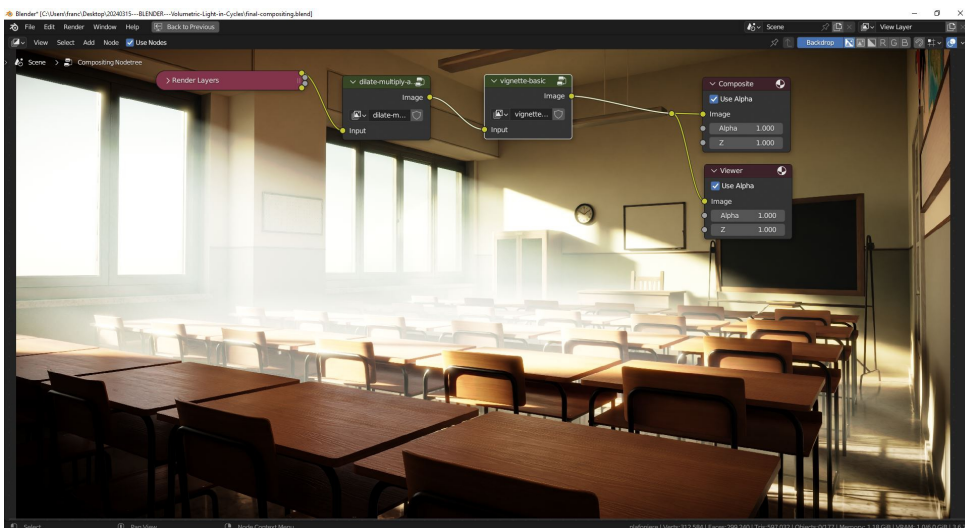


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Hello everyone!

In this second tutorial about analyzing the Classroom rendering, which you are currently looking at, we will talk about Compositing effects, in Post-Production, used to transition from the rendering seen at the end of the previous tutorial to this one. Like the previous tutorial, this one too was created using Blender version 3.6; plus, you can download the free PDF version of this tutorial at the link in the description, as is the case for most of my tutorials.

This time, along with the PDF, you will also find a **free blend file** containing the two node groups examined in this tutorial, so you can quickly use them in your projects as well.

I've explained how to import Compositing node groups into a Blender project in a tutorial I published earlier.

In the previous tutorial, I showed how to use the **Absorption Scatter** node to achieve **volumetric lighting**.



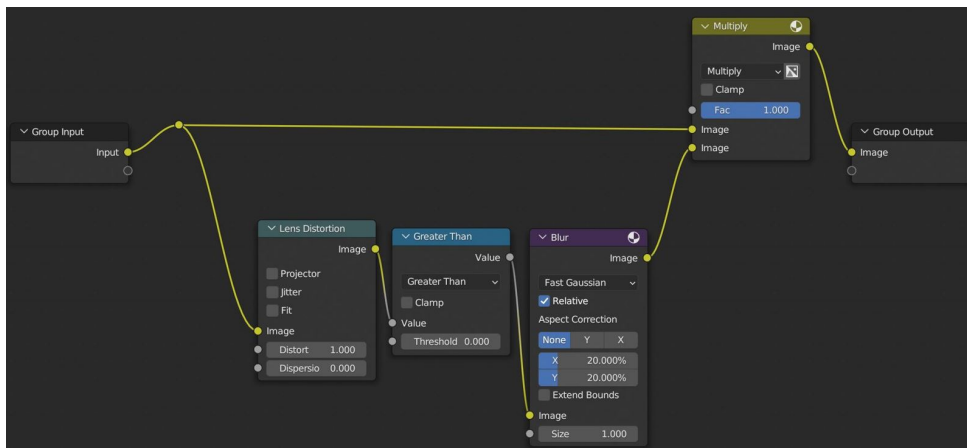
The image is already more interesting than the rendering without that effect; however, we can use **Compositing to increase the contrast, add some glow, and provide a Vignetting effect** to the final image.

In particular, I used two sets of effects: the first one is called **Step-Glare**, and the second one is **Vignetting**.



Let's start with the analysis of the second node group, the **Vignetting**, because it's the simplest, as it provides a vignetting effect to the final image by darkening the edges. I open the node group by pressing the **TAB** key after selecting the group.

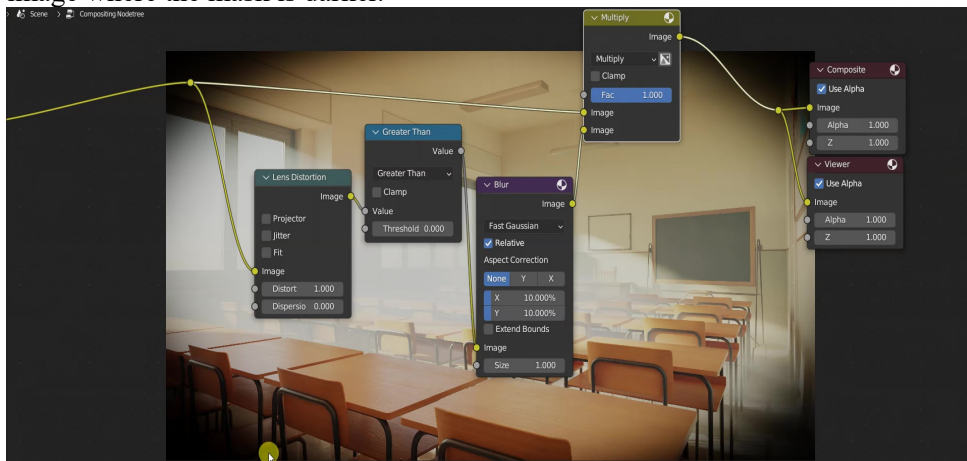
I can then close the group again by pressing the **TAB** key.



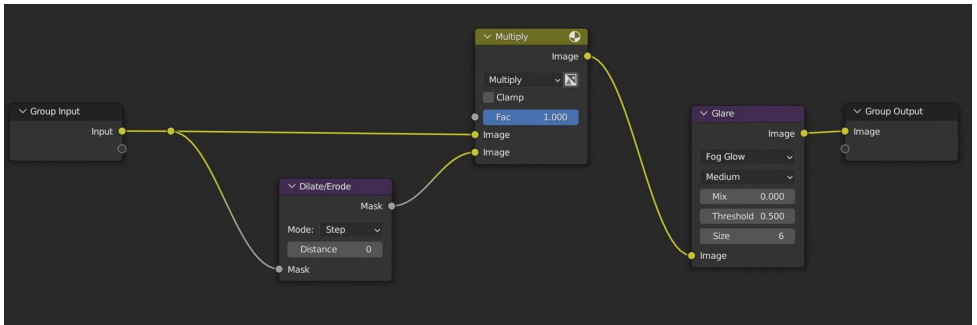
There are various ways to achieve a **Vignetting** effect in Blender.

In my case, I opted for the following solution: **a white oval** is created on a black background, inscribing this oval within the rendering, starting from the image using the **Lens Distortion** and **Greater Than** nodes. Then, the edges of the oval are blurred with a **Blur** node in Relative mode, and the resulting mask is **multiplied**, using a Mix Color node, with the original image.

Multiplying an image by a grayscale mask has the effect of **darkening** the image where the mask is darker.



Keep this concept in mind because this operation is also performed in the other node group... actually, we can close the Vignetting group, on which we have already covered everything, **to examine the Step-Glare group!**

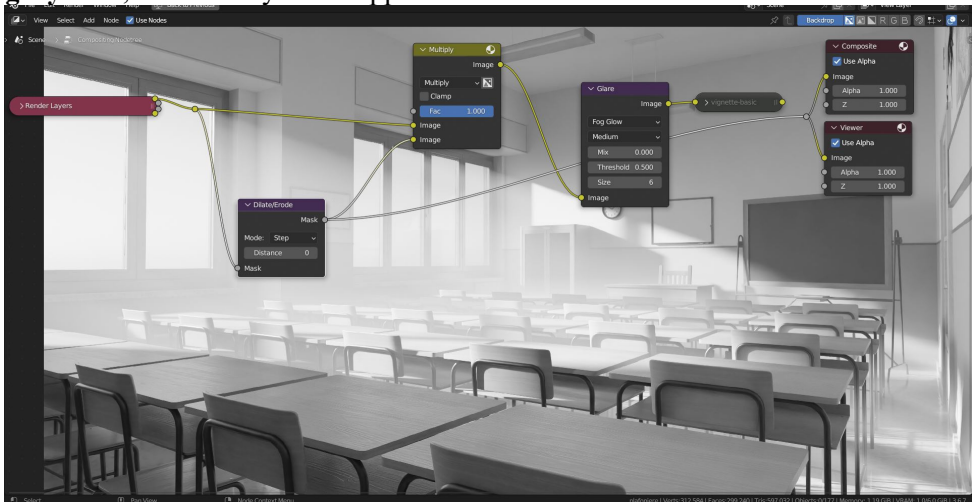


The Step-Glare group performs **two operations**: it **darkens** the original image by multiplying it with the mask coming from the Dilate Erode node, and then applies a **Fog Glow type glare** to the resulting image.

We just talked about the operation of multiplying an image by a grayscale mask, so what we need to do now is examine the operation performed by the **Dilate Erode** node in **Step** mode.

This node operates on grayscale masks, so indeed it will convert the original image to grayscale and return a grayscale mask after applying a transformation.

The image I'm showing now shows **the mask obtained from Dilate Erode** when the value of the Distance parameter is 0, so it's actually just the **conversion to grayscale**, without any effect applied.



In particular, Dilate Erode performs a **morphological operation**, which acts on the shapes in the image: a **positive value** of the Distance field **dilates or expands** the influence of a pixel on its **neighbors**, while a **negative value erodes or shrinks it**. The **Step mode** indicates that each pixel will look at the pixels **in the four directions** (up, down, right, and left), for a distance along each direction given by the Distance parameter. You can also experiment with the **Distance mode**, which takes into account pixels **diagonally** as well.

The screenshot shows a Blender StackExchange page. The main content area displays a pseudo-python code snippet:

```
FOREACH a OF allPixels:  
  FOREACH b NEXT TO a:  
    IF (a > b):  
      b = a
```

Below the code, it explains the **Step mode**: "In **Step mode**, the adjacent pixels are right, top, left, bottom." A diagram shows a 3x3 grid with a central pixel 'a' and its four orthogonal neighbors (top, bottom, left, right) labeled 'b'. Red arrows point from 'a' to each of these 'b' pixels.

Below that, it explains the **Distance mode**: "In **Distance mode**, the adjacent pixels include diagonal connections." A diagram shows a 3x3 grid with a central pixel 'a' and its eight neighbors (orthogonal and diagonal) all labeled 'b'. Red arrows point from 'a' to each of these eight 'b' pixels.

The right sidebar shows a list of questions and a "Hot Network Questions" section.

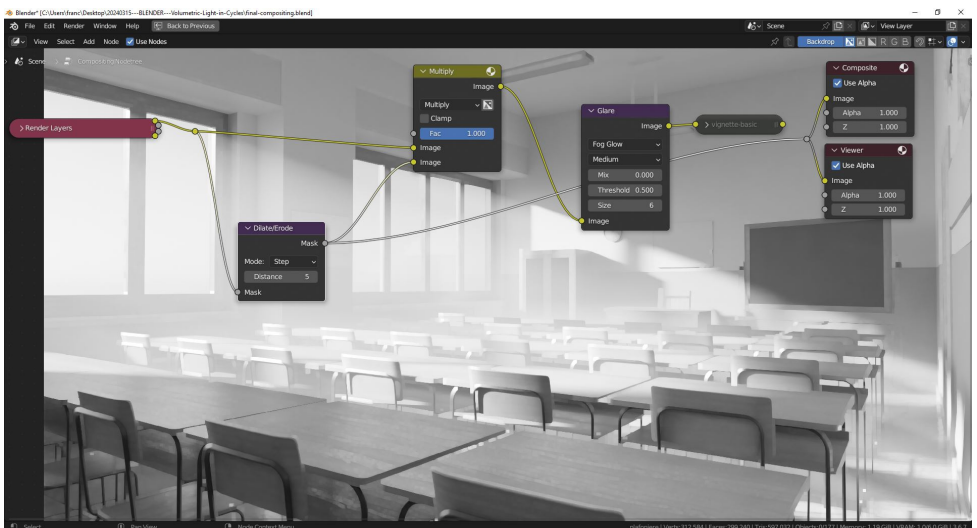
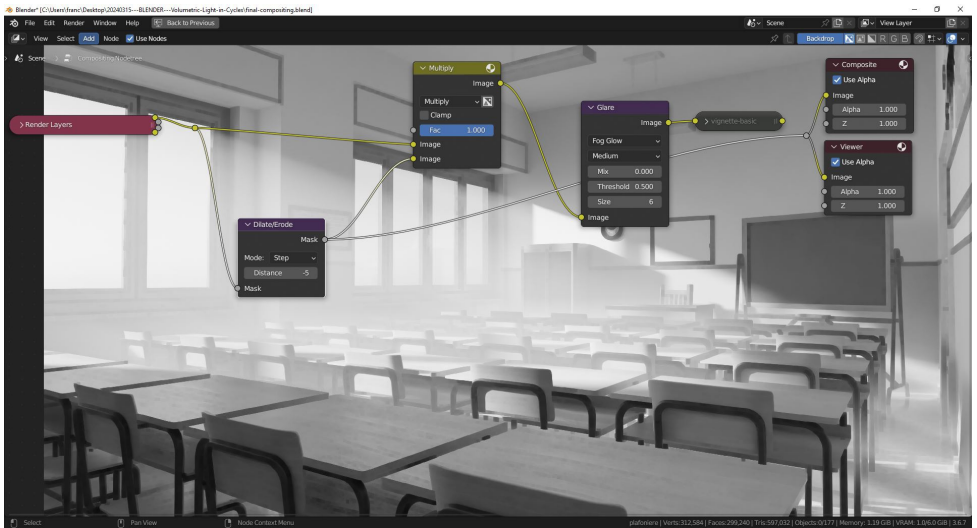
From a practical standpoint, which is what concerns us, the result of this operation is that **with negative values, we will expand the dark areas**, effectively making the final image darker due to the multiplication.

Conversely, with **positive values, we will expand the bright areas**, which will also **enhance the final Glare glow effect**.

Now I'm showing you the masks obtained with two exaggerated values for the Distance field, namely **-5 and 5**.

Pay attention, in particular, to the areas in the original image where darker parts are adjacent to brighter parts, such as the edges of lamps or the magnetic board on the wall.

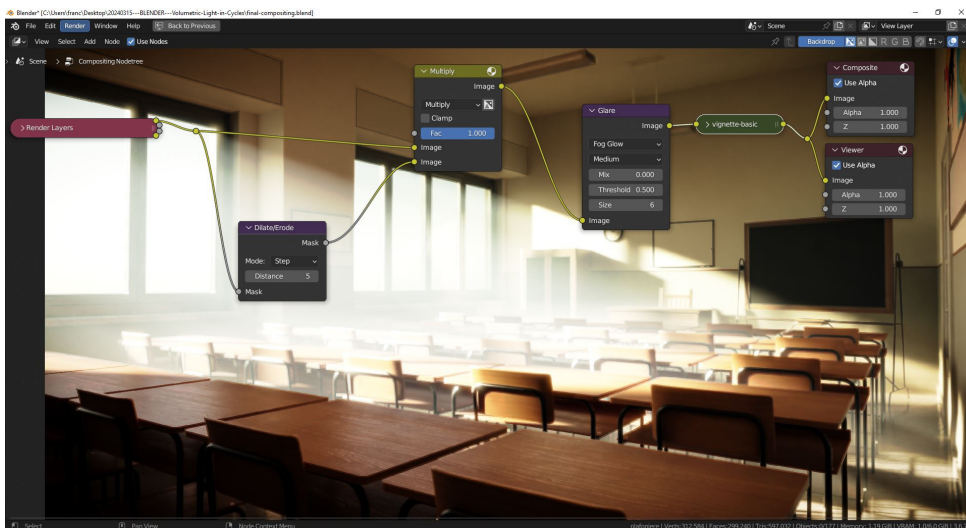
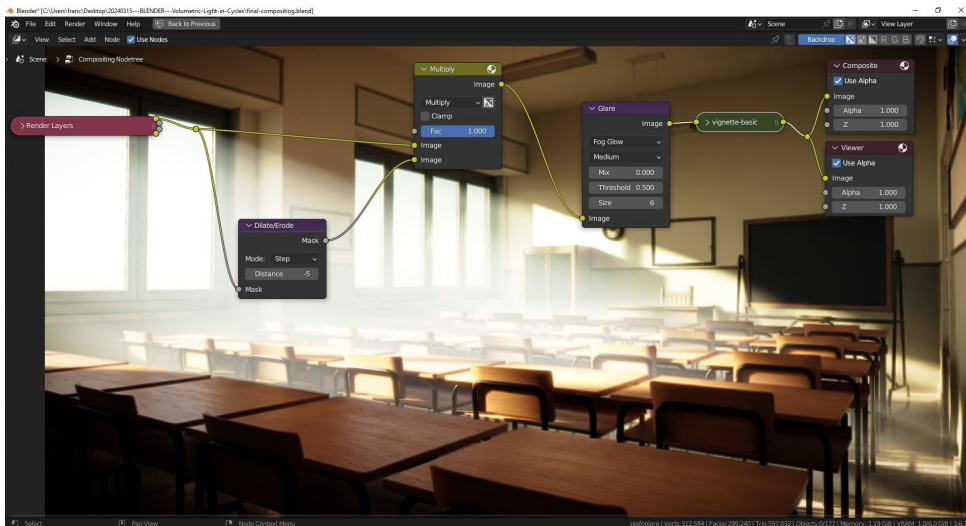
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Now, I'm alternately showing you **the renderings** obtained with the values **-5** and **5** for the **Distance** field.

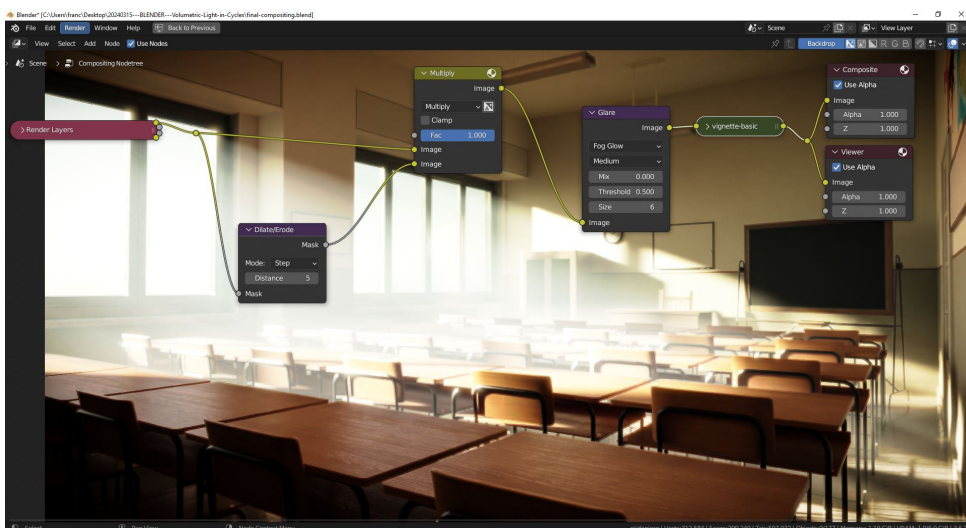
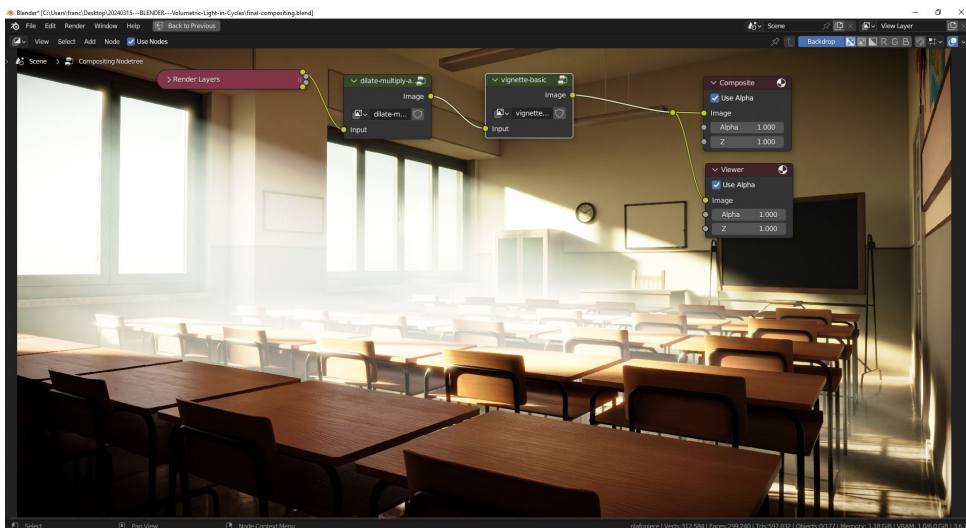
In this case, pay attention not only to the parts I mentioned earlier but also to the **Glare** glows on the metallic parts, for example, on the metal parts of the chairs and desks.

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To achieve the rendering I showed you at the beginning of the tutorial, I set the **Distance** parameter value to **1**, making the image a bit brighter.

The last comparison I'm showing you on video concerns two renderings obtained by setting **1** and **5** in the **Distance** field of the Dilate Erode node.



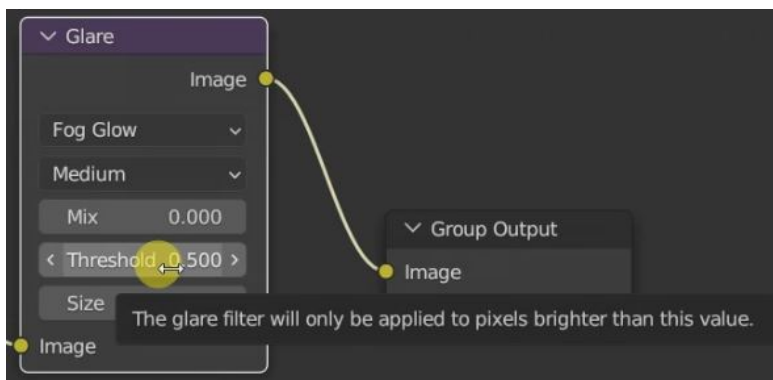
Pay attention, in this case, to the **blur** obtained by setting the value to **5**, for example, observing the **loss of details and sharpness** on the desks or the edges of the blackboard.

Therefore, **the value of the Distance** field should be set considering these consequences, depending on whether you want to achieve a contrasted but well-defined image, or a more painterly image, with less defined details and edges.

In the **Glare** node, it's necessary to **lower the Threshold value**, experimenting until you achieve the desired result.

The node applies the glow effect only to portions of the image where the **brightness is greater than the Threshold value**, but by default, this value is set to 1, which means that the effect is not applied.

To achieve the final rendering shown in this tutorial, I lowered the value of the Threshold field to 0.5.



So, to recap: the initial rendering is darkened using the **Dilate Erode node in Step mode** as a mask for this operation, and then a **Glare glow** effect is applied to this image in **Fog Glow mode**.

Depending on the value set in the **Distance field of Dilate Erode**, the bright parts of the image will be larger or smaller, and consequently, the **Glare** glow will be more or less pronounced.

Then, a **Vignetting** effect is applied to the rendering obtained in this way, using a dedicated node group.

Ok, that's all for this tutorial! See you soon!