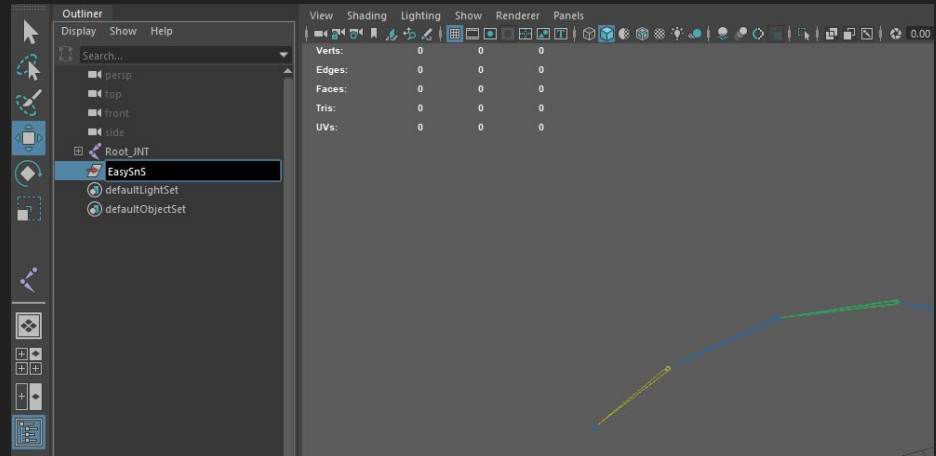


Step 1, Create controllers

# Step 1, Create controllers:

- 1) Create a group **[CTRL + G]**.
- 2) Rename the group to “EasySnS” by double clicking the group in the outliner. (Fig 1)

Fig 1:



# Step 1, Create controllers:

- 3) Select the joint named “R\_Hand\_JNT” [Left Click], then select the group named “EasySnS” in the outliner [CTRL + Left Click].
- 4) Click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Parent” option button. (Fig 2)
- 5) Make sure the “Maintain Offset” option is turned off. Then click “Add”. (Fig 3)

Fig 2:

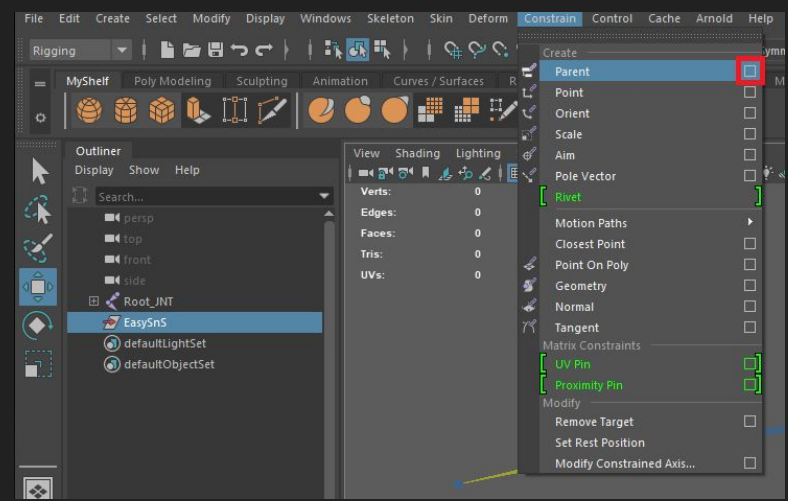
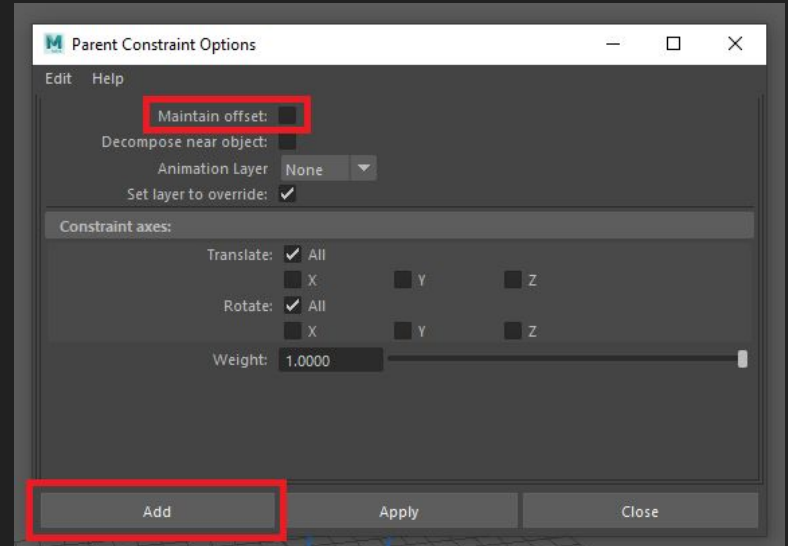


Fig 3:



# Step 1, Create controllers:

- 6) Delete the parent constraint called “EasySnS\_parentConstraint1” on the group “EasySnS”. (Fig 4)
- 7) Open the shelf menu called “Curves / Surfaces” and click the “CreateNURBSCircle” button. (Fig 5)

Fig 4:

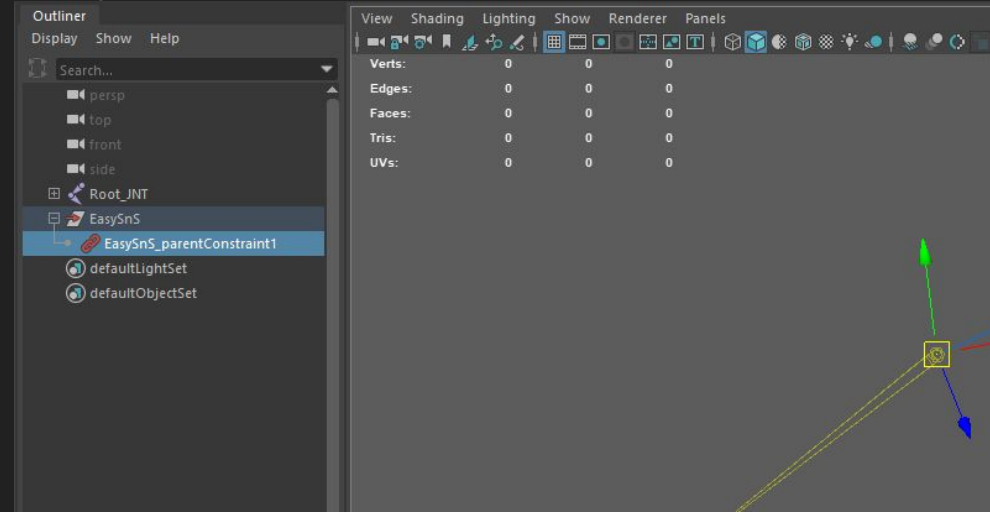
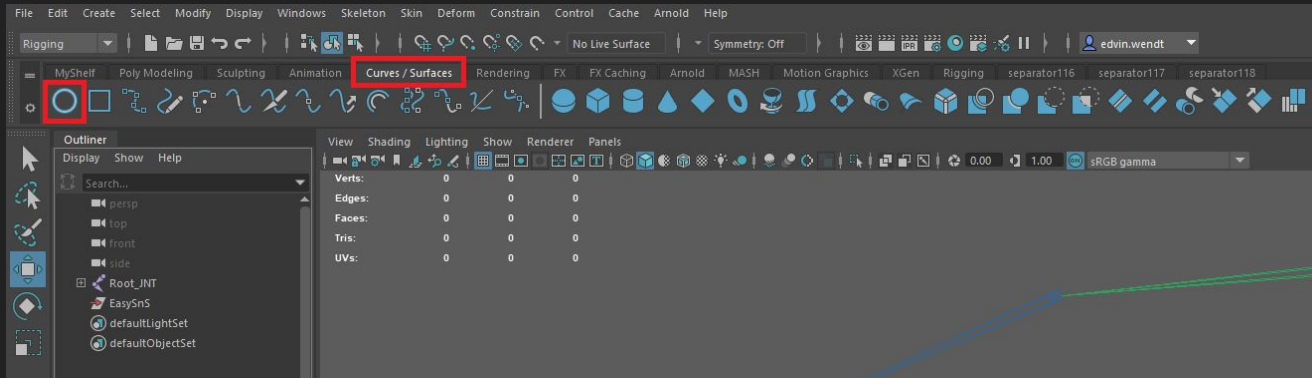


Fig 5:



# Step 1, Create controllers:

- 8) Rename the nurb circle to “IK\_CTRL” by double clicking the nurb circle in the outliner. (Fig 6)
- 9) Make sure the “IK\_CTRL” is selected. Click the “Channel Box/Layer Editor” in the right side of the maya window.
- 10) In the “Channel Box/Layer Editor” click the drop down menu called “Edit” and then click the “Add Attribute” button. (Fig 7)

Fig 7:

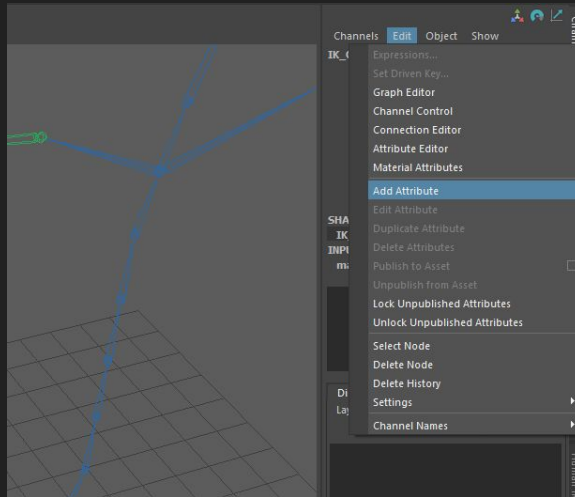
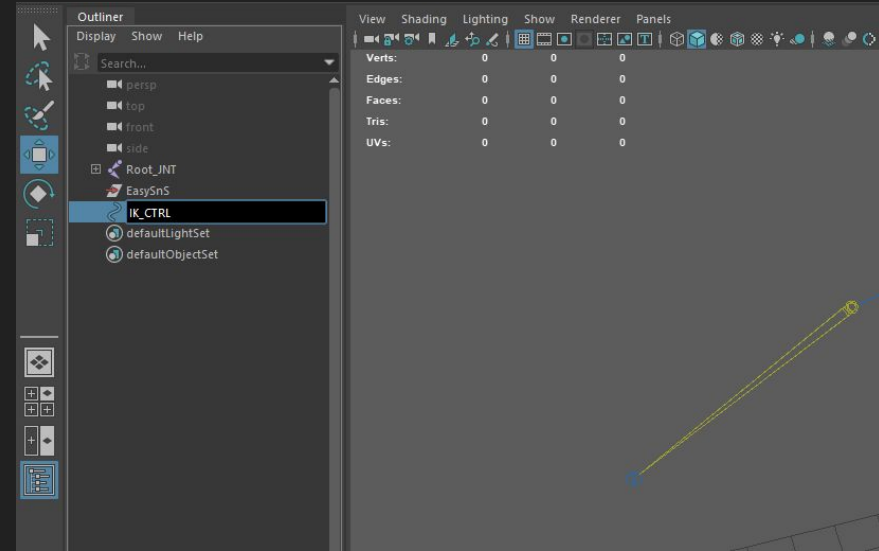


Fig 6:

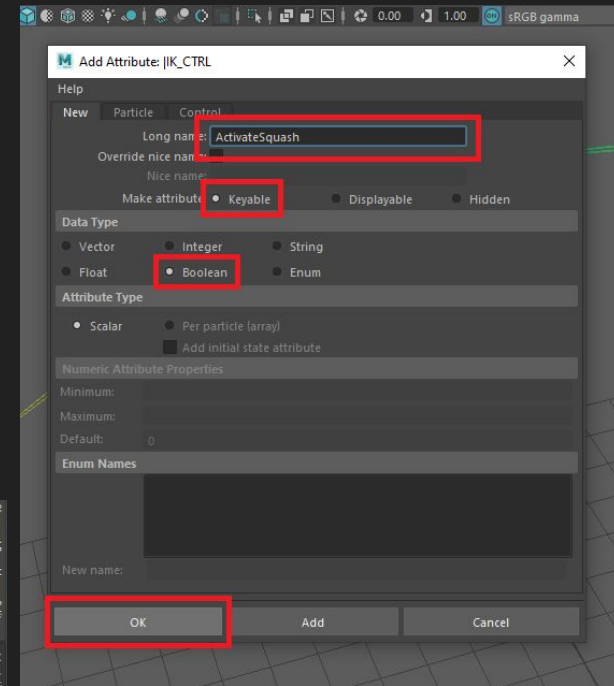
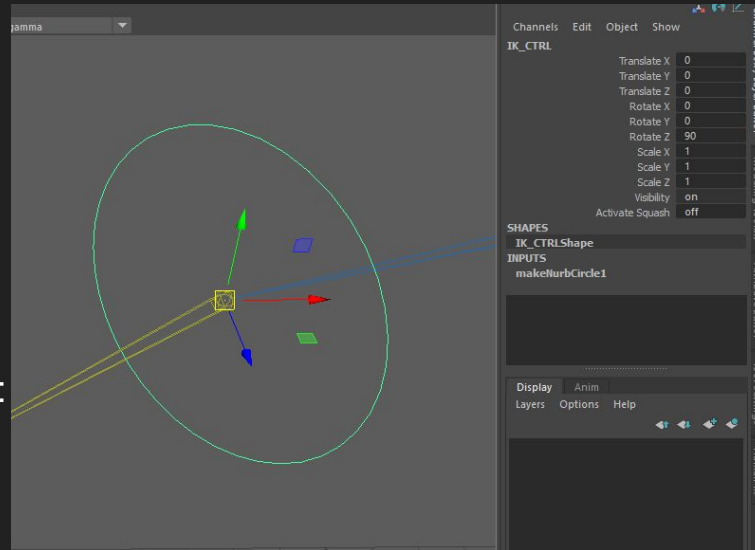


# Step 1, Create controllers:

Fig 8:

- 11) In the Add Attribute window, set the long name to “ActivateSquash”, select the “keyable” option and the “Boolean” data type. Then click OK. (Fig 8)
- 12) Select the “IK\_CTRL” [Left Click] then select the “EasySnS” in the outliner [CTRL + Left Click]. Then click P.
- 13) Make sure the “IK\_CTRL” is selected. In the right side of the maya window “in the Channel Box/Layer Editor” set the following attributes  
Translate X = 0  
Translate Y = 0  
Translate Z = 0  
Rotate X = 0  
Rotate Y = 0  
Rotate Z = 90  
Scale X = 1  
Scale Y = 1  
Scale Z = 1  
(Fig 9)

Fig 9:



# Step 1, Create controllers:

- 14) Make sure the “IK\_CTRL” is selected. Click the drop down menu called “Modify” in the top left part of the maya window. In the drop down menu, click “Freeze Transformations” (Fig 10)
- 15) Make sure the “IK\_CTRL” is selected. Click the drop down menu called “Edit” in the top left part of the maya window. In the drop down menu, click “Delete by Type” → “History”. (Fig 11)

Fig 10:

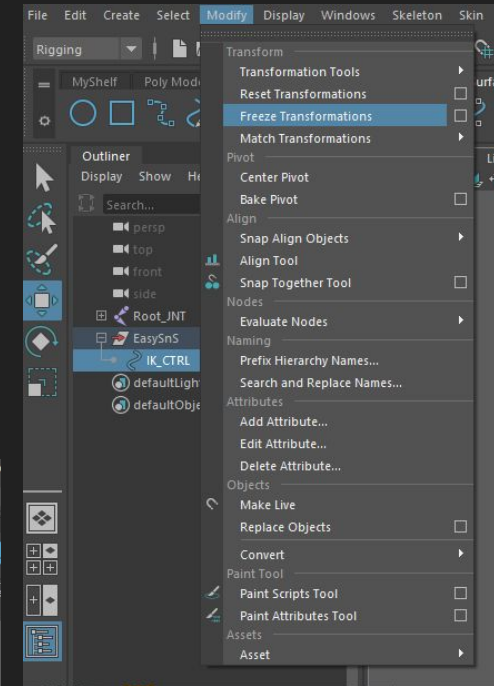
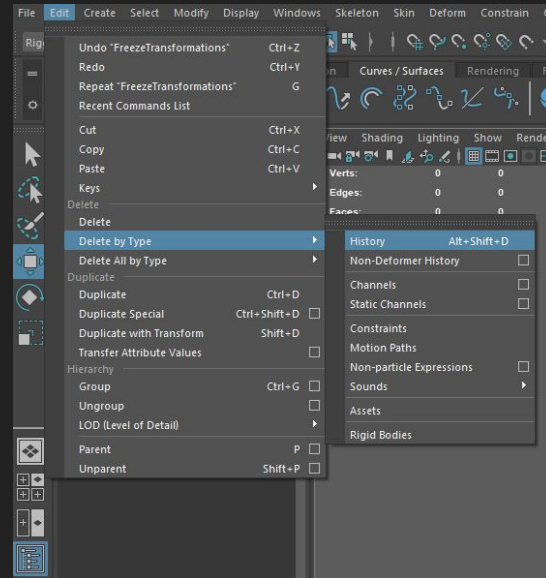


Fig 11:



# Step 1, Create controllers:

- 16) Open the shelf menu called “Curves / Surfaces” and click the “CreateNURBSsphere” button. (Fig 12)
- 17) Rename the nurb sphere to “LookAt\_CTRL” by double clicking the nurb circle in the outliner. (Fig 13)

Fig 13:

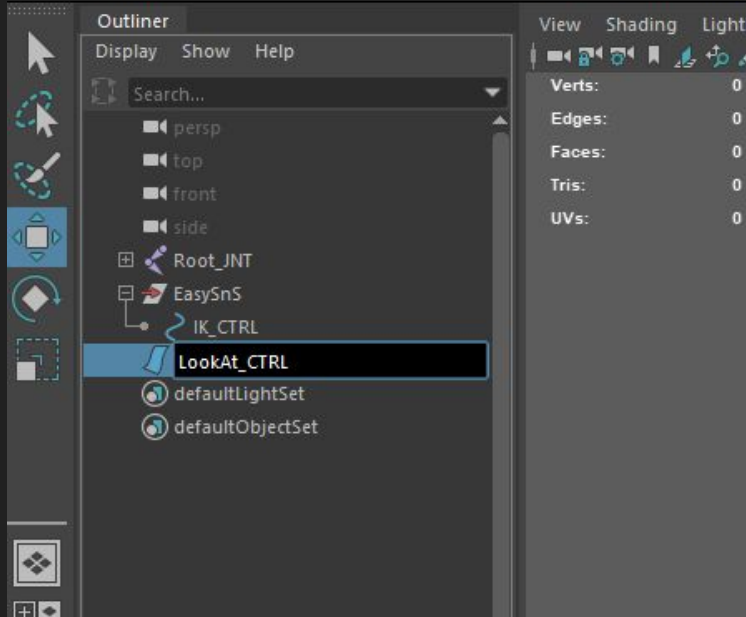
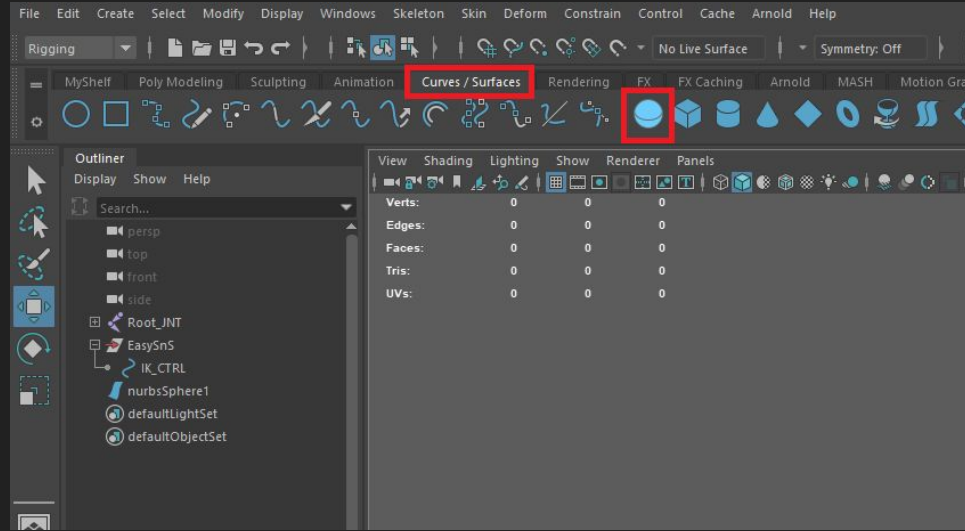


Fig 12:





# Step 1, Create controllers:

- 18) Make sure the “LookAt\_CTRL” is selected. In the right side of the maya window in the “Channel Box/Layer Editor” set the following attributes

Translate X = -5

Translate Y = 15.5

Translate Z = -2

Rotate X = 0

Rotate Y = 0

Rotate Z = 90

Scale X = 0.5

Scale Y = 0.5

Scale Z = 0.5

(Fig 14)

- 19) Select the “LookAt\_CTRL” [Left Click] then select the “EasySnS” in the outliner [CTRL + Left Click]. Then click P. (Fig 15)

Fig 14:

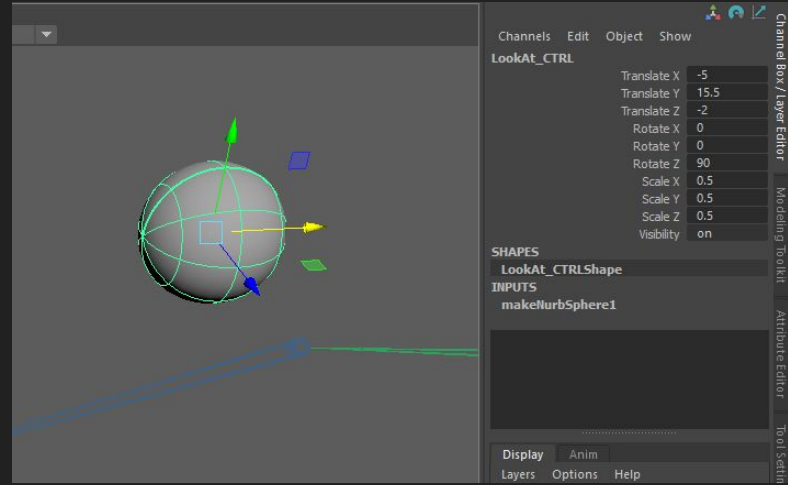
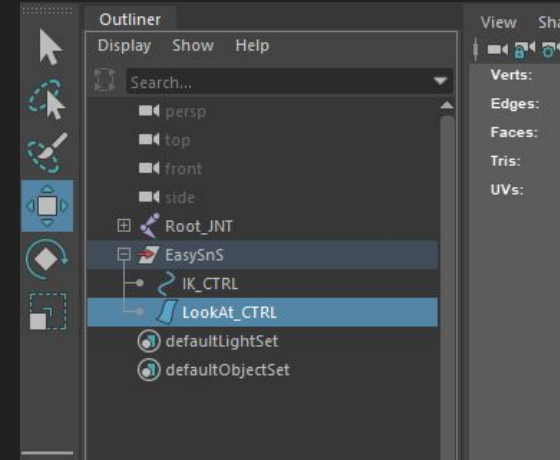


Fig 15:



# Step 1, Create controllers:

- 20) Make sure the "LookAt\_CTRL" is selected. Click the drop down menu called "Modify" in the top left part of the maya window. In the drop down menu, click "Freeze Transformations" (Fig 16)
- 21) Make sure the "LookAt\_CTRL" is selected. Click the drop down menu called "Edit" in the top left part of the maya window. In the drop down menu, click "Delete by Type" → "History". (Fig 17)

Fig 16:

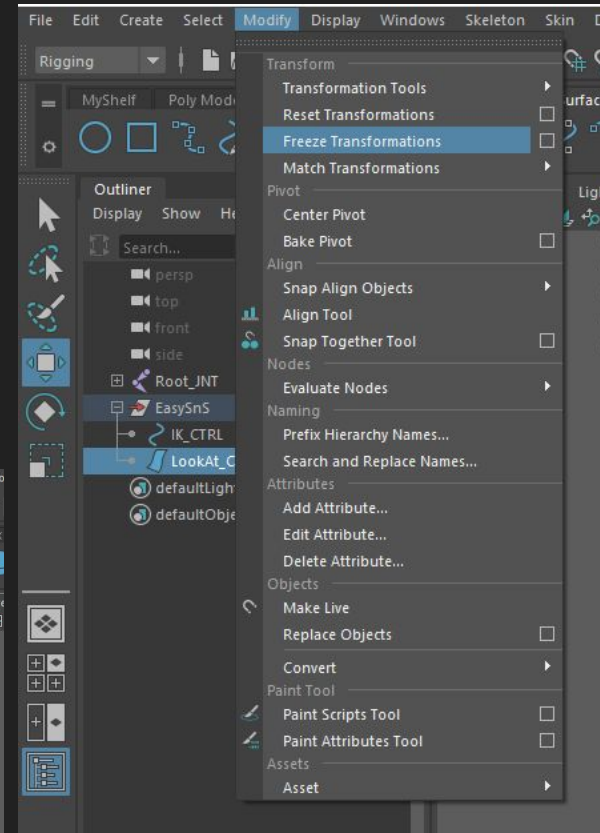
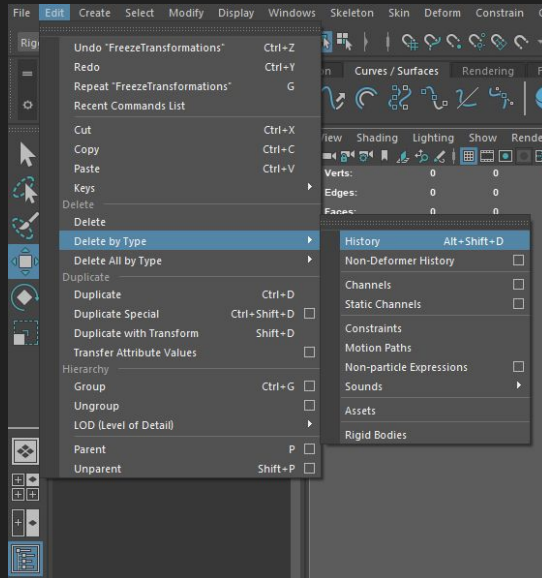


Fig 17:

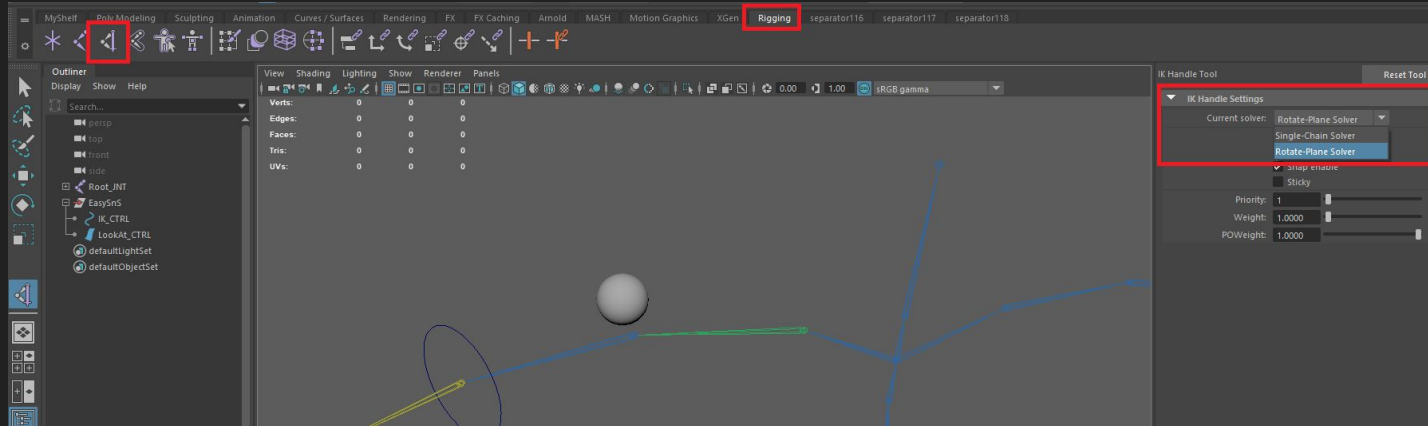


Step 2, Create constraints

# Step 2, Create constraints:

- 1) Open the shelf menu called “Rigging” and double click the “CreateIKHandle” button. Then make sure the “Rotate-Plane Solver” is the Current solver option (Fig 18)

Fig 18:



- 2) Left click on the “R\_Shoulder\_JNT” then left click on the “R\_Hand\_JNT”.

# Step 2, Create constraints:

- 3) Rename the IK handle to “IK\_Handle” by double clicking the IK handle in the outliner.
- 4) Select the “IK\_Handle” [Left Click] then select the “EasySnS” in the outliner [CTRL + Left Click]. Then click P. (Fig 19)
- 5) Select the “IK\_CTRL” [Left Click] then select the “IK\_Handle” in the outliner [CTRL + Left Click]. Click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Parent”. (Fig 20)
- 6) Rename the parent constraint to “Praent\_Constraint” by double clicking the parent constraint the outliner.

Fig 19:

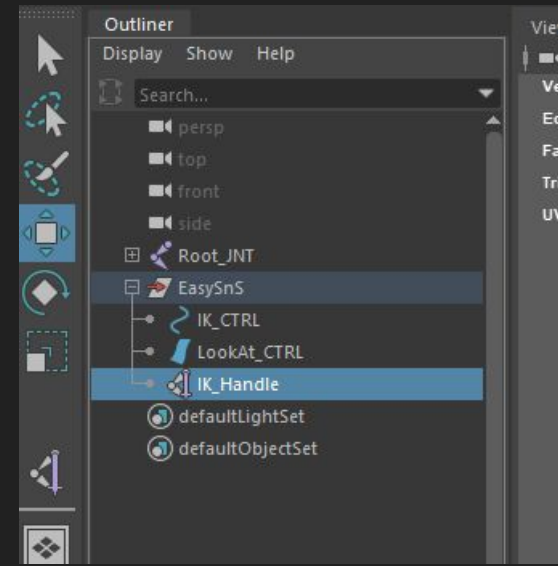
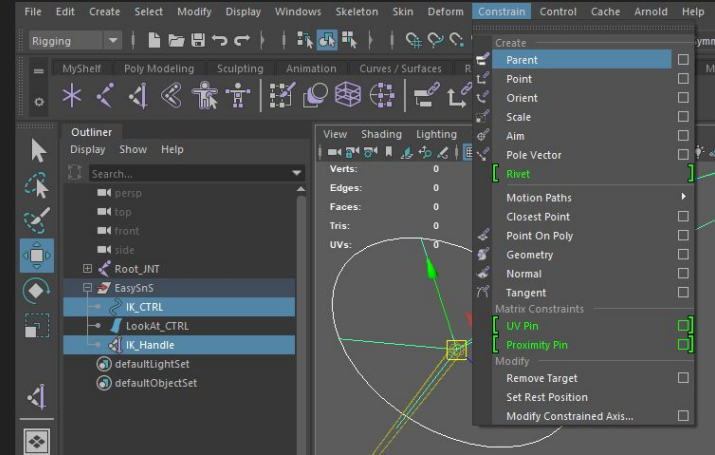


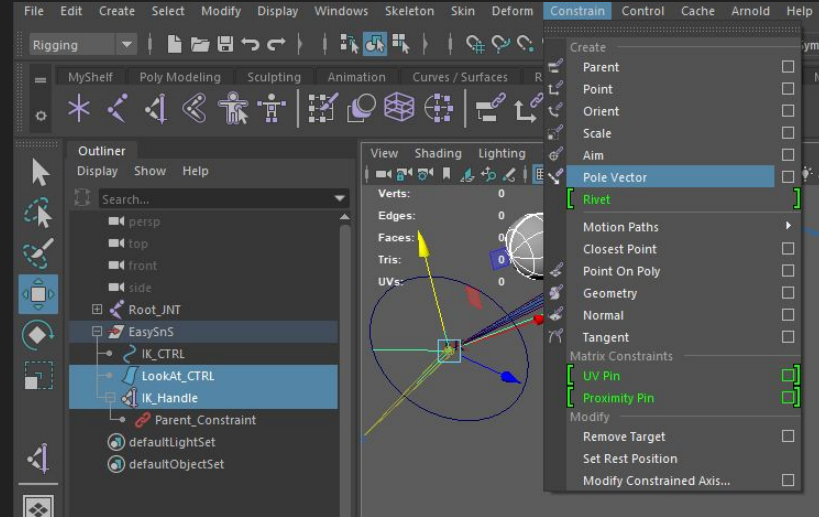
Fig 20:



# Step 2, Create constraints:

- 7) Select the “LookAt\_CTRL” [Left Click] then select the “IK\_Handle” in the outliner [CTRL + Left Click]. Then click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Pole Vector”. (Fig 21)
- 8) Rename the pole vector constraint to “Pole\_Vector” by double clicking the pole vector constraint in the outliner.

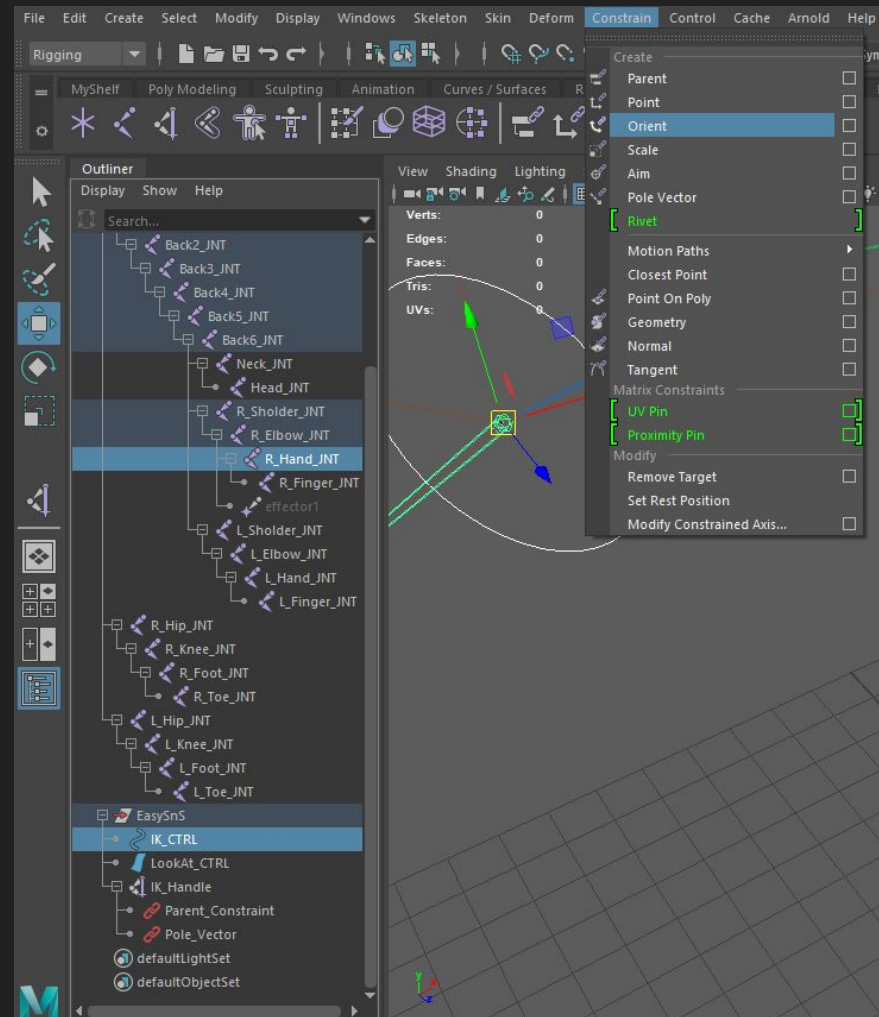
Fig 21:



# Step 2, Create constraints:

Fig 22:

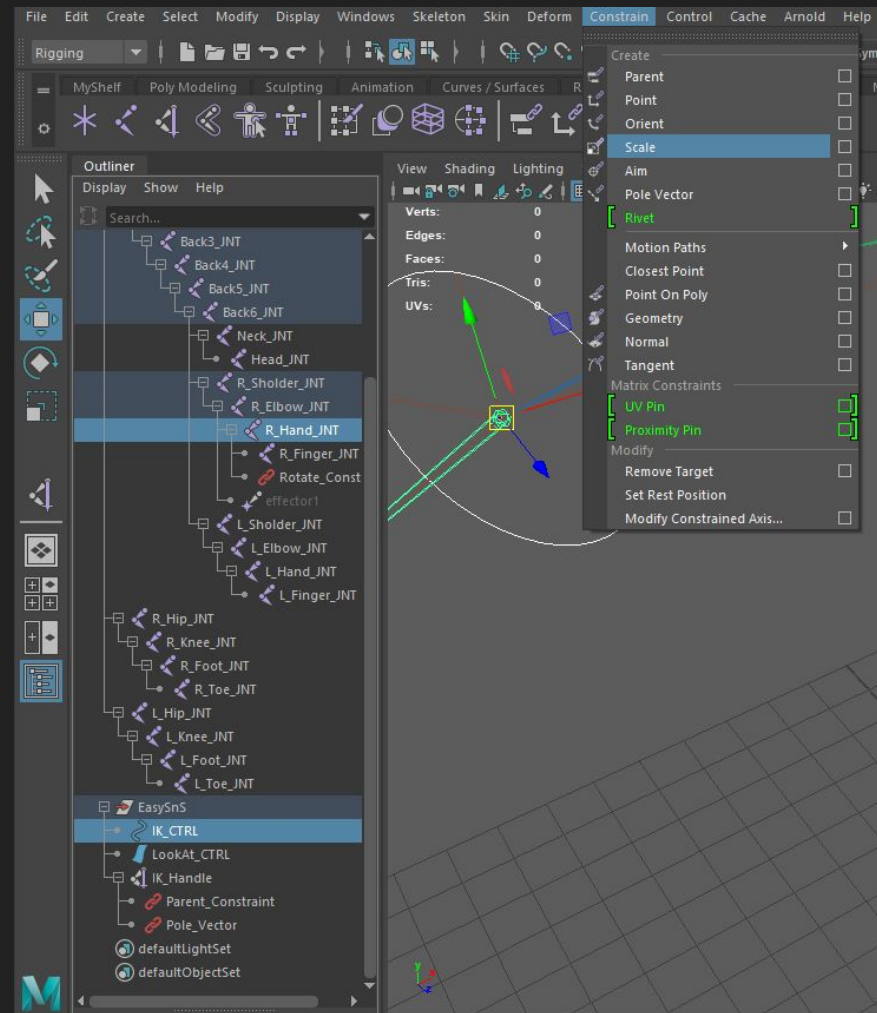
- 9) Select the “IK\_CTRL” [Left Click] then select the “R\_Hand\_JNT” in the outliner [CTRL + Left Click]. Then click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Orient”. (Fig 22)
- 10) Rename the orient constraint to “Rotate\_Constraint” by double clicking the orient constraint in the outliner.



# Step 2, Create constraints:

Fig 23:

- 11) Select the “IK\_CTRL” [Left Click] then select the “R\_Hand\_JNT” in the outliner [CTRL + Left Click]. Then click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Scale”. (Fig 23)
- 12) Rename the scale constraint to “Scale\_Constraint” by double clicking the scale constraint in the outliner.





Step 3, Create expression

# Step 3, Create expression:

- 1) Click the drop down menu called “Create” in the top left part of the maya window. In the drop down menu, click “Measure Tools” → “Distance Tool”. (Fig 24)
- 2) Hold down **V** and click on the “**R\_Shoulder\_JNT**”, then hold down **V** and click on the “**R\_Hand\_JNT**”.
- 3) Rename locator1 to “Start\_Locator”, rename locator2 to “End\_Locator” then rename distanceDimension1 to “Distance”. (Fig 25)

Fig 24:

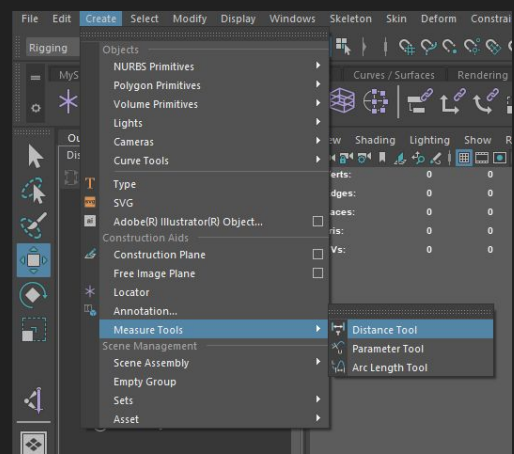
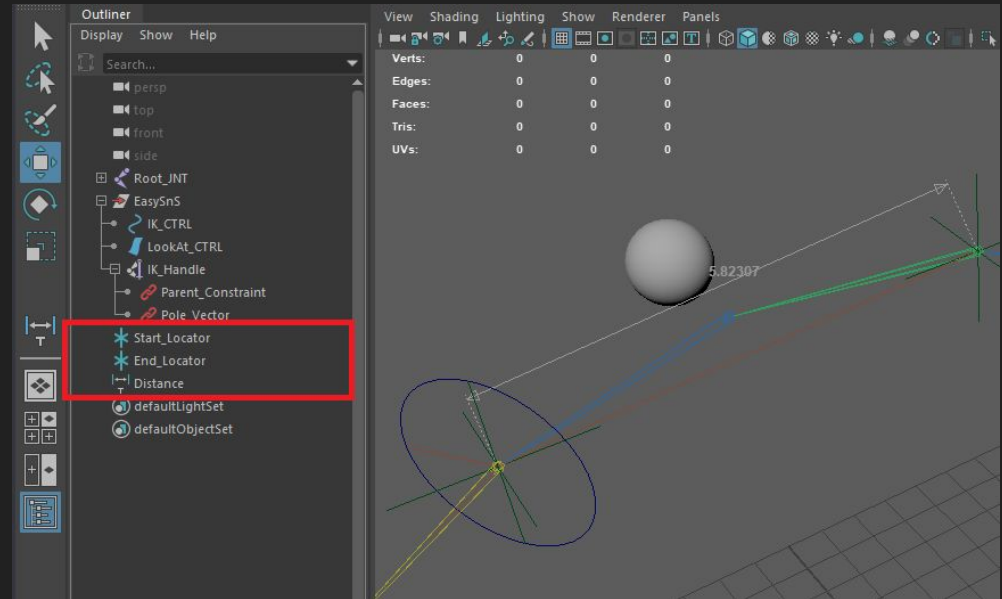


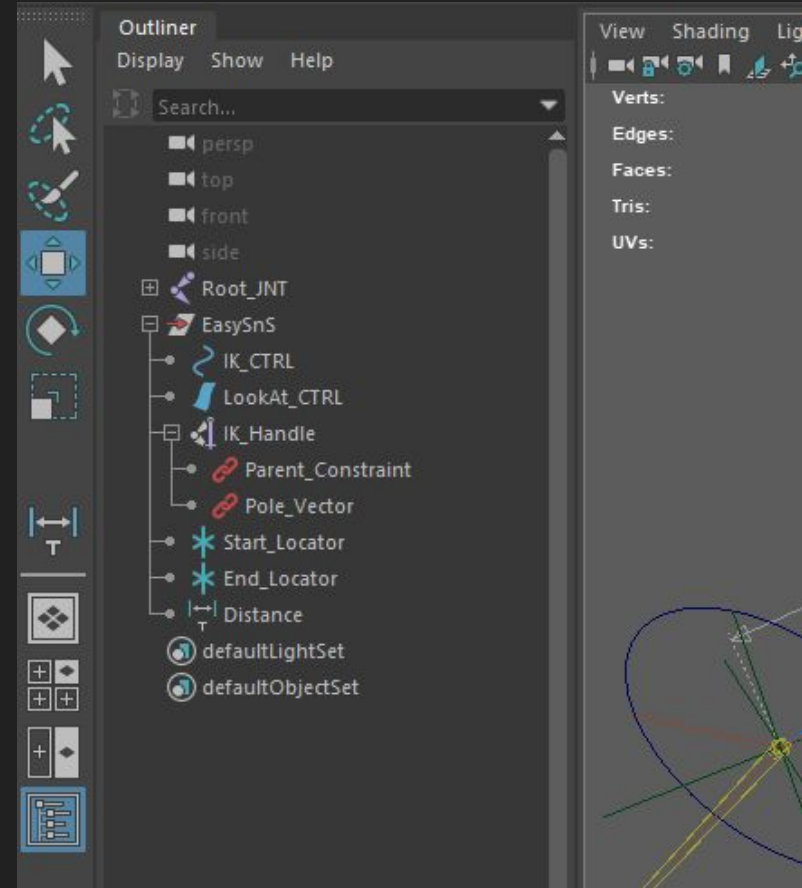
Fig 25:



## Step 3, Create expression:

- 4) Select the “Start\_Locator” **[Left Click]** then select the “EasySnS” in the outliner **[CTRL + Left Click]**. Then click **P**.
- 5) Select the “End\_Locator” **[Left Click]** then select the “EasySnS” in the outliner **[CTRL + Left Click]**. Then click **P**.
- 6) Select the “Distance” **[Left Click]** then select the “EasySnS” in the outliner **[CTRL + Left Click]**. Then click **P**. (Fig 26)

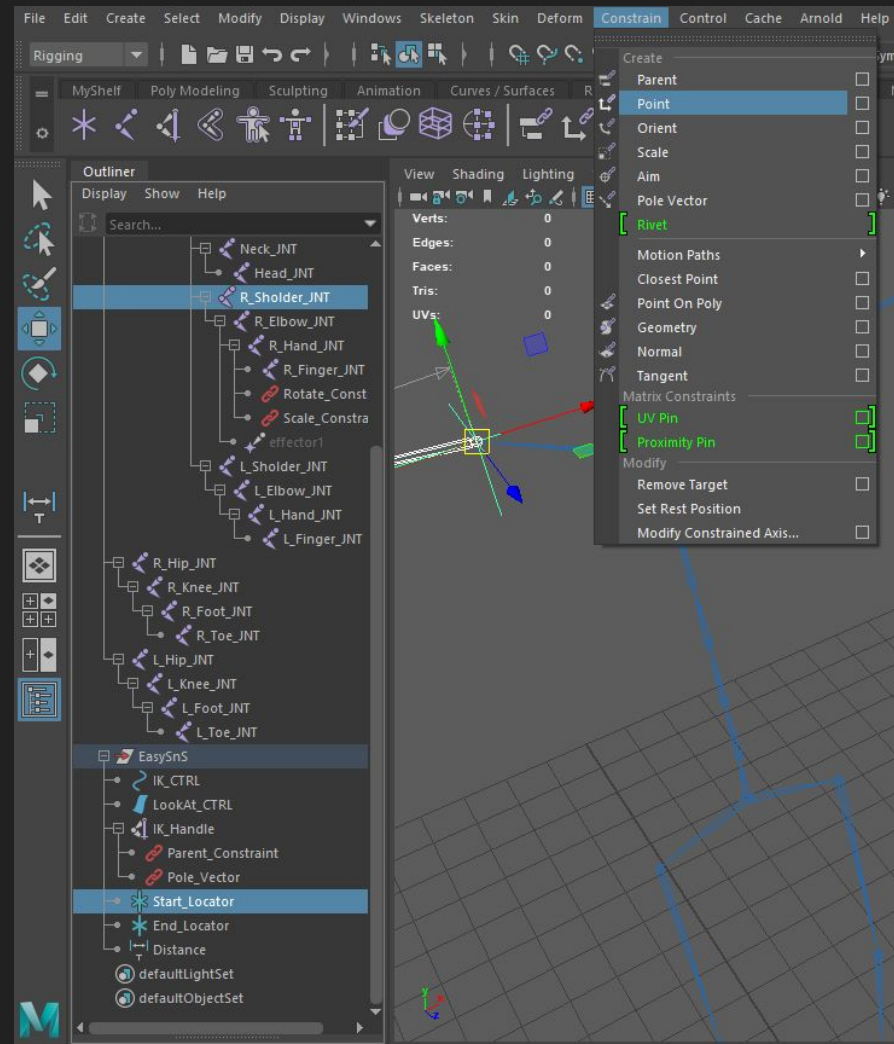
Fig 26:



# Step 3, Create expression:

Fig 27:

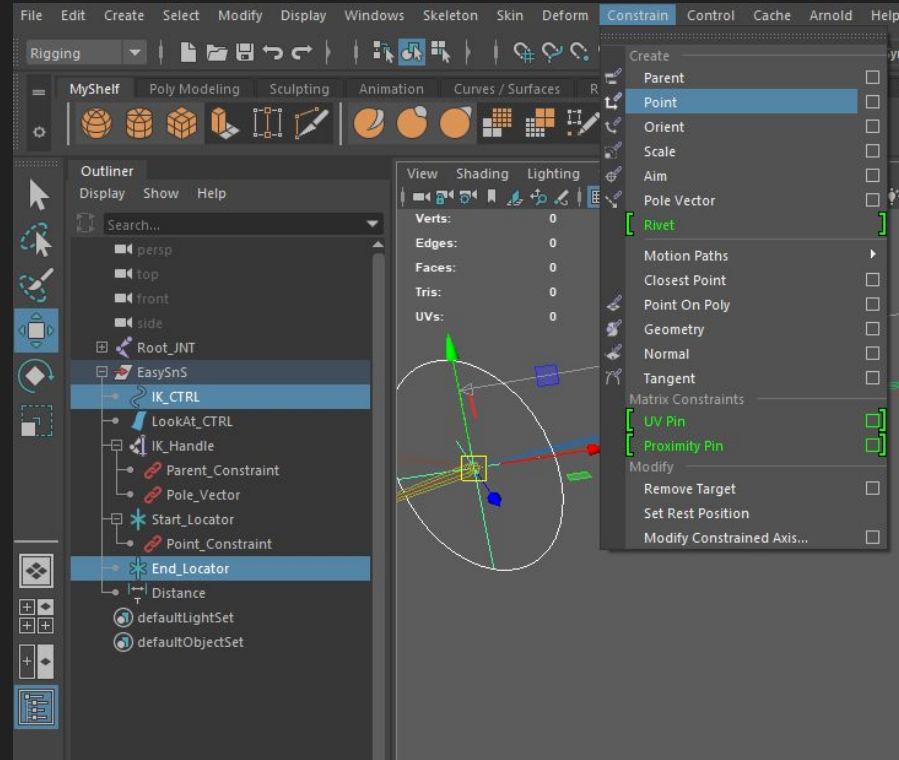
- 7) Select the “**R\_Shoulder\_JNT**” [Left Click] then select the “Start\_Locator” in the outliner [CTRL + Left Click]. Click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Point”. (Fig 27)
- 8) Rename the point constraint to “Point\_Constraint” by double clicking the point constraint in the outliner.



# Step 3, Create expression:

- 9) Select the “IK\_CTRL” [Left Click] then select the “End\_Locator” in the outliner [CTRL + Left Click]. Click the drop down menu called “Constrain” in the top middle part of the maya window. In the drop down menu, click “Point”. (Fig 28)
- 10) Rename the point constraint to “Point\_Constraint” by double clicking the point constraint in the outliner.

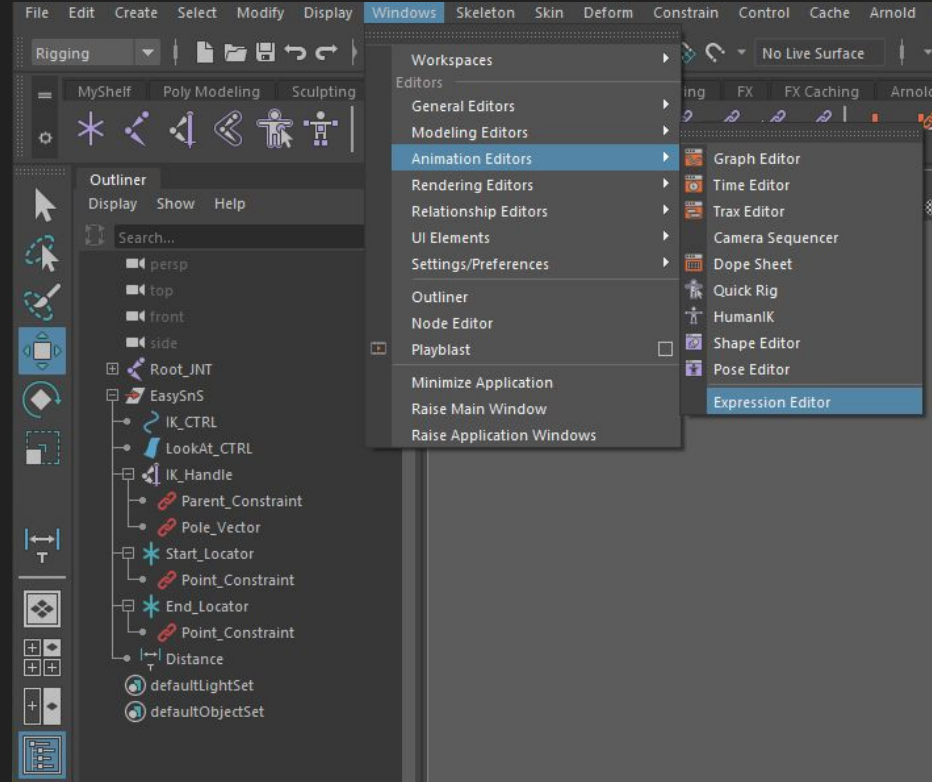
Fig 28:



# Step 3, Create expression:

- 11) Click the drop down menu called “Windows” in the top middle part of the maya window. In the drop down menu, click “Animation Editor” → “Expression Editor”. (Fig 29)

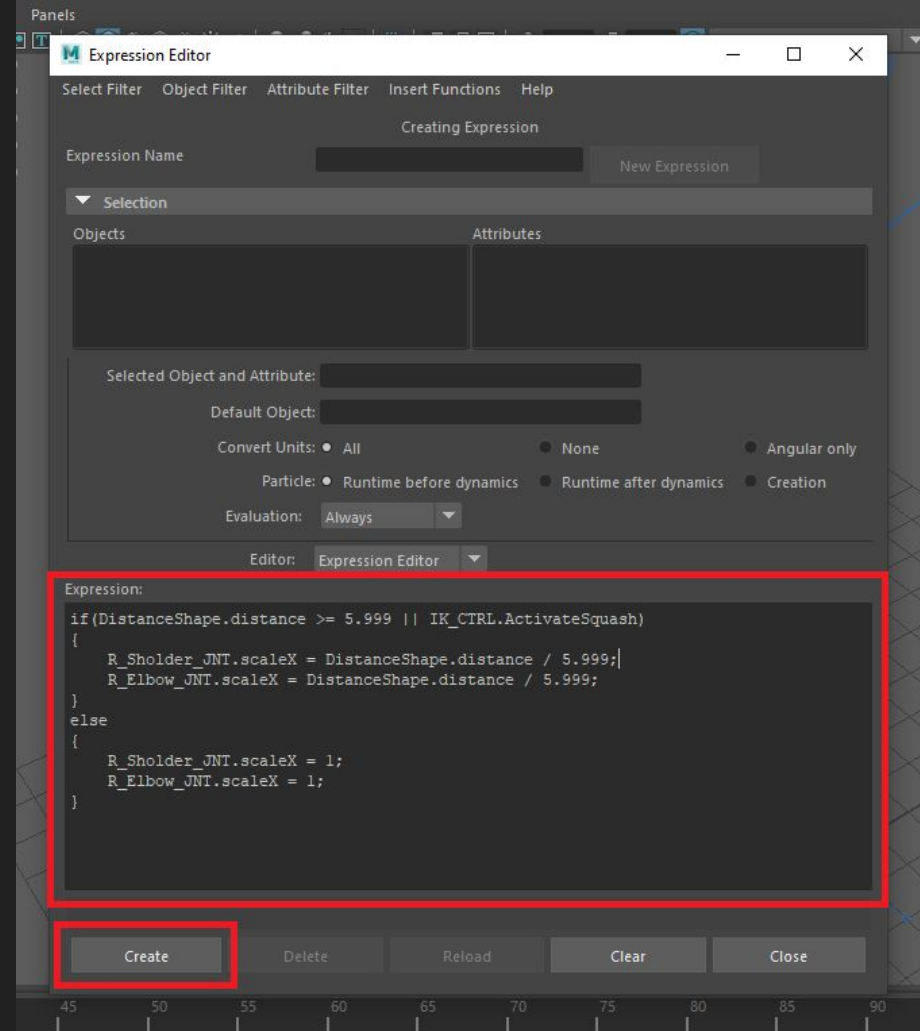
Fig 29:



# Step 3, Create expression:

- 11) In the expression window, write the following code (Fig 30), then click “Create”

Fig 30:



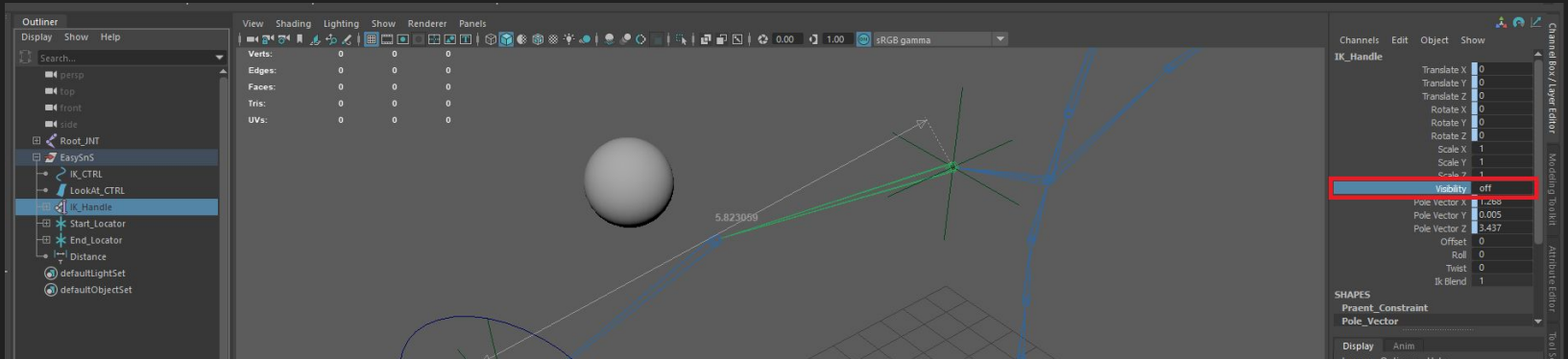
Step 4, Clean up



# Step 4, Clean up:

- 1) Make sure the “IK\_Handle” is selected. In the right side of the maya window“ in the Channel Box/Layer Editor” set the “Visibility” to OFF. (Fig 31)
- 2) Make sure the “Distance” is selected. In the right side of the maya window“ in the Channel Box/Layer Editor” set the “Visibility” to OFF.
- 3) Make sure the “Start\_Locator” is selected. In the right side of the maya window“ in the Channel Box/Layer Editor” set the “Visibility” to OFF.
- 4) Make sure the “End\_Locator” is selected. In the right side of the maya window“ in the Channel Box/Layer Editor” set the “Visibility” to OFF.

Fig 31:



You are done!