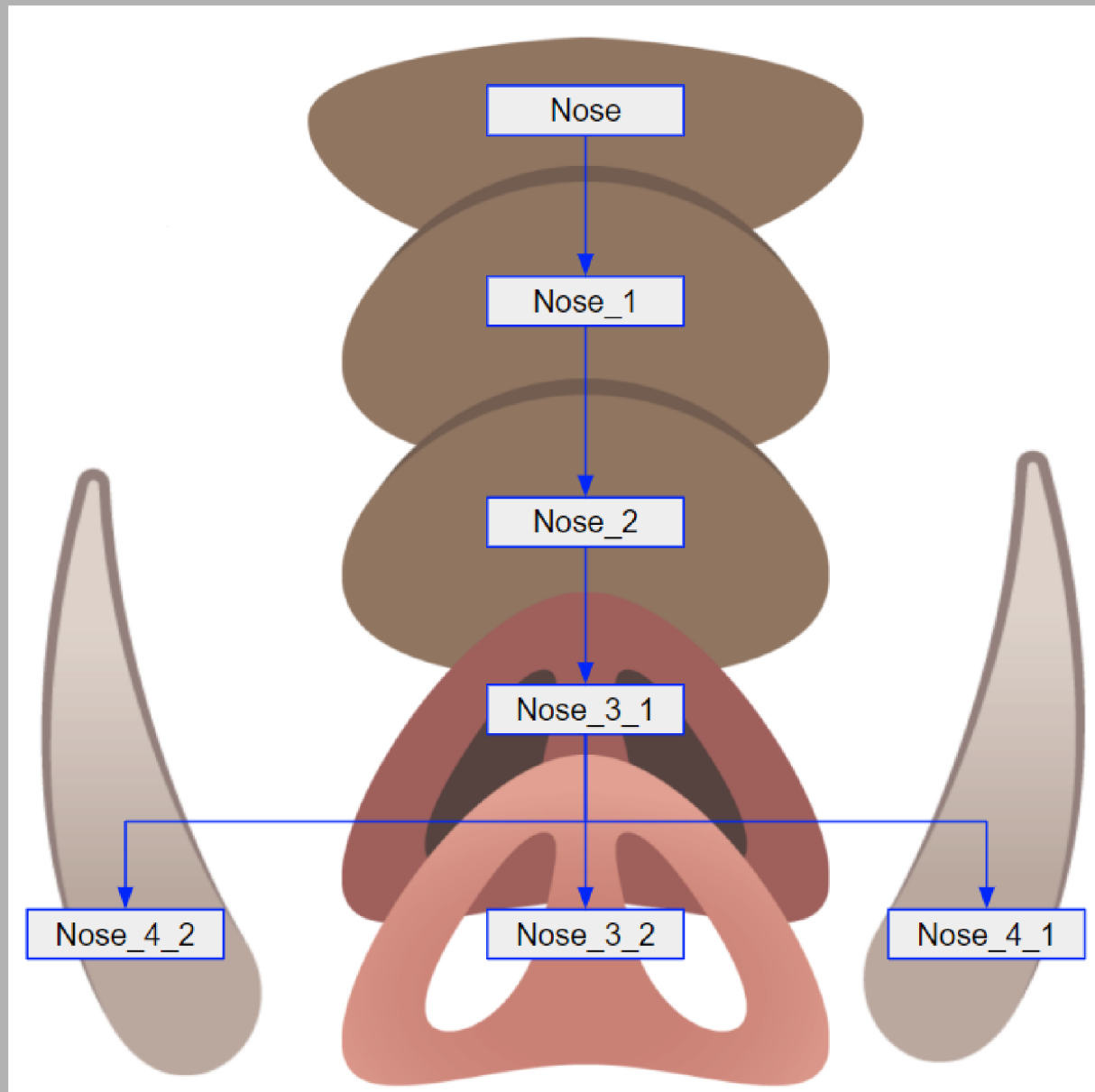
- Next, we'll need to build a dedicated folder for each image. Please name the folders according to the image name because CTA names the Sprites by the folder name. All folders should be constructed under the **Center** level.
 - Nose image should be placed in the original Nose Folder.
 - Create **Nose_1** folder and drag **Nose_1** image into it.
 - Create **Nose_2** folder and drag **Drag Nose_2** image into it.
 - Create **Nose_3_1** folder and drag **Nose_3_1** image into it.
 - Create **Nose_3_2** folder and drag **Nose_3_2** image into it.
 - Create **Nose_4_1** folder and drag **Nose_4_1** image into it.
 - Create **Nose_4_2** folder and drag **Nose_4_2** image into it.



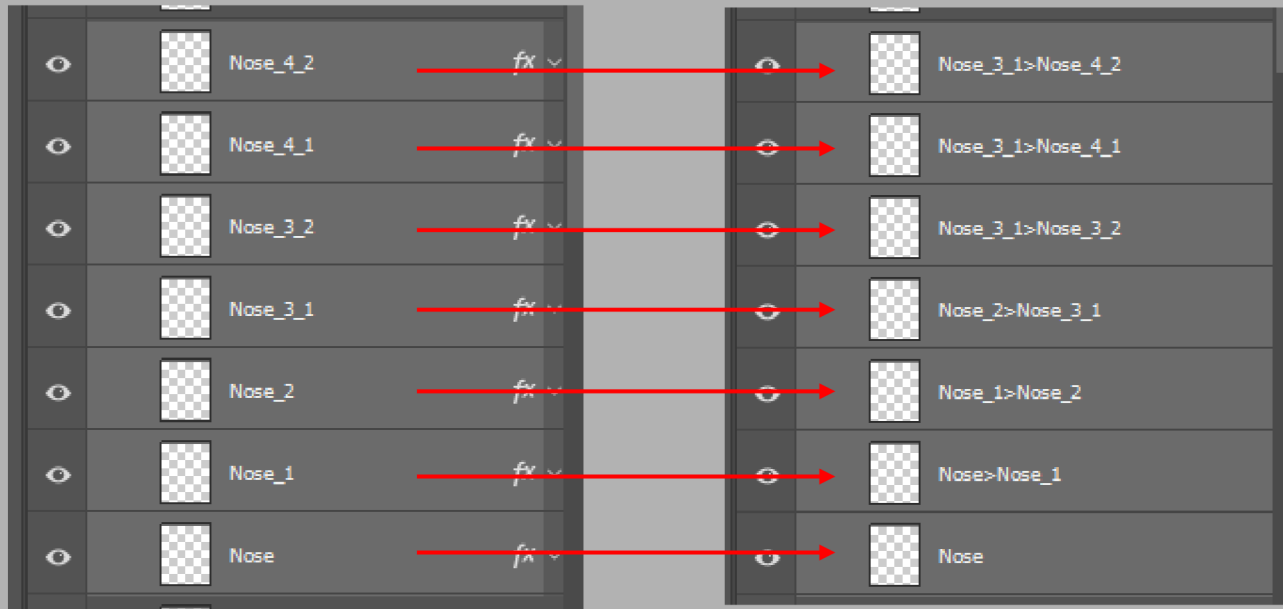
- Add Head Bone for the new sprites.
- The Head Bone pivot for the sprite is show with a yellow cross icon.
- Head bone settings are as show in the following illustration.
- Add the Head Bone underneath **Bone_1 > RL_TalkingHead > Head Bone** and name the file as the corresponding sprite name.



- Establish a hierarchical relationship within the PSD for the new Head Bone.
- First of all, we'll need to understand the hierarchical structure of the long nose as shown in the figure below.
 - The top layer is the **Nose**, which is considered as Parent.
 - The bottom layer is **Nose_3_2**, **Nose_4_1** and **Nose_4_2**, which are all considered as Child.



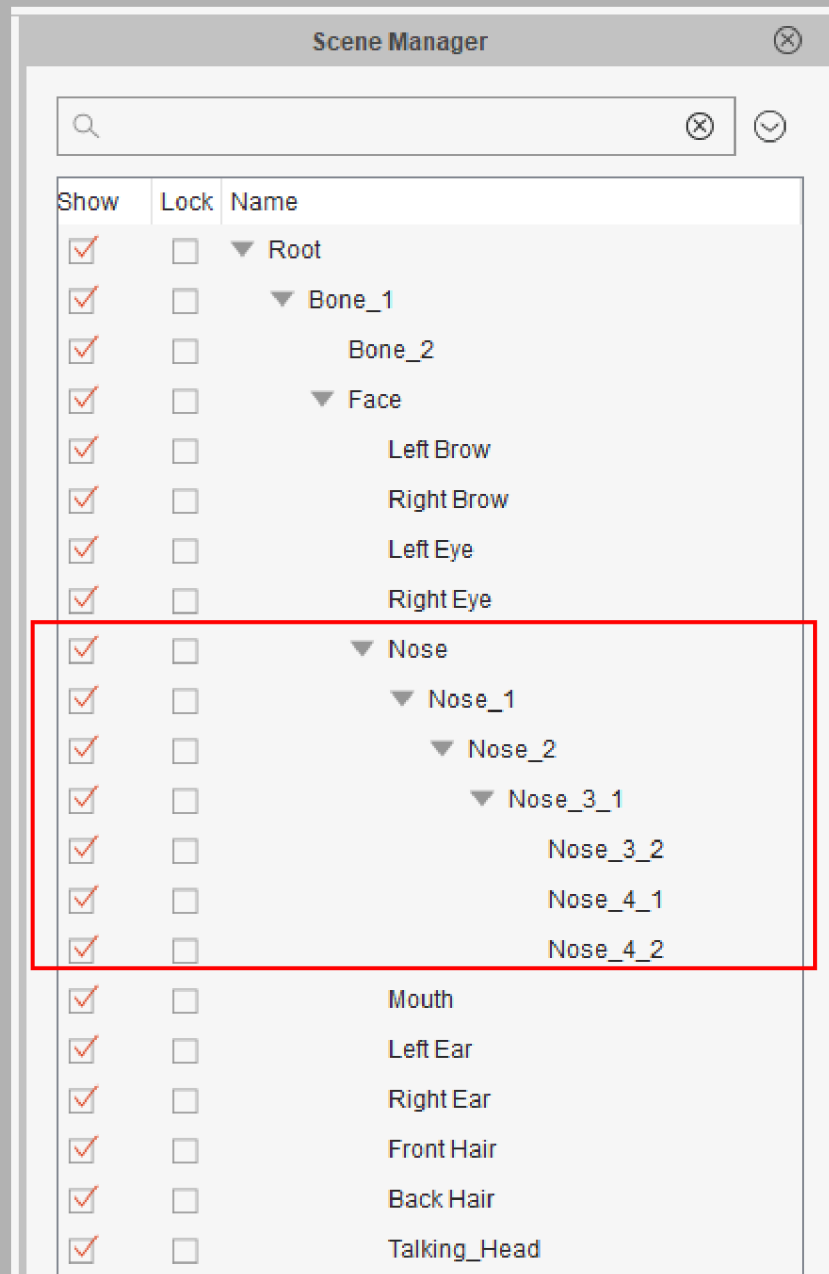
- After understanding the structure, we must rename structure of the diagram for the Head Bone inside Photoshop to establish a hierarchical relationship.
- The way to establish a hierarchical relationship is the same as that of FreeBone (see chapter 8.2 for details).
- Example: If the layer name is **NameA>Name B** then **NameA** is the parent and **NameB** is the child.
- Rename the Head Bone to the following table.
- Save the file after completion.



Before	After
Nose	Nose
Nose_1	Nose>Nose_1
Nose_2	Nose_1 > Nose_2
Nose_3_1	Nose_2>Nose_3_1
Nose_3_2	Nose_3_1>Nose_3_2
Nose_4_1	Nose_3_1>Nose_4_1
Nose_4_2	Nose_3_1>Nose_4_1

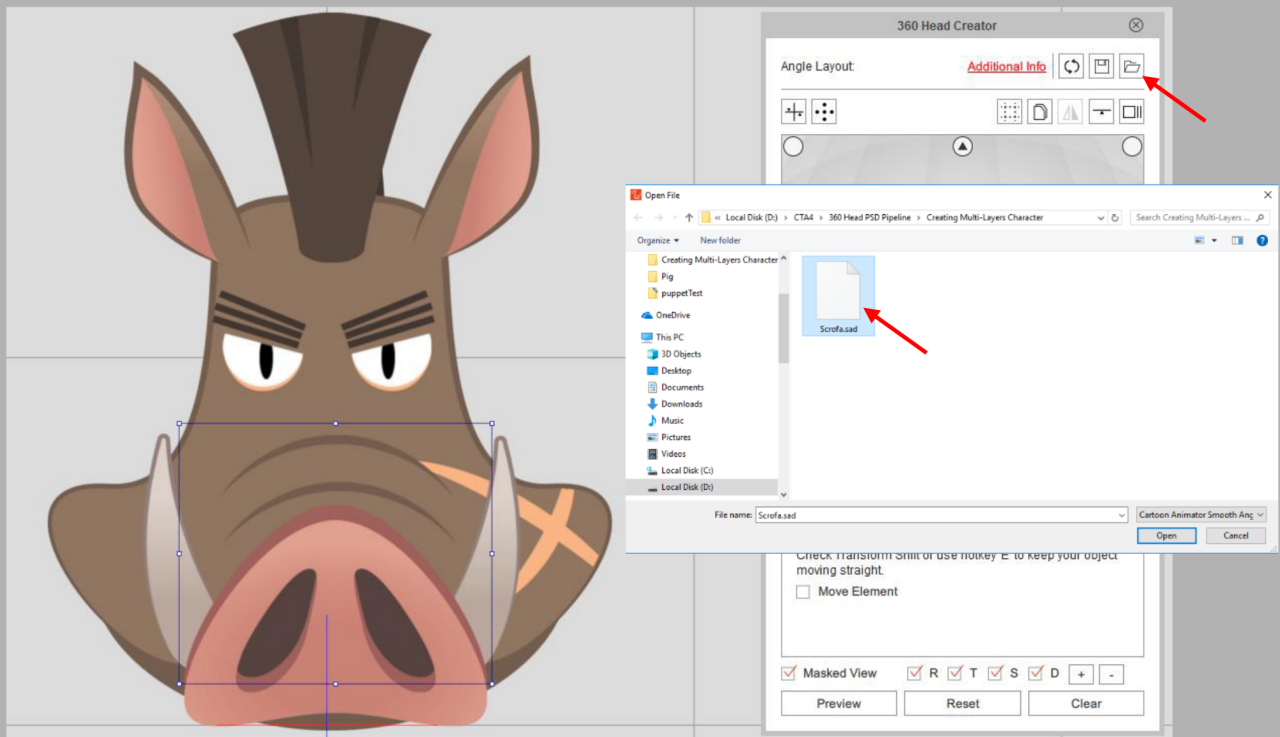
- Drag the saved file into CTA and CTA will automatically enter the Composer Mode.

- Switch to the **Scene Manager** and if the hierarchy resembles the figure below then it means the recent settings have been successful.

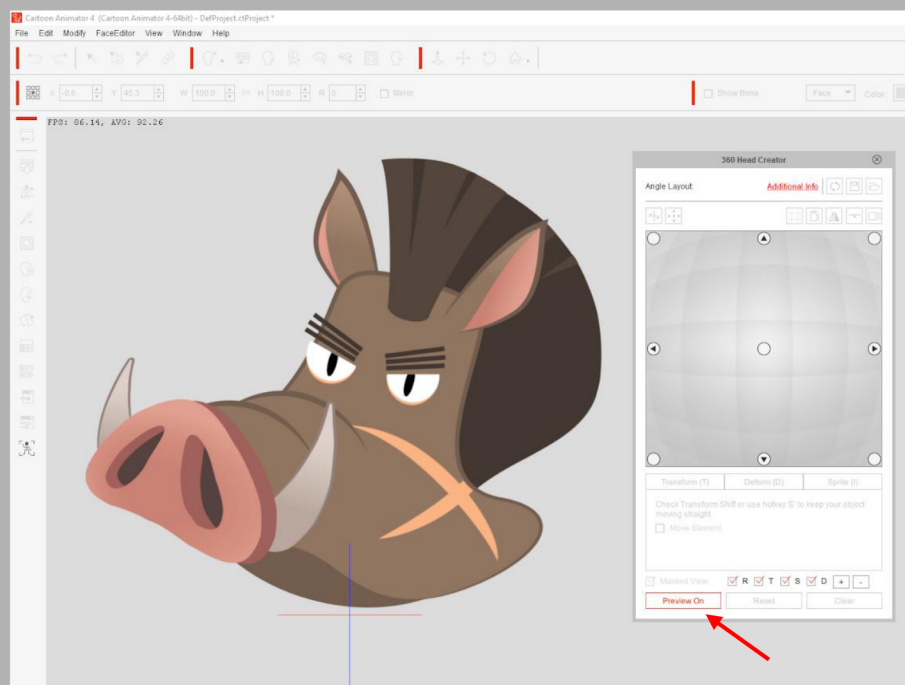


- Activate the **360 Head Creator** in Composer Mode.

- Select **Load Profile** to import the officially pre-configured head turn data file: **Scrofa.sad**.
 - File location: **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\02_360_Animal\Creating Multi-Layers Character\Scrofa.sad**.



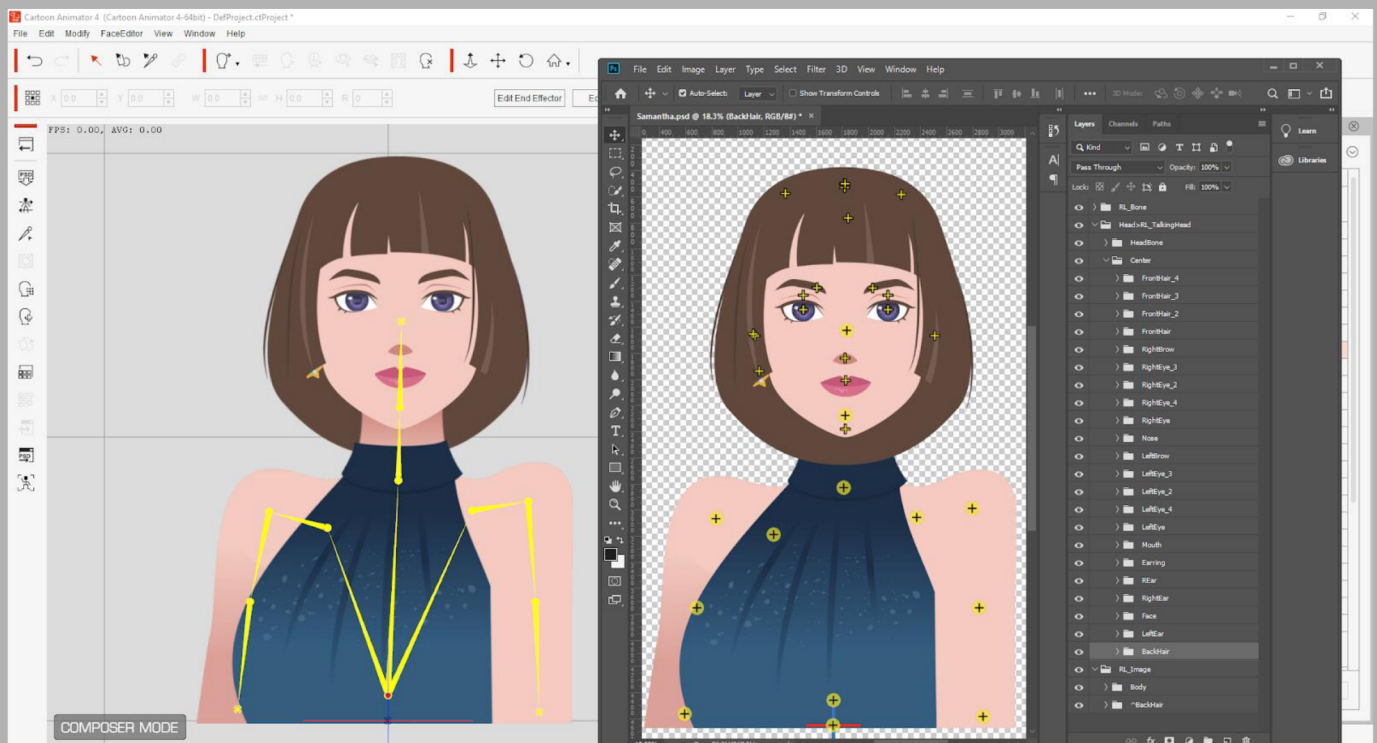
- Click on the **Preview** button to observe the multi-layered facial features in motion as the head turns.
- The completed file location: **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\02_360_Animal\Creating Multi-Layers Character\Samantha_Finish.psd**.



8.3 Layering Talking Head Sprites with the Body in PSD

Function and purpose description:

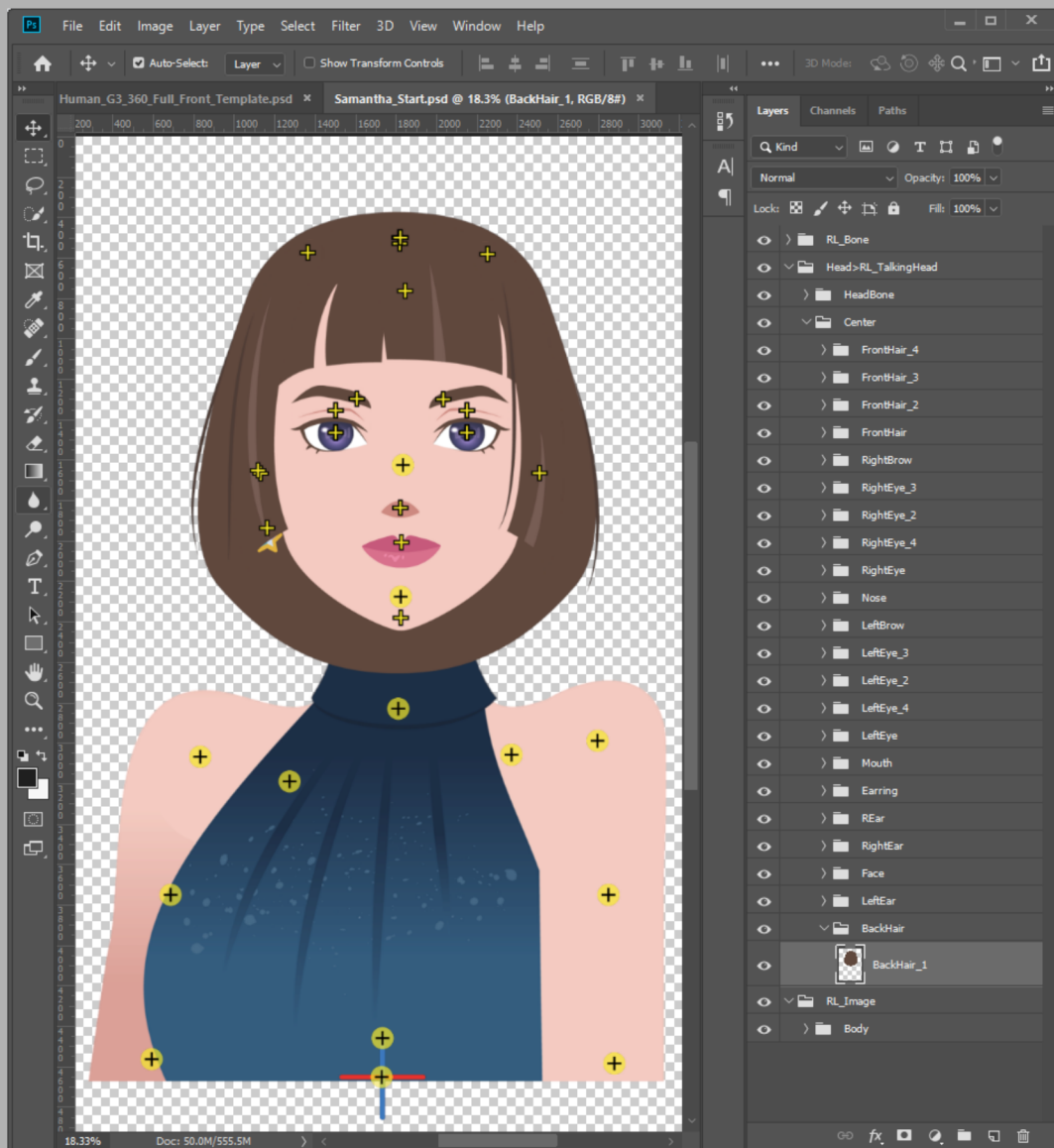
- How to use Photoshop layer editor to pre-determine the sorting order between the Sprites and the character's body for the Talking Head after importing into CTA4.
- The following figure is a description of the **BackHair** sprite.



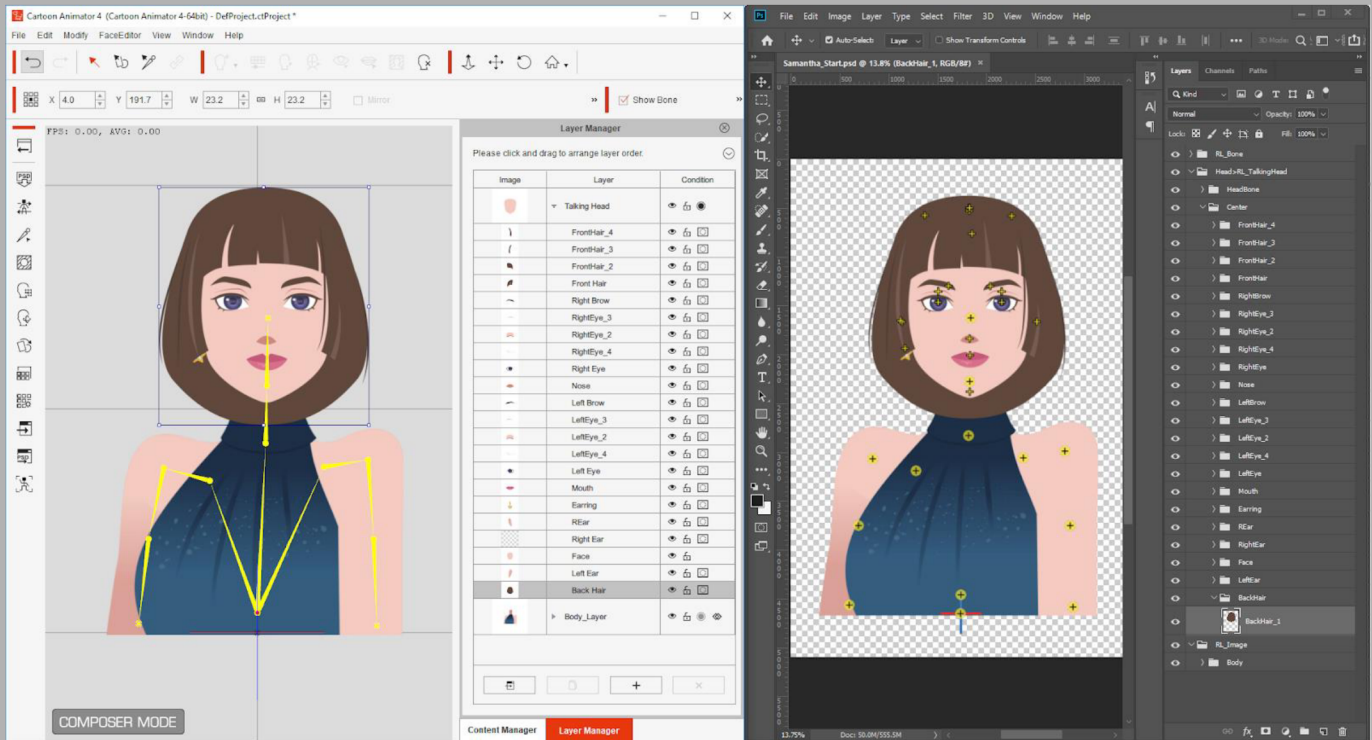
- Open the template file: CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Layering Back Hair\Samantha_Start.psd.
- Take a look at **BackHair** inside the layers: **Head > RL_TalkingHead > Center > BackHair**.

Common problem: Due to the **BackHair** being considered a part of the head, it should be placed within the Talking Head group. Because of this, the **BackHair** image layer will appear in front of the body.

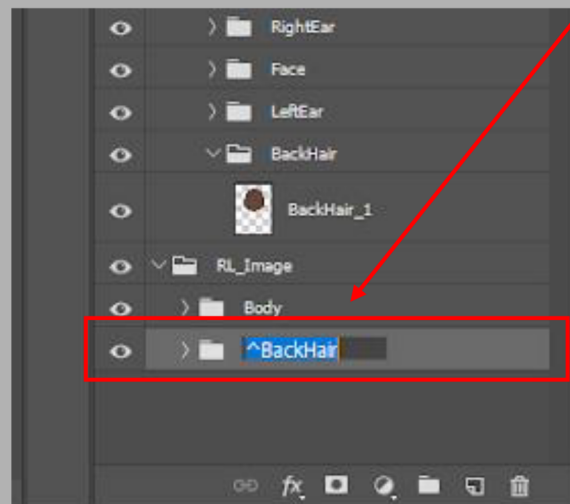
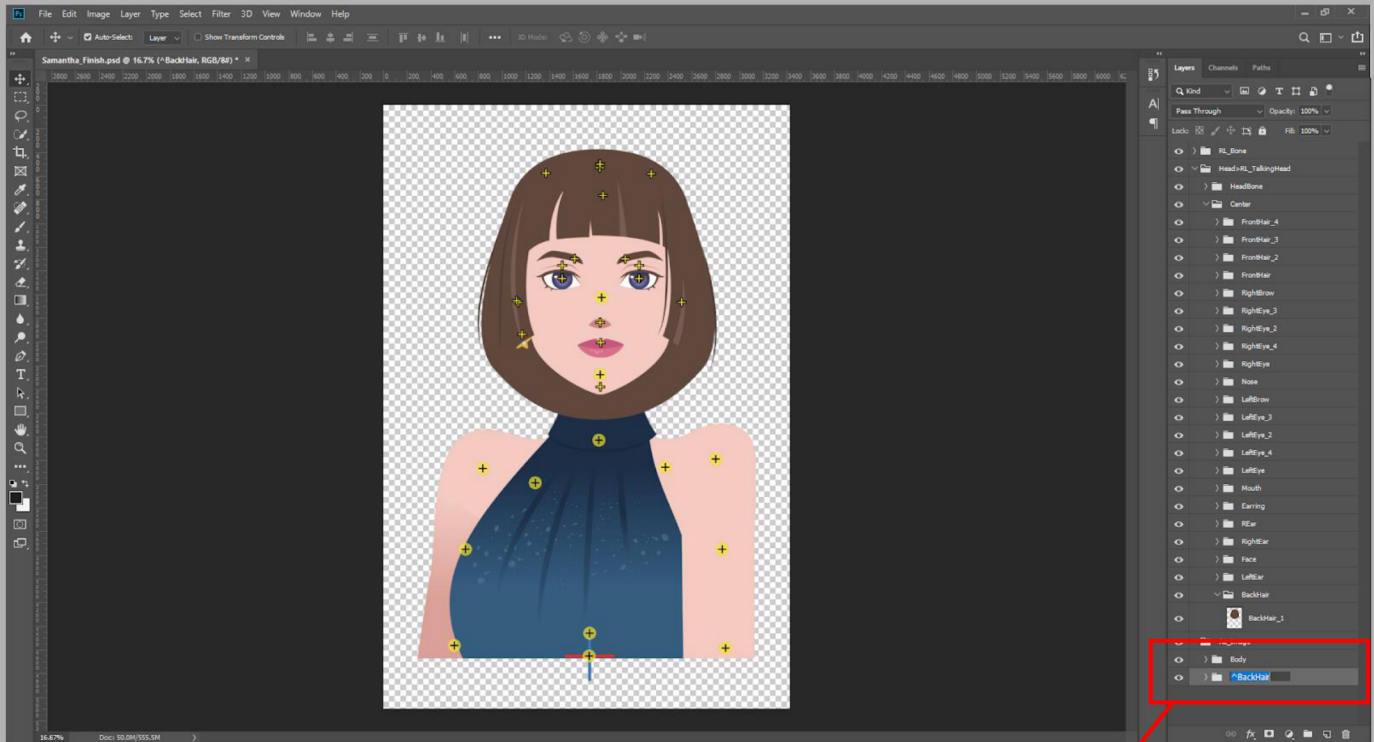
Goal: it would be best to configure the relation between the **BackHair** with other sprites within Photoshop before importing into CTA.



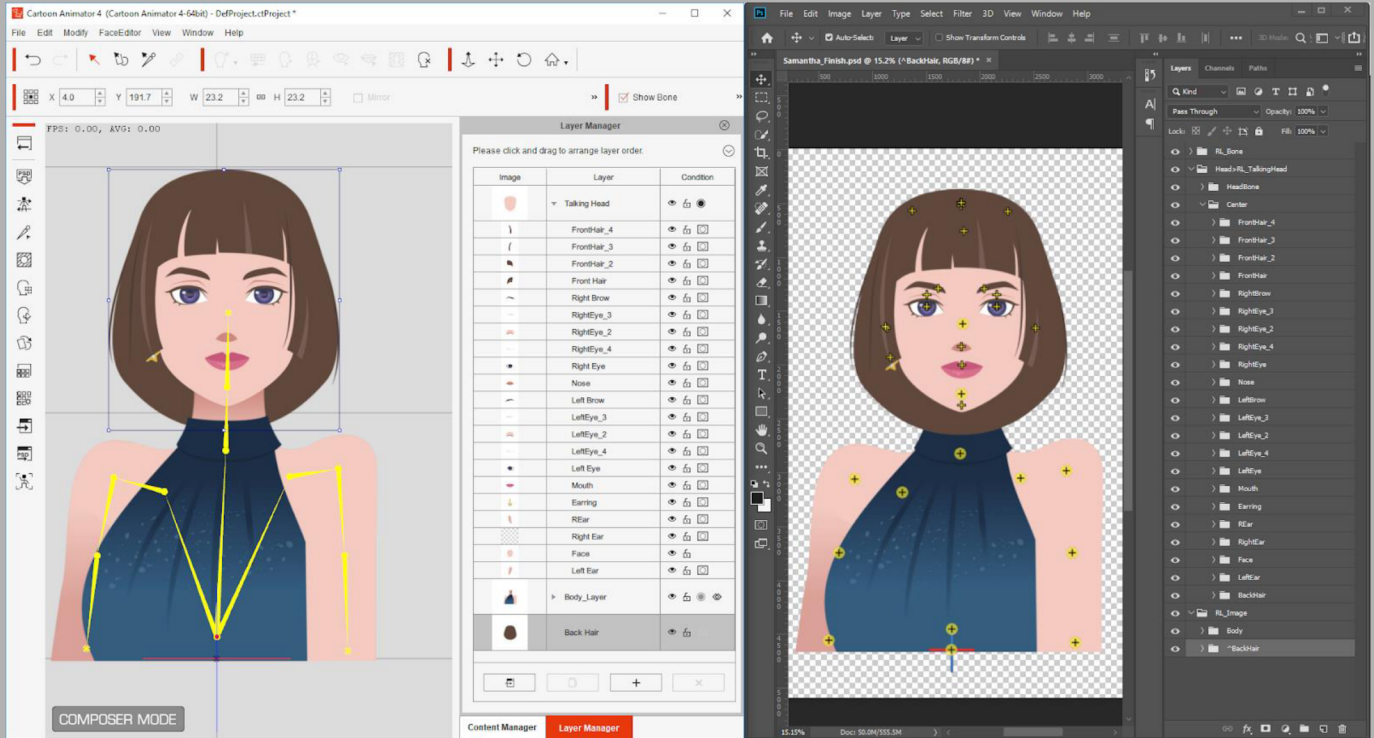
- Before configuration, the **BackHair** in the imported CTA file has layer order that resemble that of the Photoshop file.
- However, this is the not the effect we are going for because the **BackHair** has appeared before the body.



- Prefix the layer folder with a caret (^) flag.
 - Copy the layer name for the back hair or any other object that is meant to be layered behind the body.
 - Add an empty folder inside **Body Image** and rename it as caret (^) plus the layer name.
 - Drag the folder into the body group (**RL_Image**). The application will automatically determine that these images are to belong and ordered among the facial features of the Talking Head.



- After saving the file and importing it into CTA, one can see that the **BackHair** is ordered underneath the **Body_Layer**.
- Completed file location: **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Layering Back Hair\Samantha_Finish.psd**



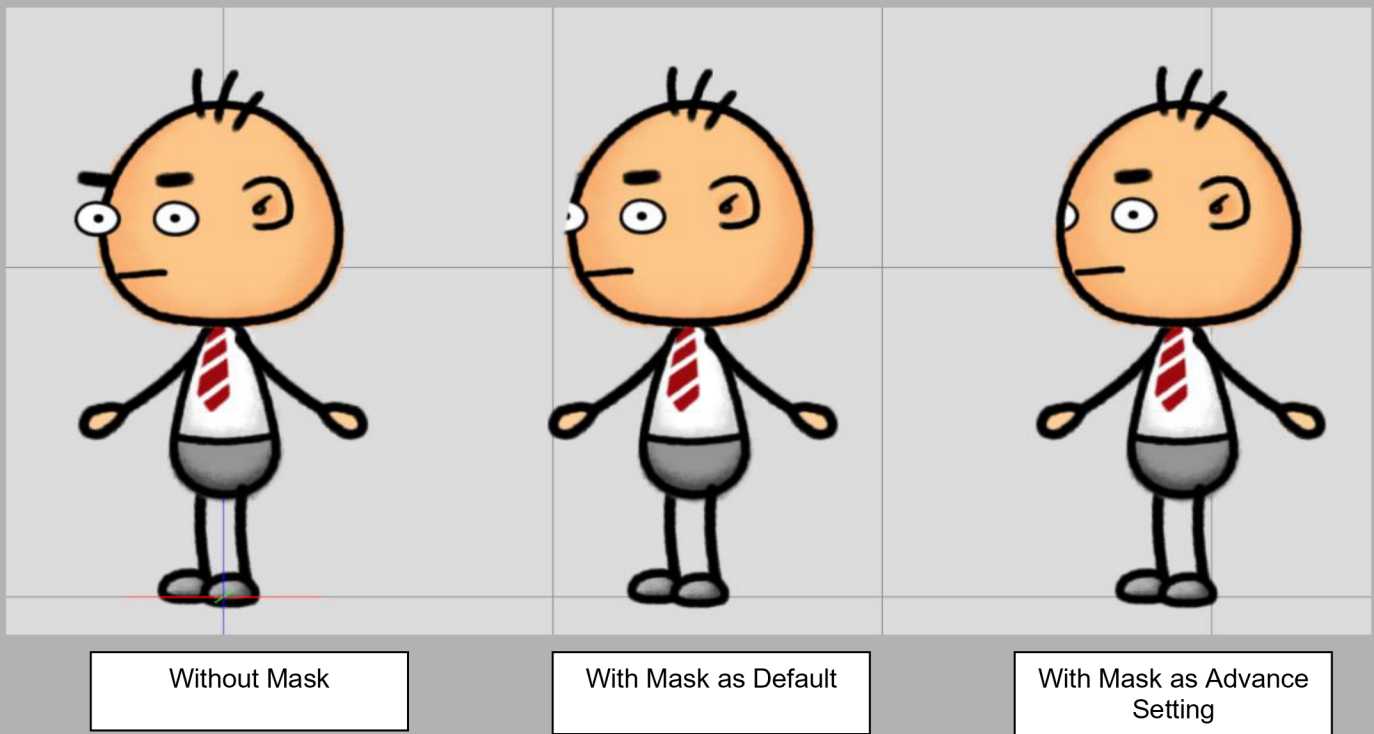
8.4 Custom Masking Layer

Function and purpose description:

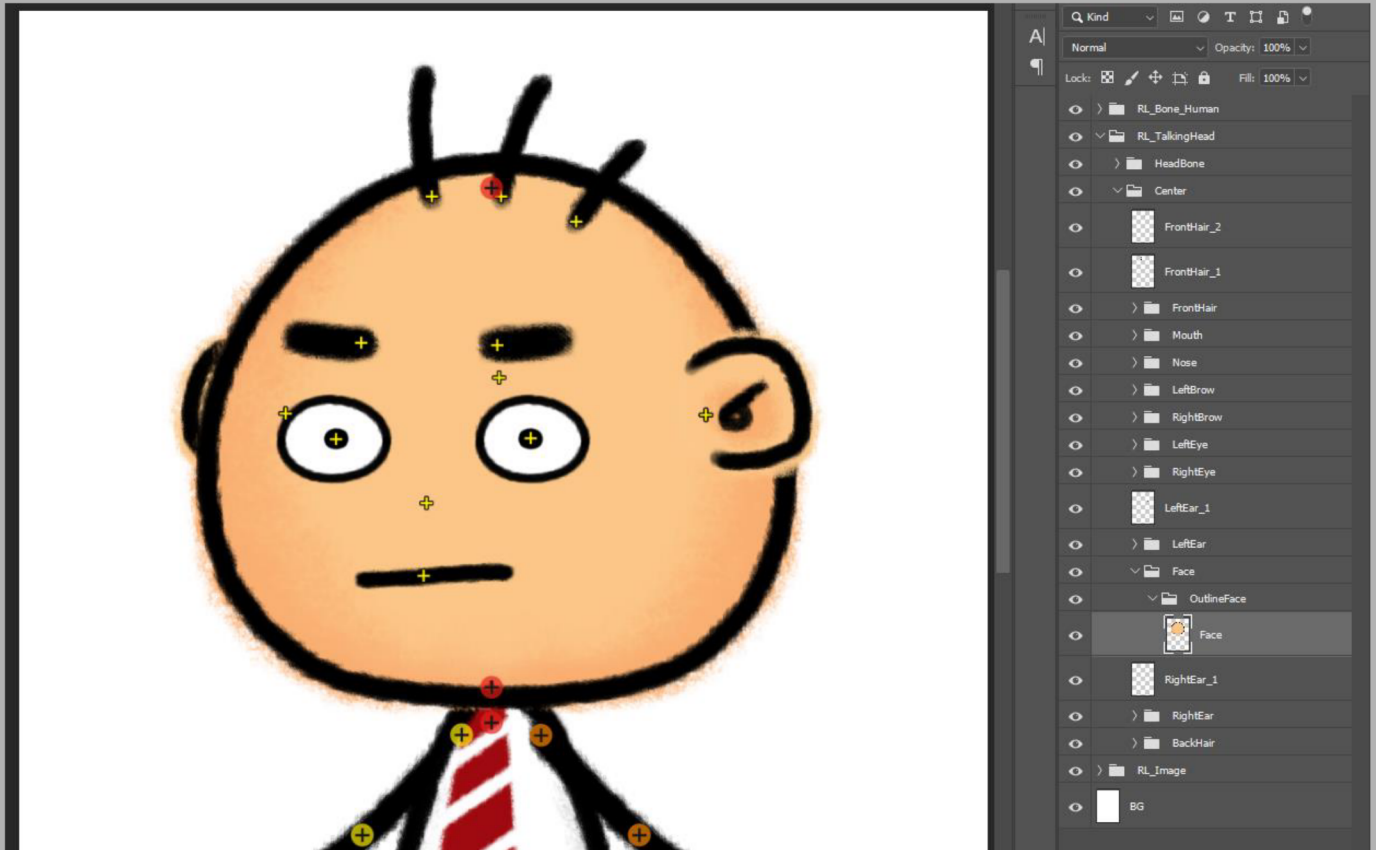
- In view of the fact that G4 heads supports large angle turns, we sometimes desire the ability to mask the facial features with the shape of the face when facing to the side.
- Therefore, under these conditions, we will need to use the character's face sprite as a image for masking (as shown in the figure).

Common problem: If you set the face sprite as the mask before setting the Masking texture then problems may arise from creating masks for characters with outlines.

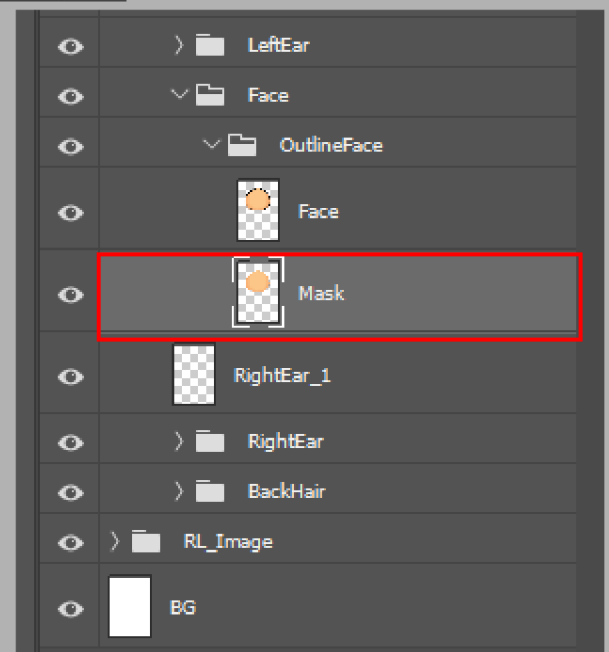
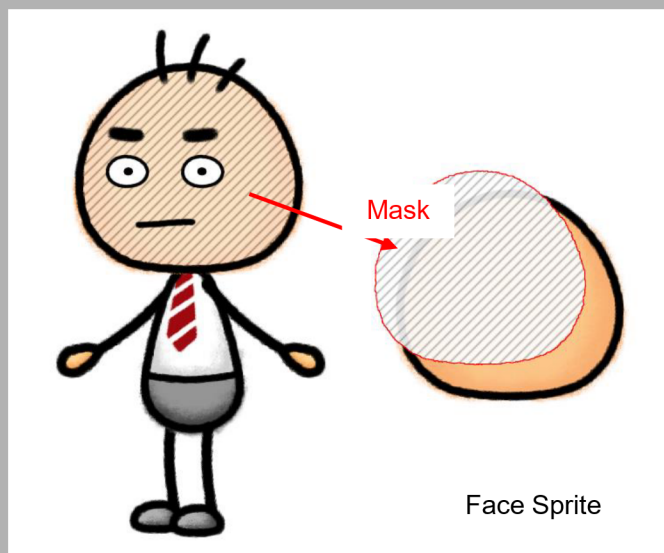
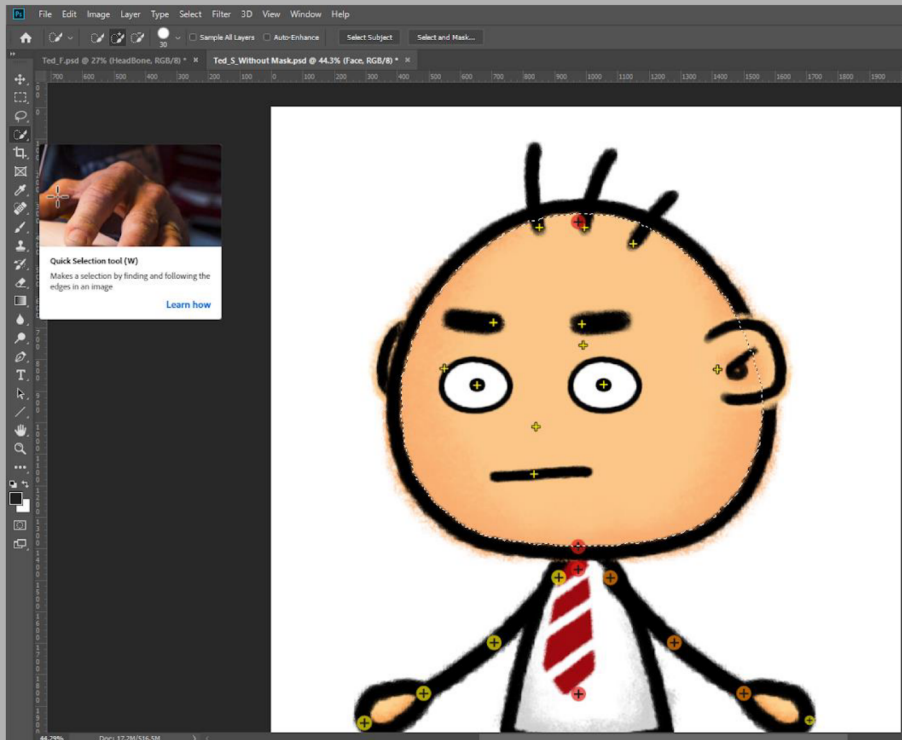
Next, we'll show you how to get the perfect result as show on the right.



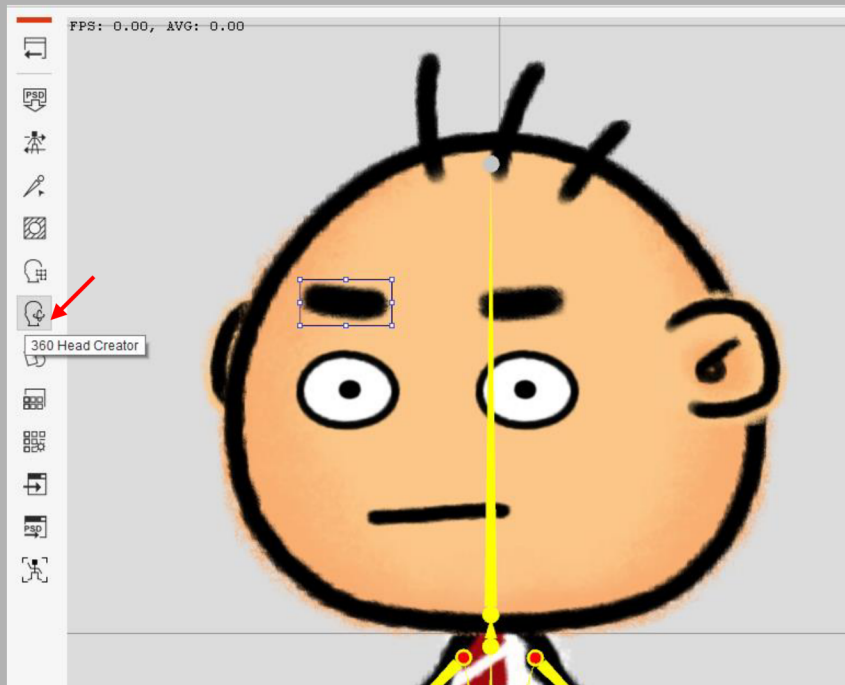
- Open CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Custom Masking Layer\Ted_S_Start.psd
- Select the face to get to the target image layer (RL_TalkingHead > Center > Face > OutlineFace > Face)



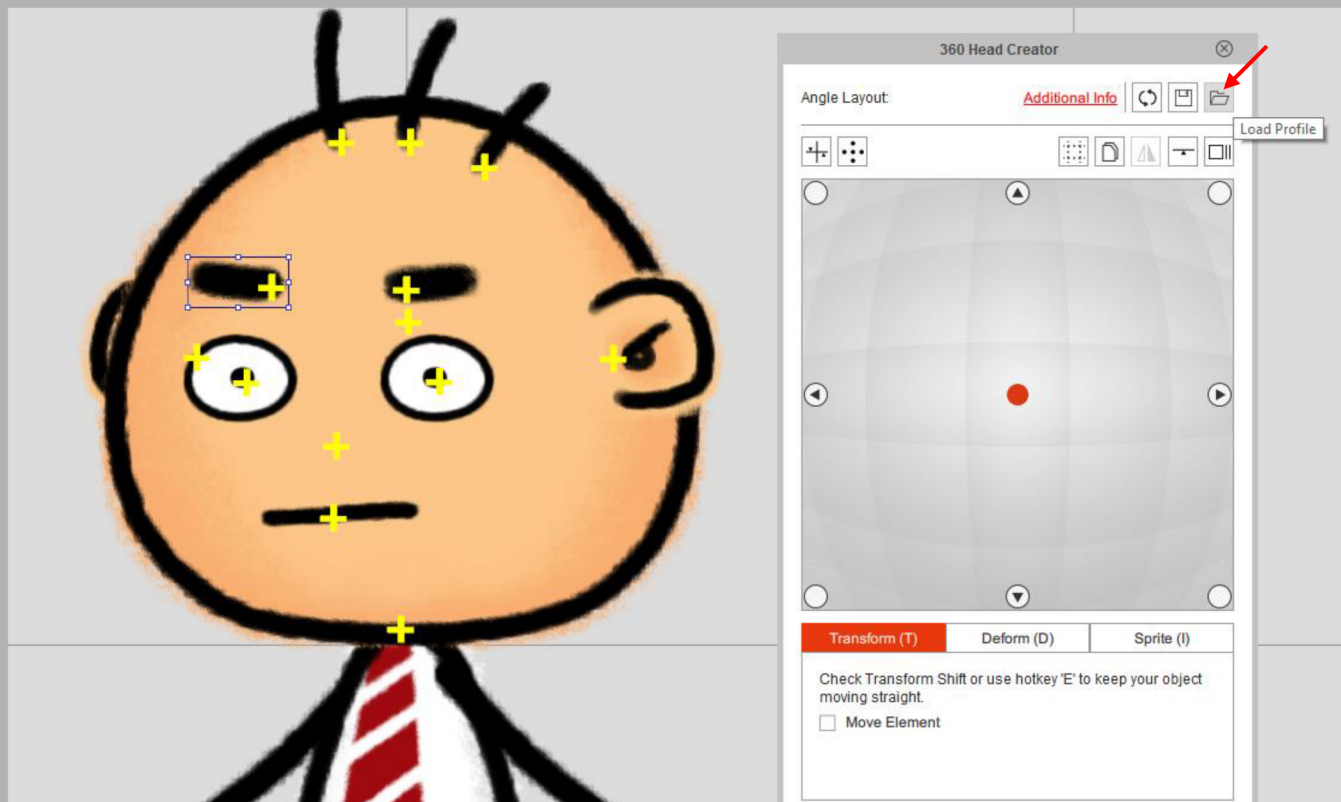
- Next, we have to select the region within the red outline of the icon and make a mask for the character.
- Use the selection tool to select the region within the red outline of the icon (Do not select the black border).
- Duplicate the selection into a new layer under the **OutlineFace** folder and rename it to “Mask” (hotkey: Ctrl/Command + J).



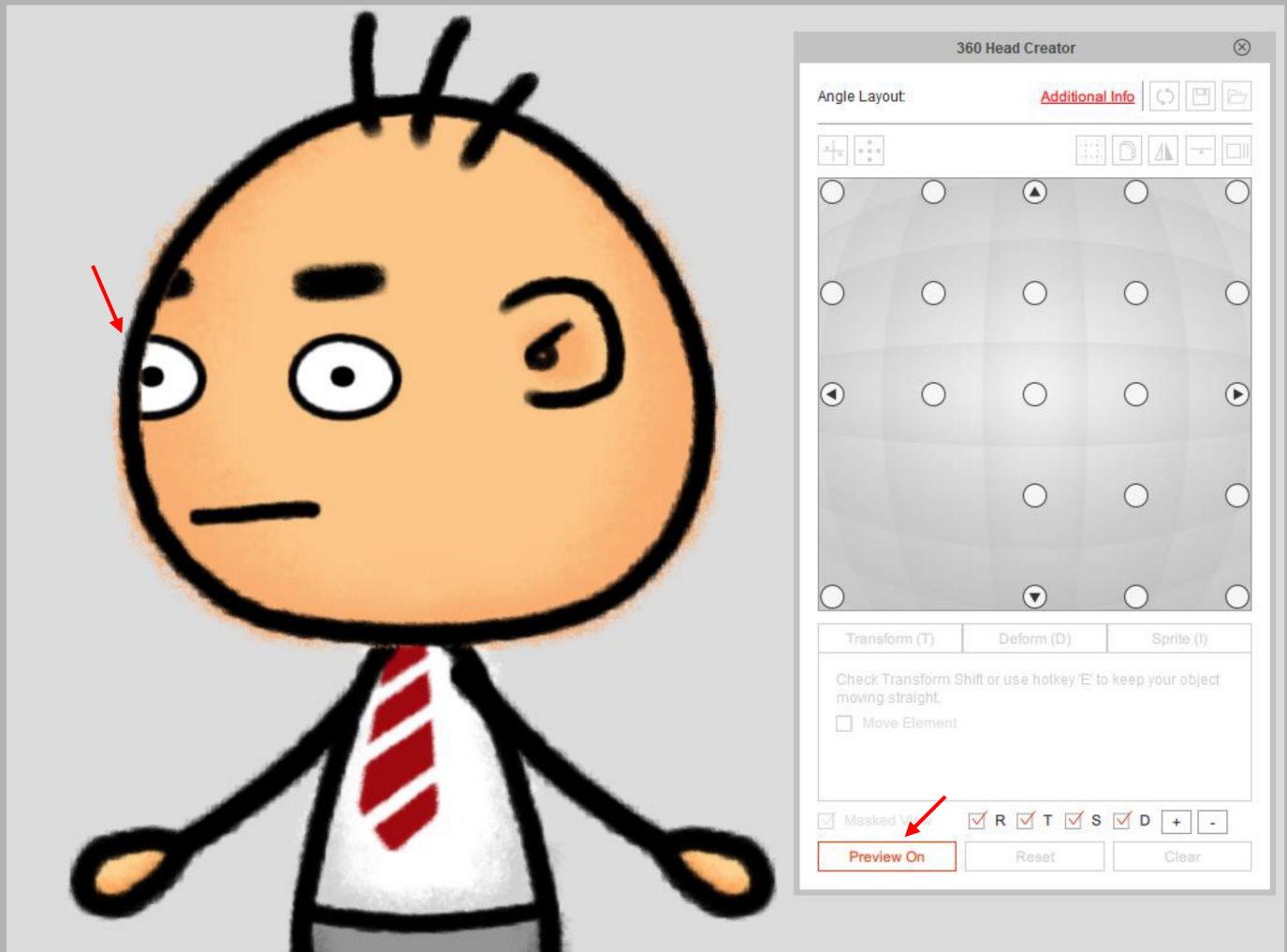
- Drag the configured file into CTA.
- Activate **360 Head Creator** in Composer Mode.



- Select **Load Profile** to import the official preset head file:
CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Custom Masking Layer\TedS.sad



- Click on **Preview** to observe the Mask in action.
- You can see that the eyes and eyebrows are masked within the black outlines of the face.
- The complete project is here: **CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\01_360_Human\Custom Masking Layer\Ted_S_Finish.psd**

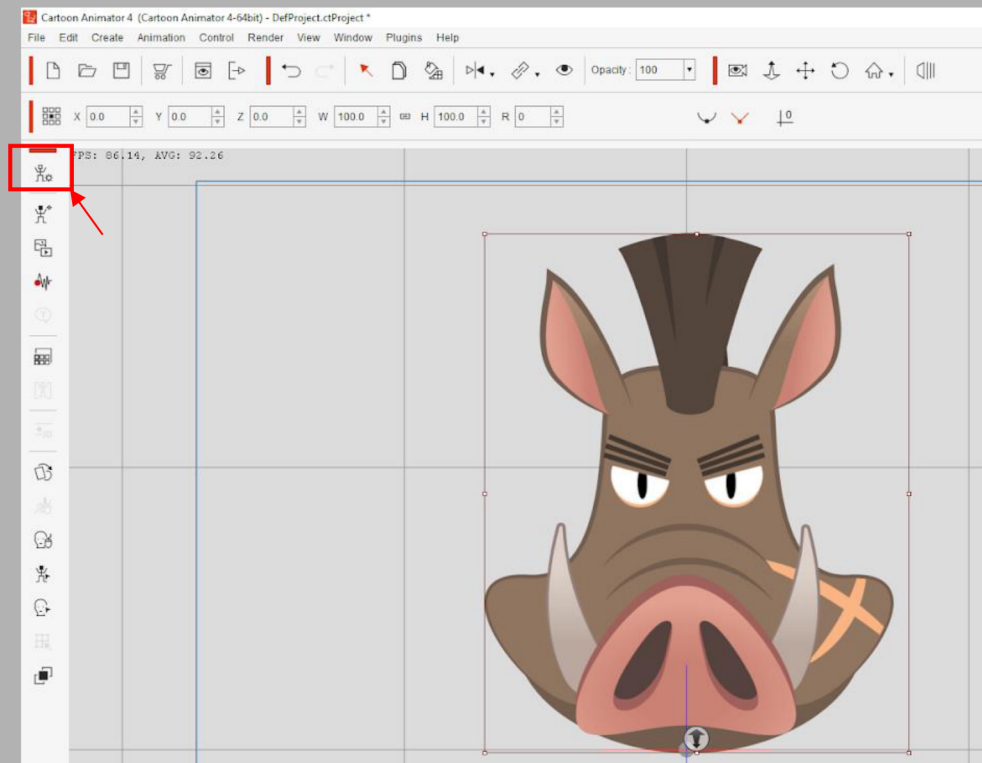


8.5 Launching PSD Files with Different Structures

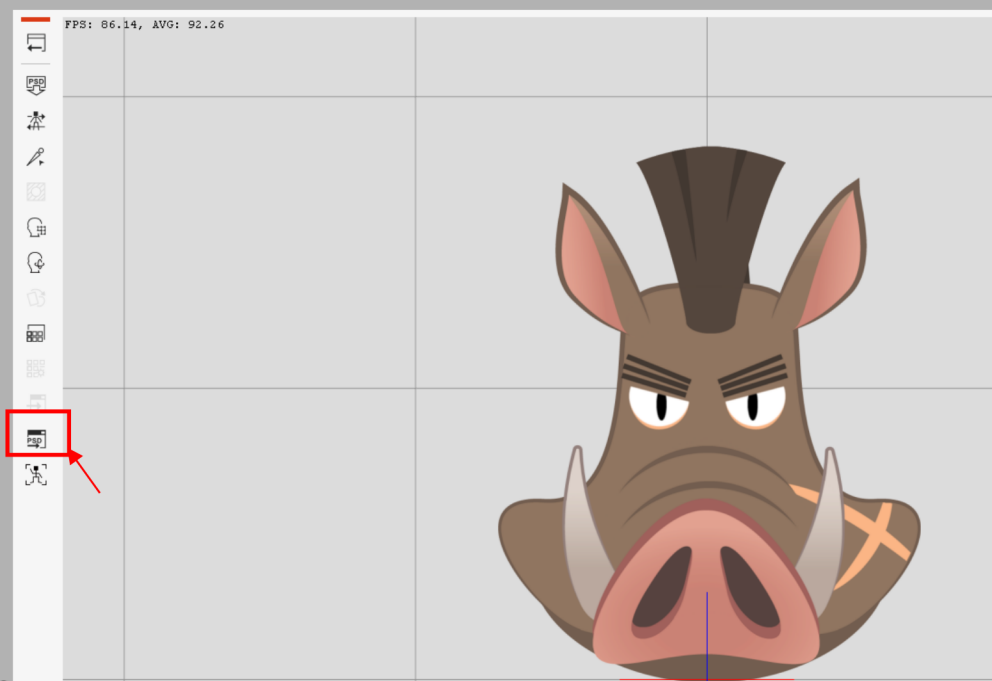
Functions and Goals:

- CTA **Composer** provides the ability to **Launch to External PSD Editor**. The purpose is to allow the user to adjust the color or structure of the character or prop in an external PSD editing software. After the adjustments, settings in CTA will still be retained.
- CTA4 has added a multi-angle structure to the PSD Pipeline to satisfy the specifications for multi-angle images and head turn parameters.
- Therefore, **Launch to External PSD Editor** provides two important options:
 - **Edit Current Angle**: light-weight structure.
 - **Update Multi-angle**: full fledged structure.

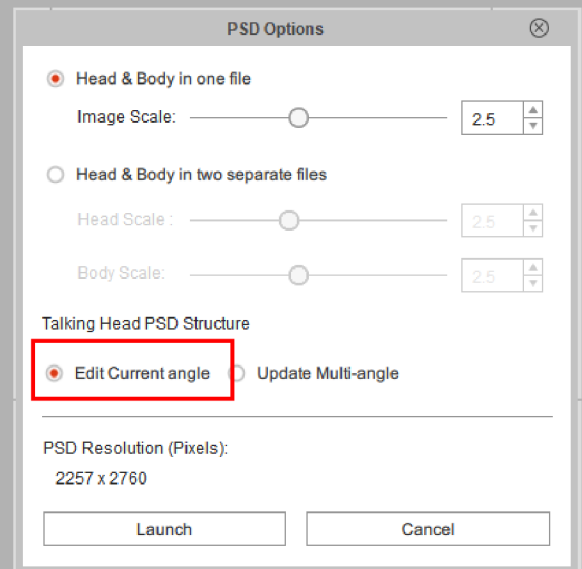
- Import G3 360 character:
CTA_G3_Pipeline_PSD_Template_Sample_Project\03_Sample_Projects\02_360_Animal\ Launching PSD Files with Different Structures\Scrofa.ctFBactor.
- Enter **Composer**.



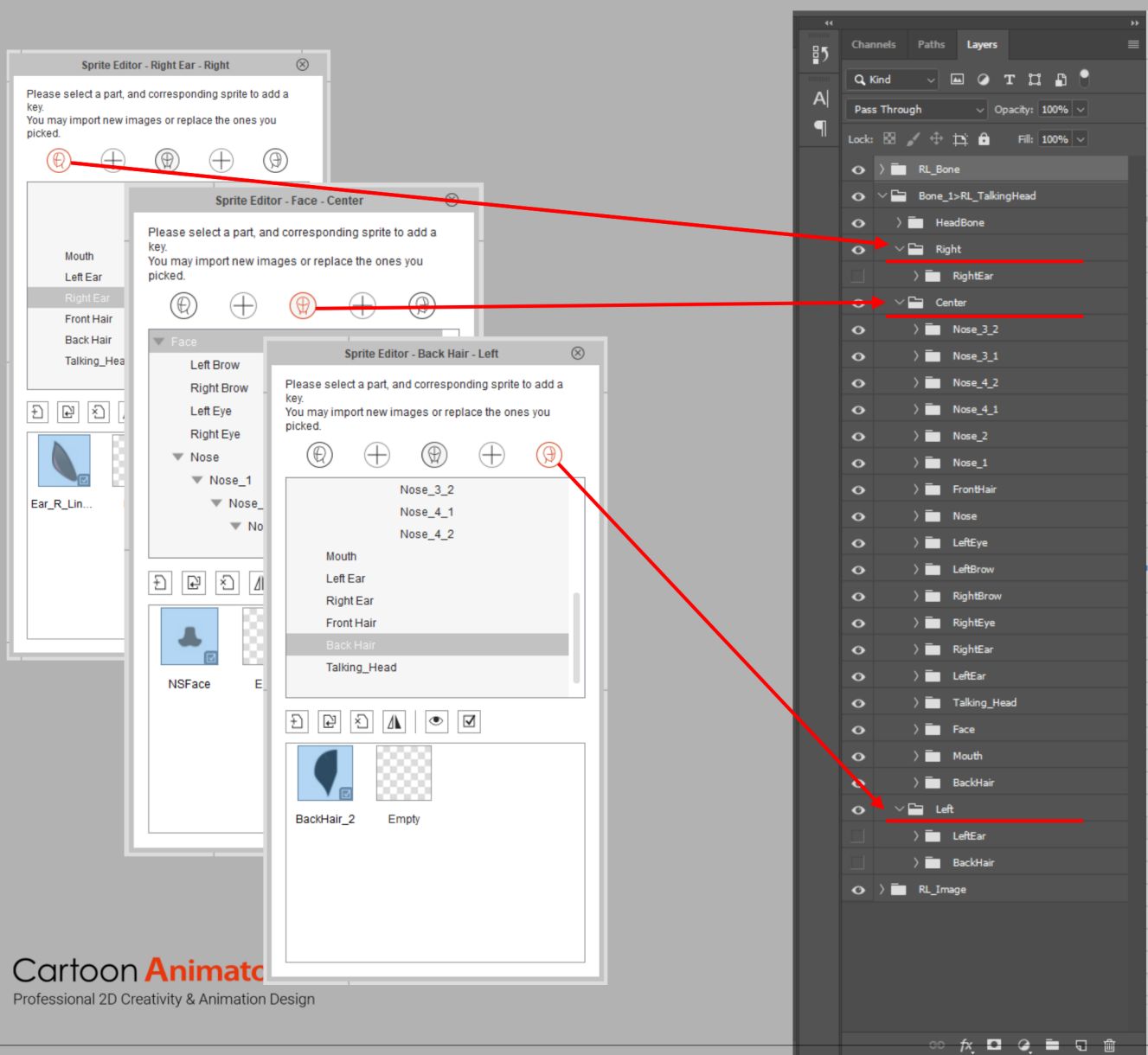
- Click on **Launch to External PSD Editor** in the **Functional Toolbar**.



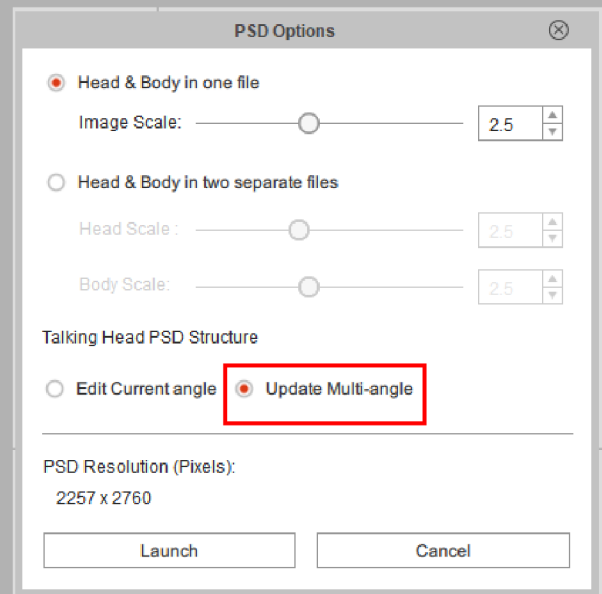
- Choose **Edit Current Angle** for light weight export.



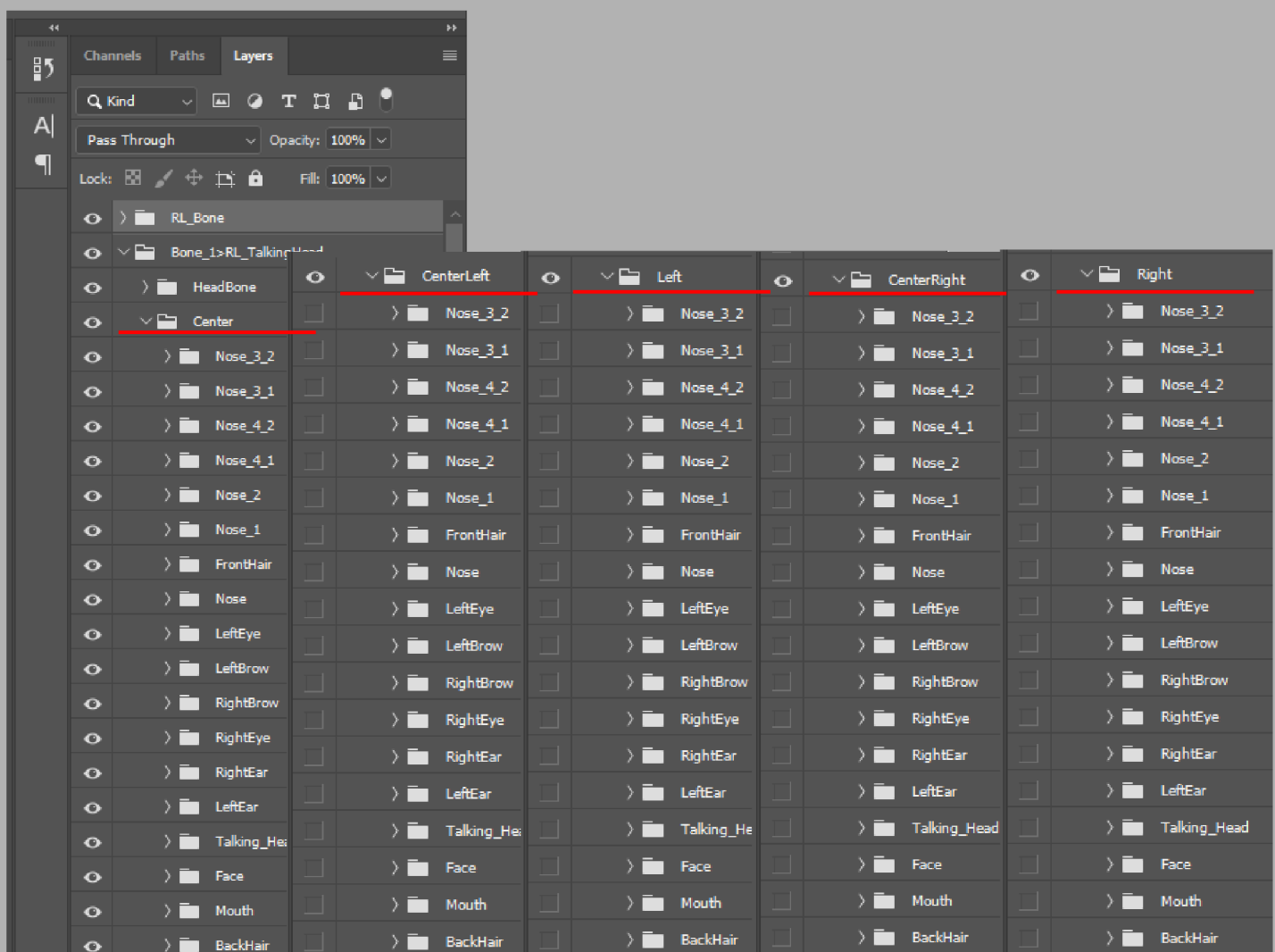
- The application will only export the images kept in the **Sprite Editor**.



- Select **Update Multi-angle** for full structure export.



- The application will create a folder for every angle and export them all.



Chapter 9 Increasing the Resolution of Facial Features

In the previous chapter, the source images in the **Low-res_Talking_Head.psd** are bitmap-based. However, if you resize the image elements, there is a great chance for quality loss as shown in the illustration below; in order to ensure visual quality for each element, you need to take the **High-res_Talking_Head.psd** file as the element sources because these element images are of **high resolutions**, their visual quality will not be degraded when they are resized.

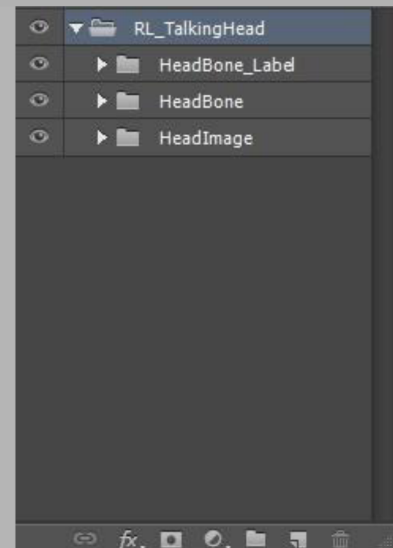
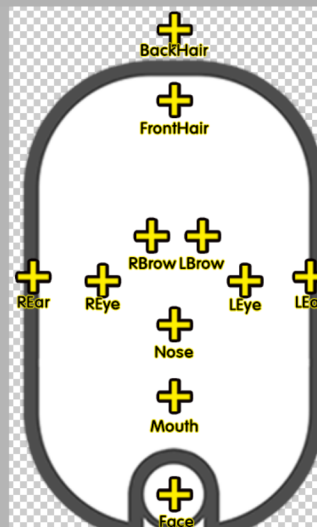


9.1 The Structure of Talking Head PSD Template

File Utilized: **01_PSD_Templates / Human_Talking_Head_Template.psd**

Before increasing the resolution of the pose images, you need to understand the structure of the head template. In the file, the main group folder is **RL_TalkingHead**, and it cannot be renamed or deleted because **Cartoon Animator** uses it to identify the existence of the talking head. There are three main sub-group folders in it:

- **HeadBone_Label**: The name labels of each bone are stored in this folder. Basically, you do not need to touch them. Cartoon Animator ignores them when loading this template.
- **HeadBone**: This folder stores all bones of the facial features. You are allowed to move them to an ideal position, but do not remove, resize, or rotate them.
- **HeadImage**: This folder stores all the facial pose images; you can move your custom images into the corresponding folders in this group when generating custom facial sprites.



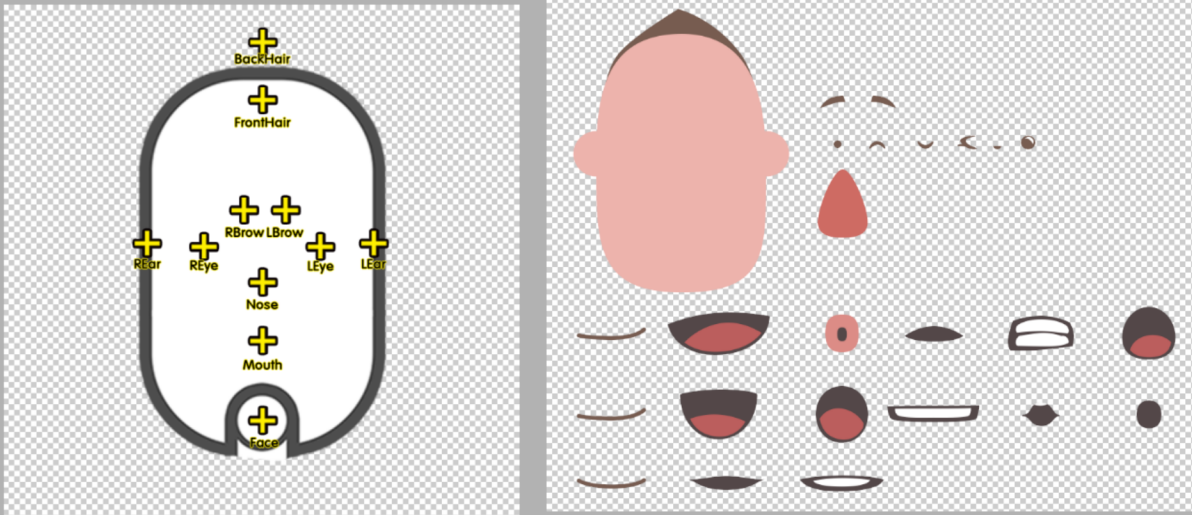
The settings of the facial pose images are identical to the steps described in the previous chapters. After the settings are done, use the **Import PSD Assets** feature provided by **CrazyTalk Animator 3** to update the head of the character.

9.2 Using High-Resolution Pose Images

File Utilized:

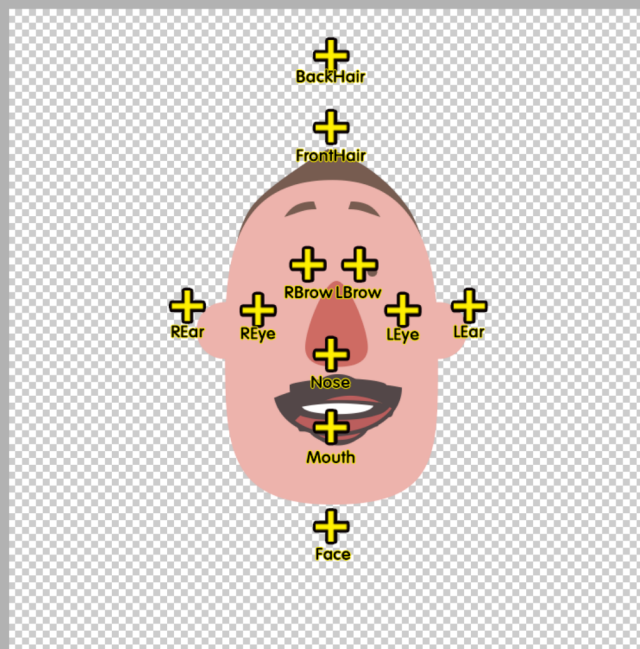
- 01_PSD_Templates / Human_Talking_Head_Template.psd
- 02_PSD_Image_Resources / 01_Human / High-res_Talking_Head.psd

Open the **Human_Talking_Head_Template.psd** and the **High-res_Talking_Head.psd**.

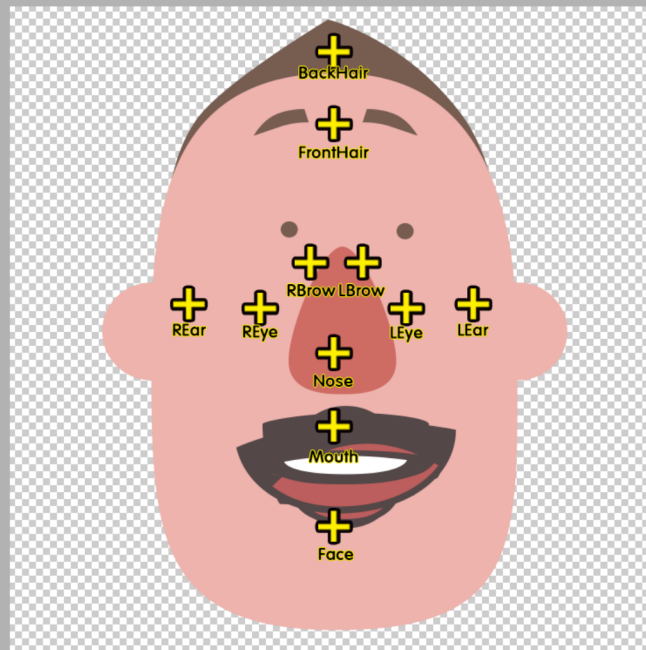


*** If you want to use custom facial features, please make sure their original sizes are no less than 100 pixels x 100 pixels.**

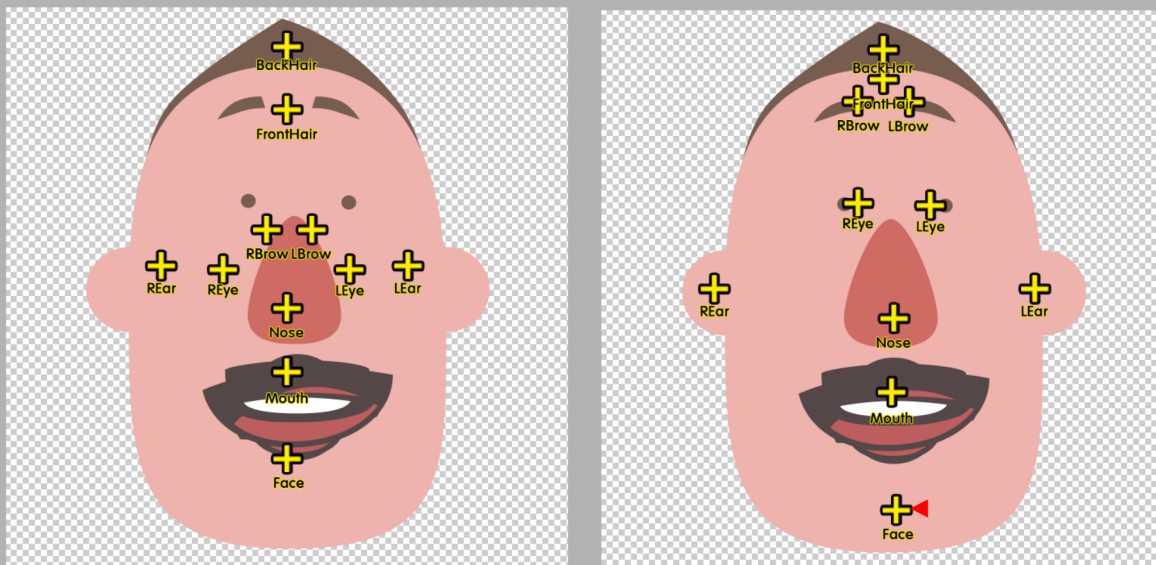
Drag and drop the element images from the **High-res_Talking_Head.psd** document to the other one (Please refer to the previous chapter for the work flow).



If the sizes of the elements are not ideal, then you can transform them (these elements are made by **Path**, therefore they do not have the quality loss issue when being resized).



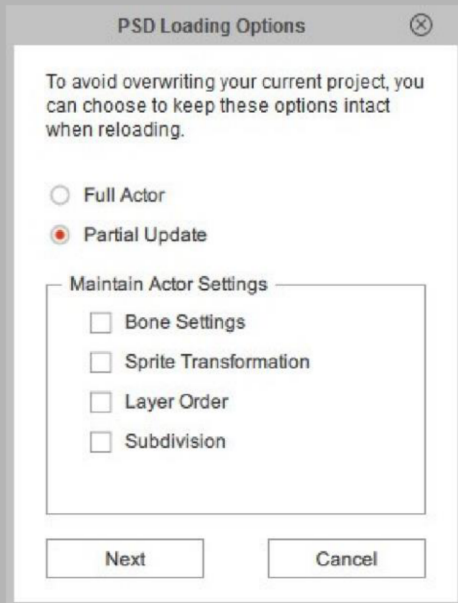
Make sure that the bones are correctly placed with the pose images, especially the **Face** bone because it will be the connecting joint for the top of the neck in **Cartoon Animator**.



In **Cartoon Animator**, select the character created in the previous chapter and switch to the **Composer Mode**.

Click the **Import PSD Assets** button and load the PSD file into **Cartoon Animator**.

Choose the **Partial Update** radio button and load the **PSD** template file to update the head of the character.



Resize the head of the character and the quality loss issue is resolved.

Chapter 10

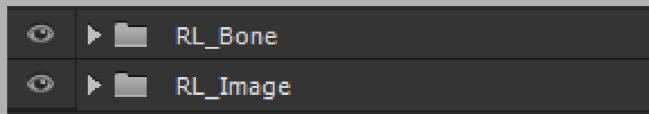
Creating Free Bone Character

By using the **PSD** template file, you can easily create custom characters as described in the previous chapters. However, if you wish to create a custom character, including the bone joints and the images from scratch, then you can follow the steps in this chapter.

10.1 Creating PSD Structure

A standard structure for a character in a PSD file is composed of two main groups, **Bone** and **Image**. In this section, you can create your custom PSD structure for the character in order to have certain groups when inserting element images.

The two main groups and their names are as shown below (please remember that the names must follow the convention in this illustration) :

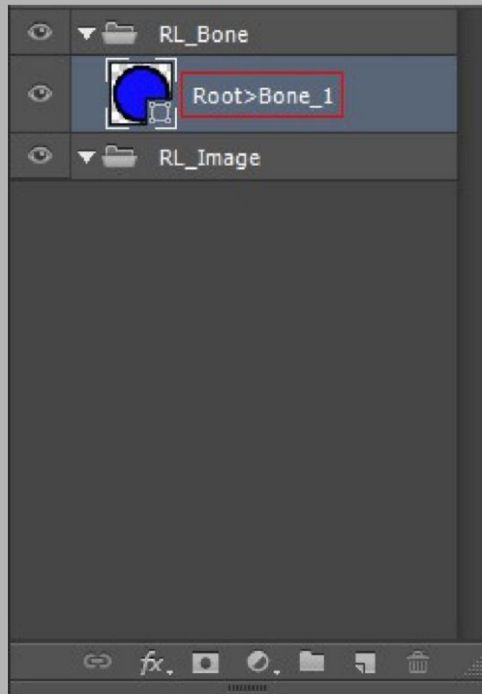


The **RL_Bone** is for storing bone layers, while the **RL_Image** stores the images you want to use for the custom character.

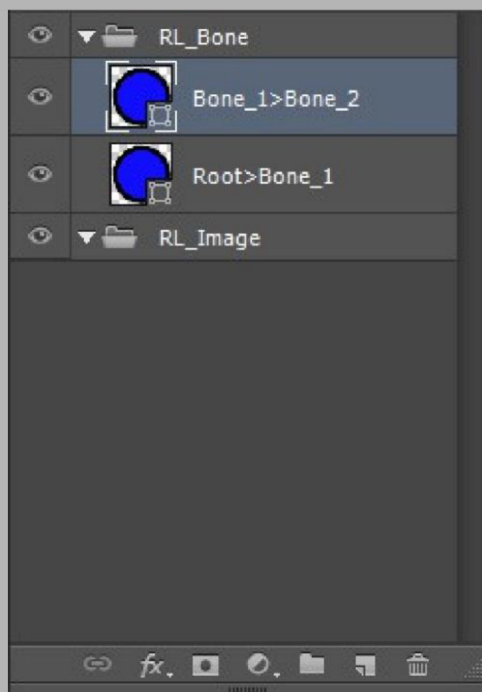
10.2 About the Bone Structure

For a PSD editor, such as Photoshop, the image layers do not have the ability to form tree structures. Therefore, you need to rename the layers in certain formations to create a bone structure (or you can form the bone structure later on in **Cartoon Animator** – section 8.5).

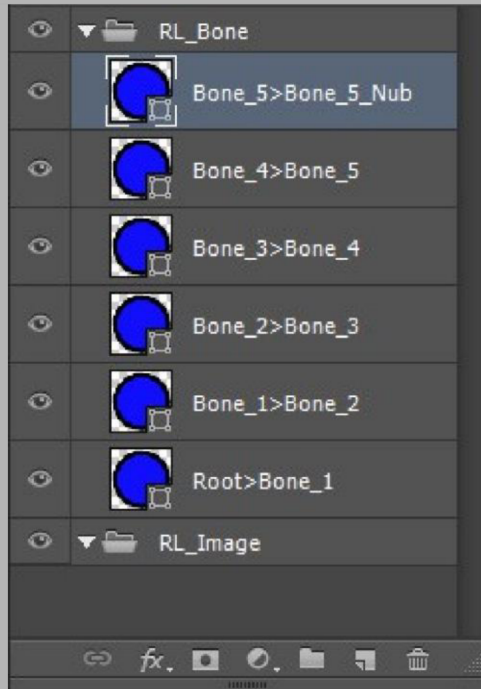
- The name of the bone root must be “**Root>Bone1_1**”.



- The naming convention for the other bones must be the parent bone name followed with a “>” sign, and then the child bone name. In this case, “**Bone_1>Bone_2**”.



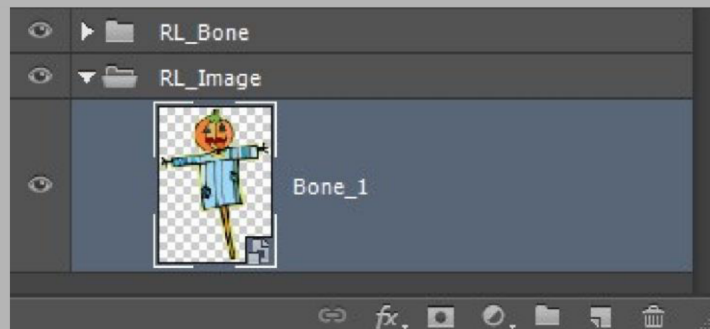
- The name of the final bone must be **Parent Name>Parent Name_Nub**.



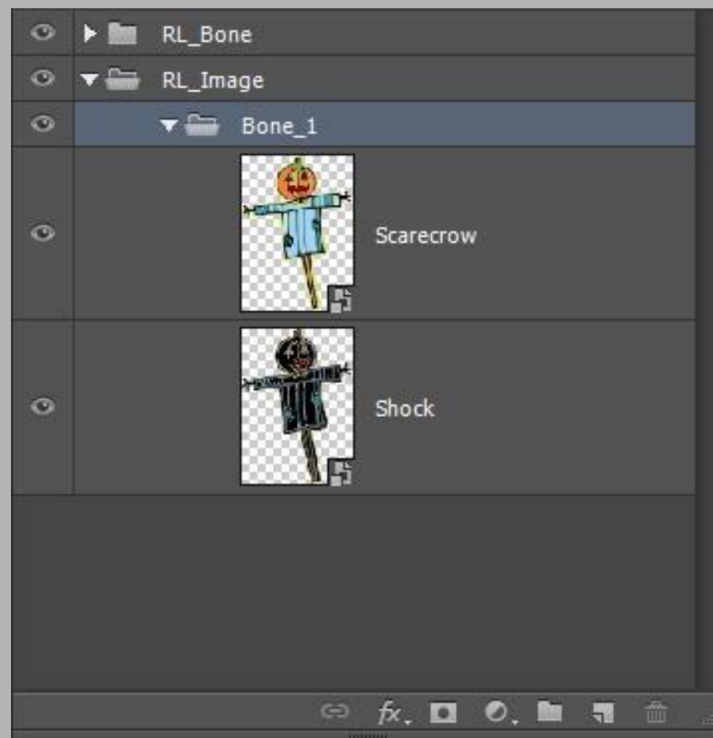
10.3 About the Image Structure

After the bone structure is set up, you can add the image into the **RL_Image** folder.

- The name of the image layer must have an identical name as the bone to which it is attached.



- If you intend to attach a sprite with multiple pose images to a certain bone, then you can create a folder under the **RL_Image** first, rename it to the name of the bone to which the sprite is attached, and then store all pose images that you want to add in the sprite.



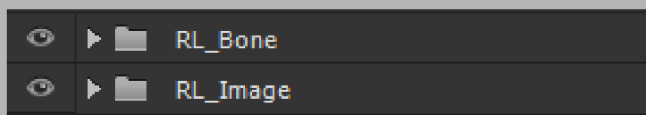
10.4 Creating Character Structures by Naming in PSD Editor

File Utilized: 02_PSD_Image_Resources / 05_Free_Bone / Scarecrow.png

In this section, the character's bone structure and images are created in the PSD editor (in this case, Photoshop). The structure relationships of the bone and the image are designated by certain naming rules. Once the editing is done, all you need to do is import the PSD file into **Cartoon Animator** and the character will be ready to be animated.

Start a new file in your favorite PSD file editor.

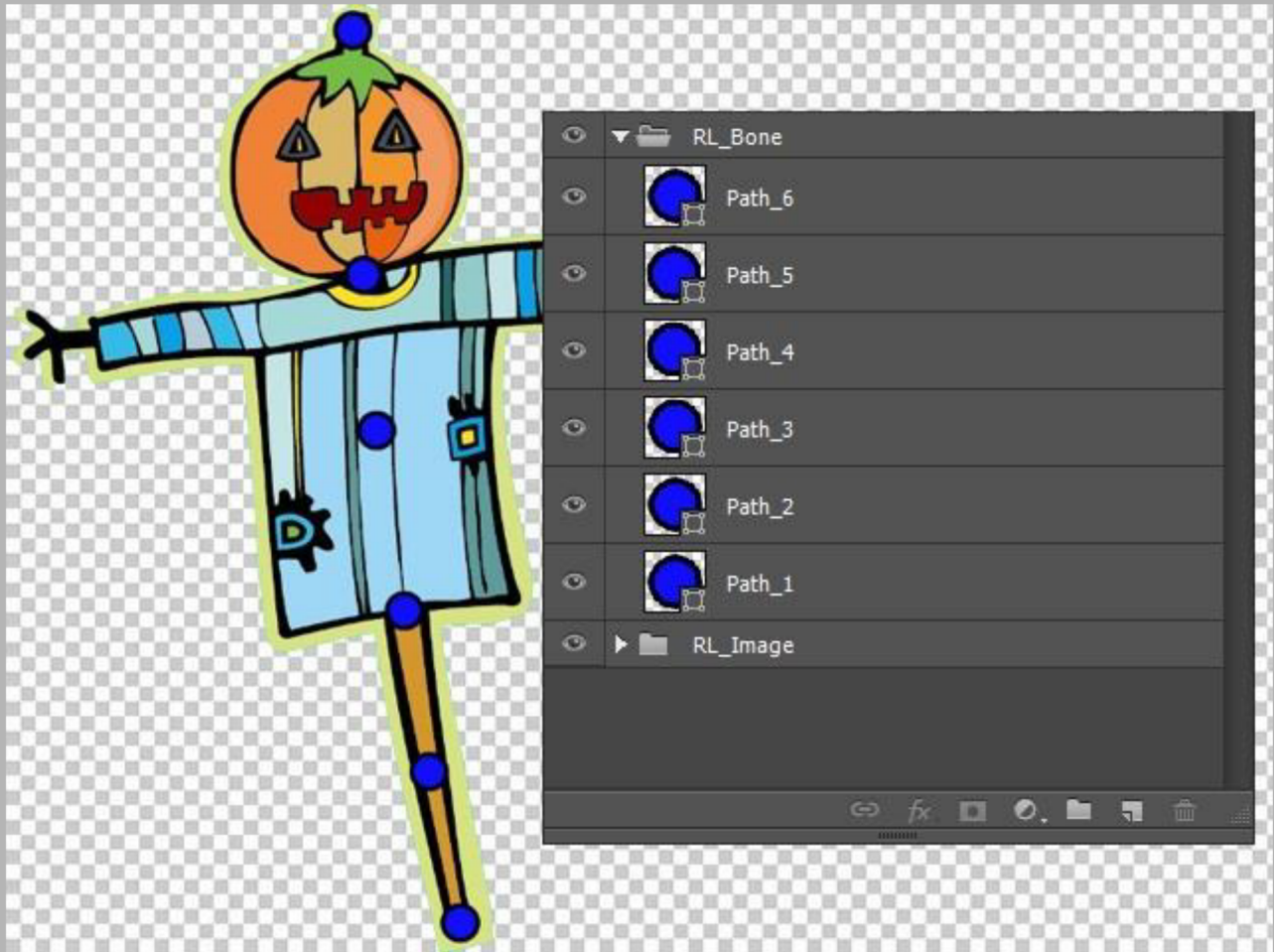
Create two group folders named **RL_Bone** and **RL_Image**.



Insert the character image into the **RL_Image** folder.

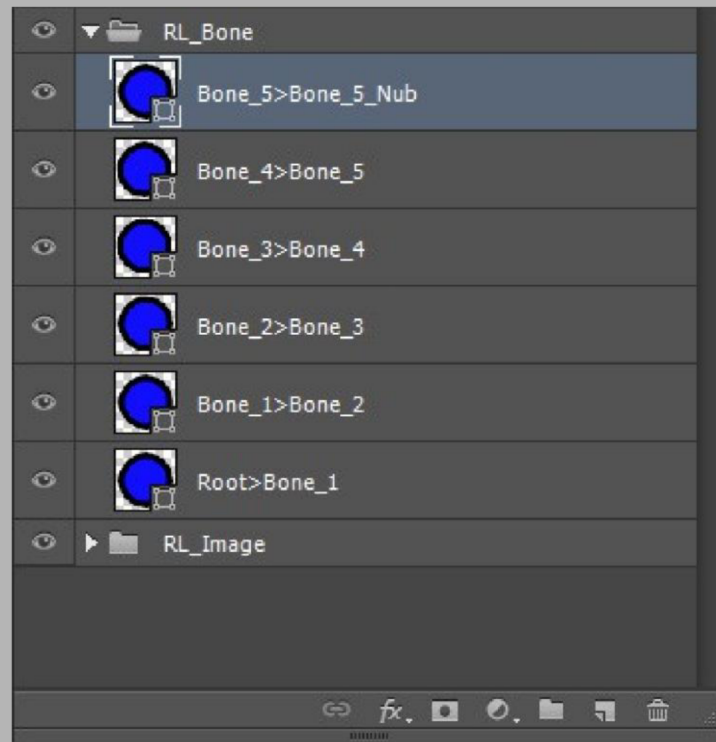


Create several simple path-shape layers in the **RL_Bone** group folder. These shapes are taken as the marks of the joints for the character when it is loaded into **Cartoon Animator**.

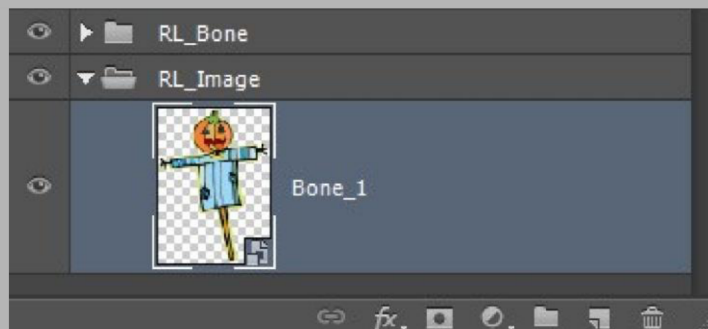


Place the path layers in the desired positions if necessary. They will be the bone joints in **Cartoon Animator**.

Rename the path layers as shown below:



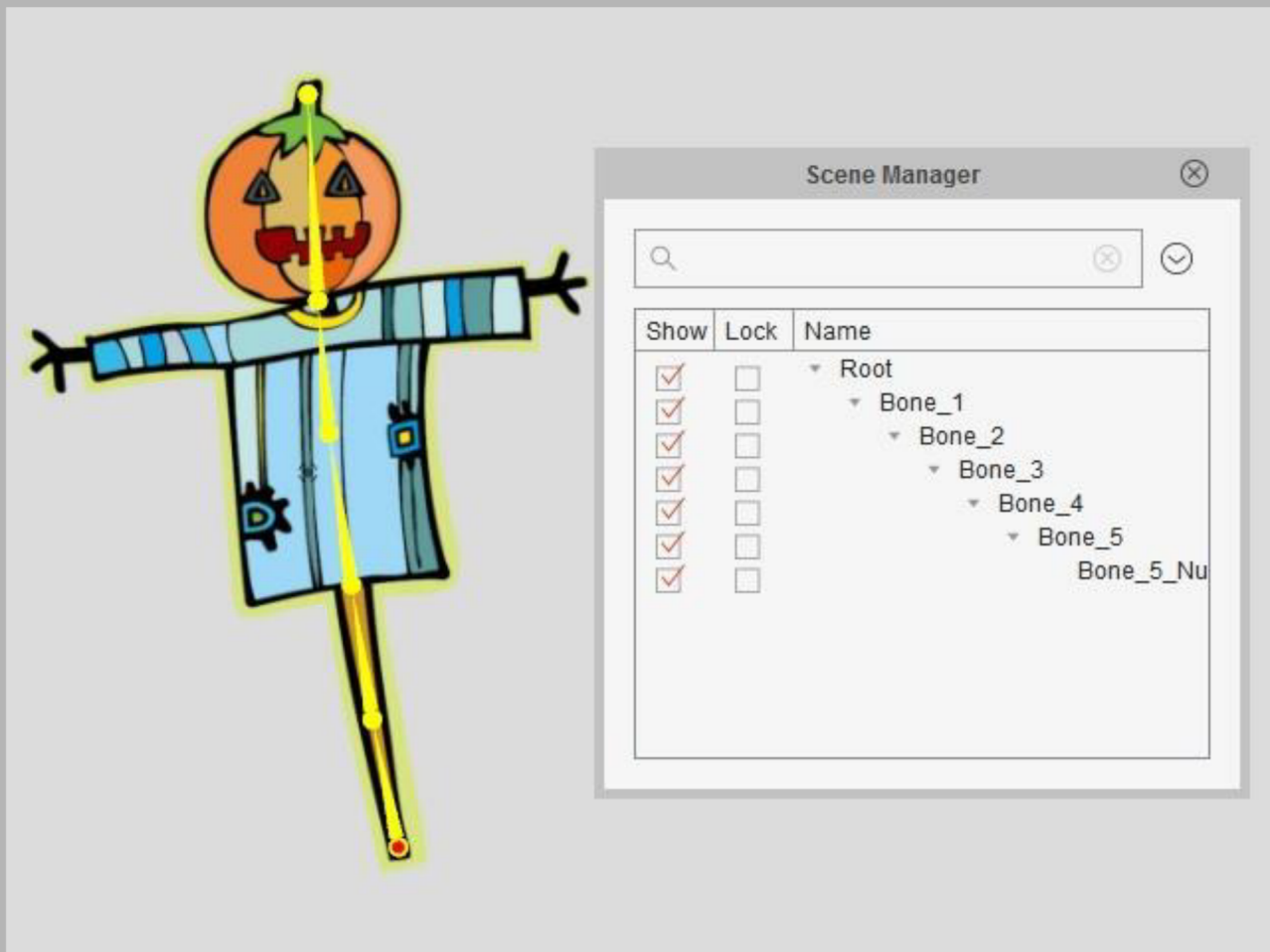
- The root bone should be named **Root>Bone_1**.
- The other sibling bones should be named in the form that the parent bone name follows with a “>” sign and then the child bone name. For example, “**Bone_1>Bone_2**”.
- The name of the final bone must be **Parent Name>Parent Name_Nub**.
- Assign the character image to the bone to which it is about to be attached by renaming the image to the name of the bone.



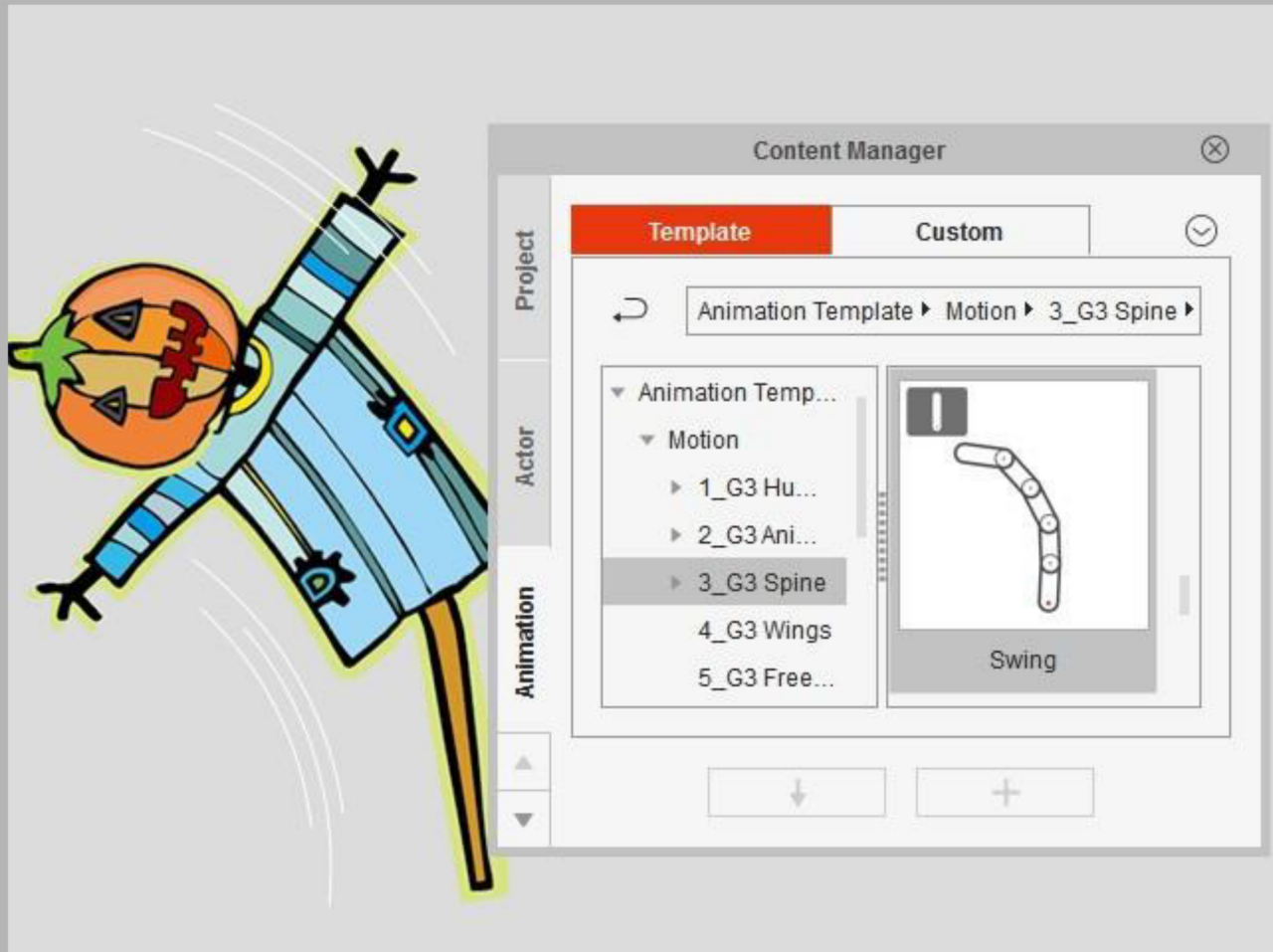
Save the document as a file in **PSD** format.

Load the PSD file to form a new character in **Cartoon Animator** by drag and dropping the PSD file onto the working area in **Cartoon Animator** ; or switch **Cartoon Animator** to **Composer Mode**, and click the Import **G3 Free Bone Actor** button to load the PSD file.

You will then see the new character with a bone structure.



Because the bone structure follows the naming rule for the **G3 Spine** character, the motion templates for the character can be applied to this new character as well.

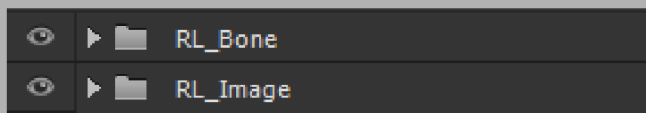


10.5 Building Character Structures in Cartoon Animator

File Utilized: 02_PSD_Image_Resources / 05_Free_Bone / Scarecrow.png

In the previous section, the structures for the bones and images of the character are created in the PSD editor. However, If you do not want to remember the naming rules, then you can simply create certain layers in a PSD document and then build up the specific structure set in **Cartoon Animator**.

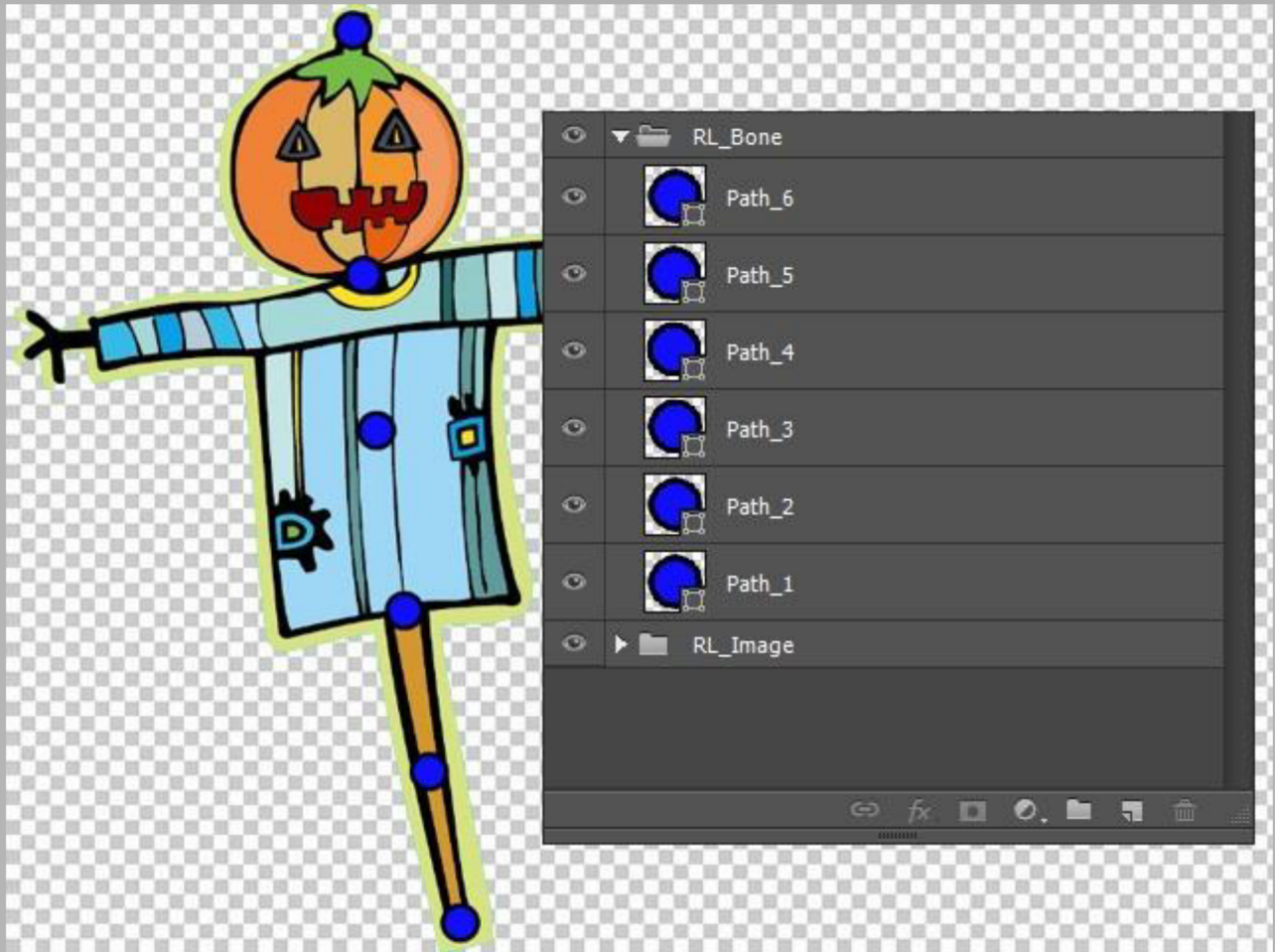
1. Start a new file in your favorite PSD file editor.
2. Create two group folders named **RL_Bone** and **RL_Image**.



3. Insert the character image into the **RL_Image** folder.



4. Create several simple path-shape layers in the **RL_Bone** group folder. These shapes are taken as the marks of the joints for the character when it is loaded into **Cartoon Animator**.



5. Place the path layers into desired positions if necessary. They will be the bone joints in **Cartoon Animator**.

6. Rename the path and image layers as shown below:



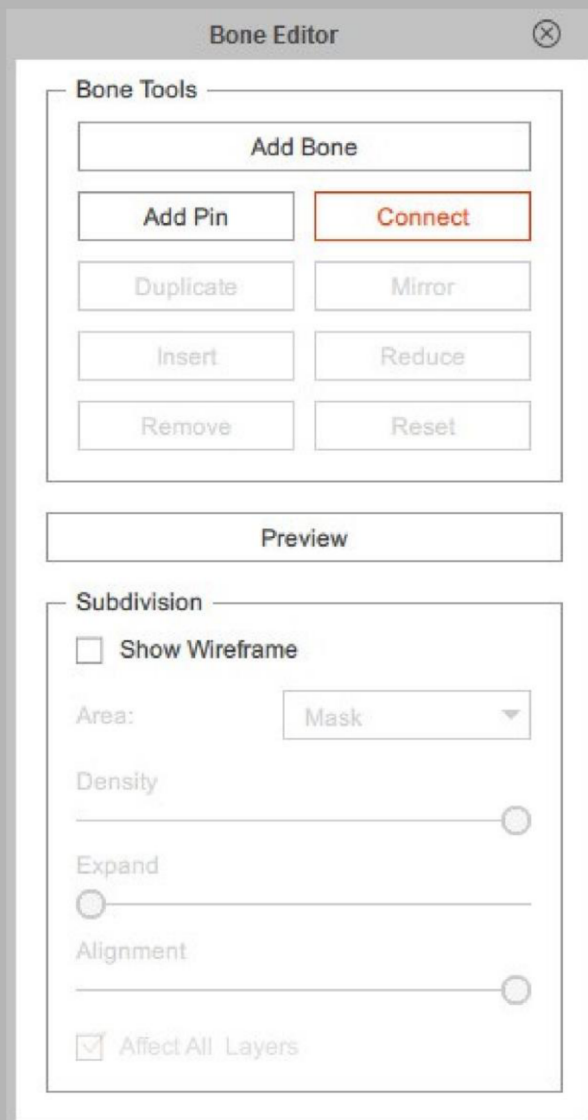
7. Save the document as a file in PSD format.
8. Load the PSD file to form a new character in **Cartoon Animator** by drag and dropping the PSD file onto the working area in **Cartoon Animator**; or switch **Cartoon Animator** to **Composer Mode**, and click the Import **G3 Free Bone Actor** button to load the PSD file.

9. You will then see the new character with a bone structure, and that each bone is in the same level of the tree view.



- The entire image is now controlled by **Bone_1**; therefore, only **Bone_1** is in yellow.
- The image is attached to the **Bone_1**, which causes a red spot shown in the yellow bone.
- The other bones are not attached nor do they control any image, so they are all grayed out.

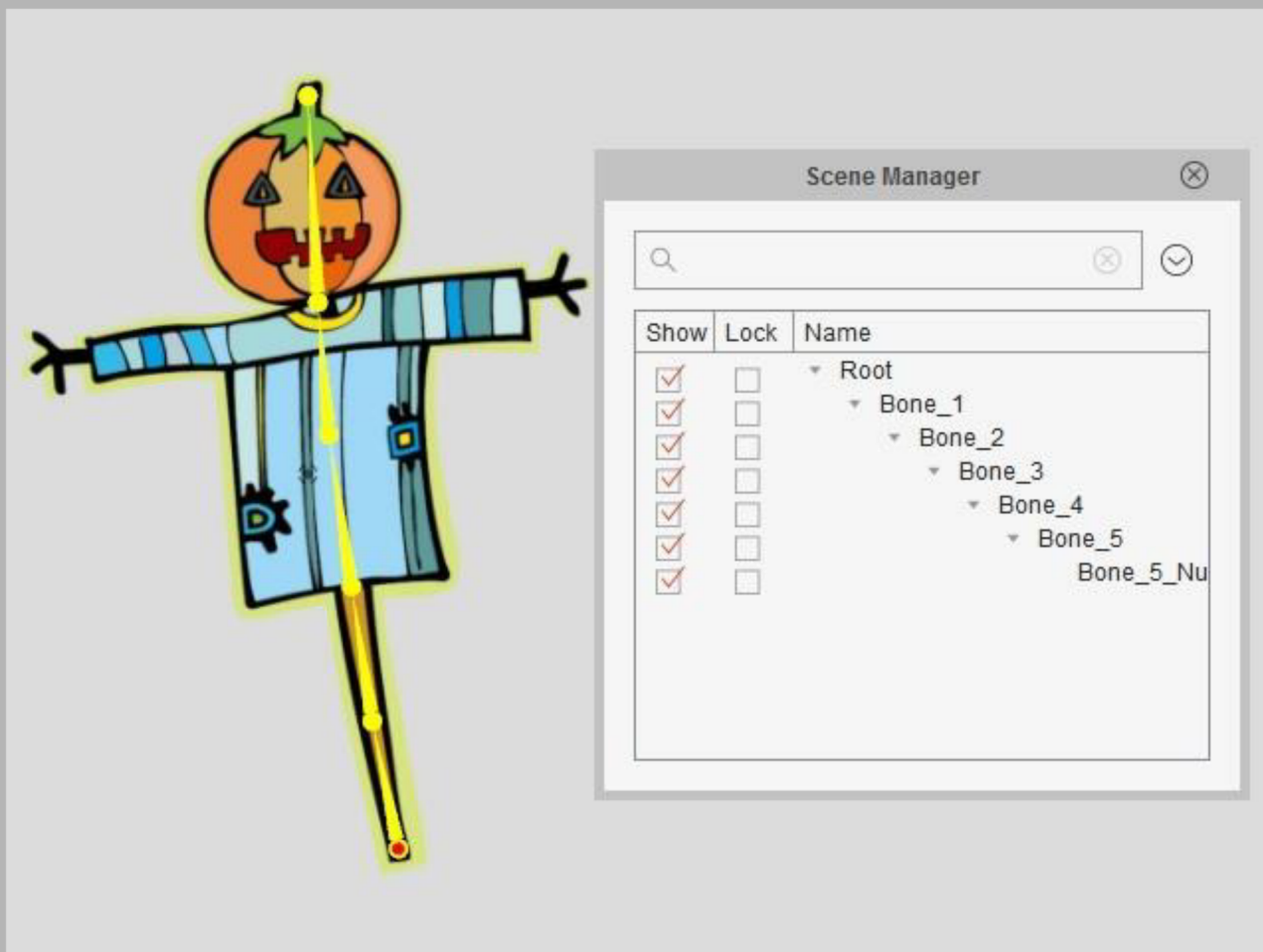
10. In the Composer Mode, open the **Bone Editor**. Press the **Connect** button in order to connect these bones into a bone structure.



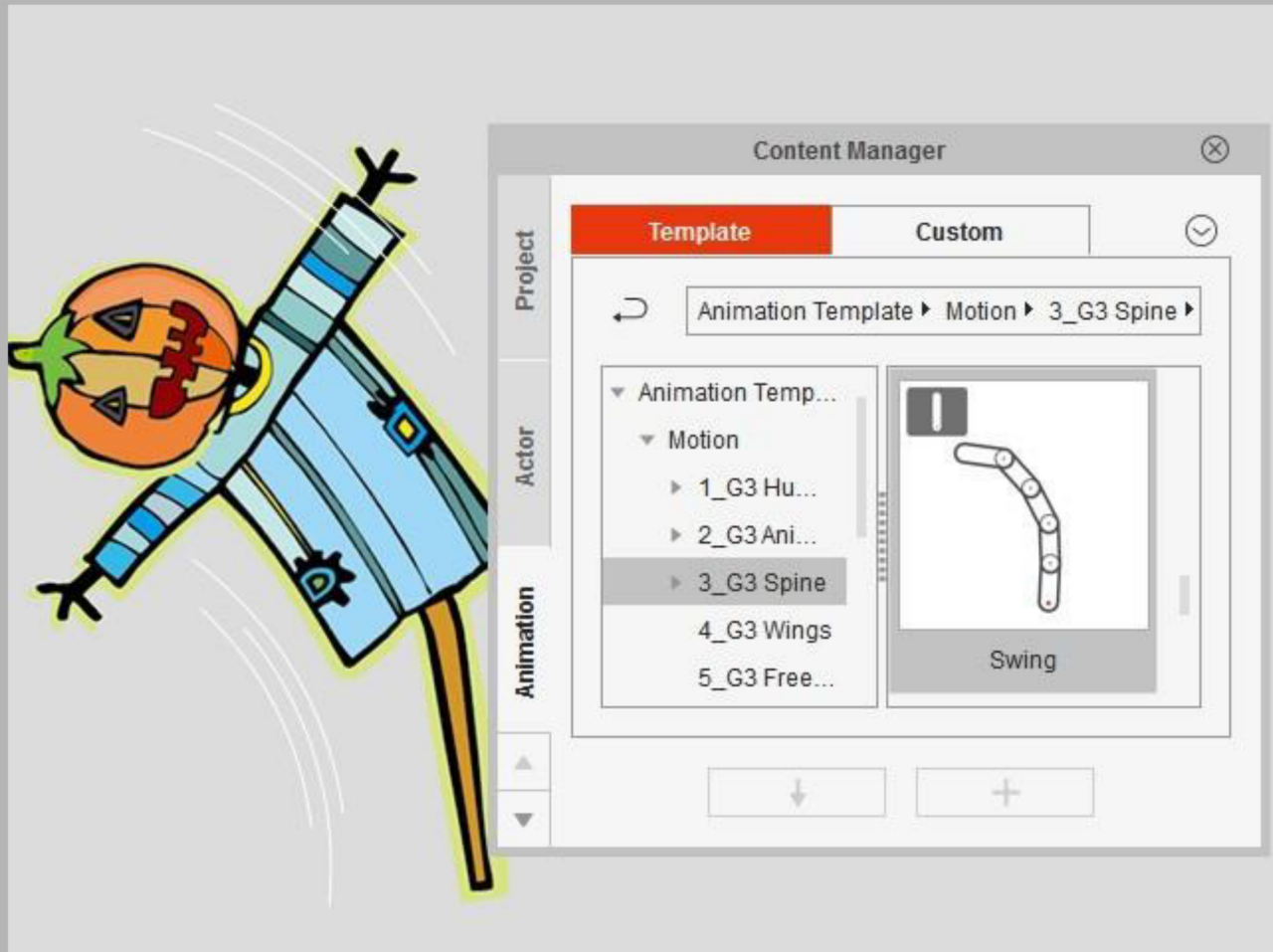
11. Click on the **Bone_1** first, and then **Bone_2** to connect them (always click the bone you want to specify as a parent first, and then the child bone).



12. Repeat the same steps to connect all bones.



13. Because the bone structure follows the naming rule for the **G3 Spine** character, the motion templates for the character can be applied to this new character as well.



Chapter 11 PSD to CTA Scene Conversion

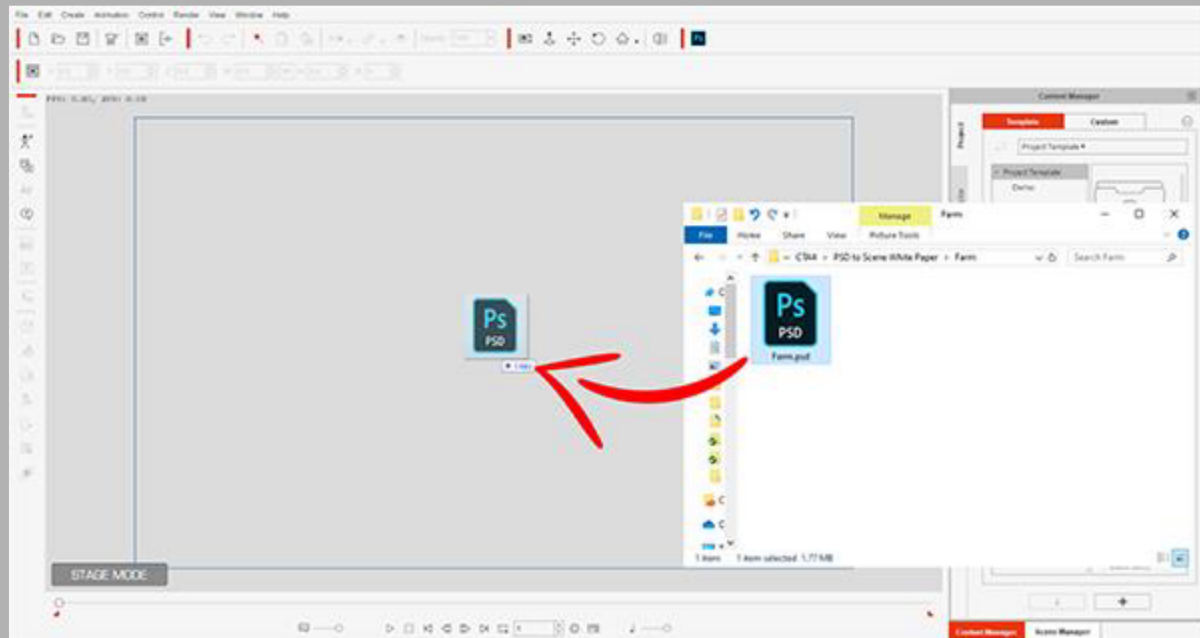
PSD to Scene functionality allows you to create a layered data inside CTA by importing a *.psd file right into CTA. Once imported the Scene Manger will maintain the original layers and groups of the PSD file making it convenient to perform subsequent editing in CTA, such as animation production and 3D camera adjustments.

The following sections will describe the PSD to Scene workflow and explain how the PSD data structure is interpreted inside CTA.

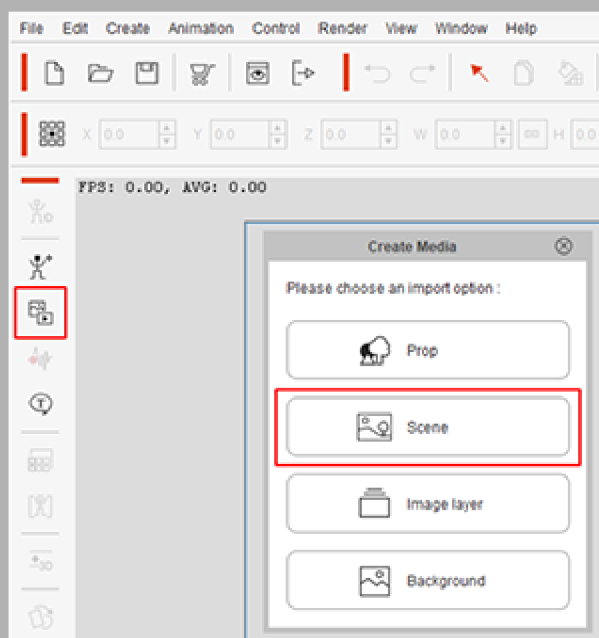
11.1 PSD to CTA Scene Workflow

There are two ways to import a CTA file (**WhitePaper & Learning Resource\CTA_G3_Pipeline_PSD_Ai_Template_Sample_Project\03_Sample_Projects\00_Scene\Farm.psd**)

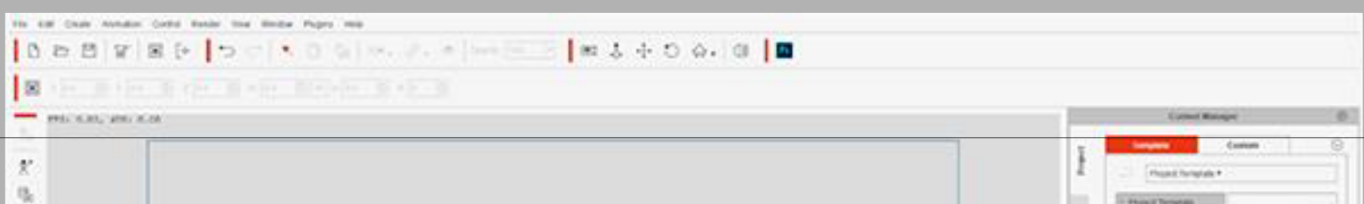
Method 1: You can drag the PSD file directly into the stage.



Method 2: Open the PSD file by clicking on the **Create Media** button and select the **Scene** type.



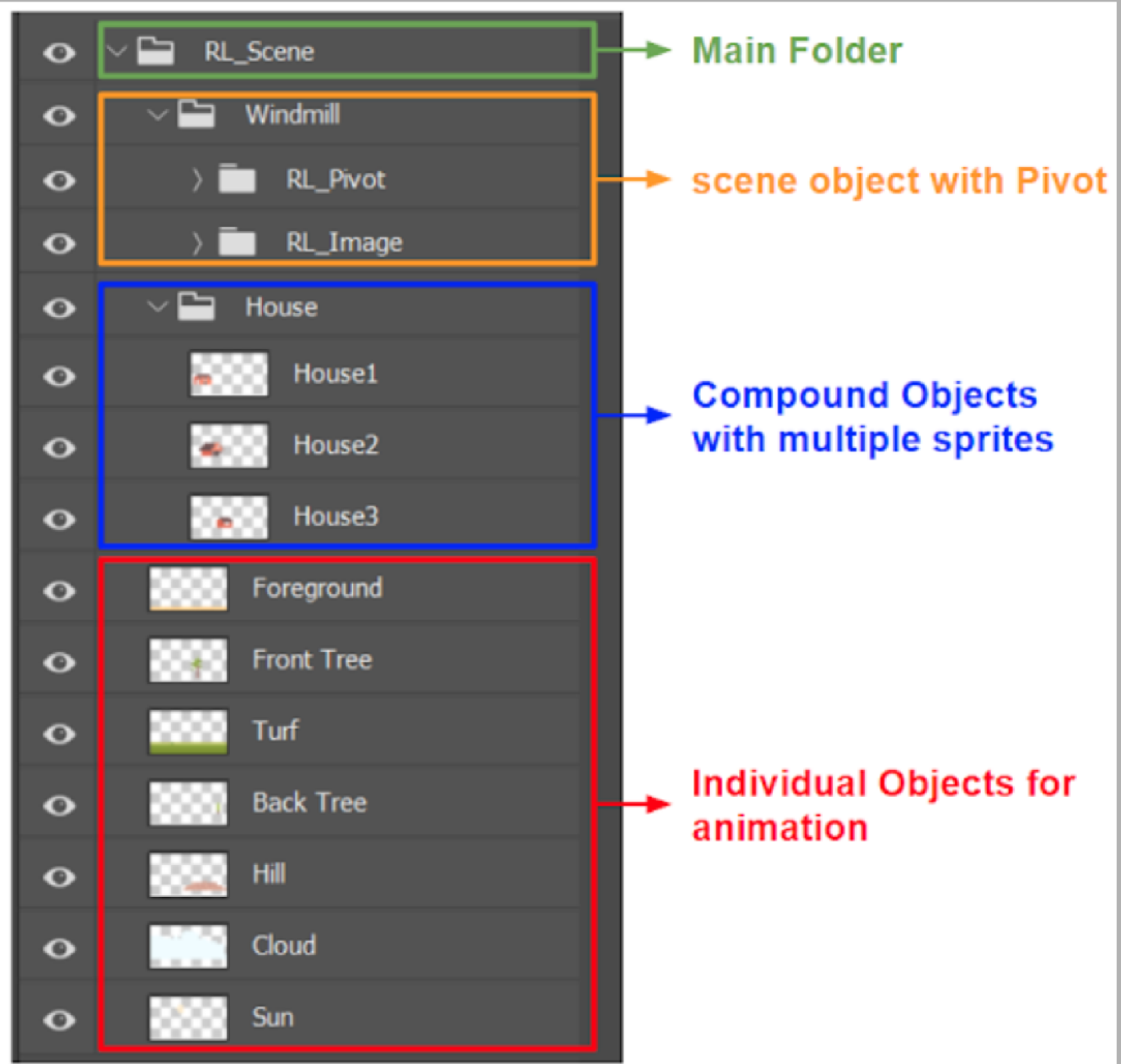
Once the file is imported then the elements of the PSD file are deployed into the stage.



11.2 Correspondence between CTA Object and PSD Data Structure

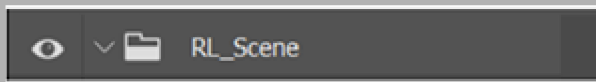
Use any PSD tool to open the **Farm.psd** example file and examine the structure in the layer panel to the right. The types that make up different structures can be divided into four categories: Scene Root, Single Layer, Compound Prop, and Compound Prop with Pivot.

The following sections will compare the format conversions of these four structures corresponding to CTA.

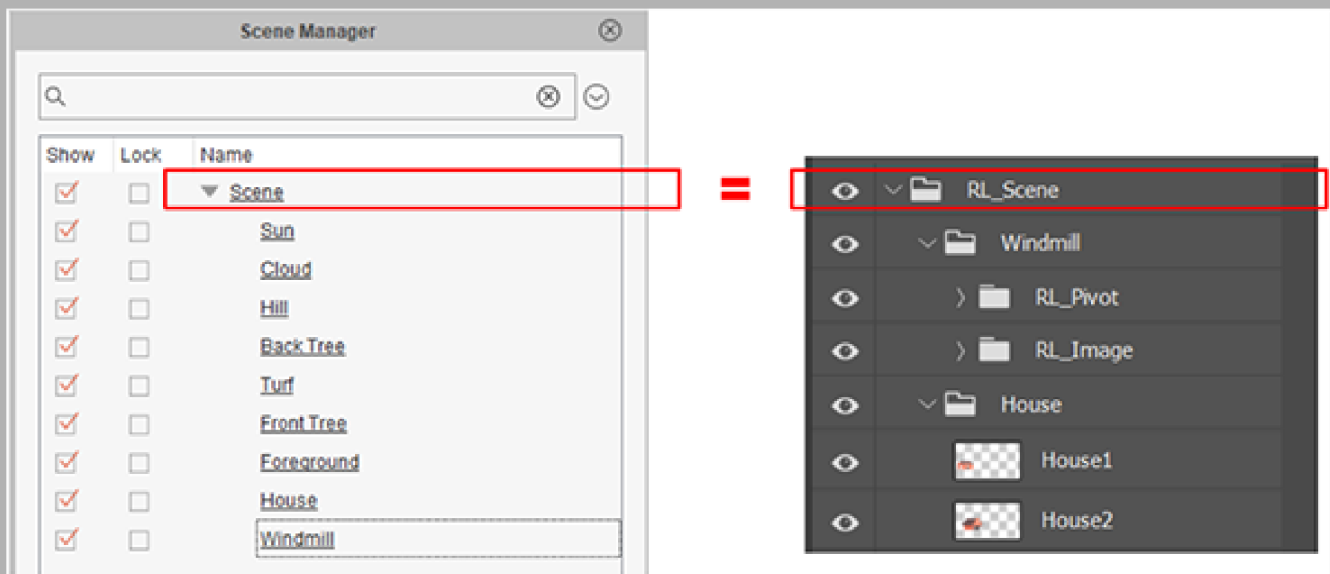


- **Main Folder**

A standard structure of the Scene PSD file must have a Group: **RL_Scene**, all objects to be entered into the CTA must be built under this group level.

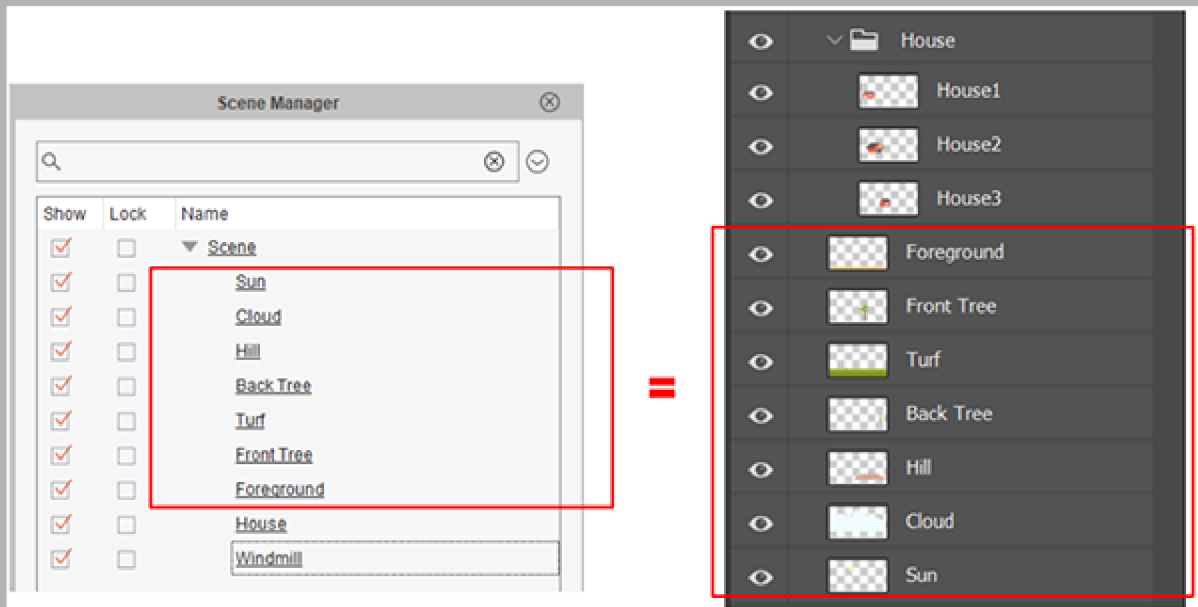


- Open **CTA's Scene Manager**.
- Import type will be automatically designated to scene because we have been defined the PSD file's root as **RL_Scene**.



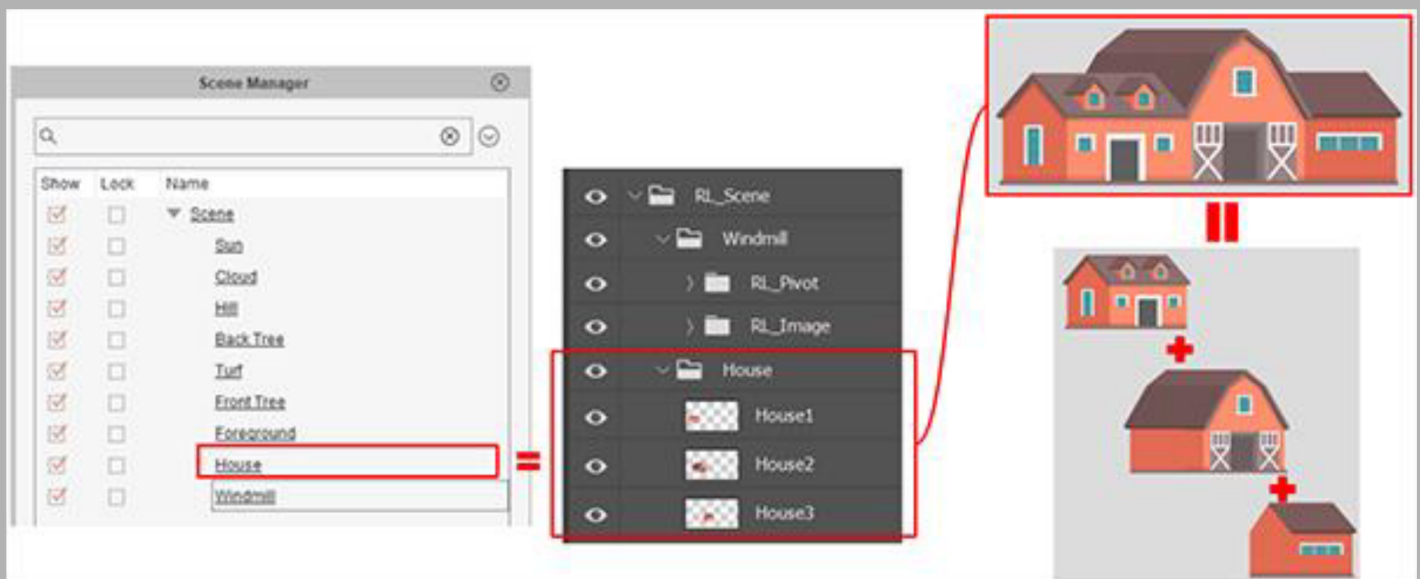
- **Individual Objects for Animation**

- CTA will convert all the layers under the **RL_Scene** single layer (without folder) into individual objects.
- Since this type of object does not define a pivot, the pivot point will be set to the center of the image by default.

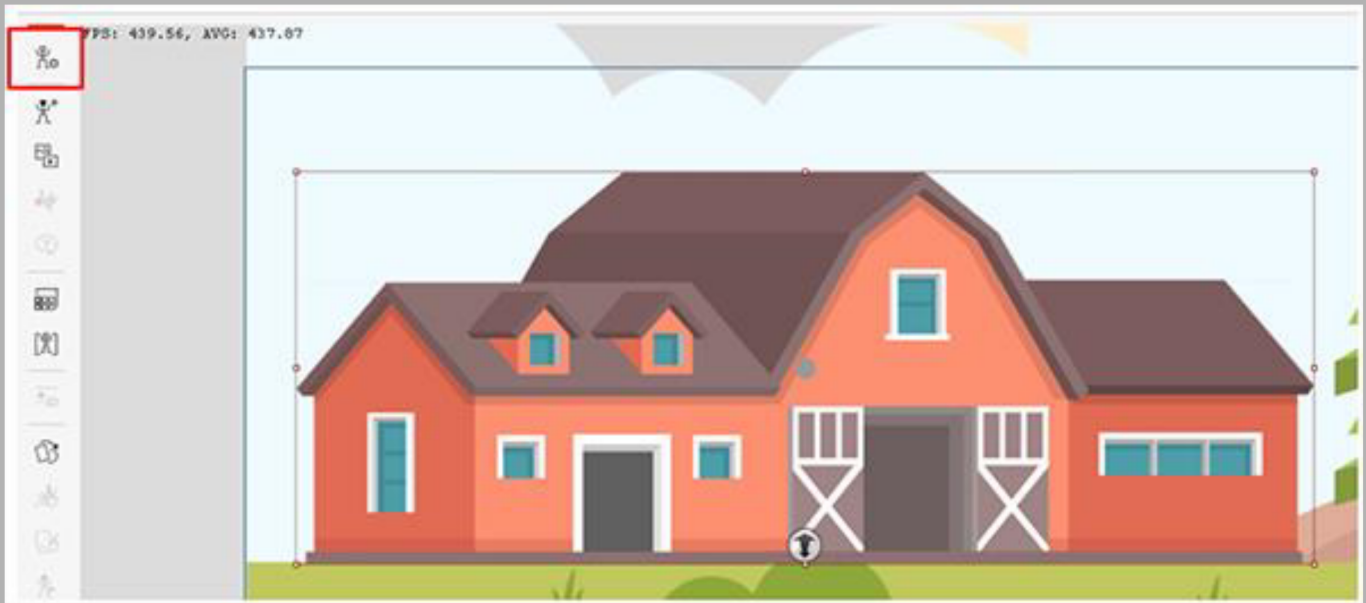


- **Compound Objects with Multiple Sprites**

- Expand “House” folder in Photoshop and compare with “House” Object in CTA’s Stage.
- CTA will collect the folder under the **RL_Scene** as an object.



From the PSD layer, there are three objects in the House group; We can enter Composer to find these three objects

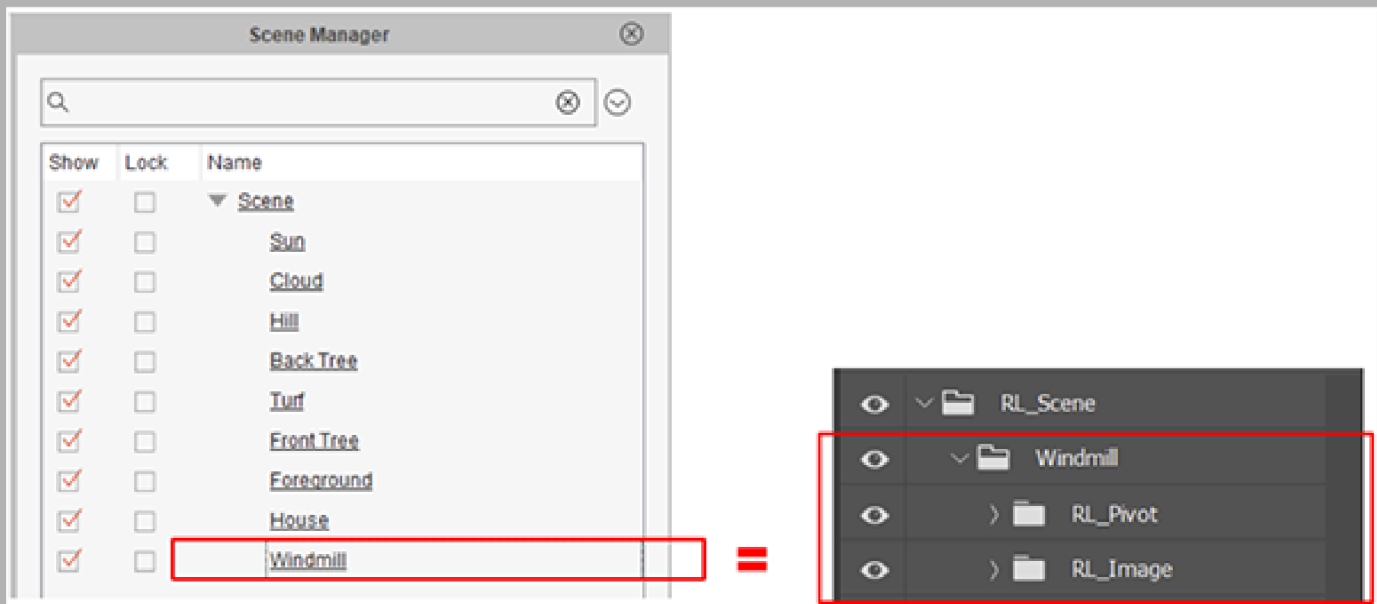


Turning on the **Scene Manager** in Composer, one can observe that CTA still has a layered object structure under the folder. Therefore, you can define the size and position of individual objects in Composer if needed.

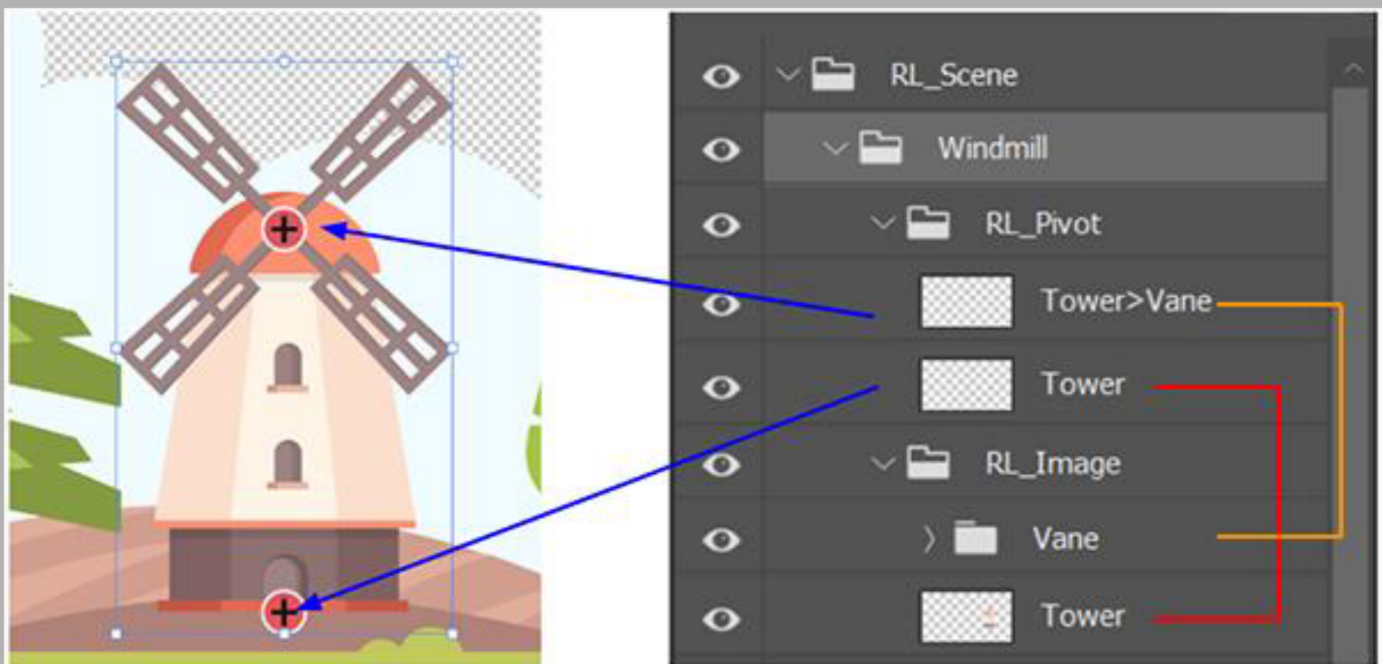


- **Compound Prop with Pivot**

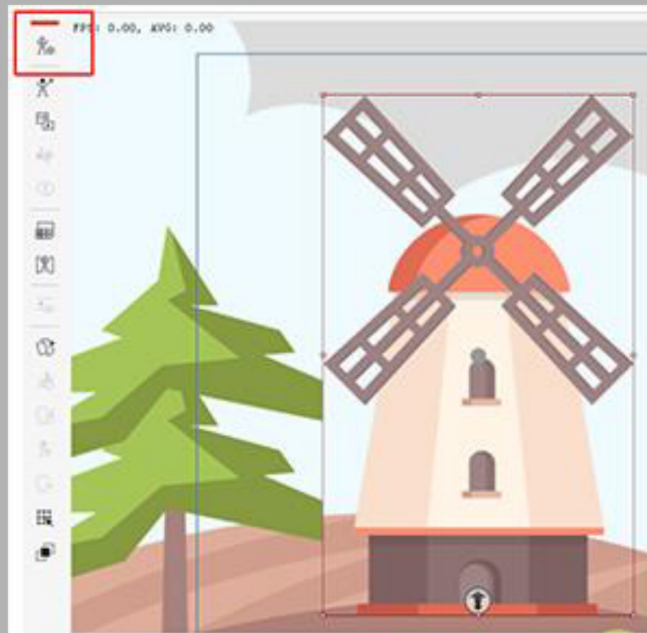
CTA Scene Template provides a definition of a Compound Prop with Pivot in PSD.



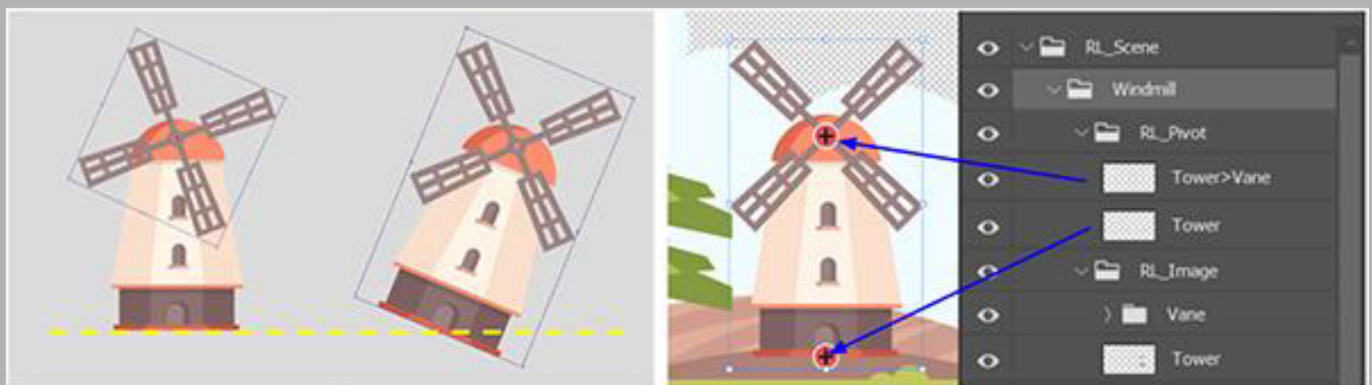
- Expand **RL_Pivot** and **RL_Image** Group.
- **RL_Pivot** is the center point location of the object, so the name in **RL_Image** is the same as the one in **RL_Pivot**



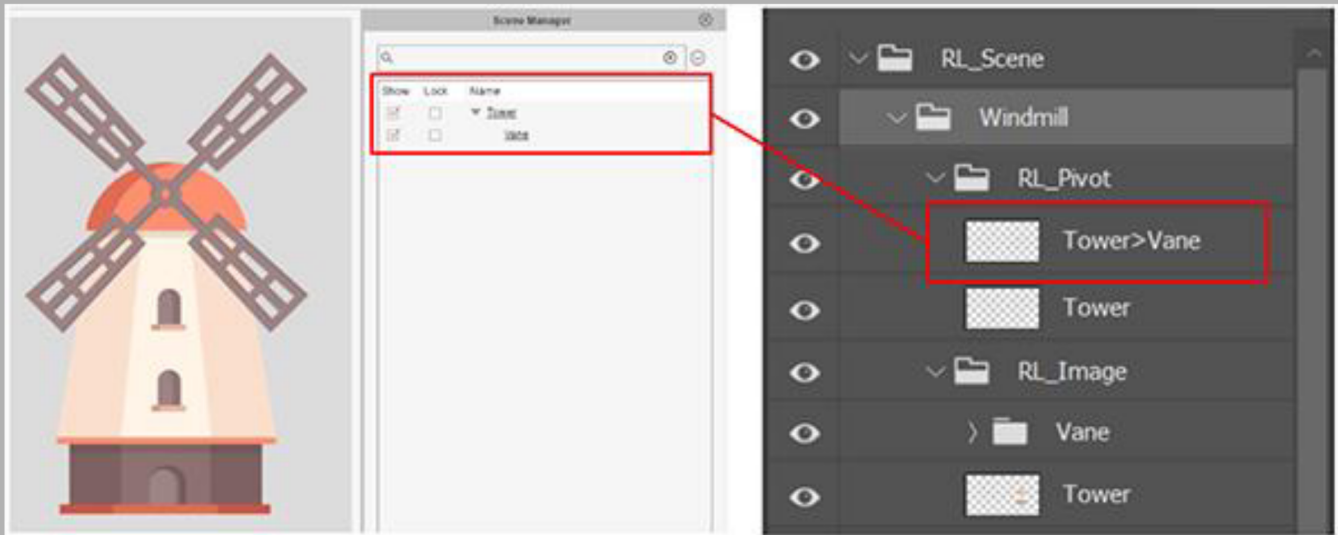
- A hierarchical relationship can be established on the **RL_Pivot** Layer, with the same rules as Free Bone (see Chapter 8.2)
- Select the **Windmill** and enter the **Composer mode**.



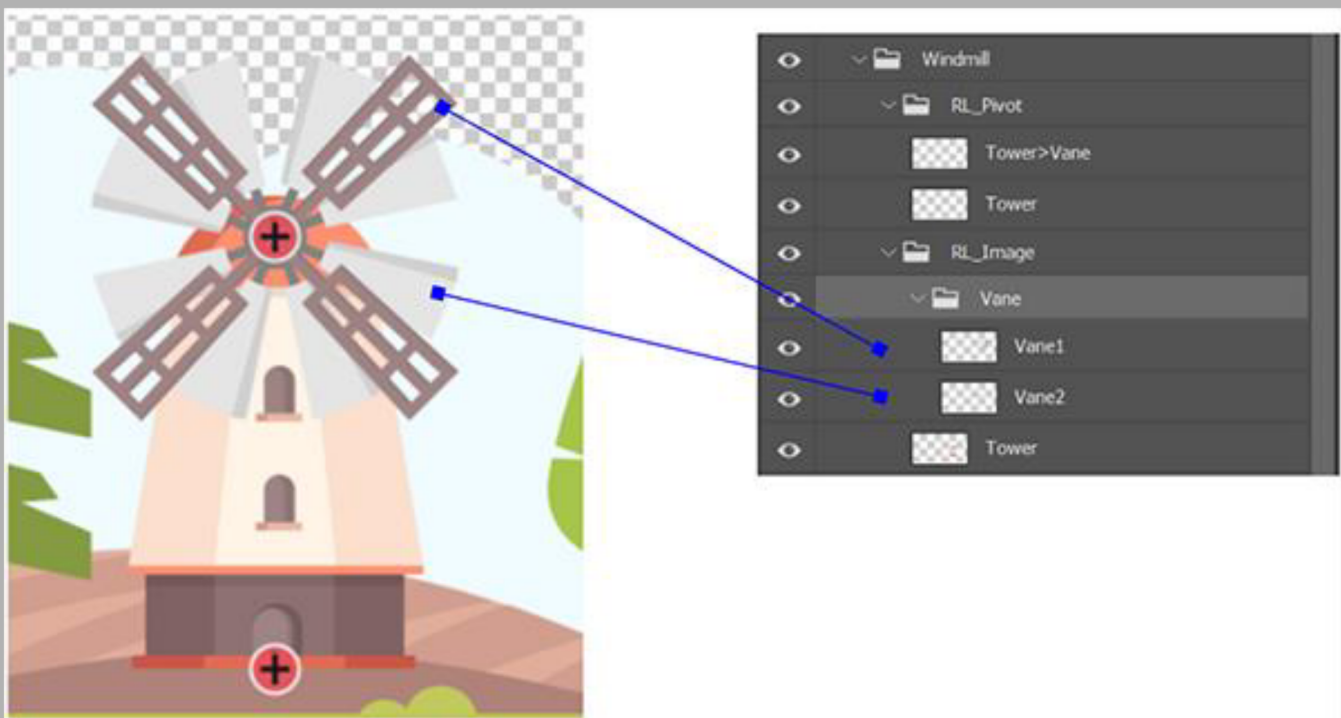
In Composer, rotate the Vane and Tower and observe how they move differently. This is due to different pivot positioning causing the rotation axis to differ.



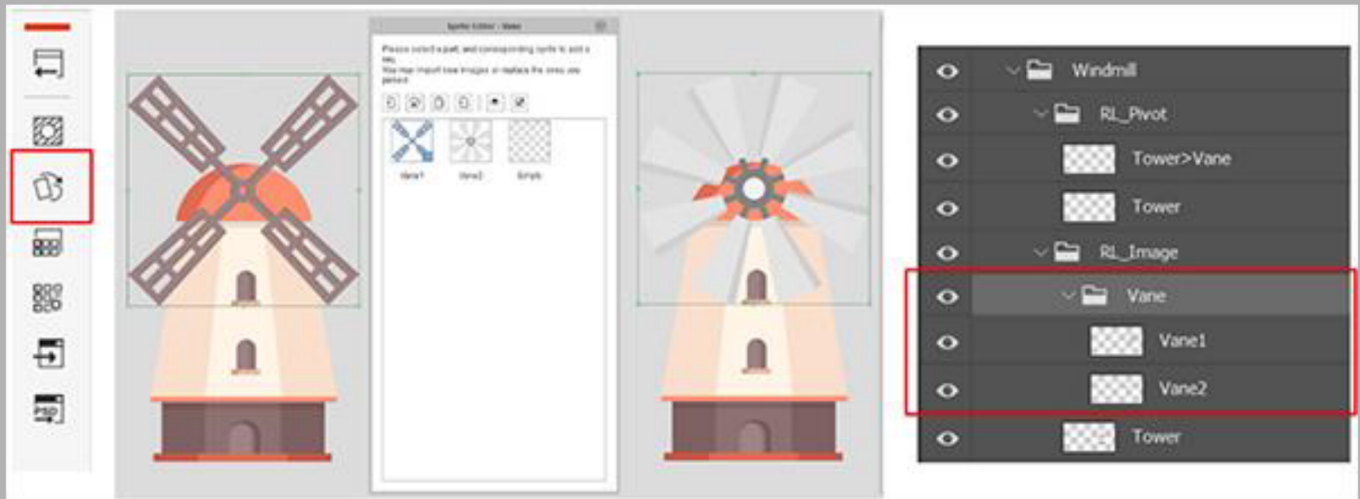
- **Vane** can be observed under the **Tower** hierarchy in the **Scene Manager** in the **Composer**.
- Since **Vane** is built below the **Tower's** hierarchy, rotating or scaling the **Tower** reveals that **Vane** will be driven by the rotation and scaling of the **Tower**.



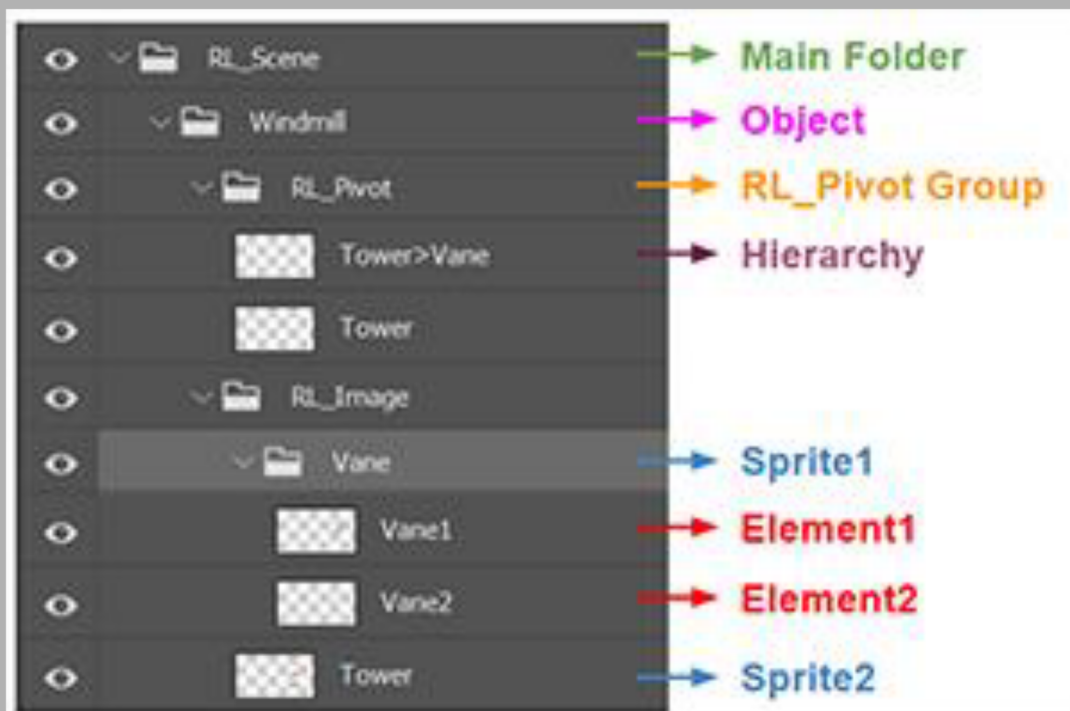
Expand the Vane folder of the PSD file to see that there are two different types of blades, one of which is hidden.



- Open the Sprite Editor in the CTA Composer and see the two images placed under the **RL_Image**.
- Click on the Element in the Sprite Editor to switch between different blades



The picture below illustrates the relationship between the Photoshop hierarchy and the corresponding CTA objects.



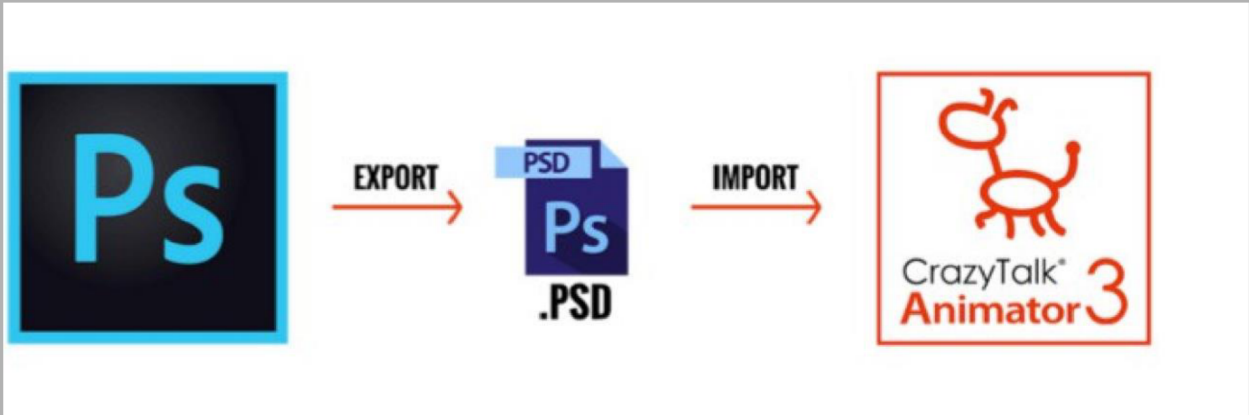
Chapter 12

Illustrator Pipeline to Cartoon Animator

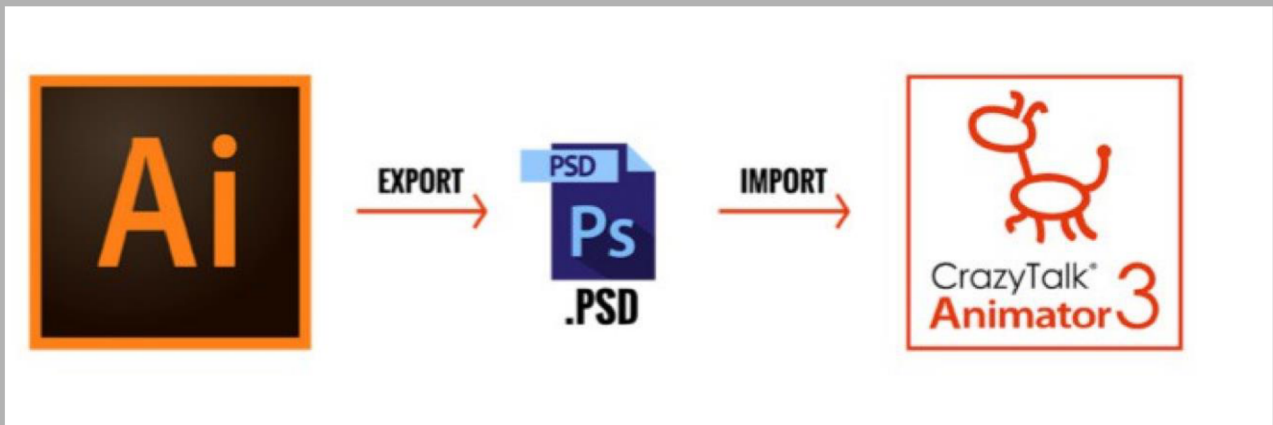
In **Cartoon Animator**, not only can you create **G3 Characters** with a PSD editor, but you can also prepare ones with **Illustrator**. This chapter describes the differences between the **PSD** and **Ai** template structures, and the methods to quickly generate an animate-able character by replacing the body parts with the **Ai** template. Besides, you will also learn how to add additional images onto a character's body parts.

12.1 The Introduction of Illustrator Pipeline

In the character pipeline with a PSD editor (in this case, **Photoshop**), you can create a G3 character by inserting images into specific layers, aligning bones, exporting **PSD** file, and finally load it into **Cartoon Animator**.

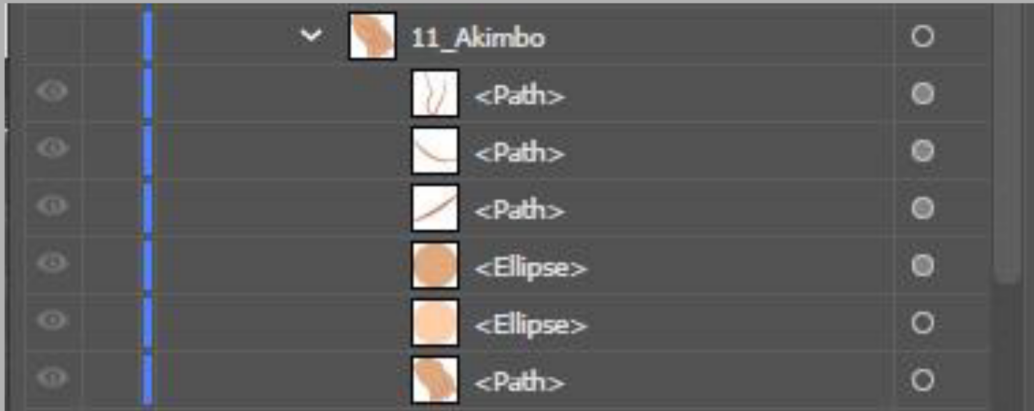


The character pipeline for **Illustrator** is almost the same. Inserting images to specific layers, aligning bones, exporting **PSD** file, and then loading it into **Cartoon Animator**.

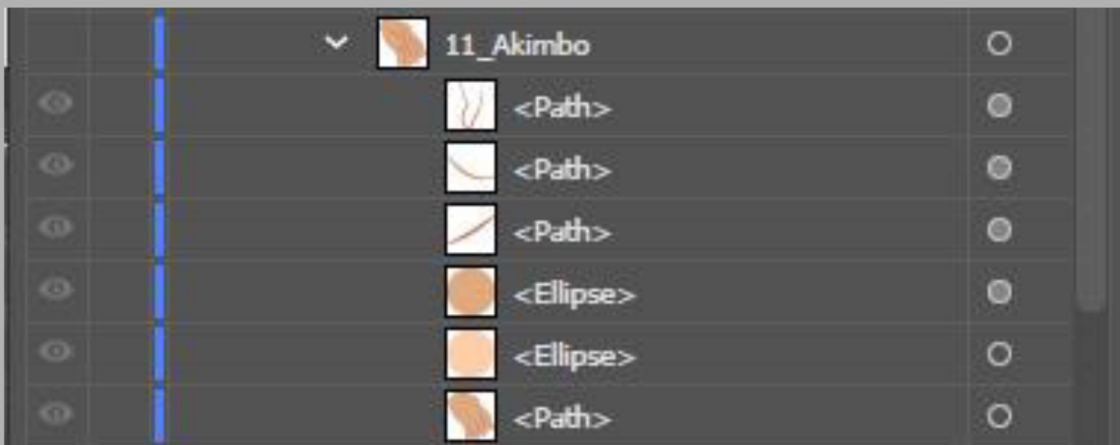


Important Points before you Start

- Do not regroup shapes images under an existing group, otherwise the file can not be saved as a PSD template.



- Certain Illustrator drawing techniques may influence the layer hierarchy.
 - Failing to connect the anchor point of an image to its endpoint may cause errors when exported to Photoshop.
 - If the picture is a line, then fill color will not be supported.



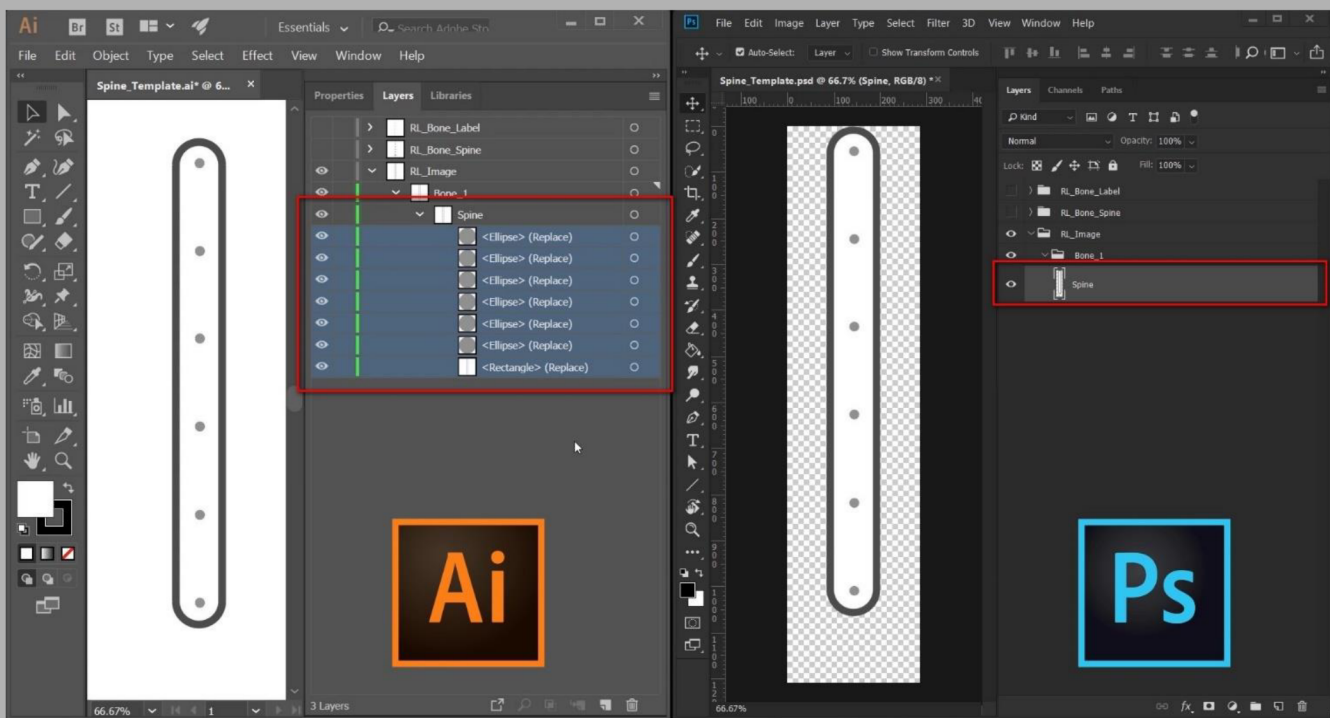
12.2 Differences between the Illustrator and Photoshop Pipelines

File Utilized:	WhitePaper & Learning Resource\CTA_G3_Pipeline_PSD_Ai_Template_Sample_Project\04_Ai Template\CS6\Spine_Template.ai
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There are few differences between the **Illustrator** and **Photoshop** pipelines.

First, all image layers in **Illustrator** must be shown before exporting the PSD file; while it is not necessary to show the layers in the **Photoshop** pipeline.

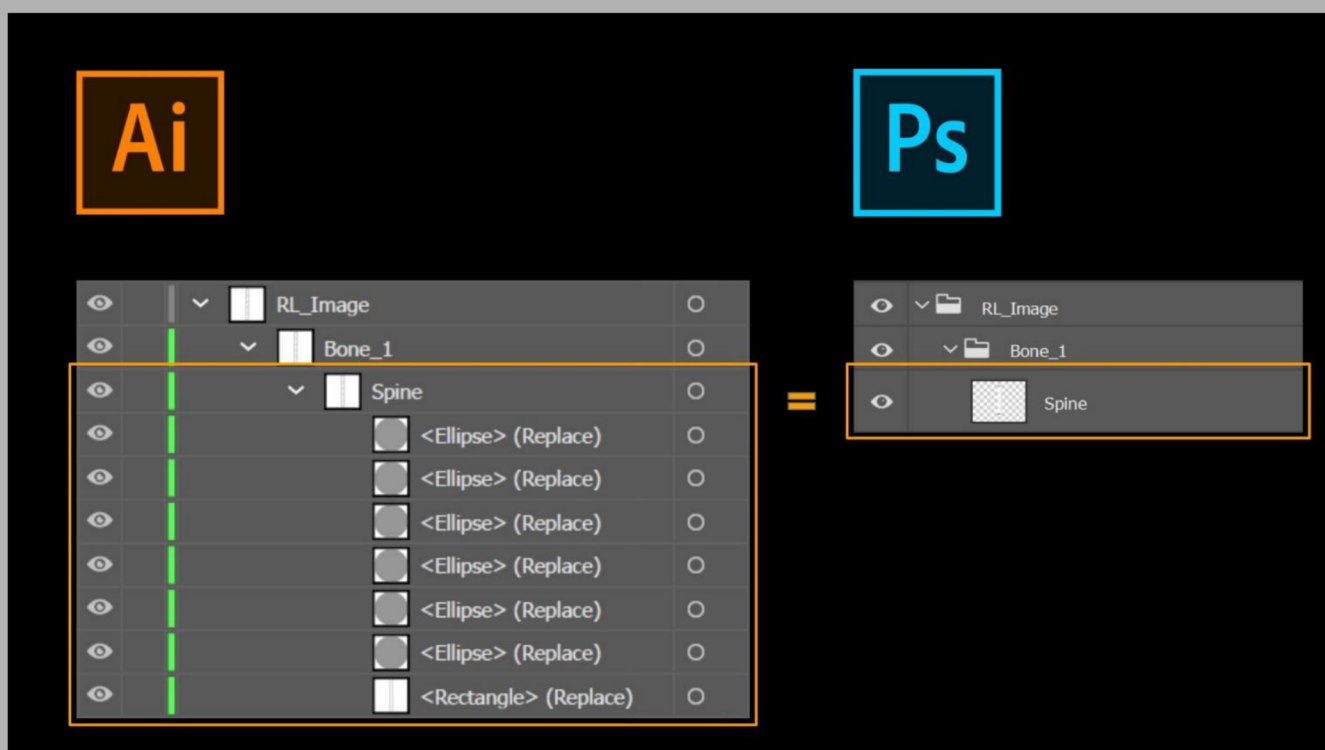
Second, check out the Spine template in **Illustrator** and **Photoshop** with the side by side comparison. Although the two images look alike, the image in **Illustrator** (as shown on the left below) is vector-based, composed of different color shapes under a group folder; the image in **Photoshop** (as shown on the right below) is raster-based in a single piece of an image layer.



In the **Illustrator** pipeline, in order for the PSD format to be identified by **Cartoon Animator**, the vector-based color shapes must be grouped into a group folder (“Spine” in this case, as shown on the left below).

Thus, after exporting the PSD file, these vector-based color shapes can be flattened into a single raster-based image layer with that group folder named “Spine” like one in **Photoshop** (as shown on the right below).

*** Please note that the folder name in the template can NOT be changed, otherwise the program will be unable to identify the image after you load the file into Cartoon Animator.**

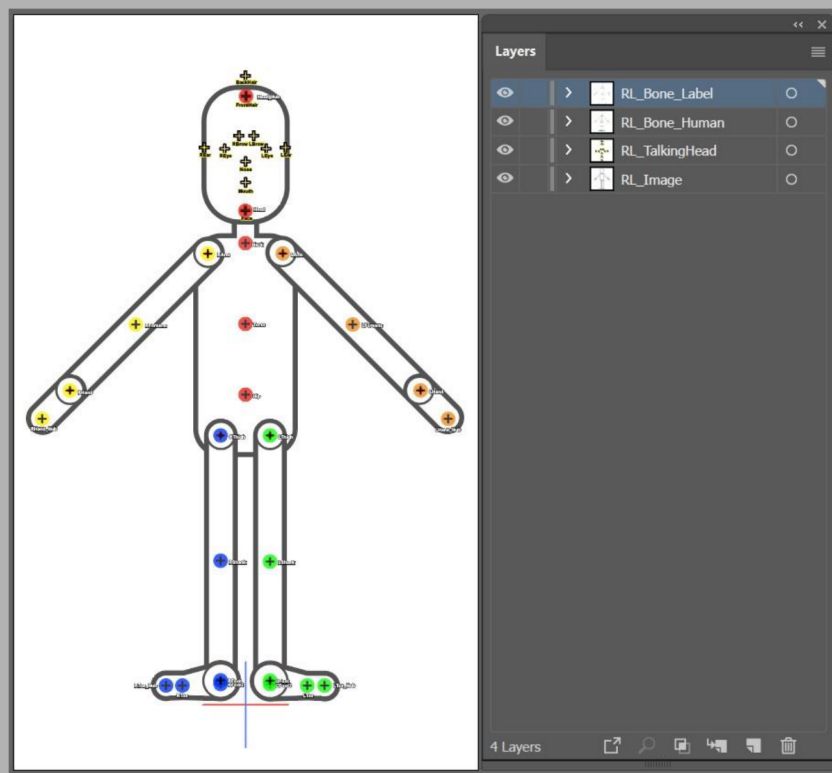


12.3 Human Body Creation with Illustrator

File Utilized:	CTA_G3_Pipeline_PSD_Ai_Template_Sample_Project\04_Ai_Template\CC\G3_360_Character_Template\Human_G3_360_Full_Front_Template.ai
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The Introduction of the Human Template

When the human Ai template file, **Human_Front_Template.ai**, is opened in **Illustrator**, you will see four groups:



RL_Bone_Lable:

The contents in this group are not to be imported into **Cartoon Animator**. They are used for placing the bones, the name of the bones, and other elements.

RL_Bone_Human:

This group is used for placing the **Bone** layers.

RL_TalkingHead:

This group is used for placing the data related to the head, such as the eyes, nose, mouth and any other facial features (described in **Chapter 5**).

RL_Image:

File Utilized: CTA_G3_Pipeline_PSD_Ai_Template_Sample_Project\04_Ai_Template\CS6\Resources\Elastic_Folks_Front_Resources.ai

This group is used for placing the image data related to the body.

The Introduction of the Human Materials Template

In order to create a basic character with 10 parts, you need to first open the **Elastic_Folks_Front_Resources.ai** file, where the individual image groups and body part layers, for creating a default front facing character, are prepared.



The data related to the body include:

1 Heads (without facial features), **1 Face** (painted with facial features), **1 body**, **1 left and 1 right arms**, **left and right hands**, **left and right legs** and **left and right shoes**.

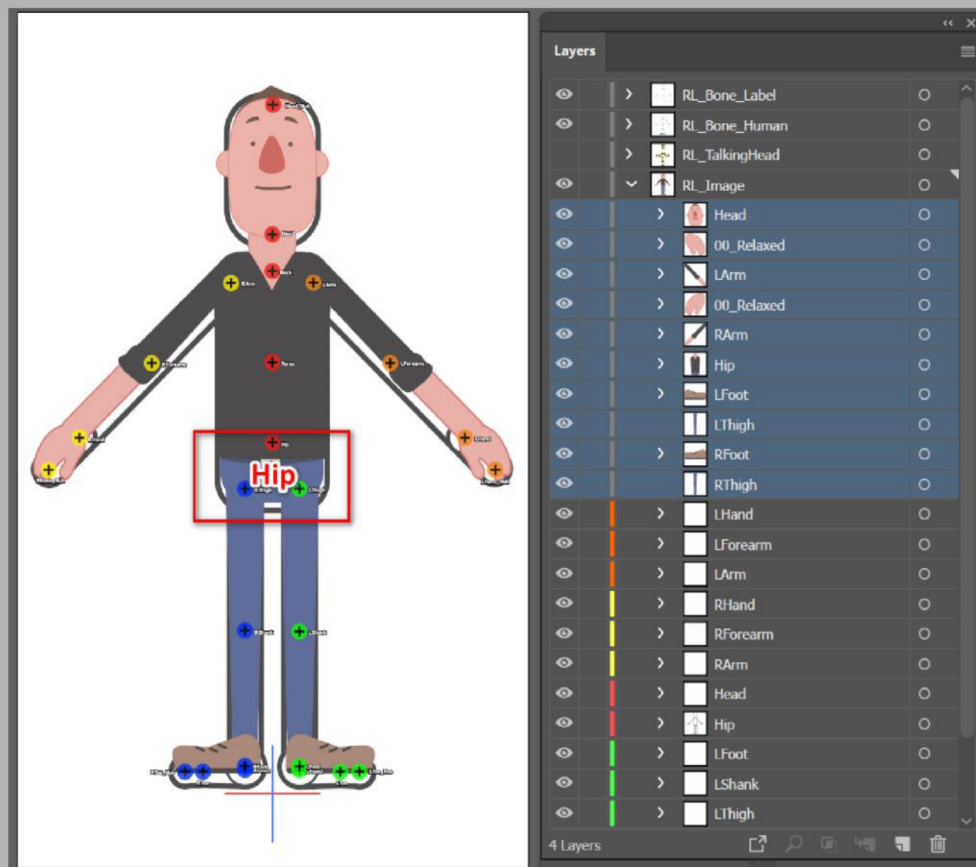
File Utilized:

04_Ai Template\CS6\Human_Front_Template.ai
04_Ai Template\CS6\Resources\Elastic_Folks_Front_Resources.ai

Human Body Creation

To create the body of a G3 character, you simply need to insert images into certain layers and slightly adjust these images.

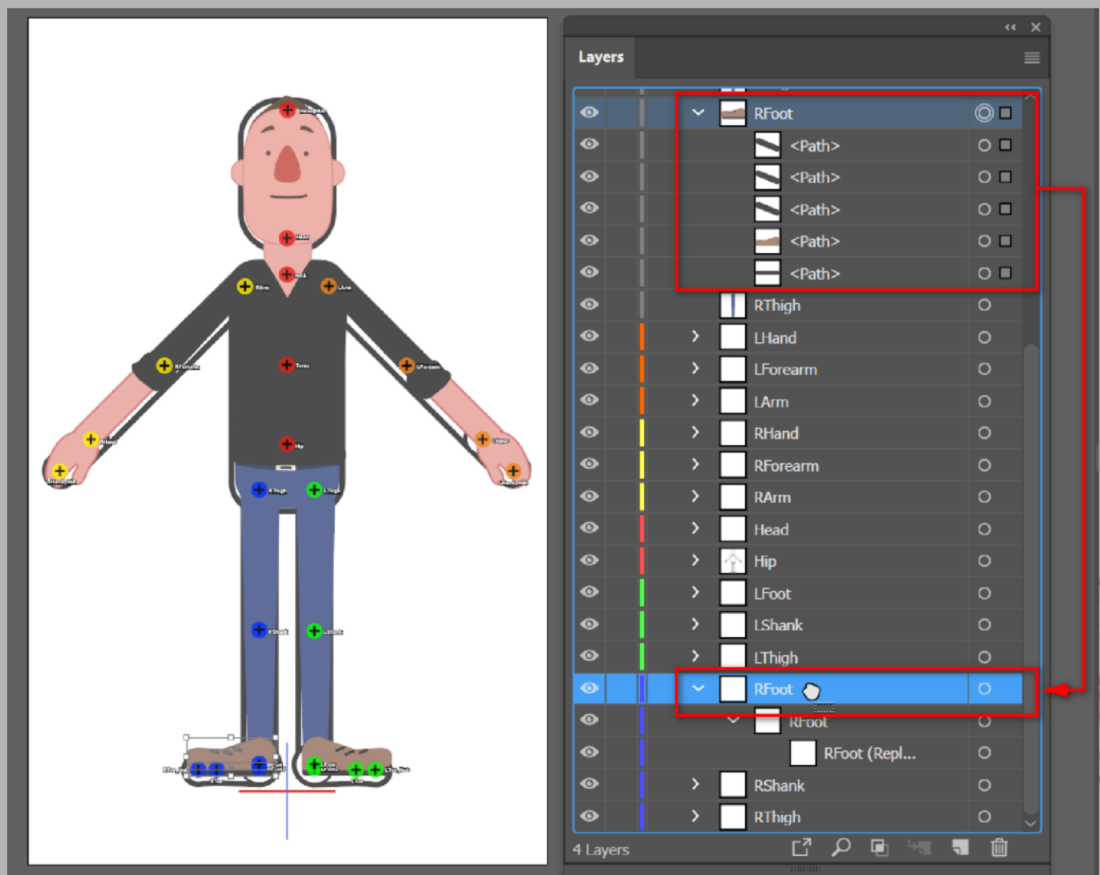
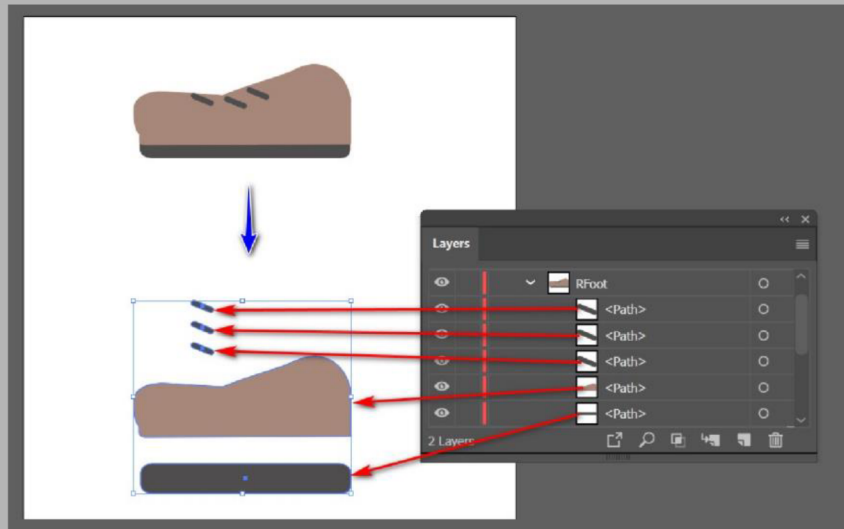
1. Drag and drop the 10 body part layers from the **Elastic_Folks_Front_Resources.ai** document into the **RL_Image** group of the **Human_Front_Template.ai** document.
2. Transform these layers together to fit to the approximate proportion of the dummy. Please note that it is highly suggested that the **Hip** of the imported image layers is aligned to the **Hip** of the dummy.



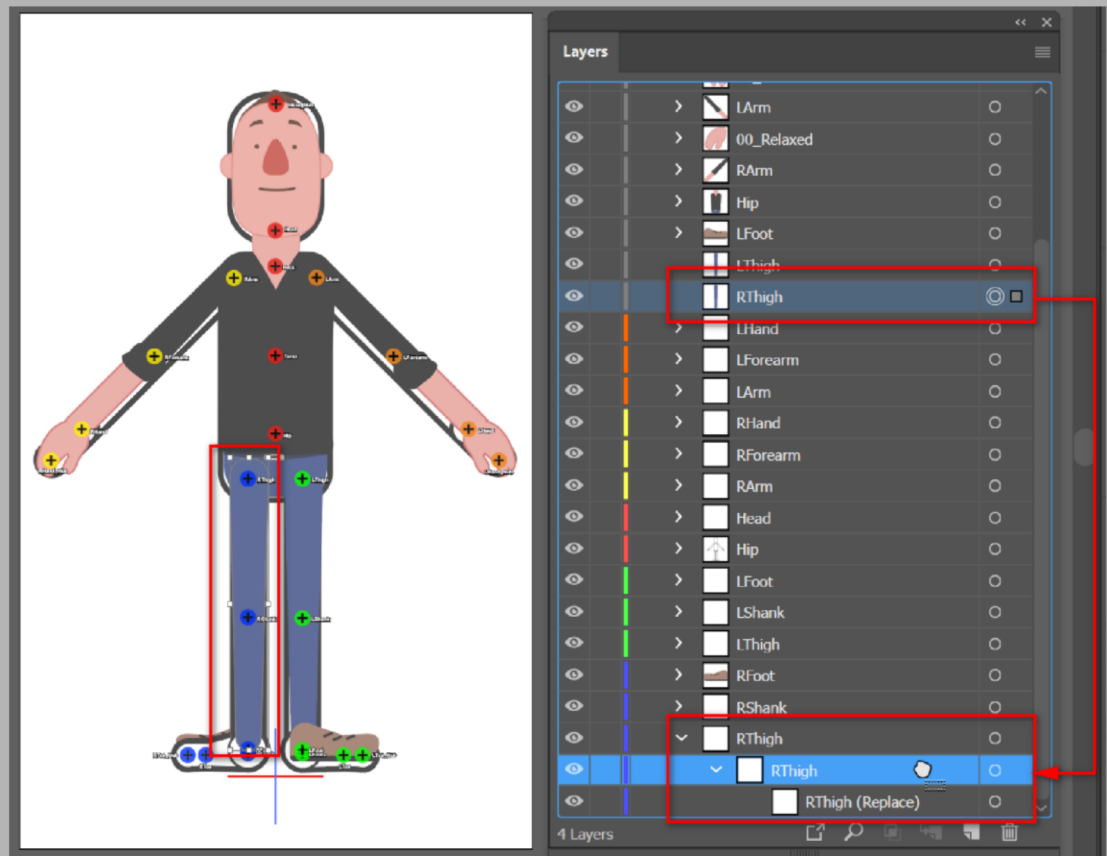
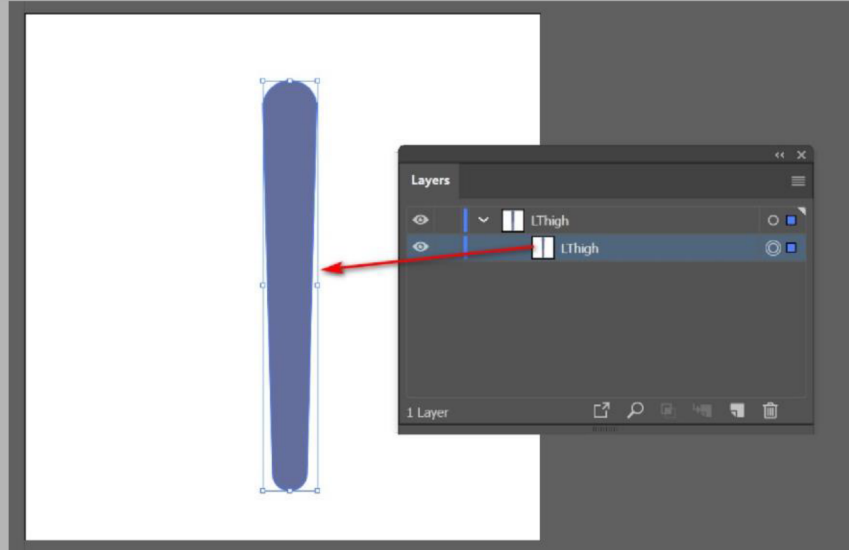
3. Move the body part images to specific bones by dragging them to corresponding folders.

*** Please note that there are two different types of body parts, and therefore their placing destination is NOT the same (as described below).**

- If a body part is composed of multiple color shapes under a group folder (RFoot in this case), drag the RFoot image group to the first layer of the RFoot group folder.

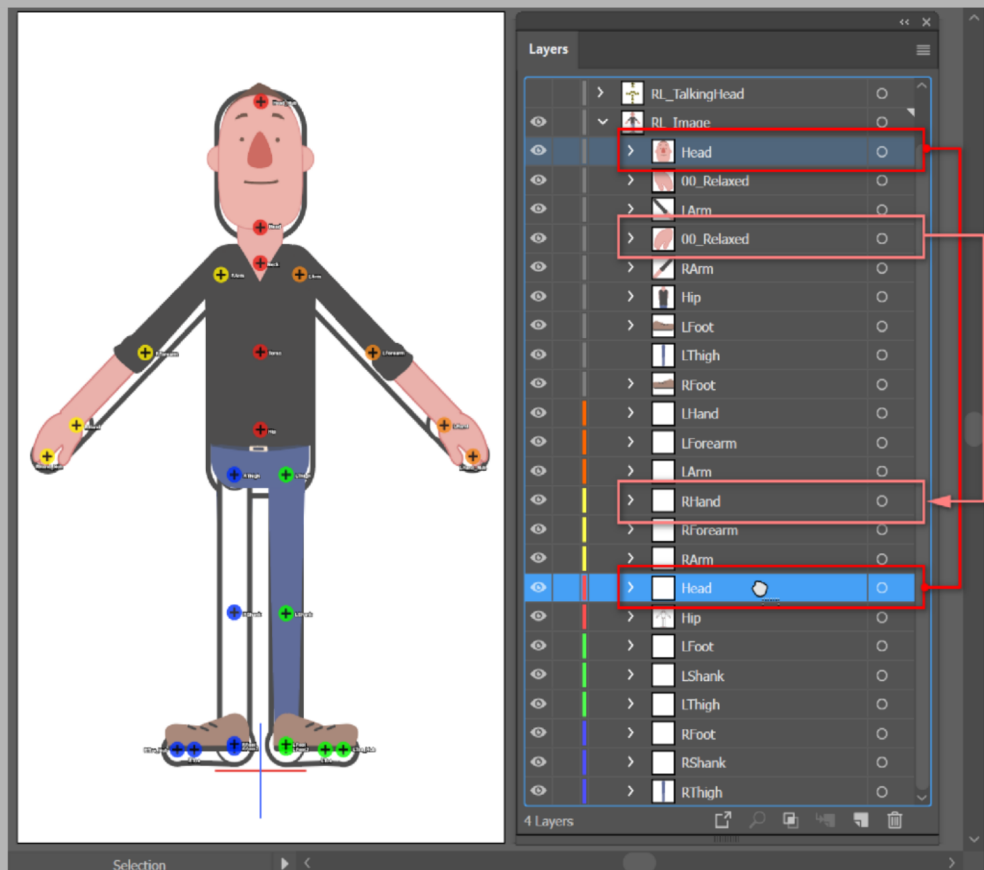


- If a body part is composed of a single color shape without a group folder (in this case, RThigh), drag the RThigh image layer to the second layer of the RThigh group folder, so that the RThigh image layer can inherit the group folder of the template. (Please refer to the previous section)

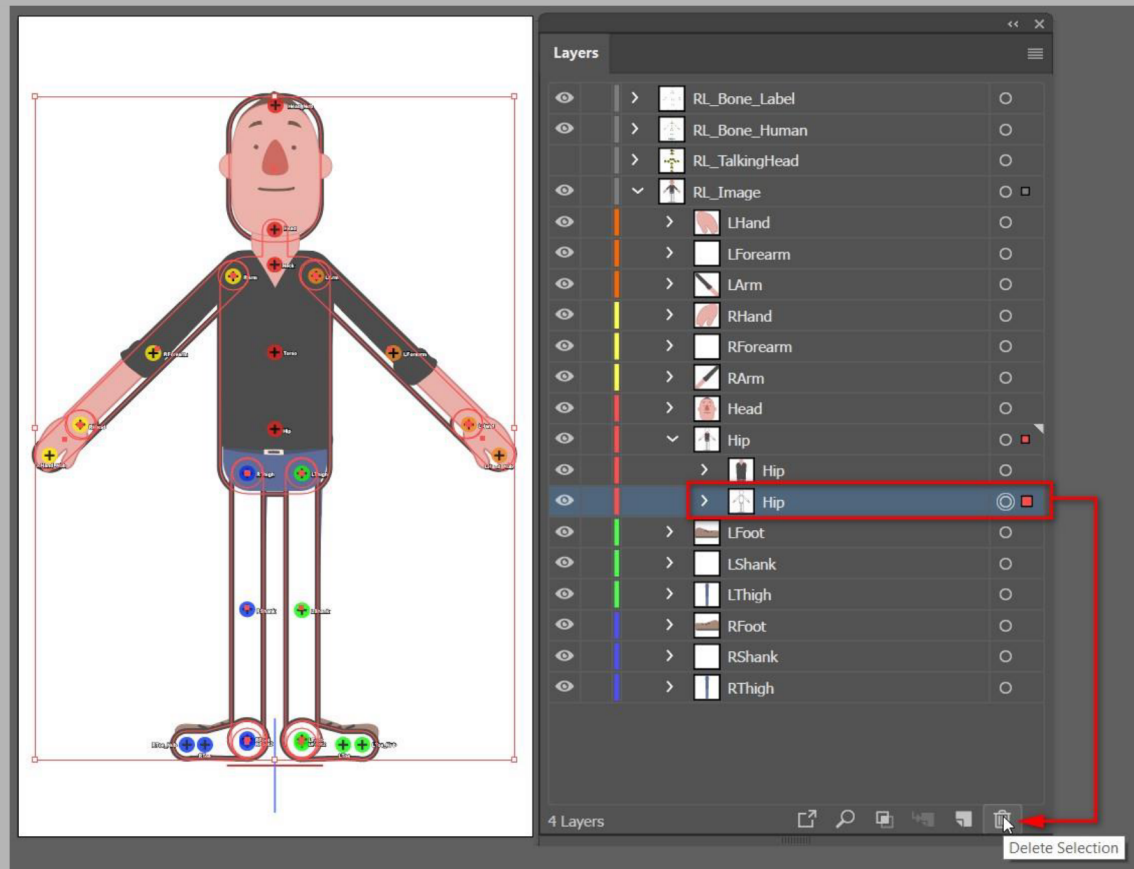


Follow the rules described above, place all of the 10 body parts to the correct folders:

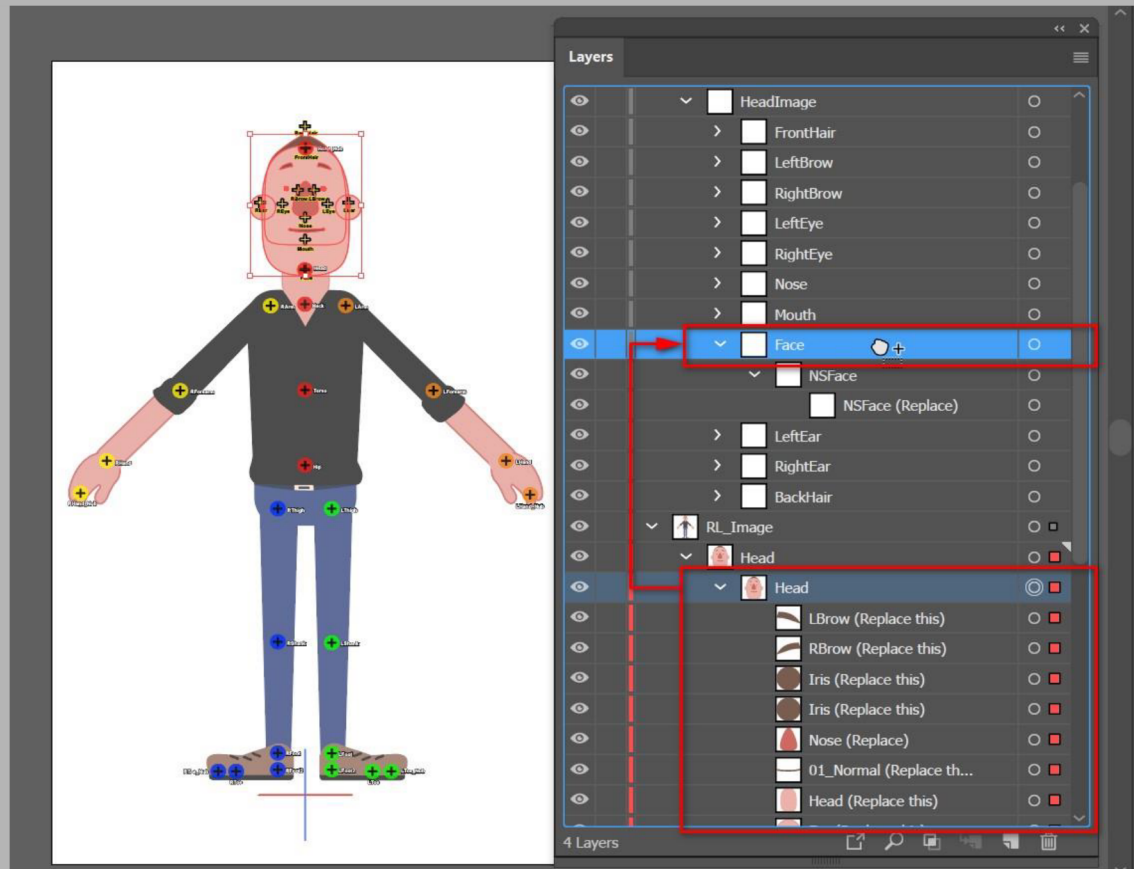
- **Head** image group to the **Head** group.
- **LArm** image group to the **LArm** group.
- **RArm** image group to the **RArm** group.
- **00_Relaxed** left hand image group to the **LHand** group.
- **00_Relaxed** right hand image group to the **RHand** group.
- **LThigh** image layer to the **LThigh** group.
- **RThigh** image layer to the **RThigh** group.
- **LFoot** image group to the **LFoot** group.
- **RFoot** image group to the **RFoot** group.
- **Hip** image group to the **Hip** group.



4. When the steps are finished. The white dummy image group or image layer can be removed (deleted).



5. Copy the **Head** image layer and paste it to the **RL_TalkingHead > HeadImage > Face** group folder.

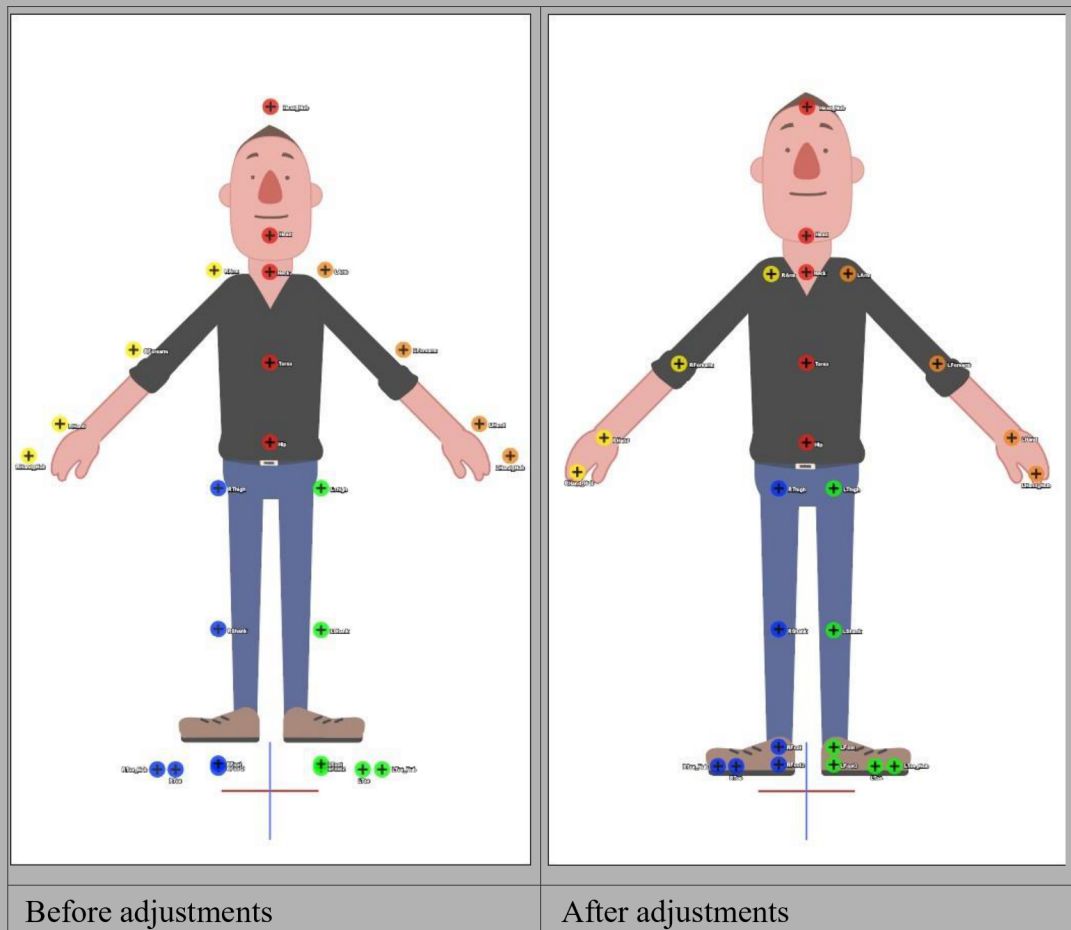


* For creating a talking head, please refer to **Chapter 5** and **6**.

Aligning Bones

The bones are the rotating center of the body parts in **Cartoon Animator**. Therefore, it is crucial to align the bones in the **Ai** template to their adequate positions. Once the individual body image layers are correctly moved to the corresponding folders, then the bones can be used as references when moving the layered parts to their appropriate positions.

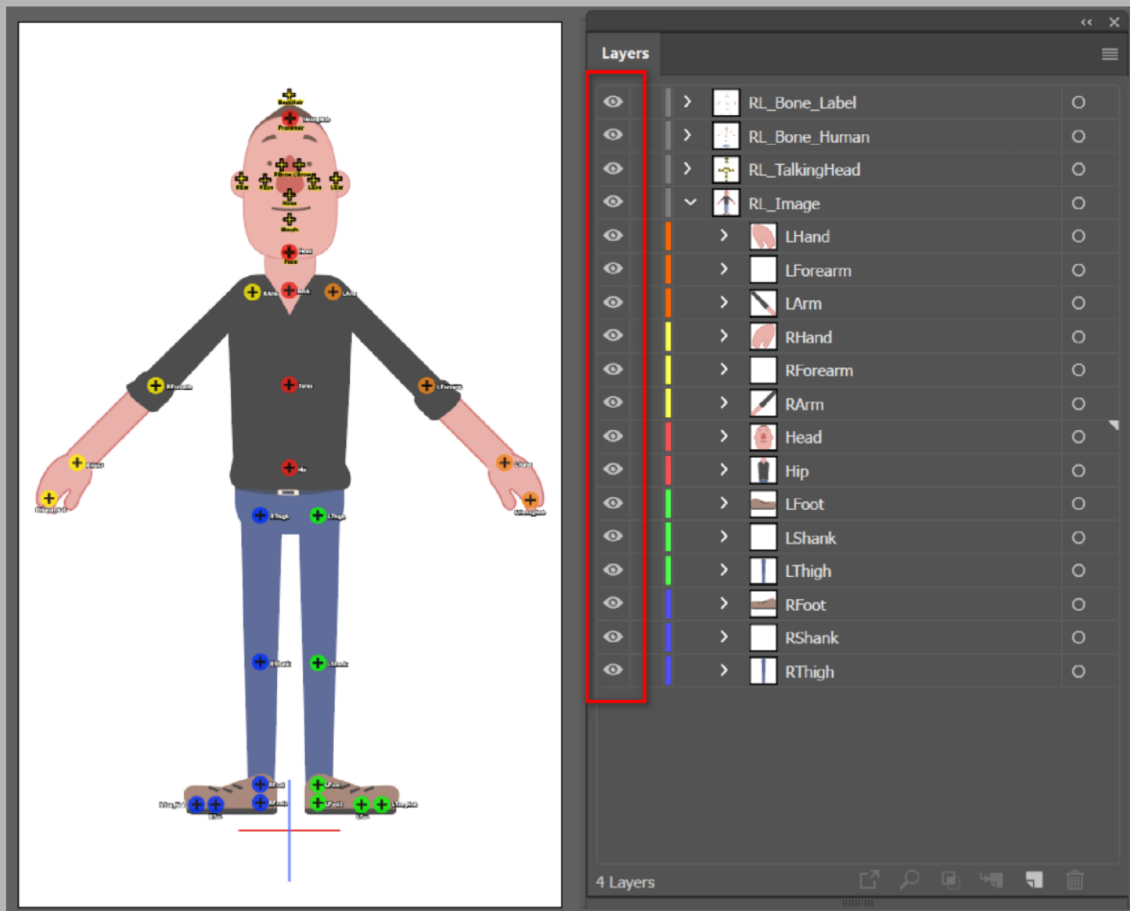
Take the example after the final step in the previous section, in accordance to the name next to the bones, drag and move these bones to their appropriate body positions in the working area.



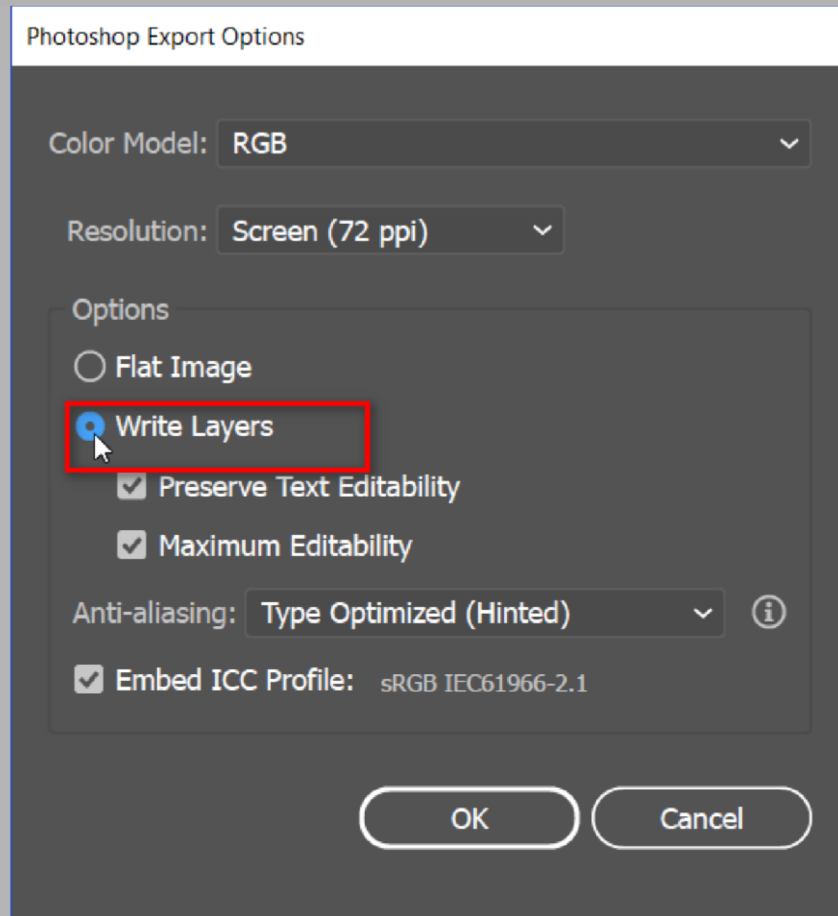
12.4 Exporting and Loading PSD File to Cartoon Animator

After a custom character is prepared in **Illustrator**, you are able to export the PSD file and load it into **Cartoon Animator** to form a new **G3** character.

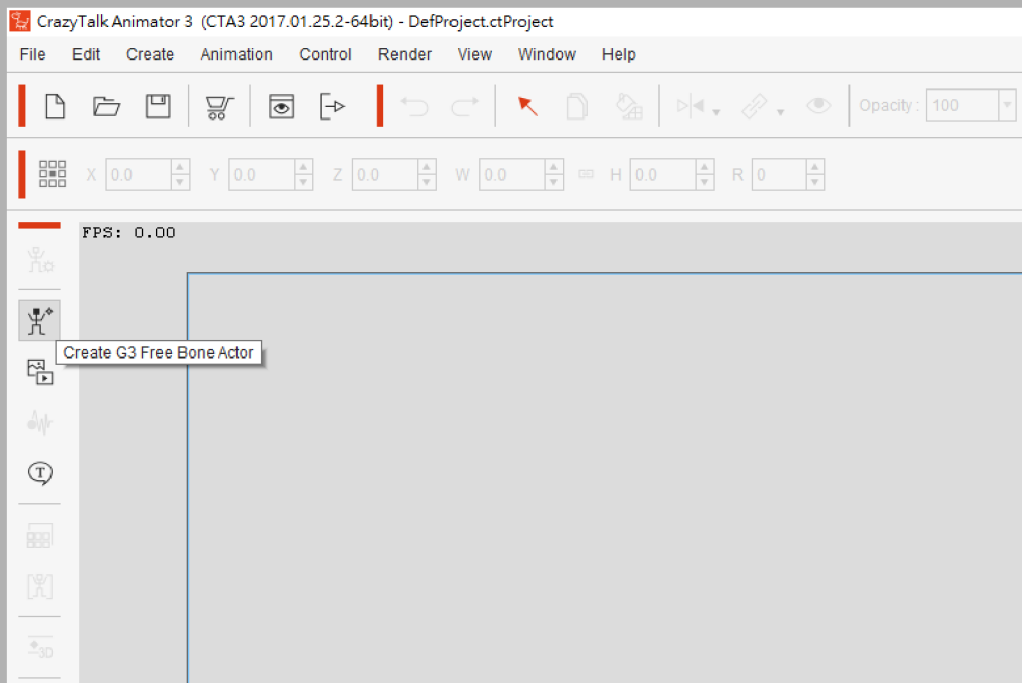
1. Display all the image layers you need before exporting. You can quickly show all image layers at one time by clicking the **Object >> Show All** command on the Menu Bar.



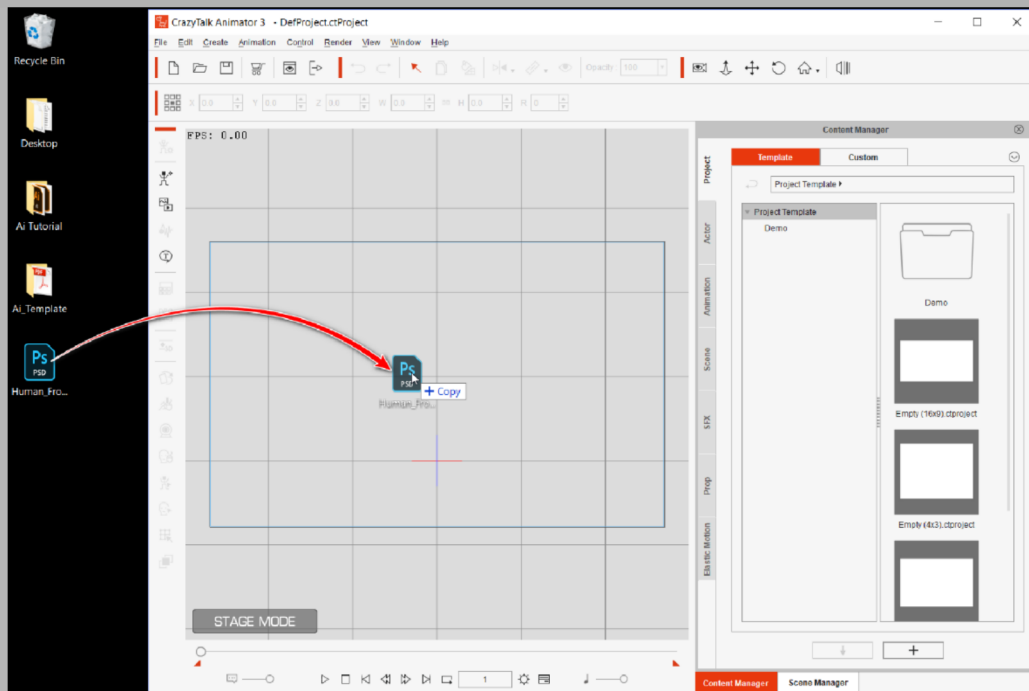
2. Click **File >> Export >> Export As...** and choose to export in PSD format. Please make sure that the **Write Layers** option is chosen in the following dialog.



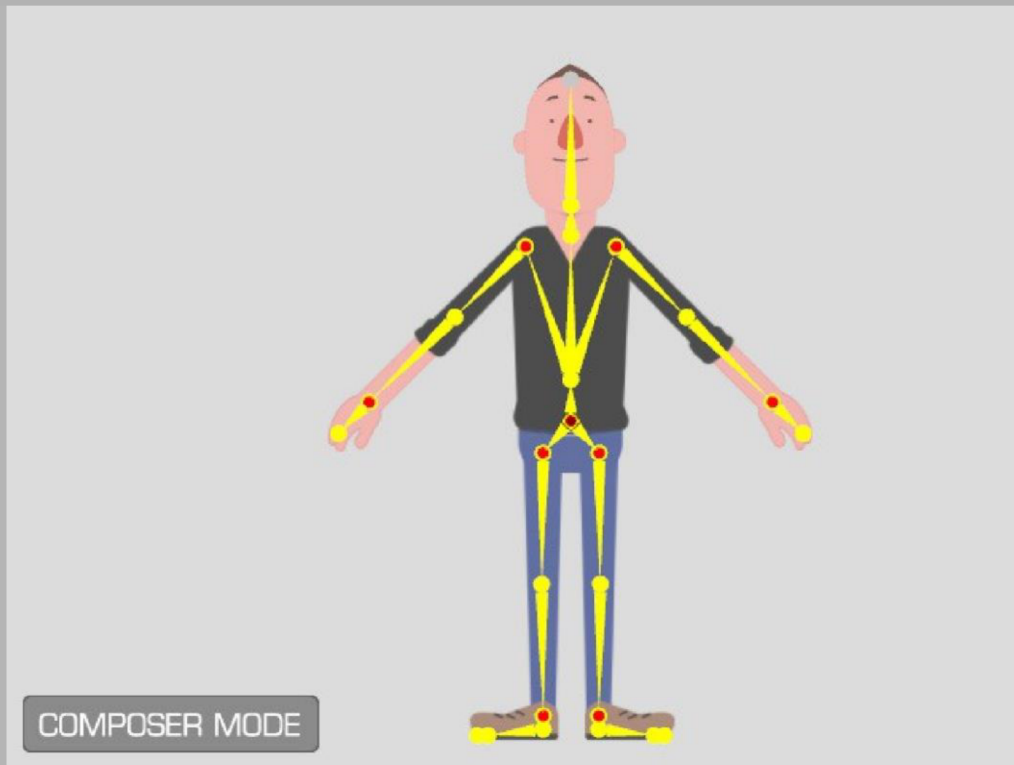
3. Launch **Cartoon Animator**.
4. Click the **Create G3 Free Bone Actor** button on the **Functional Toolbar**.



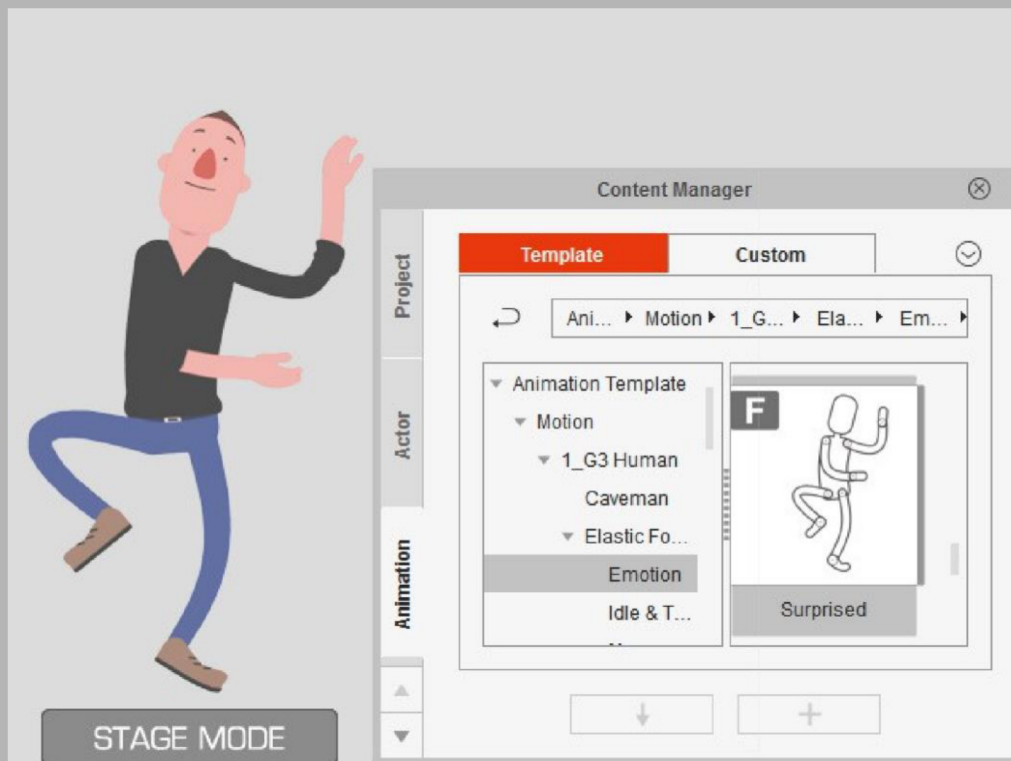
Alternatively drag and drop the exported PSD file into the working area.



5. When the loading is done, the character will appear in the **Composer Mode**.



6. Click the **Back Stage** button to bring the character to the stage for applying motions.



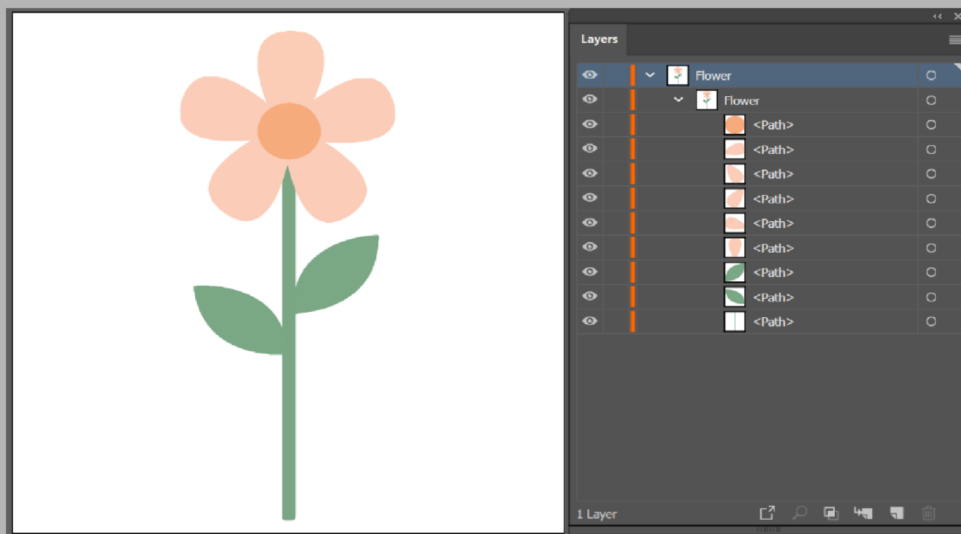
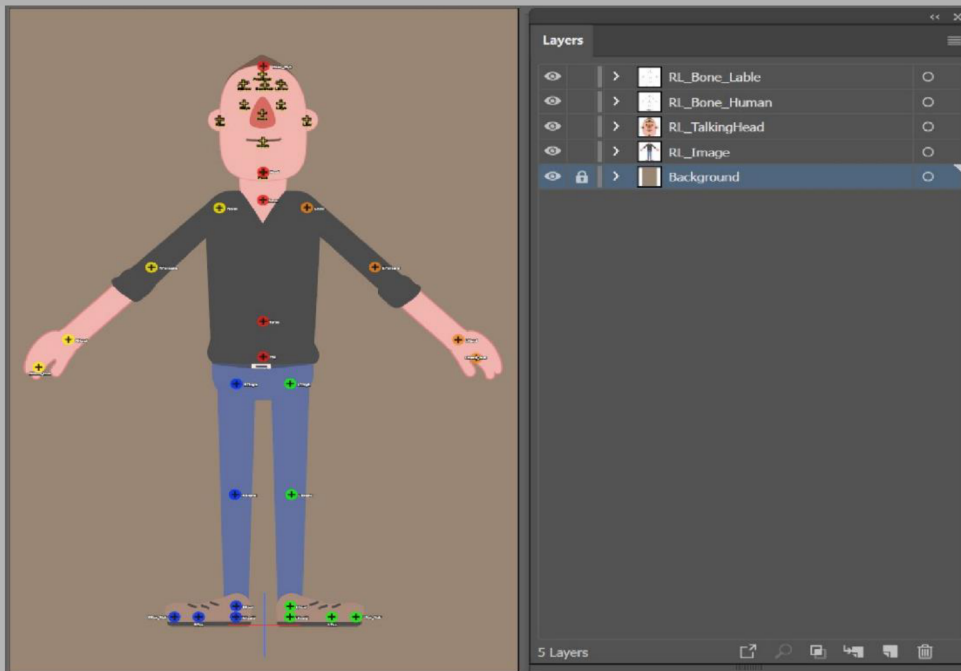
12.5 Adding Additional Images to a Body Part

File Utilized:

- 04_Ai Template\CS6\Elastic_Folks_Front.ai
- 04_Ai Template\CS6\Resources\Flower_Resources.ai

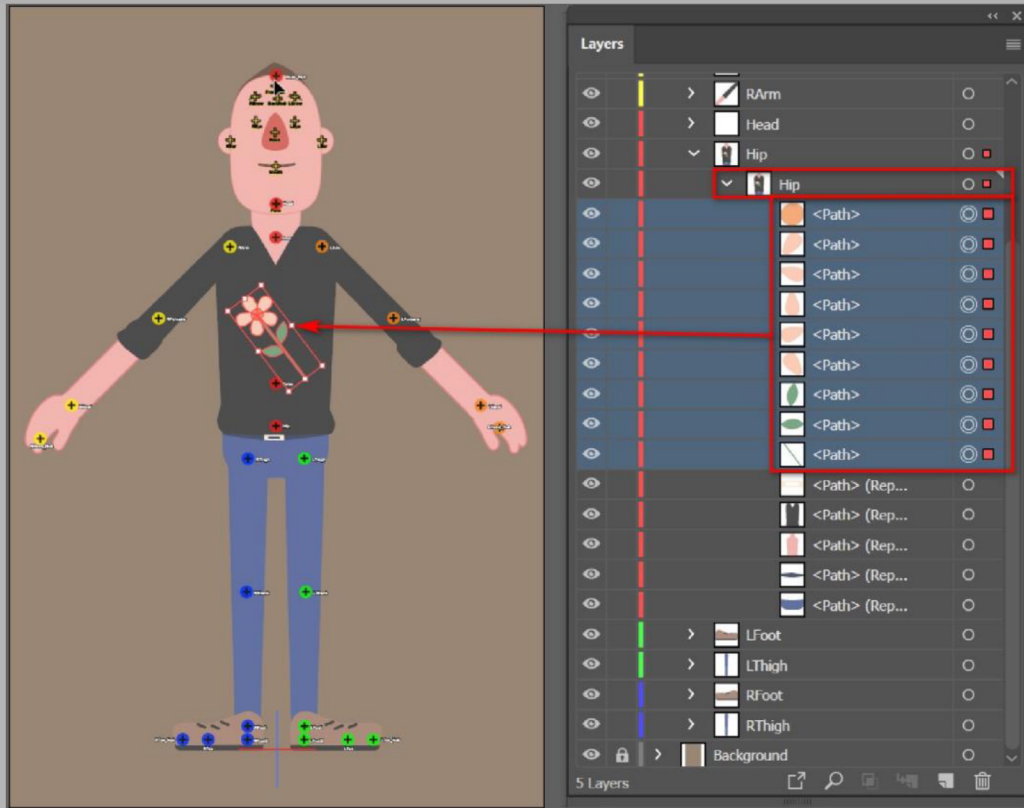
In this section, the completed G3 character Ai template will be used and modified so that the additional image group (in this case, Flower) can be combined into a body image layer (Hip in this case) being loaded into **Cartoon Animator**.

Open the **Elastic_Folks_Front.ai** and **Flower_Resources.ai**.

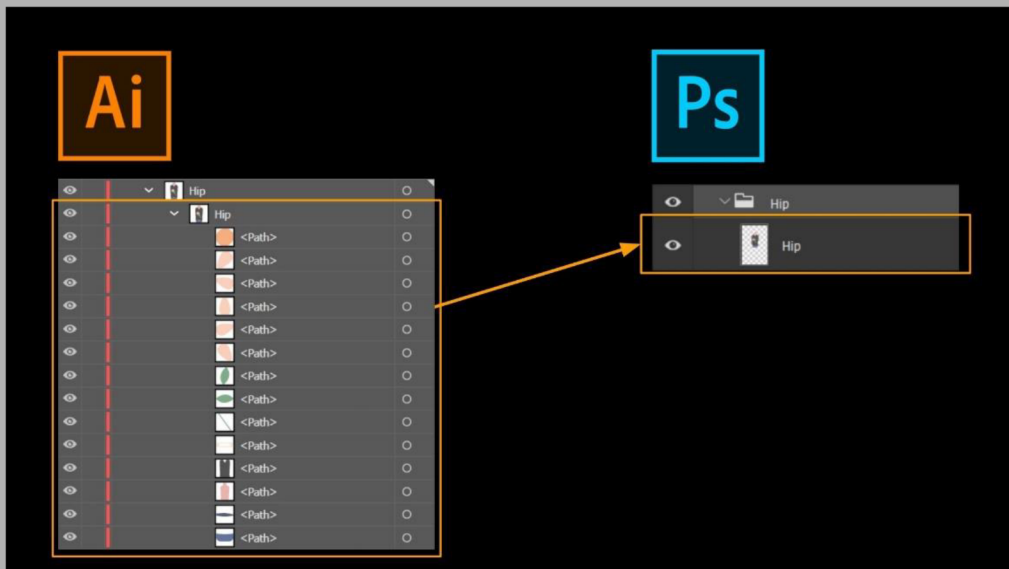


There are two methods to add the flower image to the character's **Hip** image layer.

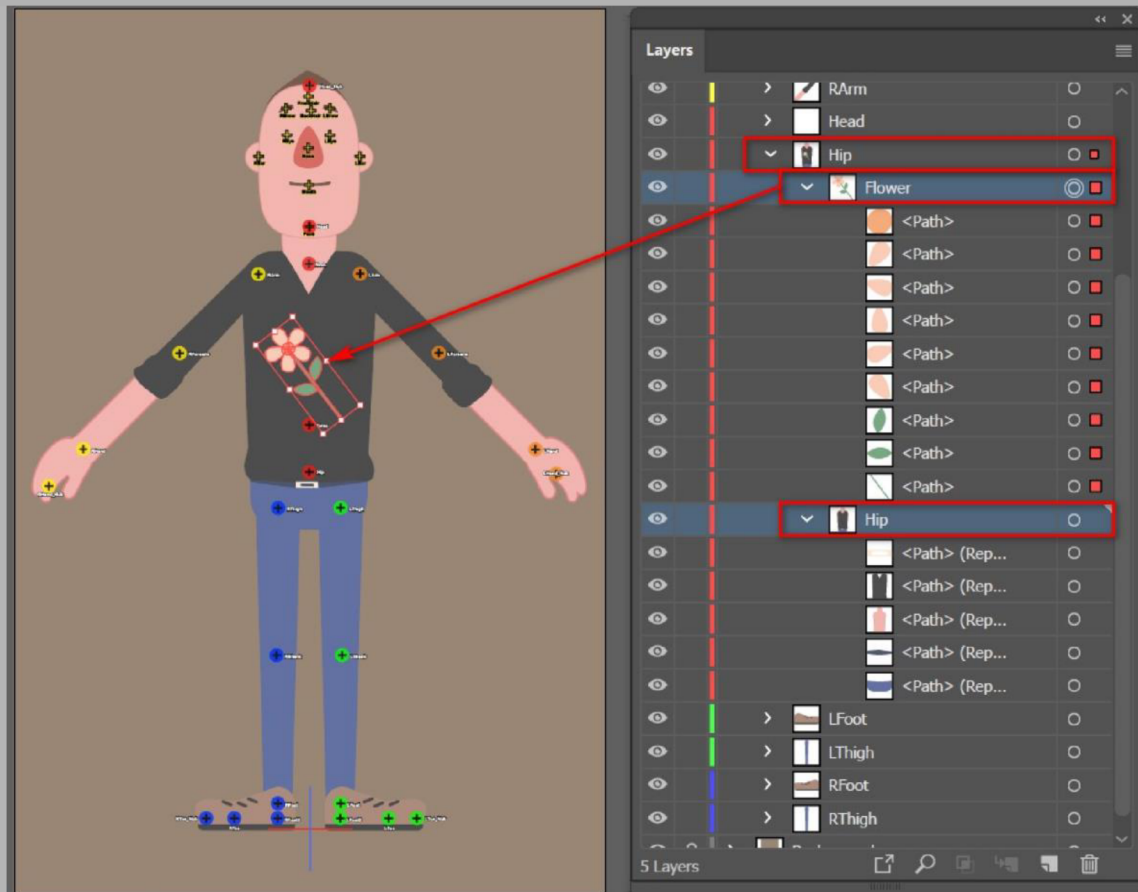
- A. Copy all of the vector-based color shapes of the flower, and paste them to the **Hip** group folder (together with the color shapes of Hip).



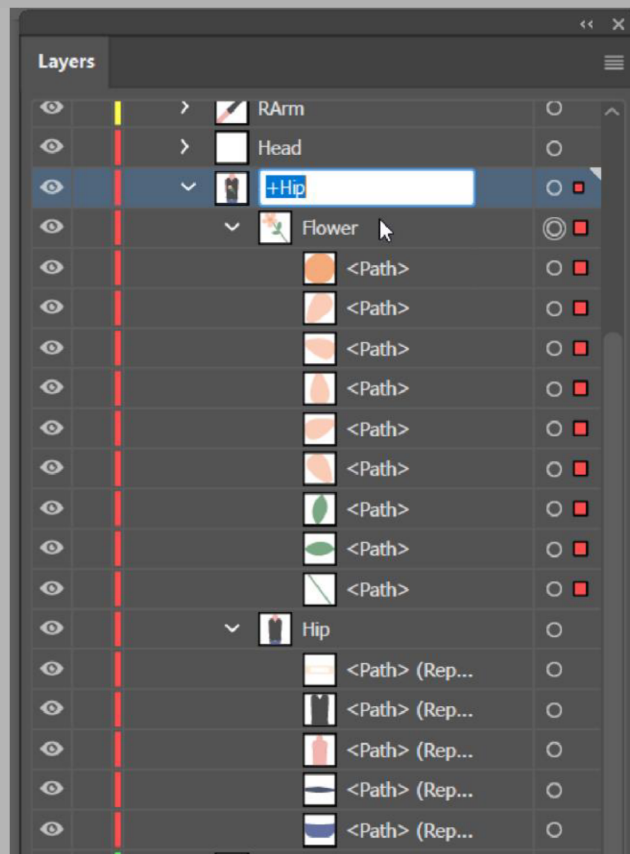
With this method, after exporting the PSD file, the color shapes of Flower and Hip will be combined into a single Hip image layer under the **Hip** group folder, as can be seen in **Photoshop**.



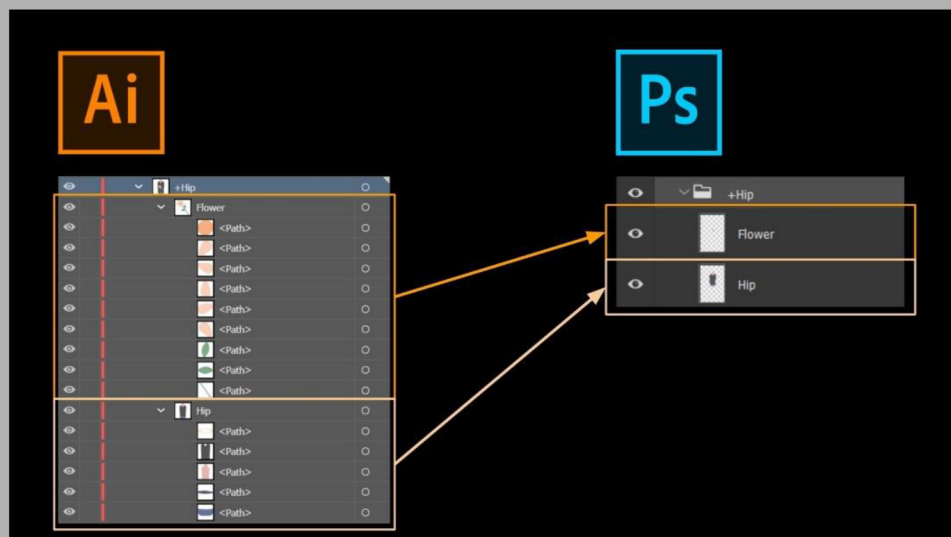
- B. Copy the Flower image group, and paste it to the **Hip** group folder. Then, the **Hip** group folder will be composed of two group layers - Flower and Hip.



Rename the **Hip** group folder (the first layer). Add the symbol “+” before the name of the folder so that **Cartoon Animator** is able to identify and automatically combine the image layers under the group folders which start with the “+” prefix.

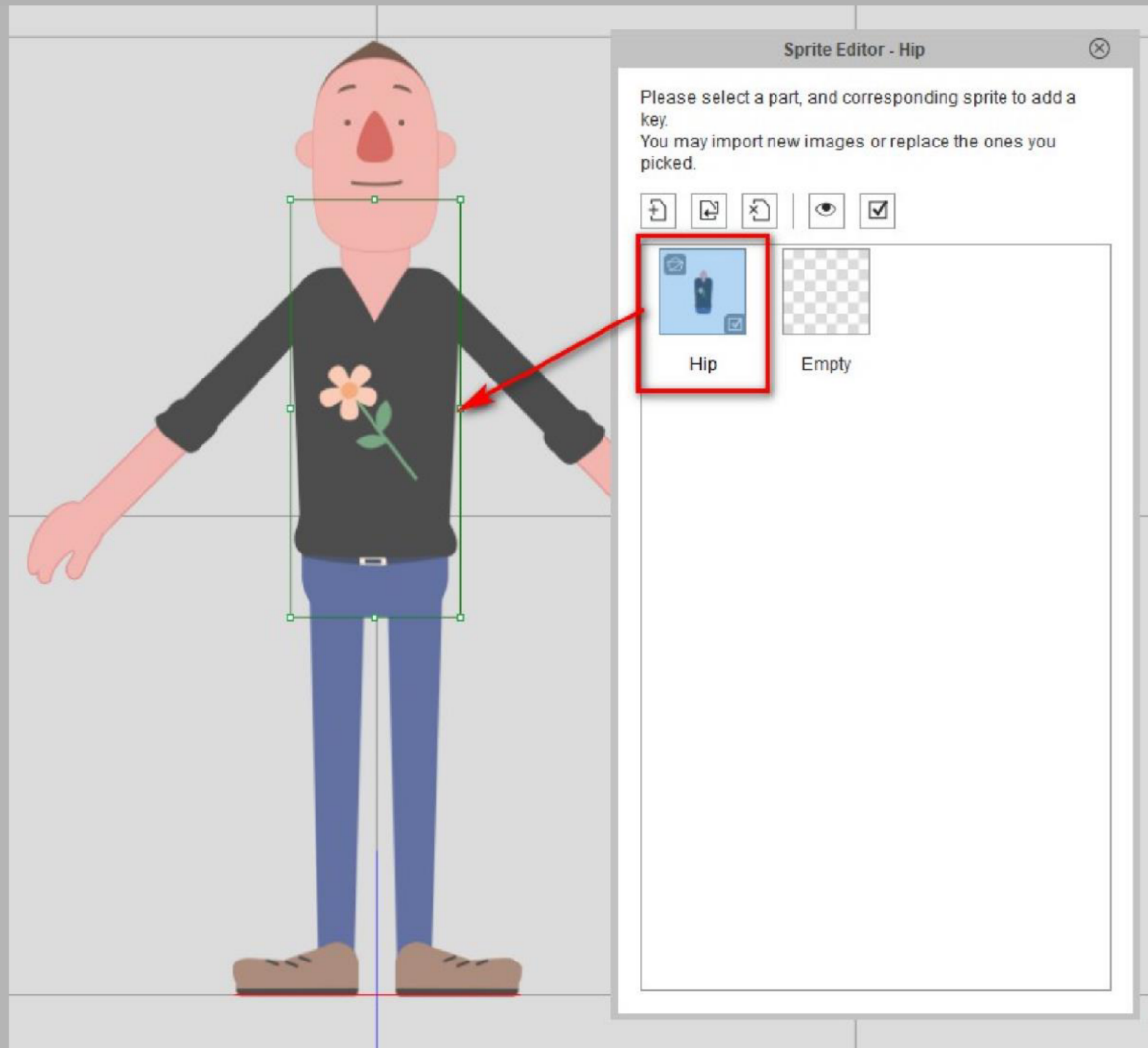


With this method, after exporting the PSD file, the color shapes of Flower and Hip will be separately combined into their own image layer under the +Hip group folder, as can be observed in **Photoshop**.



Once adding the flower image to the character's body part (Hip) with the method A or B described above, you can export the PSD file and load it to **Cartoon Animator**. (Please refer to the previous section)

In the **Composer Mode**, select the character's Hip sprite and then open the **Sprite Editor**. You will see the Hip thumbnail comes with the additional flower image on it.



* Similarly, in the Photoshop pipeline, you can add any additional image layers under a body part's group folder, then follow the naming convention to prefix the group folder with a "+" symbol for **Cartoon Animator** to combine image layers under this body part.