PMD/X EDITOR

>> BONE TUTORIAL <<

CONTENTS PAGE

[0] Introduction……

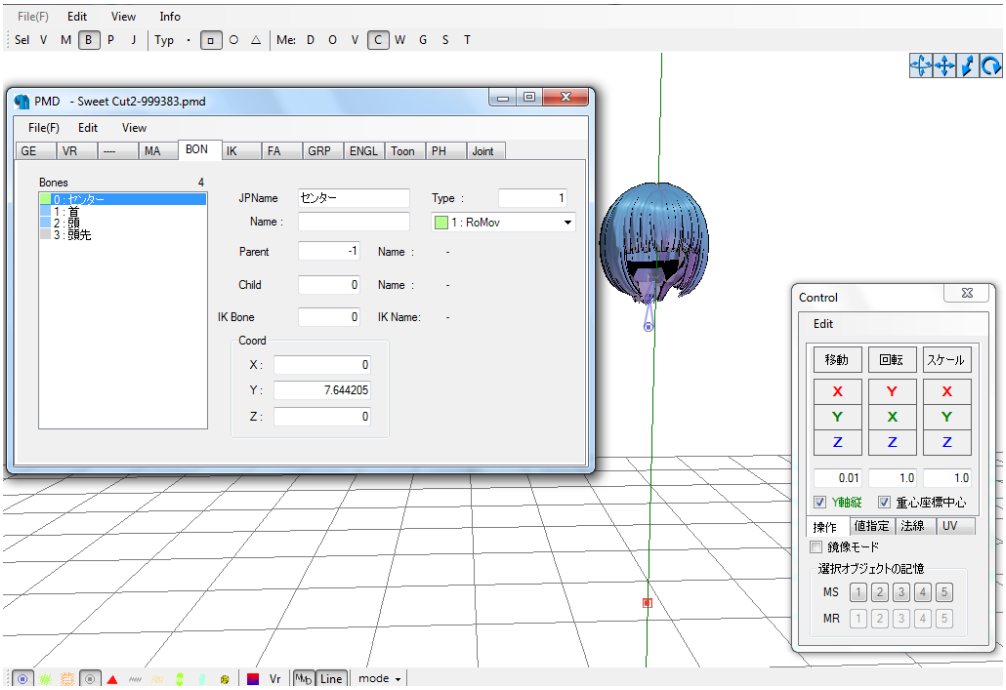
This tutorial for making bones was requested, so I thought that it would be a good idea to do one. A tutorial for rigging was also requested at the same, and while you read this one I am probably working on it.

You can also find a tutorial on physics in my gallery as well, which may interest you once I finish and upload the Rigging tutorial.

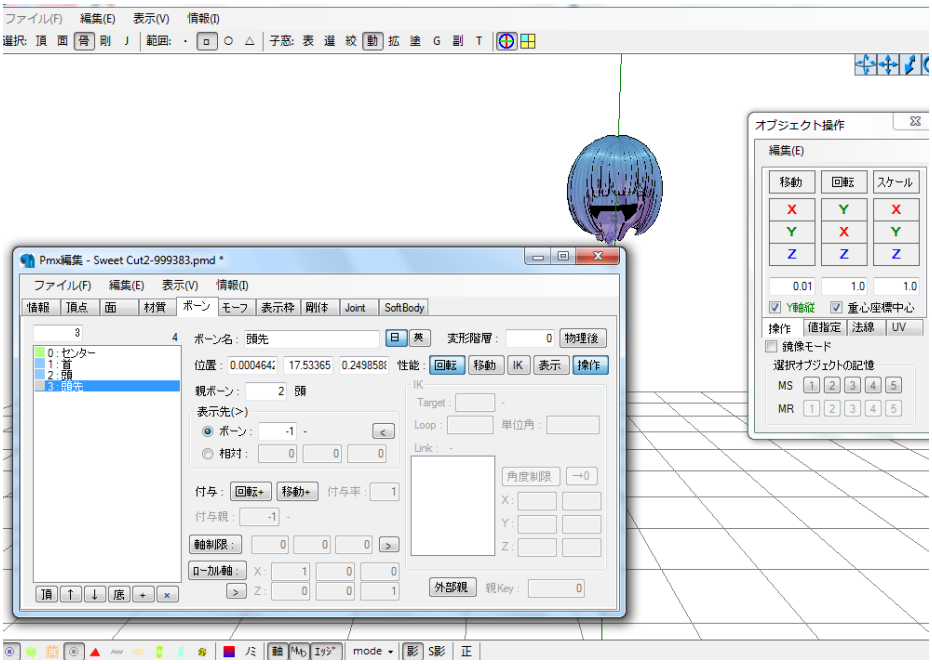
If anything is missing in this tutorial then please feel free to say so, so that I can add it to this tutorial.

[1] Windows you'll need……

You'll need the "B" from Sel on, along with the "C" from Me. You'll also have to make sure that the two little bone symbols are on at the bottom.

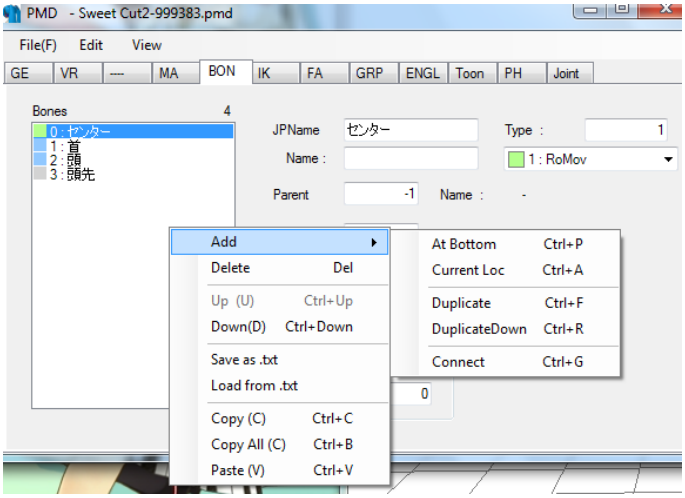


PMXeditor is exactly the same in layout. The only difference is that Its in Japanese



[2] Understanding the Bone Commands .....

Go to the BON tab and right click in the list area.



Add > Bottom
Adds a bone at the bottom of the List

Add> Current Loc(ation)
Adds a bone at the location you current are – in this case in between the Centre and Neck bone.

Add> Duplicate
Duplicates the bone below the current bone in the list; the bone you want to duplicate.

Add > Duplicate Down
Duplicates at the bottom of the list

Add > Connect
Makes a new bone which is connected to the selected bone.

Delete -> Deletes selected bone.

Up (U) -> Moves bone Up in list

Down (Ctrl+Down) -> Moves Bone down in list

Save as .txt – Save bone data/information into text form.

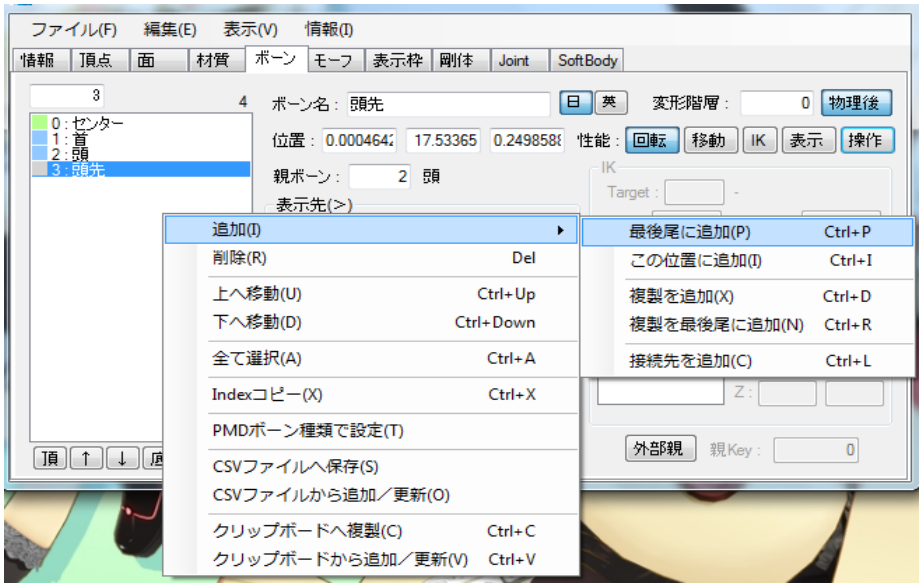
Load from .txt – Loads bone data/information from text form.

Copy – Copies Bones (never works for me)

Copy All – Copies all Bones (never works for me)

Paste – Pastes the bones that were copied. (never works for me)

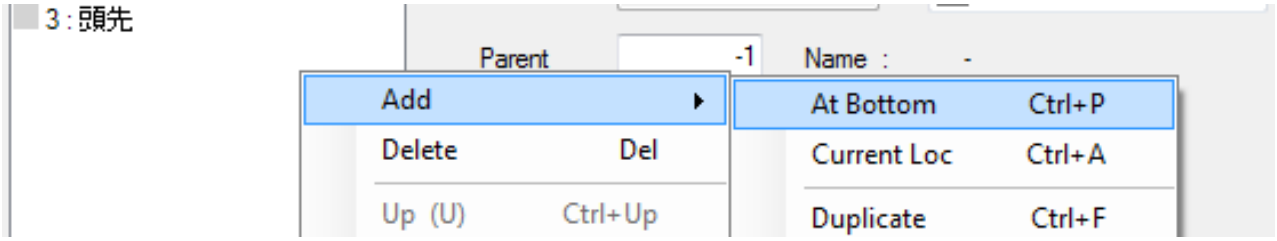
In PMX editor it should be the same principle. You just have a few extra commands that don't really matter at this point.



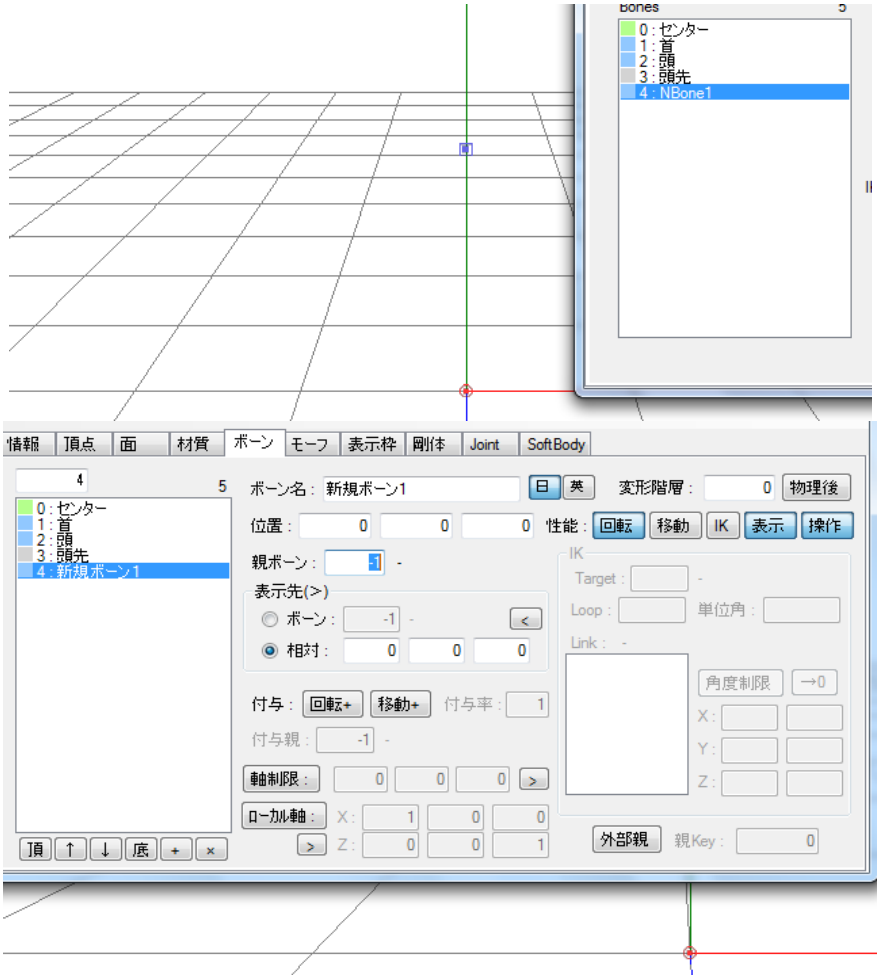
[3] Making Bones……

I was going to explain the entire Bones window first, but it might be too much to take in all at once before you make your bones. So, we'll cover that later on.

Just go to the BON tab, Right click and go to add and then choose select "At Bottom".



Click on it and on your PMD view, you should see a bone at the bottom of the axis. If you do not then make sure you have the bone Icon on at the bottom. 



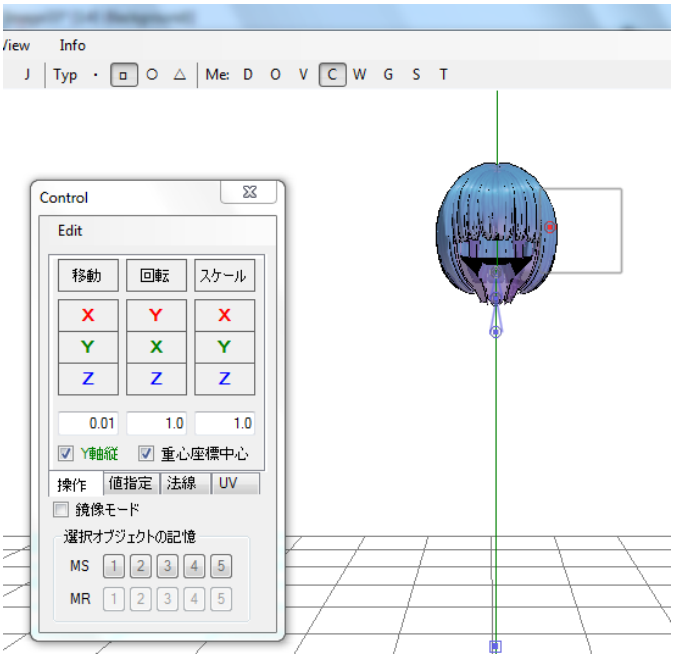
PMD

PMX

It'll be called NBone 1. However, it does no go for me at the moment, because its all the way down there, and my hair is all the way up there somewhere. So how do I get it up there? Hmmmm…?

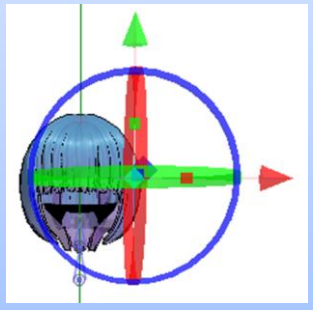
Easy, select the bone so that it's red – like in the picture above.

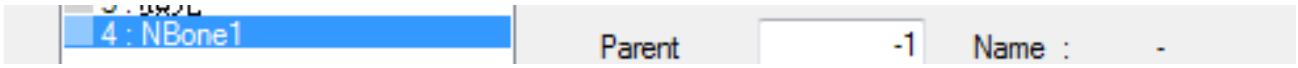
Then get your trust Control Window Open (Me: "C") and move the bone up with the first Y Command in the First column. Do the same that you do for your Materials when you drag them to the MA tab. Move it wherever you want/need it to be.



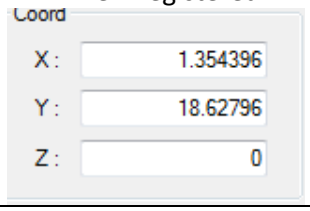
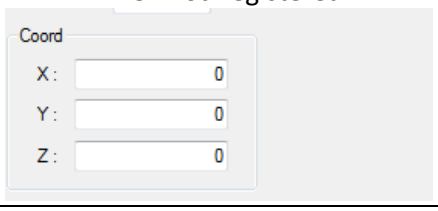
In my case I want to give a bone to the Left side of her Bangs (my right).

So I moved it up there using the Control Panel, you can also use that little squiggly circle control thing that appears as well.



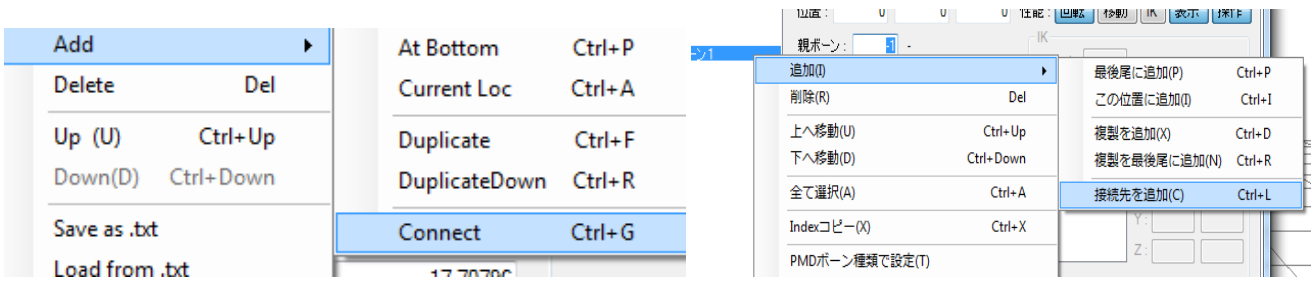


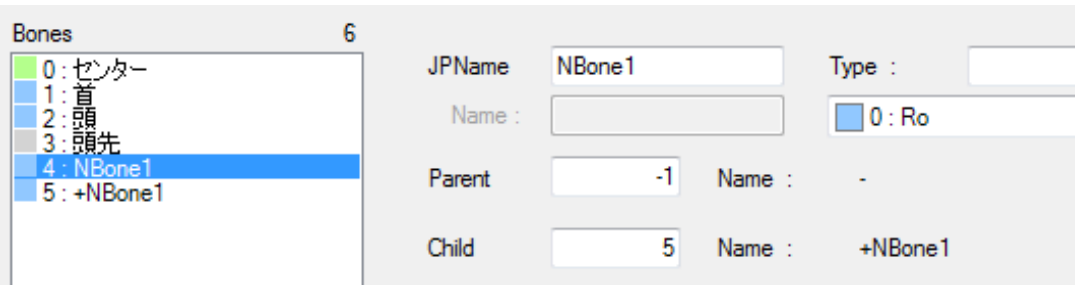
Always remember to go back to the BON tab window and click on the bone you just made, else it'll reset itself and be at the bottom of the axis again. D:

When Registered	When not Registered.
	

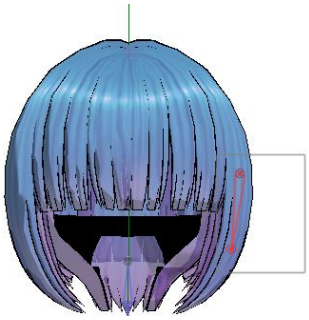
From here, if you need to continue making bones, you can select the bone you just made (NBone1) and go to Add > Connect and it'll make a bone (+NBone 1) which is connected to the first bone.

[Left – PMD ----- Right – PMX]





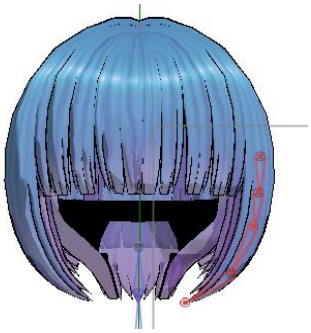
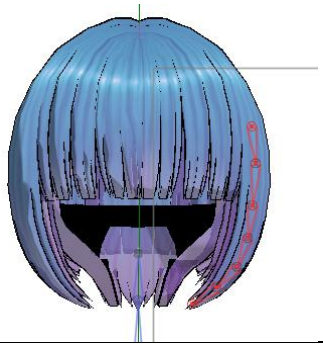
Then move it to wherever you want it to be with the Control Window again.



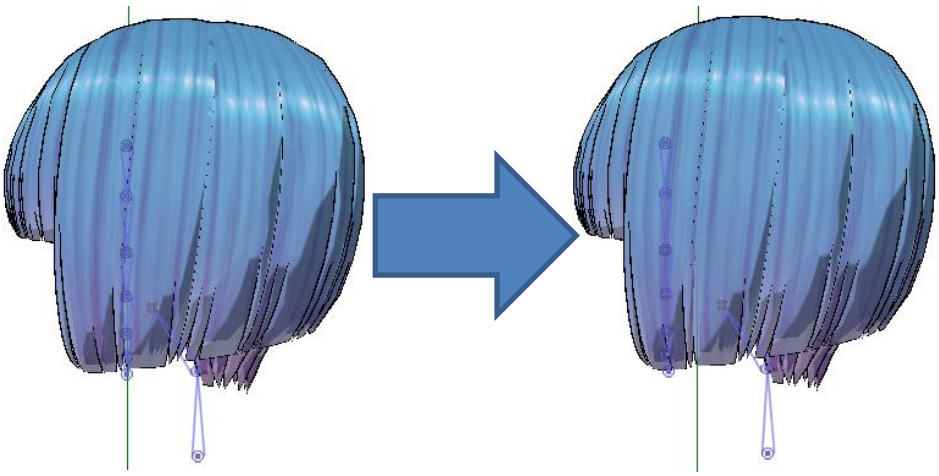
Then go back to the BON tab and click the bone you just made to register its position – like you did with NBone 1.

After this you just continue this process, until you are happy with the bone positions. Please note that you can rename these bones at any point in time e.g. left 1, left 2 ect.

Don't be afraid to change the size (height) of the bones or how many there are. An example is shown below.

5 Bones	7 Bones
	

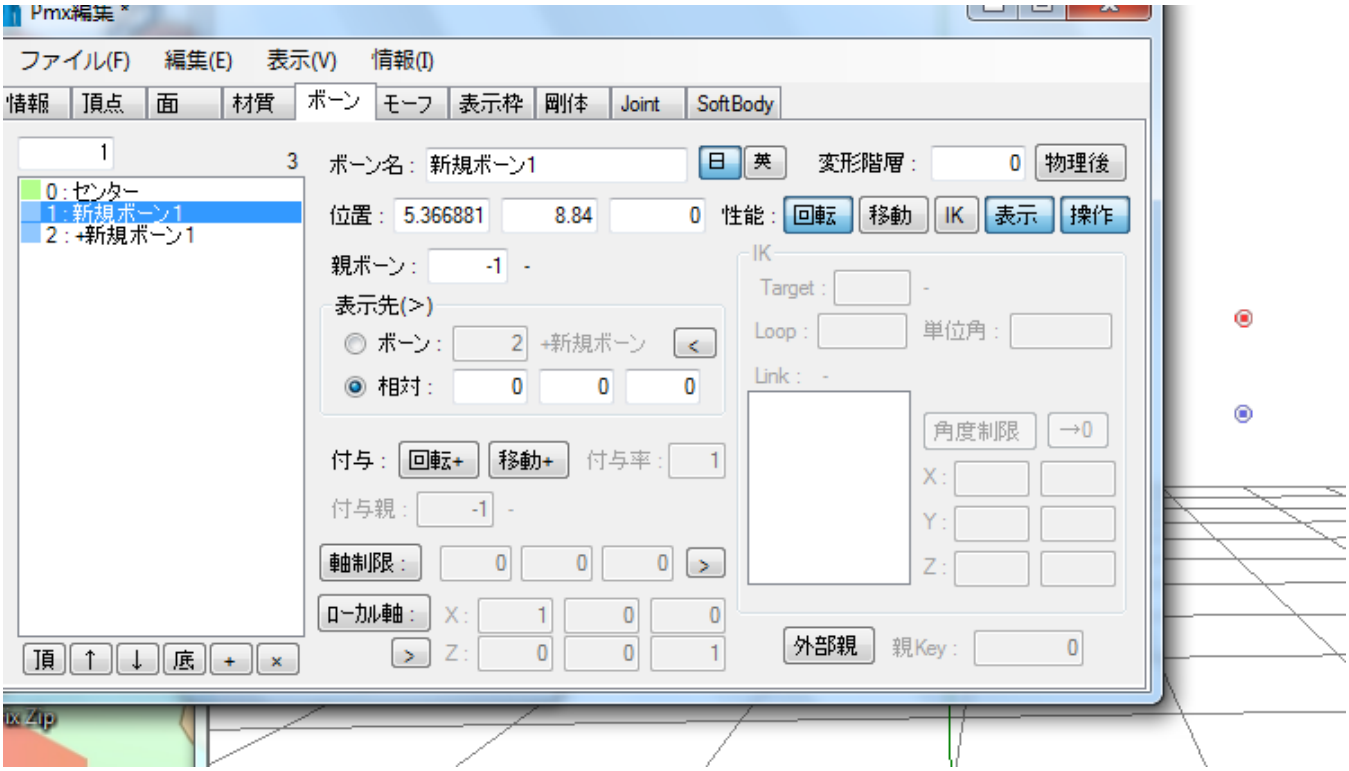
Just remember that when you are making bones, you'll have to rig them too. Also be aware of where your bones are actually positioned, as they may not be where you think they actually are. For example in these pictures they look straight. However, when viewed from the side, they look very different.



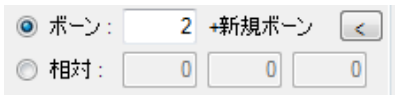
Just move the bones forwards with the Control Window (Z) and you'll be fine.

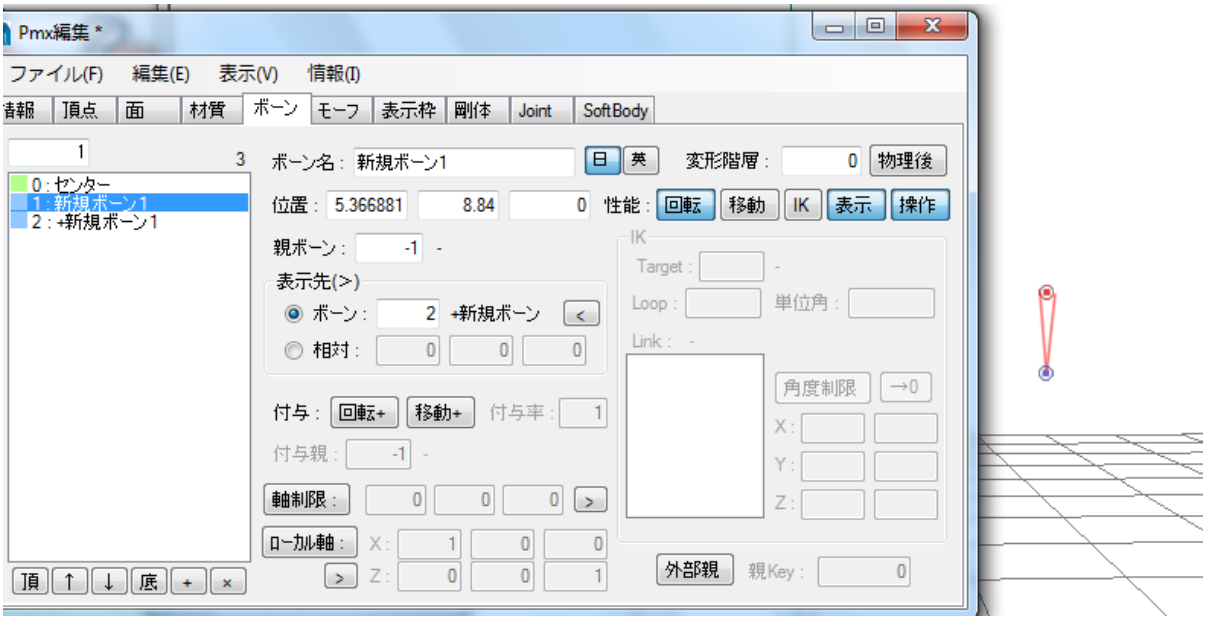
PMXeditor Version

However, with PMXeditor, you will have to specify that “N Bone 1” (新規ボーン 1) has a child bone which is “Nbone 2” (+新規ボーン 1) else it won’t connect to it. [This will actually only happen if you accidently click on the bone DIRECTLY after making it.]

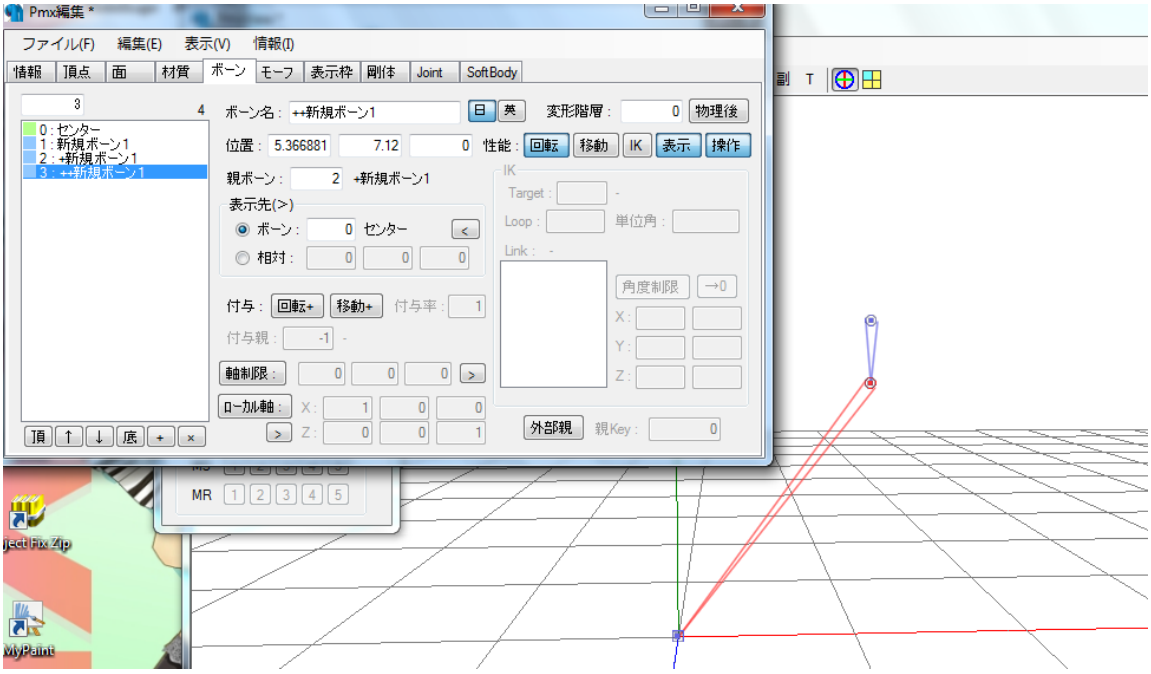


In order to get them to connect you’ll have to choose the first option here;





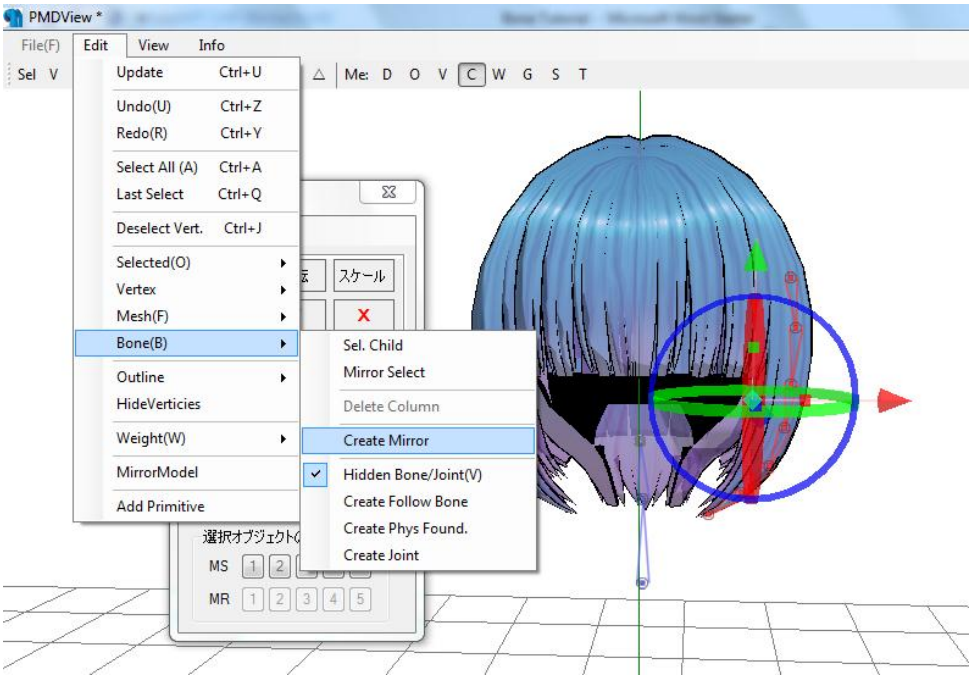
This will allow the bones to connect to each other. After this it should be smooth sailing;



(Note: I have to move the third bone)

Now I could be mean and tell you that you have to make the bones from scratch, but I will be kind. You ***can*** mirror bones.

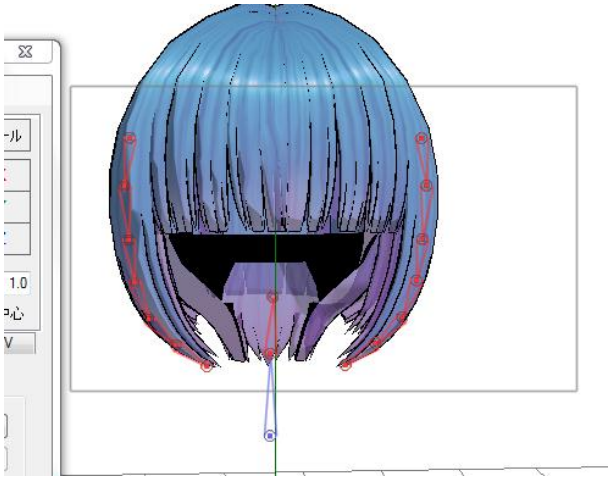
First Select your bones and then go to Edit > Bone > Create Mirror. Click it say okay and….



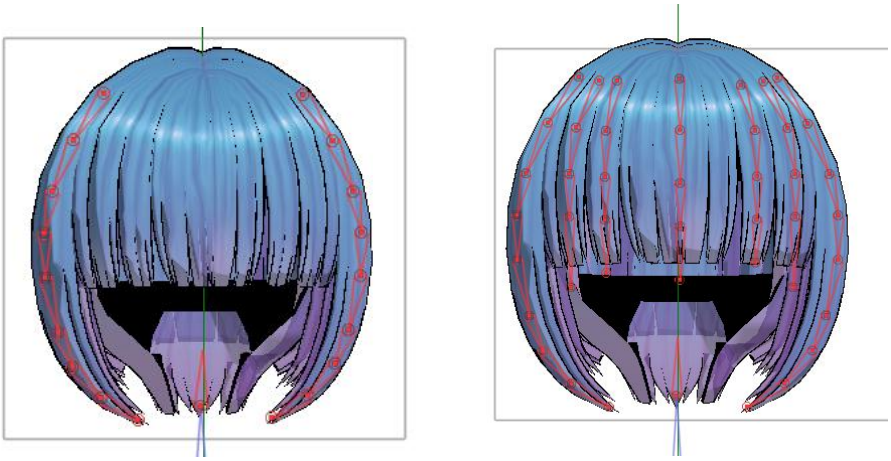
You now have bone clones of the side you decided to mirror. It saves you a lot of time and effort trying to get them symmetrical.

This feature does not appear to be functional in PMXeditor, unless the command has been moved elsewhere.

I will keep searching for the option and will update this tutorial once/if I find it.



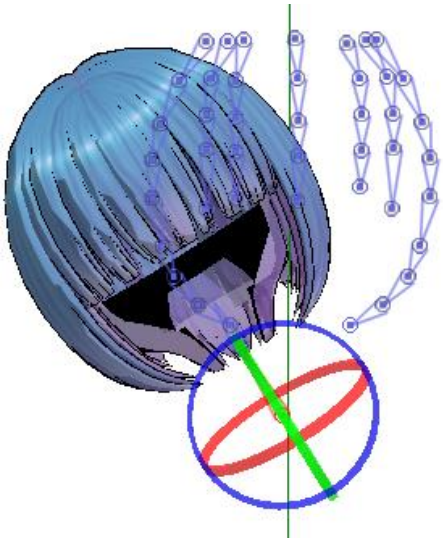
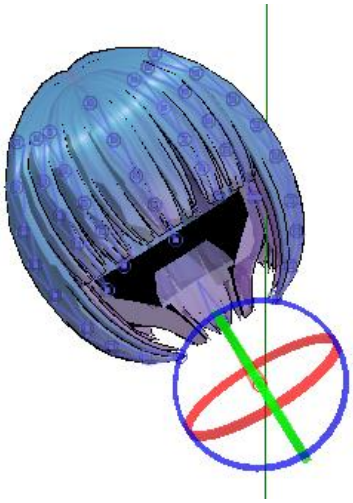
Anyway continue making your bones, until you're happy with them.

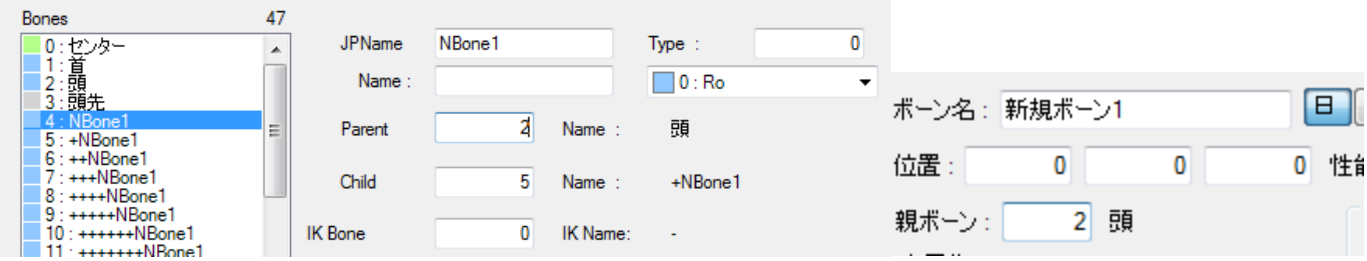


Make sure they are in a reasonable place for when you begin to rig them. Now, unfortunately – or fortunate for me, we will not be covering rigging in this tutorial. Instead Rigging will be a separate tutorial all together.

However, we aren't quite done yet. All the first bones (the ones at the top which you made first) need to be connected to the Head bone, else they'll stay in one place.

In order to do this, you change the Parent bones of the bones at the top to the Head Bone. Shown below the table.

Without the Connection	With Connection
	



Originally as you'll find out, the Parent bone will probably be something like -1. You do not need to touch the child Bones. They are already set up for you. If you haven't done so, so far, you can rename the bones to whatever you want. It may make it easier for you when you try to rig them.

[4] The Bones Window……

Different Bone Types

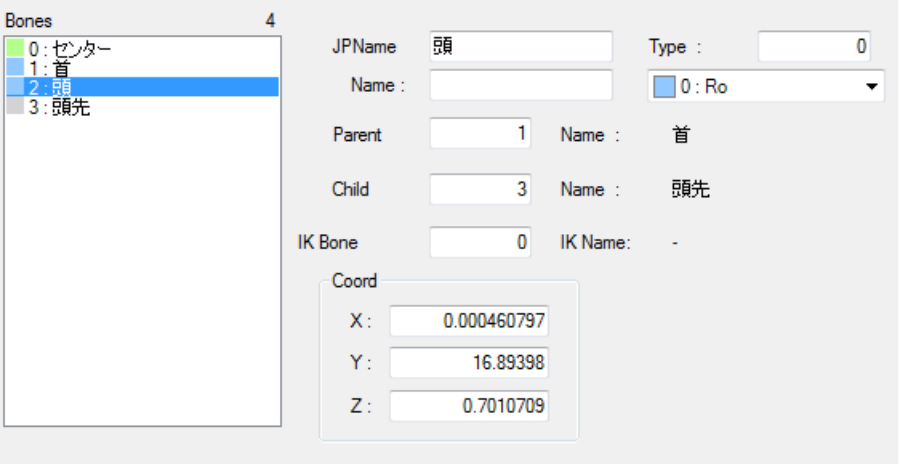
0: Ro	Used for Normal Bones
1:RoMov	Used for Centre, Groove and Mother Bones.
2: IK	Used for hair, ankle, toe and mic. Bones that can be moved with other bones following it. E.g. Hip Bone -> Knee Bone -> Ankle Bone <- Ankle IK
3: ?	*I'm not sure sorry.* ☹
4: IKInflRo	Hip and Knee Bone Bones. Can also be found in models hair with by IK bones and things like Miku's Tie.
5. InfRo	Found in Eye bones – at least Animasa Miku's
6: IKCon	*I'm not sure sorry.* ☹
7: Hid	Hidden Bones that can't be rotated or actually seen in anything but pmdeditor.
8: Tw	Twist Bone
9: Revo	*I'm not sure sorry.* ☹

It's always best to use the same sort of bones for the main body of the model, else the model may act funny with some motion data's.

Also, always make sure that the bones are named the same in Japanese so the neck bone IS 首 else the model may not work with motion data/poses.

In PMX editor I believe you play around with these to get the correct bone type that you want. But in confuses me so you'll have to figure it out on your own.

[5] Parent and Child Bones……

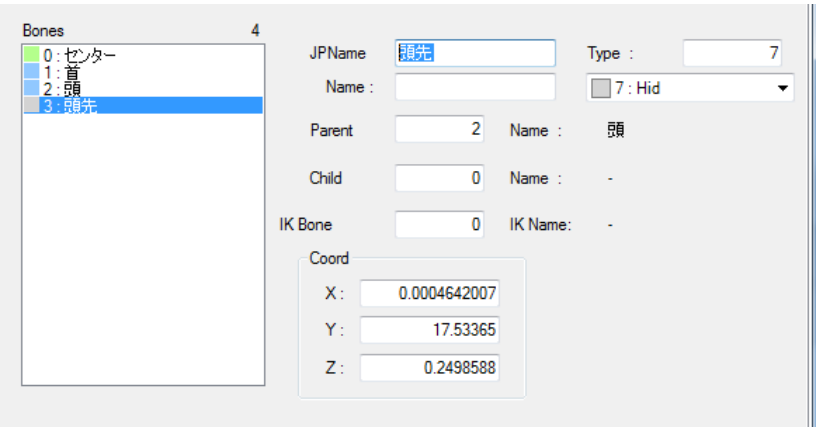


Parent

Bone that is connected to the **Selected Bone**. So for example, **The Head Bone's** parent Bone is the **Neck Bone**. This is because the Neck's Child bone is the Head Bone.

Child

What **Bone** the **Selected Bone** connects to. So for example The **head bone's** child bone is "頭先" . This is because 頭先's Parent Bone is the head bone. It does not need a child bone, because nothing else attaches to it.



If this has confused you so far, think of it this way.

- **Selected Bone (Which you are setting the Parent Child Bone up in)**
- **Parent Bone Key**
- **Child Bone Key**

You are wearing a **hat (Bone1)** on your **head (Bone2 = Parent of Bone 1)**.

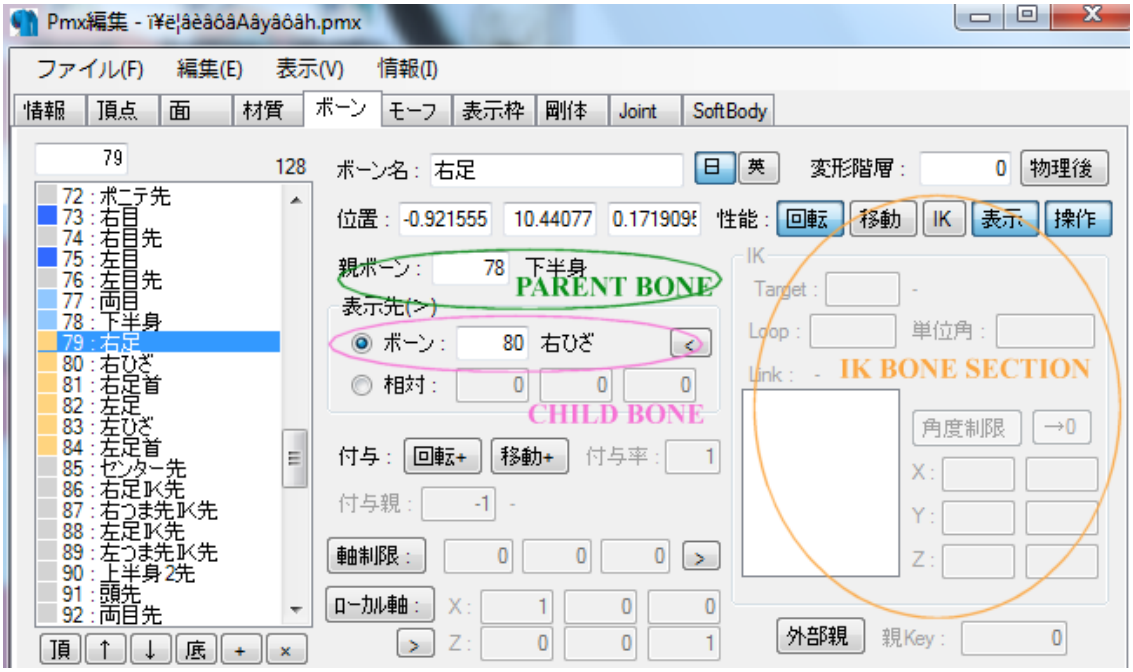
The **Hat(Bone 1)** is on your **head (Bone 2).**

Your **Head (Bone 2)** has a **skull(Bone 3)** inside of it.

Neck Bone	Head Bone
Parent Bone = Head Bone	Parent Bone = Neck Bone
Child Bone (Would be the Upper Body Bone)	Child Bone: 頭先

Think of it like it's a jigsaw being put together. You can't put one piece down before the other in this case. So it becomes **1** connects to **2**, **2** is connected to **1**, **2** Links to **3**.

PMXeditor Version



PMXeditor uses Child and Parent bones in the same way, the only difference is that there's more boxes on the page and it's in Japanese.

You do not set up IK bones in the same way as they are in PMDeditor. The section below will clear this up for you when you get to it.

IK Bone

IK Bones refer to things like Hair IK's, ToeIKs and Ankle IKs. Any bone that is connected to an IK bone will move with it. For example;

> Bone 1: Hip Bone
> Bone 2: Knee Bone
> Bone 3: Ankle Bone
> Bone 4: Toe Bone
> Bone 5: Ankle (Leg) IK
> Bone 6: Toe IK

Hip Bone	
Parent	Upper Body
Child	2. Knee Bone
IK Bone	5. Ankle (Leg) IK

Knee Bone	
Parent	Hip Bone
Child	Ankle Bone
IK Bone	Ankle (Leg) IK

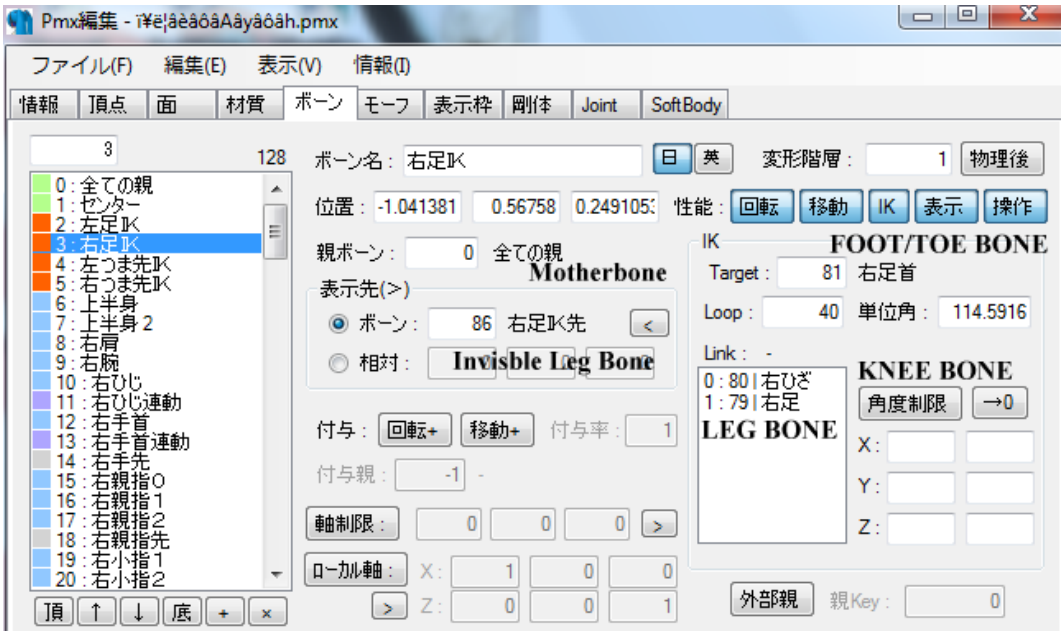
Ankle Bone	
Parent	Knee Bone
Child	Toe Bone
IK Bone	Ankle (Leg) IK

Toe Bone	
Parent	Ankle Bone
Child	Invisible Toe Bone
IK Bone	Ankle (Leg) IK

Ankle (Leg)IK	
Parent	-1
Child	Invisible Ankle Bone
IK Bone	None

Toe IK	
Parent	Ankle IK Bone
Child	Invisible Toe Bone
IK Bone	None

PMXeditor Version

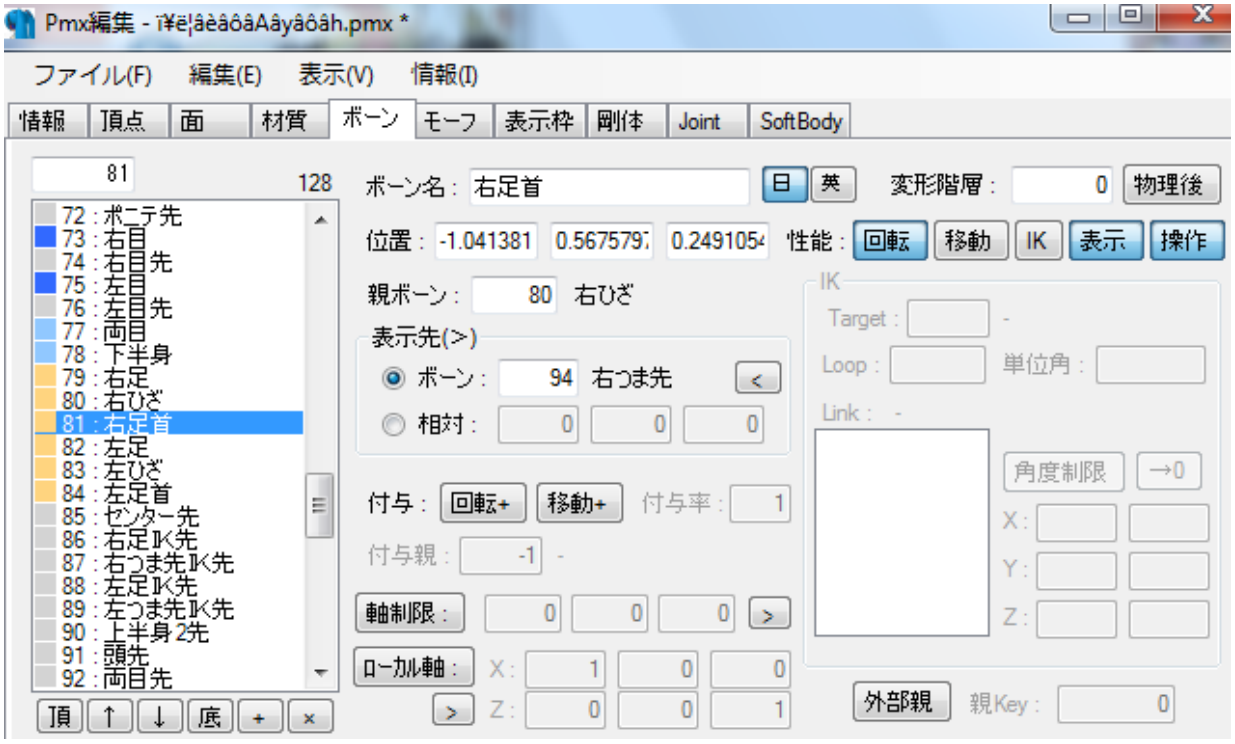


PMXeditor basically works in the same way. Except this time you have to specify that the IK bone has a ‘target’. In this case the Ankles IK bone’s target is its own Foot/Toe bone. I believe that this is the only real difference when working with IK bones in PMXeditor.

You should also specify that the model’s IK bone also links to the actual Leg and Knee bone’s respectively.

I currently do not understand what “Loop” does, because upon checking the model’s bones, it comes up as the model’s wrist bone which seems odd. But if the model works then it doesn’t really matter.

Oh and just to be REALLY confusing for all you PMXeditor users, you no longer have to specify that a bone has an IK bone in its respected section. The IK Bone itself holds all that information for you. You just have to make sure that these bones connect properly with its parent and child bones.



94 is an invisible pink bone at the end of the toes. Its parent is bone 81, and its child is -1.

[6] Afterword .....

I think that that's all there is to bones. The rest comes from rigging them to an item/part/model and then adding physics to them. So I hope that this helps you in some way.

Sorry if it's a bit confusing in places, but it actually isn't THAT bad. Just look at how other model's bones connect. For example, the leg bones used in the example above are actually from Animasa Miku.

Sorry if the PMXeditor sections are…a little bit lacking.

I also give up with this documents spacing. D: So I'm sorry if there are big gaps in between sections.

Anyway I hope that tutorial is helpful to you!

- Butterfly

19-09-12