Procedural paint effect clouds
(Blender 4.2)

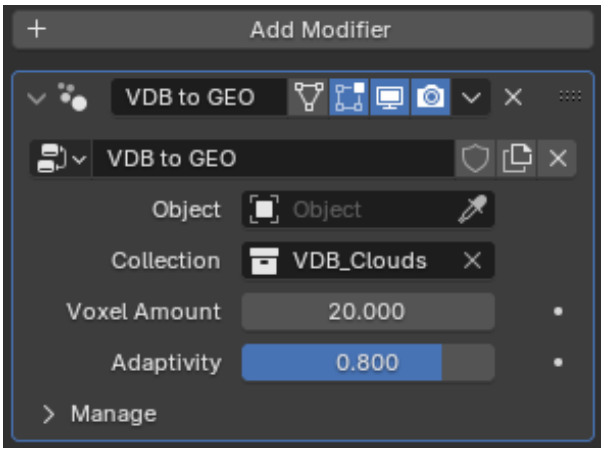
Tool Usage

Step 1

Install the Library
Go to Edit → Preferences → File Paths → Asset Libraries.
Click on the “+” button and set the the following path :
R:\RnD\CloudTool

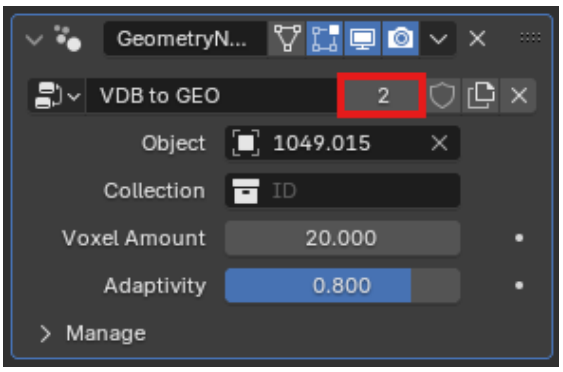
Step 2

Create your cloud shape. It can be a geometry or a VDB transformed into a geometry.
To convert a VDB to a geometry, use the **VDB to GEO** modifier.

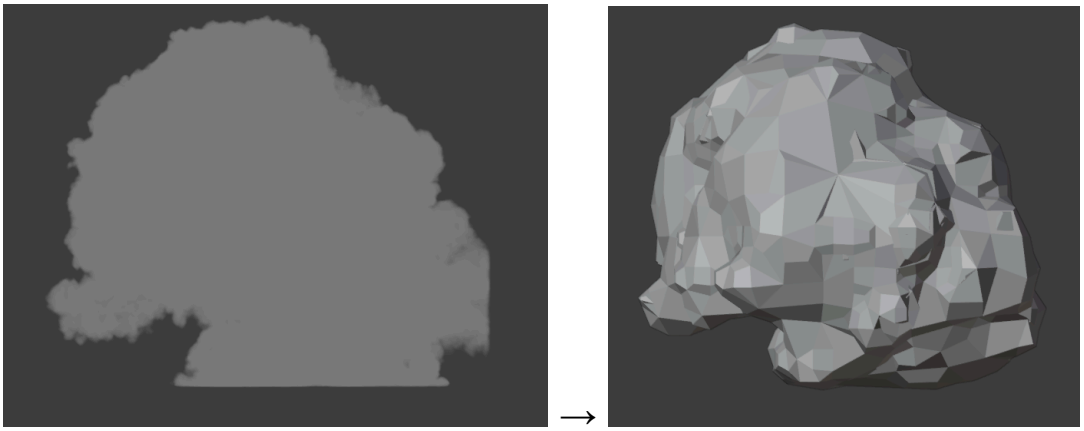


Assign the geometry node **VDB to Geo** to a random geometry (for example, a cube).
Select either a single VDB in Object or a VDB collection in Collection.
Voxel Amount: Specifies the approximate resolution of the final mesh. The voxel size is adapted to the size of the entire volume.
Adaptivity: Reduces the final face count by simplifying geometry where detail is not needed.

★ **Advices:**
- Create collections of VDBs with the same size and density to ensure consistent geometry density.
- If you apply the modifier to multiple collections or objects, click the number to make it a single user, allowing independent parameter adjustments.


GeometryN...
VDB to GEO
2
Object
1049.015
Collection
ID
Voxel Amount
20.000
Adaptivity
0.800
Manage

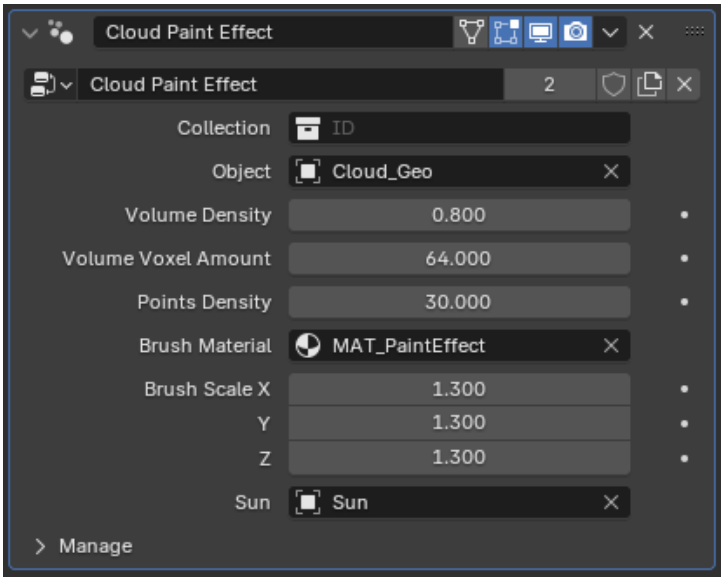
Result:



Step 3

Apply to the cloud geometry the paint effect.

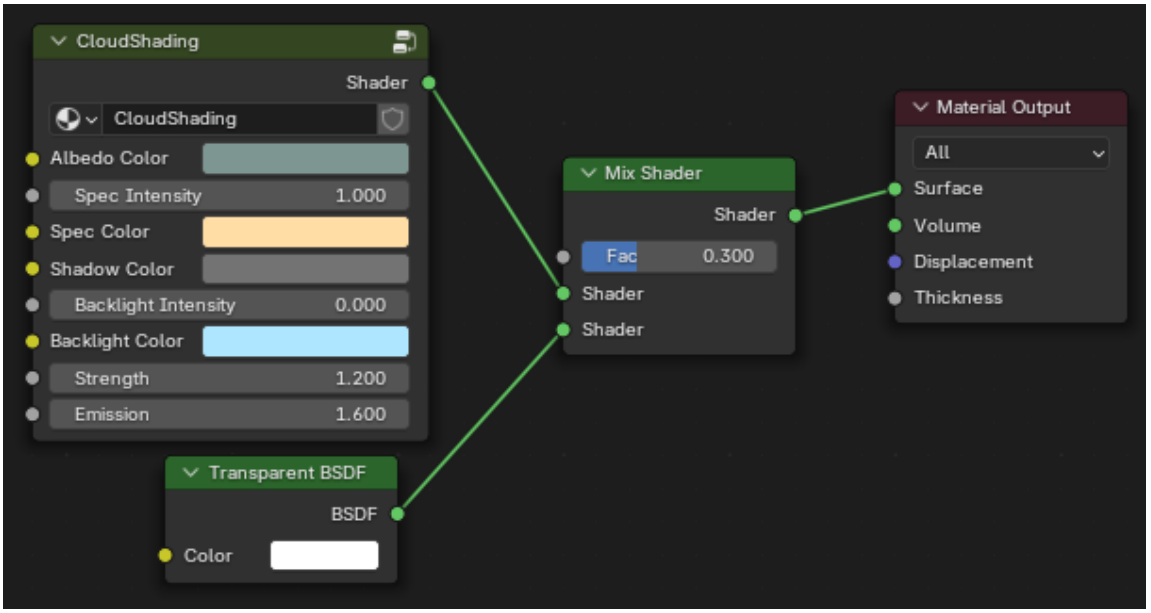
Create a new random object, for example a new cube. Assign **Cloud Paint Effect** modifier to it.



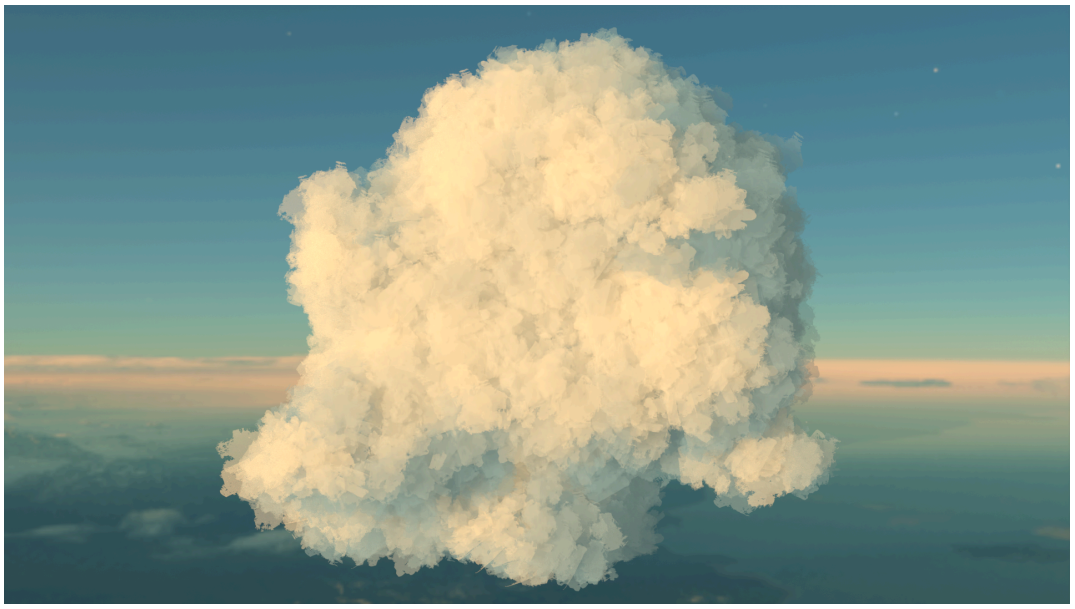
The modifier starts with transforming our geometry to a volume.
Volume Density: Makes the generated volume appear denser or less dense when rendering.
Volume Voxel amount: This allows setting an approximate number of voxels that will be used to represent mesh along its diagonal. When the dimensions of the mesh changes, the voxel size will change as well.
Points Density: Number of points to sample per unit volume. (Distribute points in volume).
Brush Material: Select the **Mat_PaintEffect** shader.
Brush Scale: The modifier scatters planes with a brush effect. Define its size.
Sun: Select the sun to influence the lighting of the cloud. You can

Step 4

You can adjust the shading aspect on the MAT_PaintEffect shader.



Result:

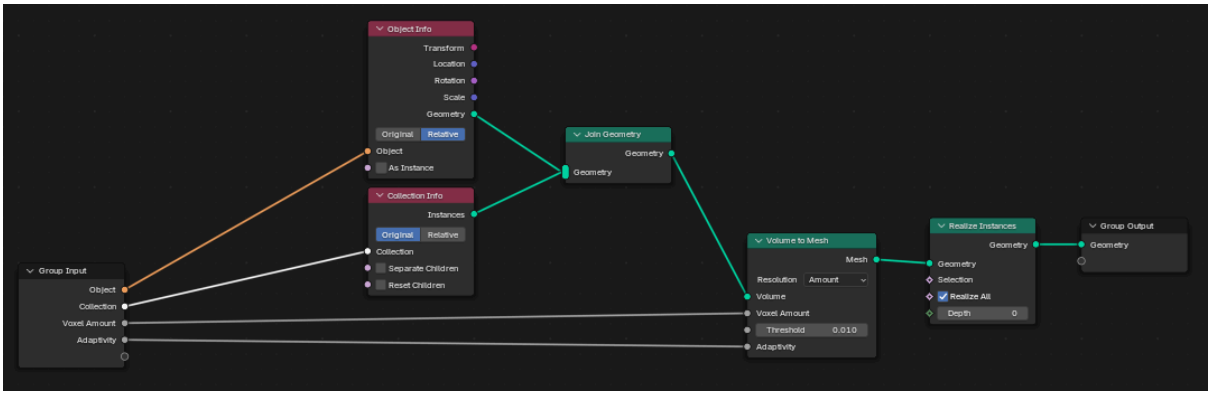


★ **Advices:**

- The paint effect can make the scene heavy. To avoid slowdowns, disable the object with the **Cloud Paint Effect** assigned when you want to move objects or animate, and enable only the one with **VDB to GEO** assigned.
- In the Render properties, make sure to raise the **Transparent** parameter or you may have black areas.
- Render with Cycles

Nodes documentation

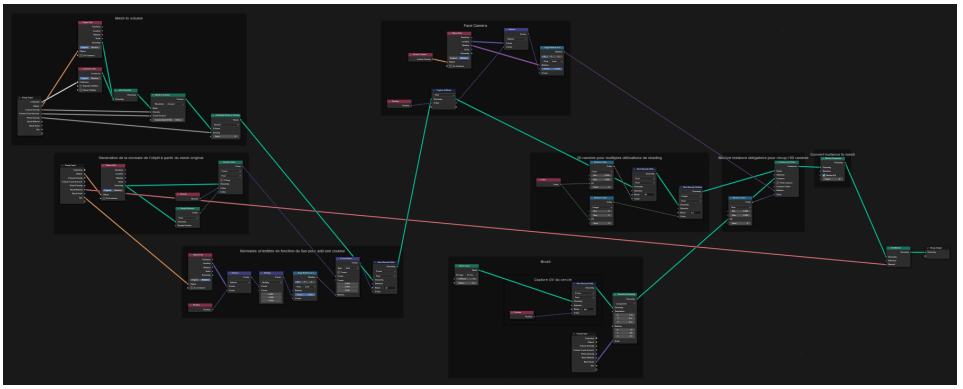
VDB to GEO



The **VDB to GEO** converts an object or a collection of volumes into a mesh. The **Realize Instances** ensures it becomes real geometry, allowing further modifications with additional modifiers.

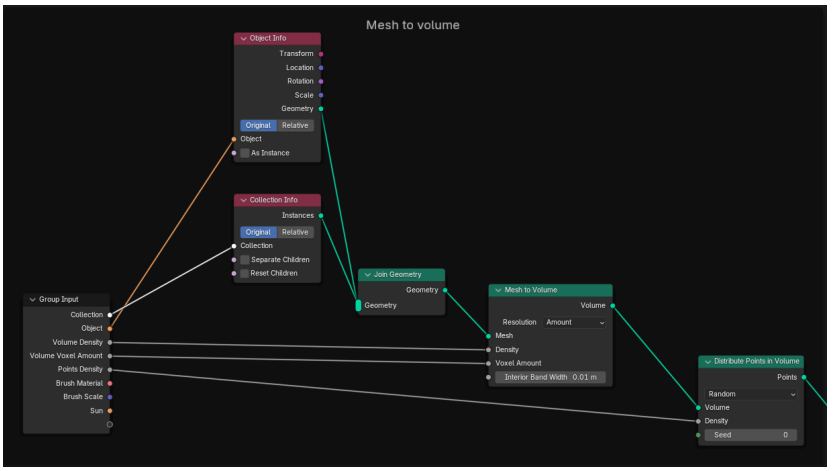
Cloud Paint Effect

Overview:



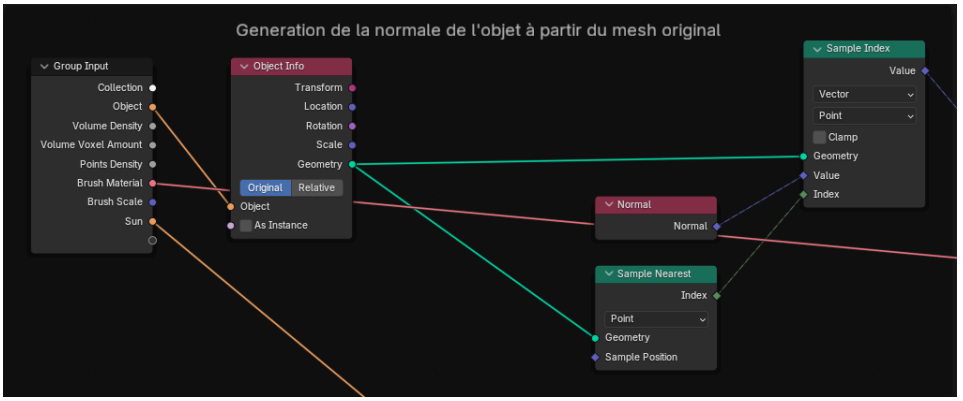
Step 1

Convert a mesh or a mesh collection into a volume and distribute points into the volume.



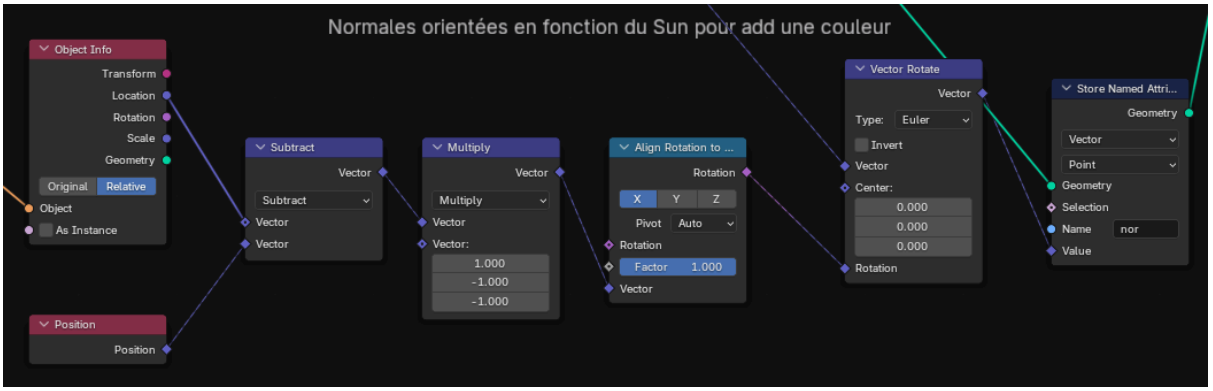
Step 2

Generate normals based on the original mesh.



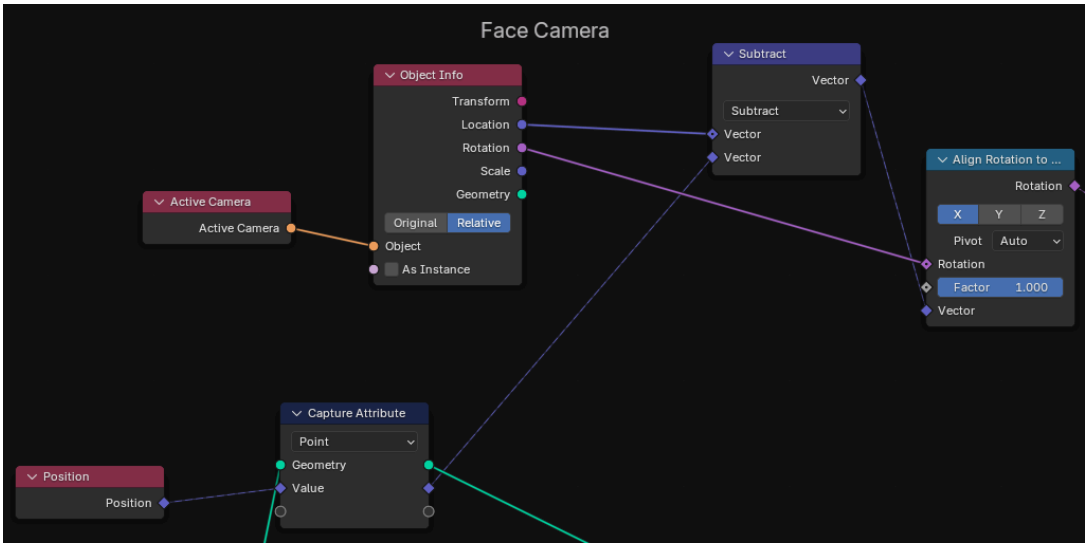
Step 3

Normal orientation based on the sun. This part will be used for the shader.



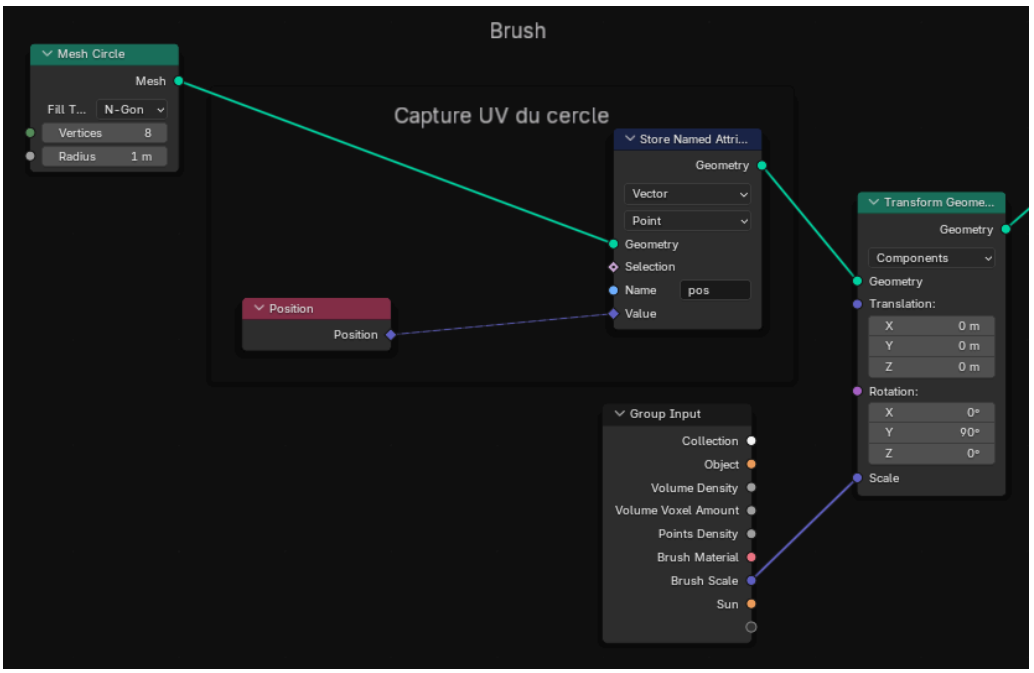
Step 4

Make the point's orientation always face the active camera (updates at each frame if the camera moves).



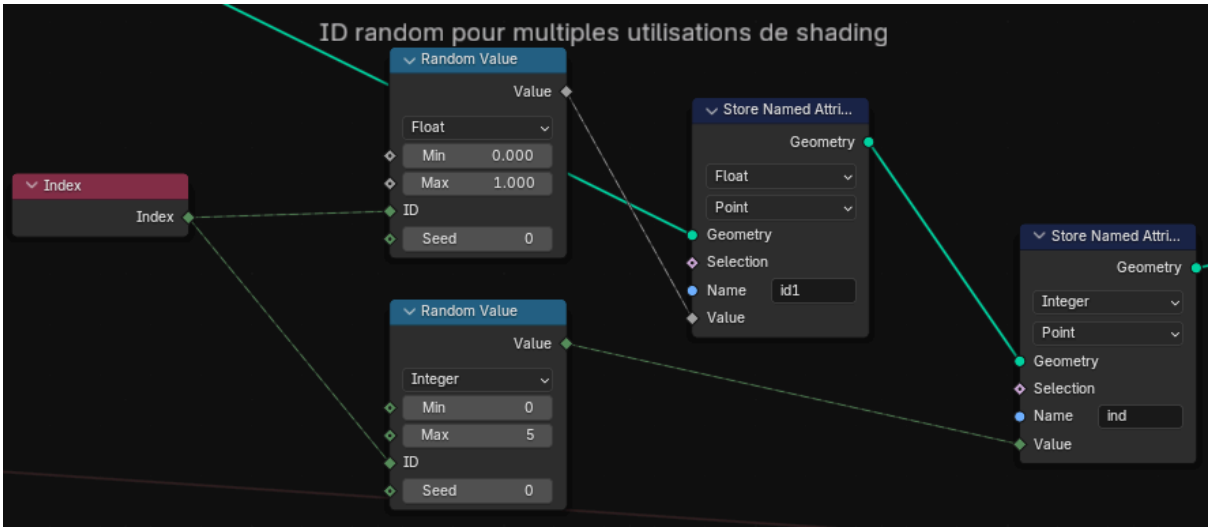
Step 5

Setting up the shader support. PNG brushes placed in the shader will be applied to each Mesh Circle. The UVs are also retrieved separately for the shader.



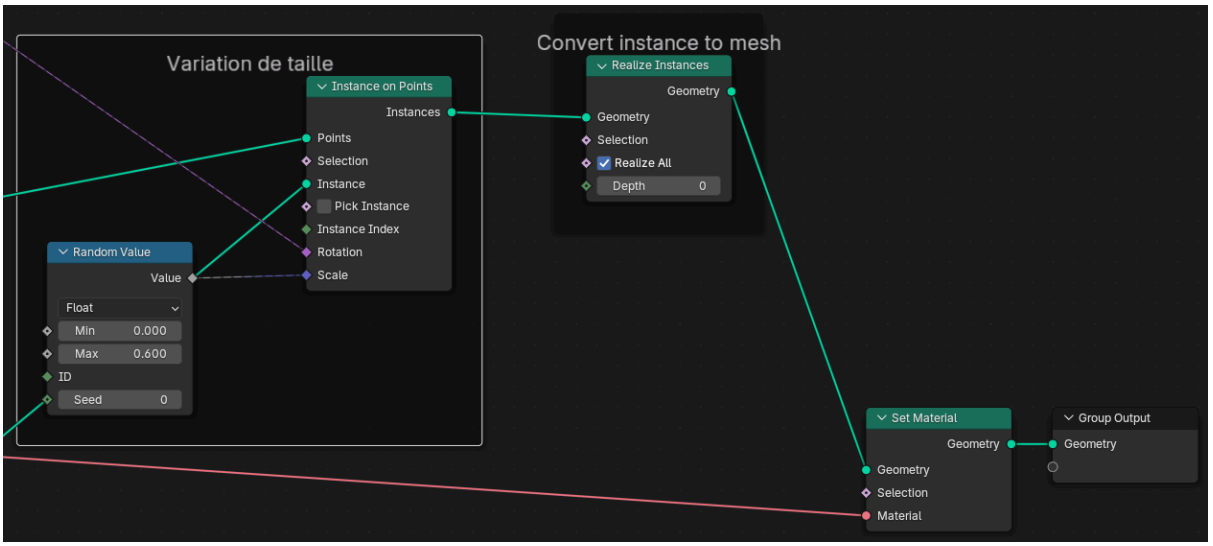
Step 6

Retrieving indexes and assigning a randomization attribute along with the index for shading.



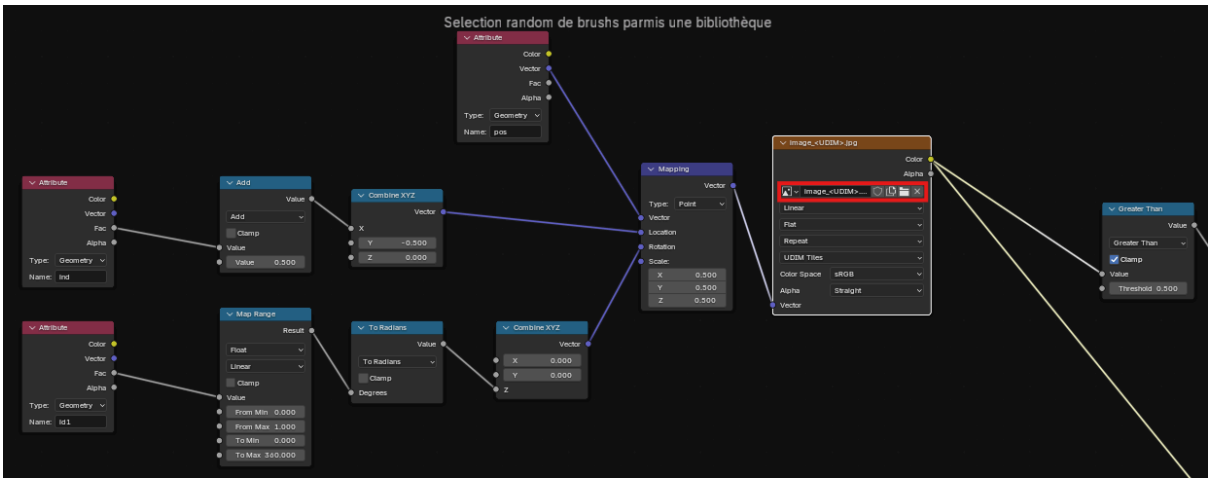
Step 7

Random size variation for the brushes. Convert the instances to meshes so the shader can be applied correctly and assign the material.



Shader note

The shader works with a brush library. To set the brush library you want, assign it here:



Make sure to rename the images correctly with a suffix "*_1001*", "*_1002*",....

<u>Example:</u>