

# How to clone Dungeon Master using Monogame and C#

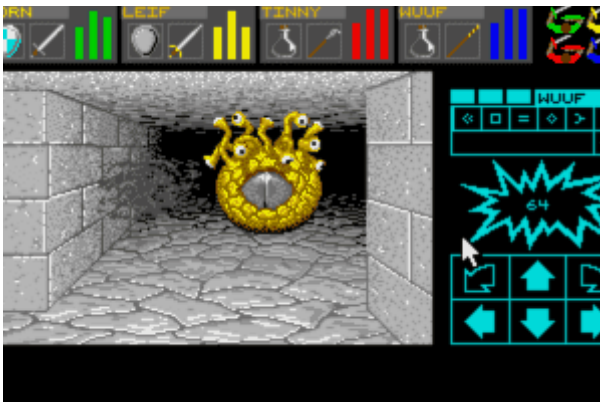
## What is Dungeon Master?

Dungeon Master was a popular game from the 1980's developed for the Commodore Amiga and other computers of that era: [https://en.wikipedia.org/wiki/Dungeon\\_Master\\_\(video\\_game\)](https://en.wikipedia.org/wiki/Dungeon_Master_(video_game)) There are a bunch of screenshots and other information here:

<https://www.myabandonware.com/game/dungeon-master-n0>



It is basically a 2D game, but the graphics give an impression of a 3D perspective, which is the main reason it is so challenging to create:



You can still play the game using emulators, and maps of the original game dungeons are available.

## Image resources

The first thing you will need when cloning a game is resources. Even though this game is around 40 years old, the graphics and sound effects are still somebody's copyright.

This resource, the Github repositories and the Youtube tutorials may contain copyrighted materials, but they are used in an educational context only. If you are the owner of any of these materials and want them deleted, let me know, and they will be removed immediately.

Most of the graphics I am using were found in a Java version of DM written in 2001. All links in the readme.txt are no longer working, neither are links on this page: <https://www.dungeon-master.com/forum/viewtopic.php?f=50&t=23285>

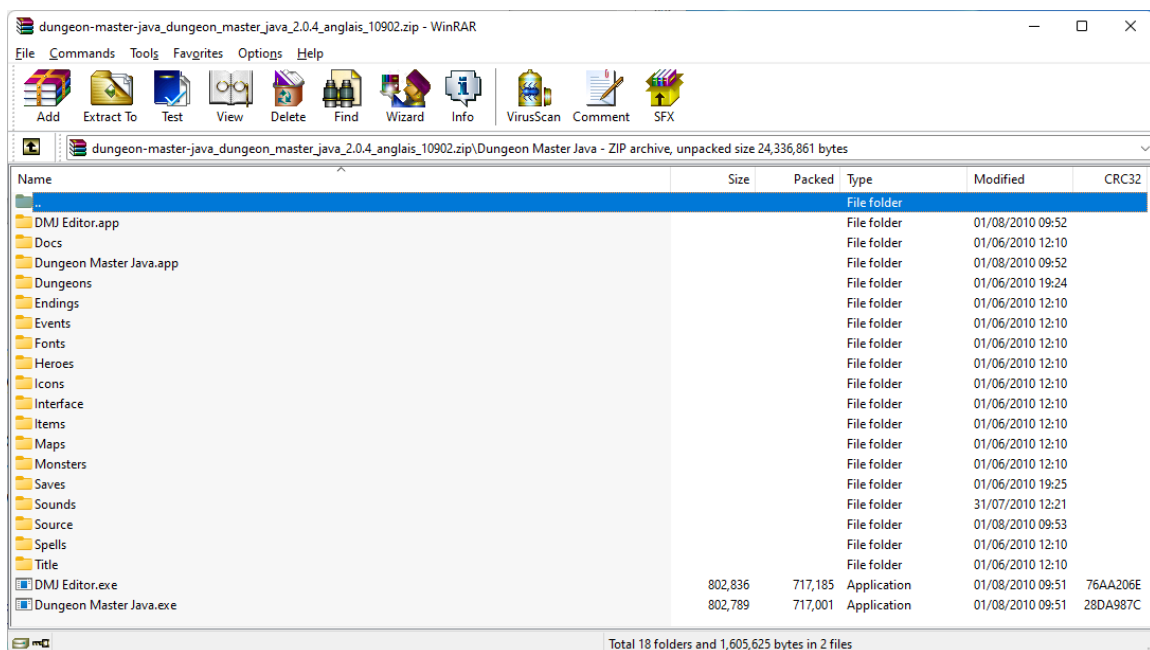
From the comment left by one user, it is possible the graphics I am using are from Alan Berfield aka Cowsmanaut. If you follow the link on post 10: <https://www.clubic.com/telecharger-fiche10902-dungeon-master-java.html>

The licence on this page “Logiciel Gratuit” translates as “Free Software”

I am working on the assumption that all the assets contained in the zip file can be used at least in an educational context without any copyright concern. As I have done here I am referencing the resource and expressing my thanks to the creator for making it available.

Click the “Telecharger Version Gratuite” button to <https://www.clubic.com/telechargement-encours/9473-0-dungeon-master-java.html> this will download a zip file called `dungeon-master-java_dungeon_master_java_2.0.4_anglais_10902.zip`

which contains the following:



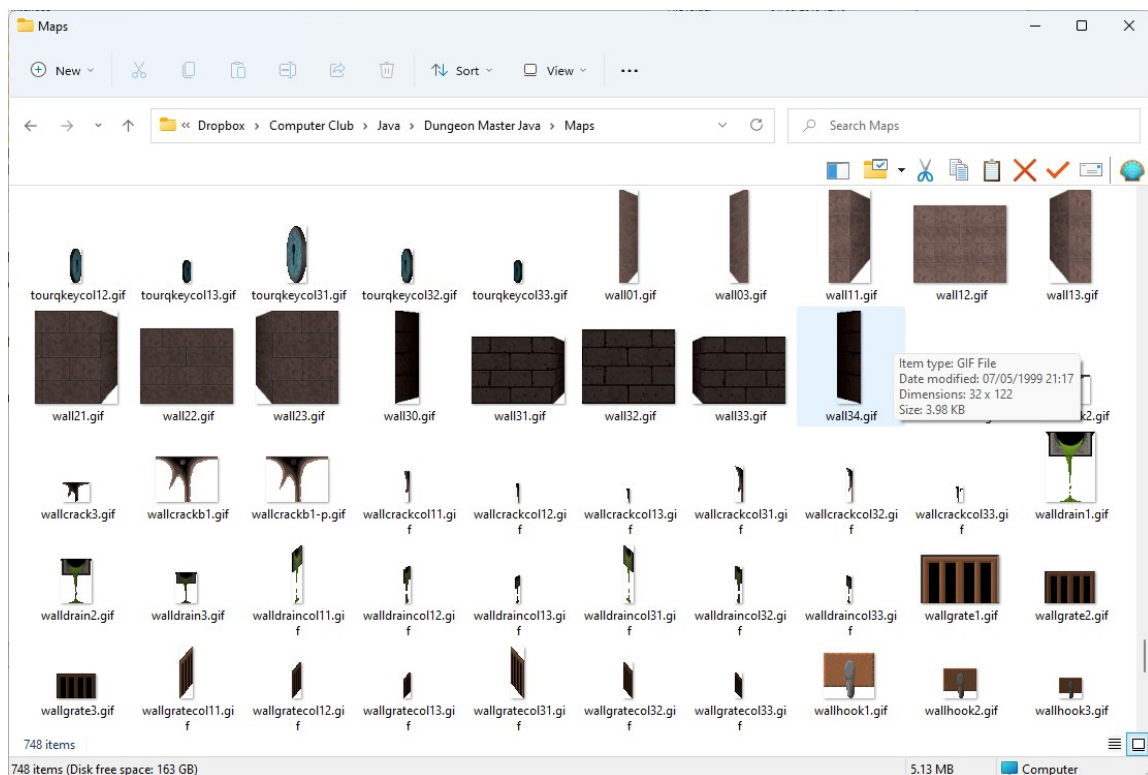
The images used are mostly in the “Maps” folder. They are similar to the original game, but not identical.

The creation of spritesheets from these images using GIMP is the next stage in the process.

For those of you who want to find your own start here:<http://dmweb.free.fr> Good Luck!

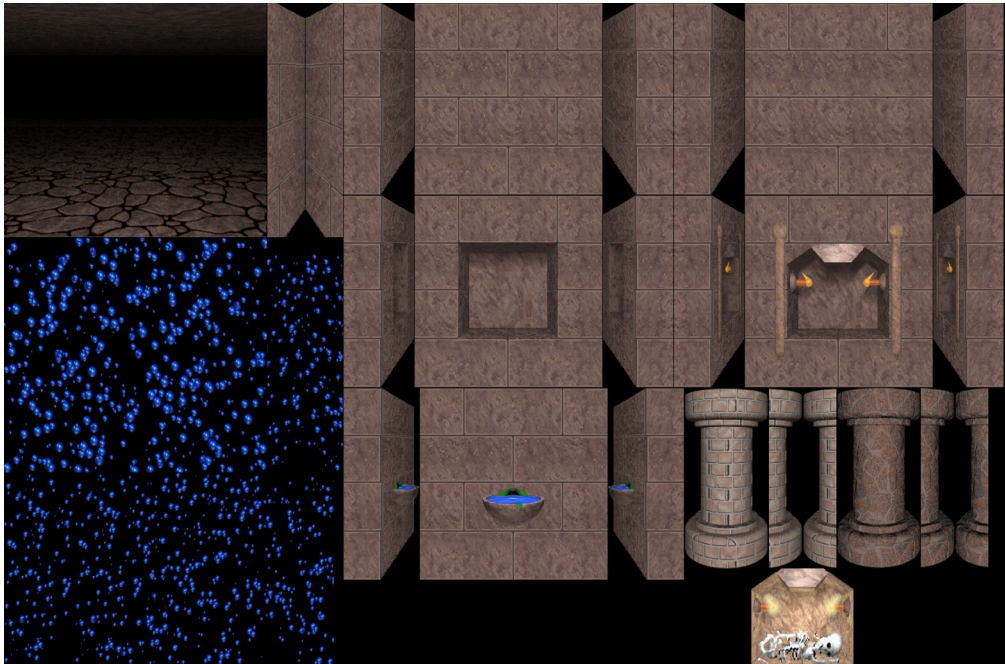
## Creating Image Atlases (Spritesheets)

The images found in the resource above are numerous and are stored in individual files:



This is not ideal when all images have to be processed through the pipeline tool in Monogame. It is better to use an *atlas*, which contains multiple images (*spritesheets* images are all the same size).





Obviously the images are all over the place, not in a regular grid, so a data file containing the location of each image is required. A sample of the data file for this image:

```
Wall.L4,0,0,64,326
Background.C0,65,0,448,326
Wall.R4,514,0,64,326
Wall.L3,579,0,120,267
WallWriting.L3,700,0,120,267
Wall.R3,821,0,120,267
WallWriting.R3,942,0,120,267
Pillar.C3,1063,0,143,251
Pillar.C2,1207,0,91,161
Pillar.C1,1299,0,64,113
```

This is a .csv file with the image name, x and y coordinates, width and height of each image.

The naming convention is significant:

Wall.L4 = Plain wall, left side, layer 4 drawing order.

Position can be:

```
FL (FarLeft)
L (Left)
C (Centre)
R (Right)
FR (FarRight)
```

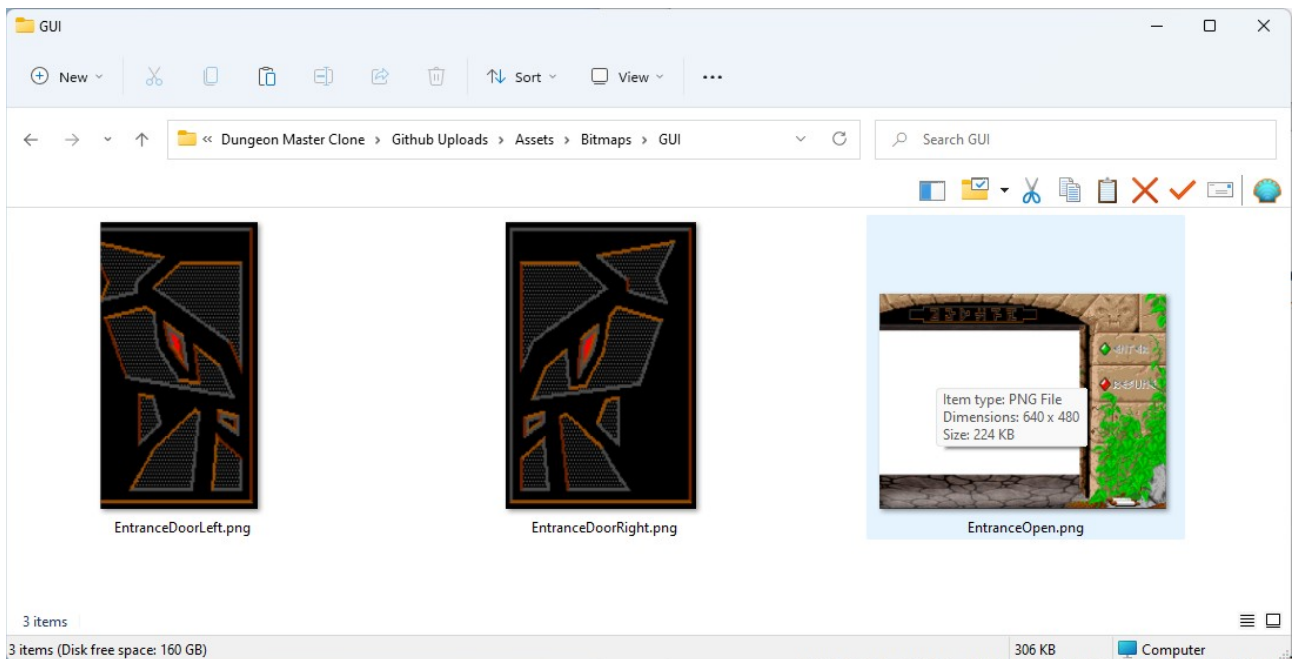
Layers range from 0 (Drawn first) to 5 (Drawn last) but only 0-4 are used on image names

To create the spritesheets use GIMP <https://www.gimp.org/>

Make a folder called Assets and a subfolder Spritesheets.

The first one is for the game start and requires 3 images. These are not directly present in the latest download and have to be created from the existing images with cropping. I have included them in the github repository as an example:

<https://github.com/Inksaver/MonogameDungeonMaster/tree/main/Assets/Youtube%20Tutorials/Episode%2001%20-%20Gathering%20Resources>



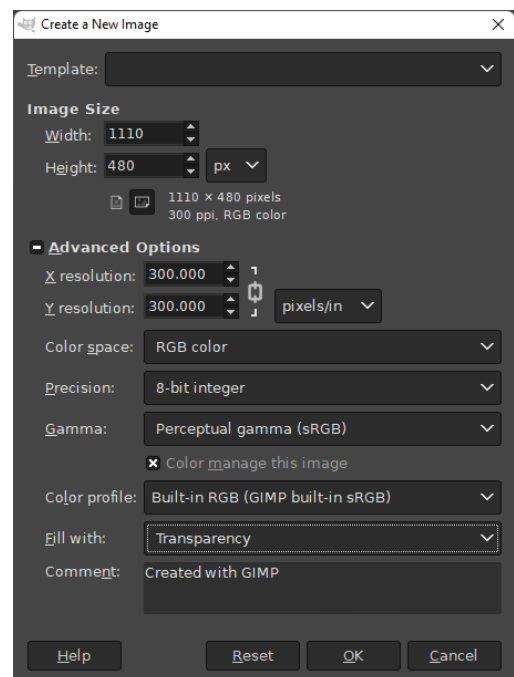
Start GIMP and select Menu → File → New...

Insert 1110 pixels wide, 480 pixels high

Click the “Advanced Options”

Change “Fill With” to Transparency

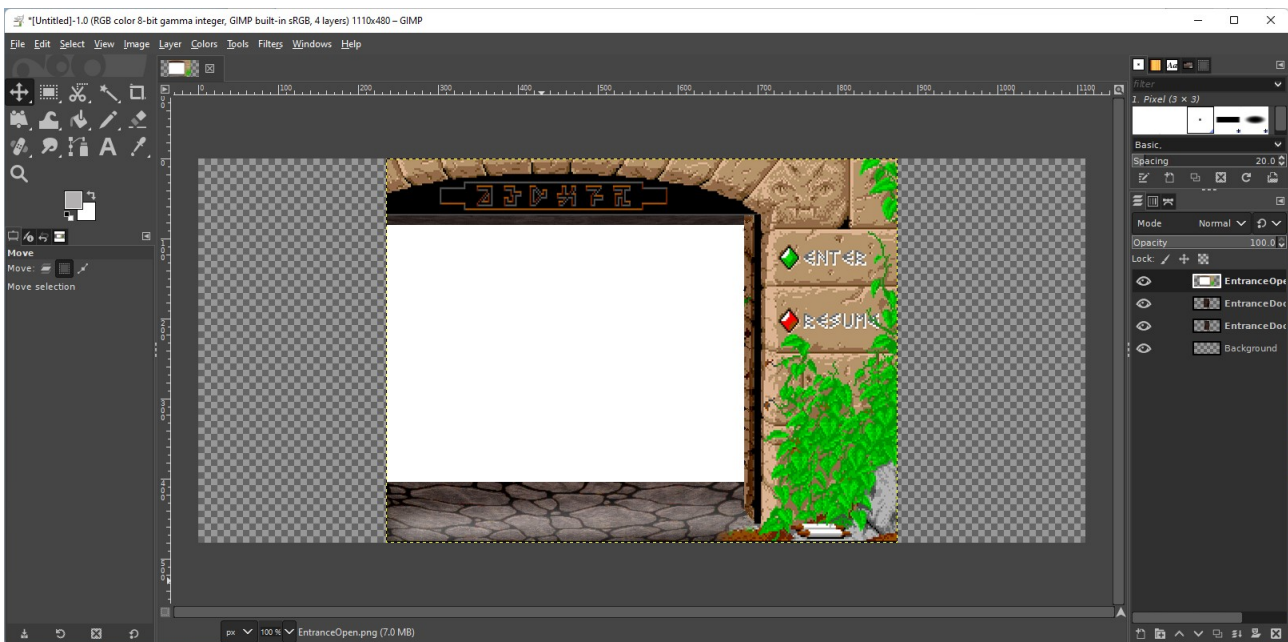
Click “OK”



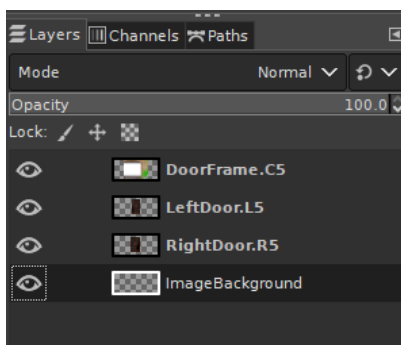
Drag’nDrop the 3 images onto the newly created transparent image:

They will all be placed on top of each other, so what you end up seeing depends on the order you dropped them.





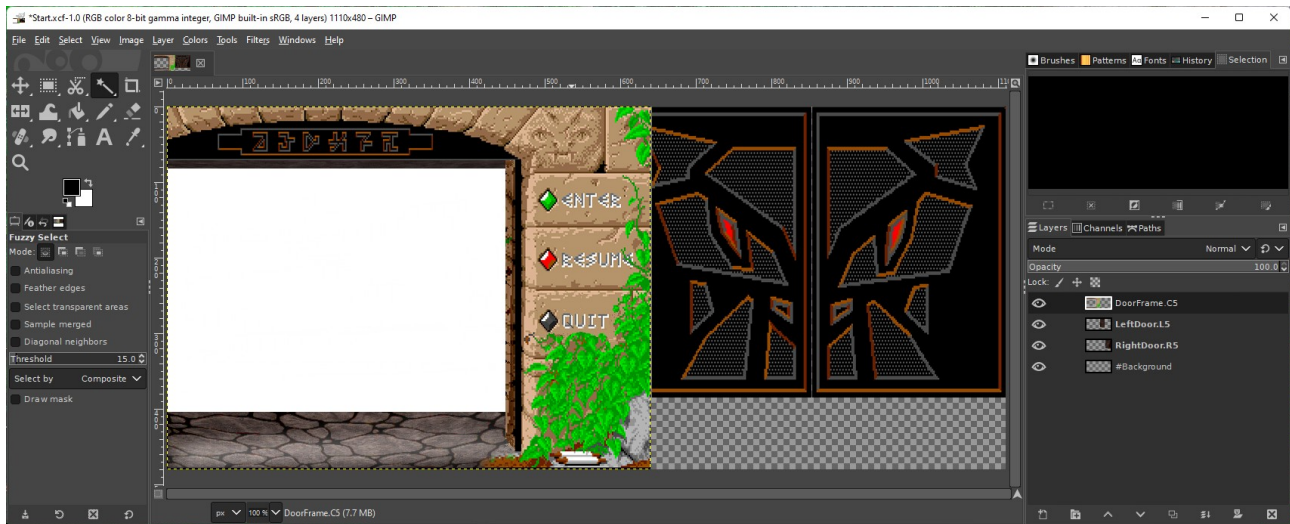
1. Go to the layers panel on the left and select "Background"
2. Right-Click → Edit Layer Attributes
3. Change the name to "#Background". This is important as we are going to write a C# Console App to extract the data from .xcf files and any layer starting with "#" is ignored.
4. Change the name of EntranceDoorOpen.png to DoorFrame.C5
5. Change EntranceDoorLeft.png to LeftDoor.L5
6. Change EntranceDoorRight.png to RightDoor.L5
7. Use the arrow buttons to move the layer positions as shown:



You can now drag each layer to a new position on the ImageBackground. For precise results edit the attributes as before, but set the offsetX and offsetY to these values:

DoorFrame.C5	0, 0
LeftDoor.L5	641, 0
RightDoor.R5	854, 0

You should end up with this:



Save the file as “Start.xcf” in the Assets/Spritesheets folder you created earlier

1. Before exporting, the white background of the entrance needs to be removed.
2. Select the DoorFrame.C5 layer
3. Right-Click → Layer → Transparency → Add alpha channel.
4. Choose the Fuzzy select tool.
5. Uncheck all options
6. Click in the white area - it should be selected:
7. Press the delete key. With luck you should have a transparent area instead

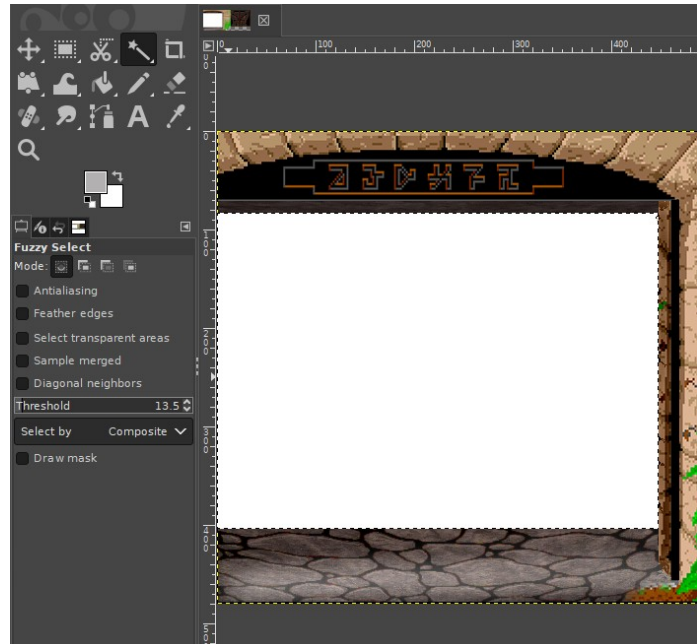
Save again.

File → Export (It should be in the same directory you used before)

Name: → “Start.png” → Export

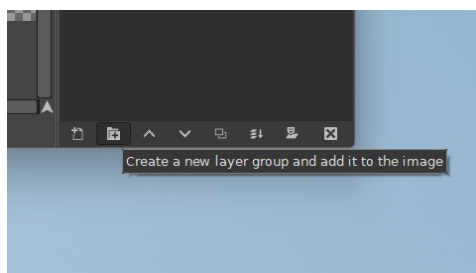
The same technique can be used to create all the spritesheets / atlases.

The larger ones with hundreds of images can be separated into groups using the button at the bottom of the layer pane.



Spritesheets with a lot of images can be split into groups.

To create a group click on the symbol at the foot of the layer pane:



## IMPORTANT

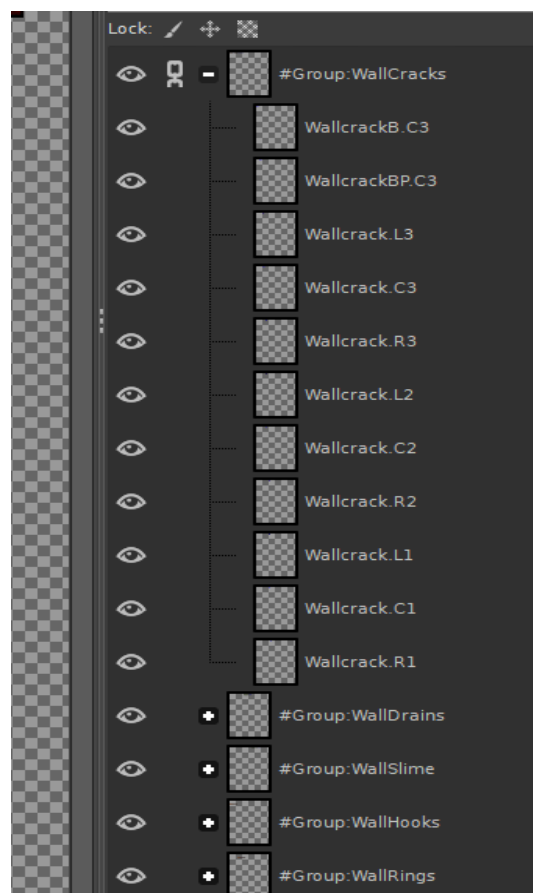
Rename any groups with the prefix # or even better

#Group:

This is used in the xcf reader to remove references not required

In the WallDecorations example shown here, there are multiple nested groups.

The first one is #Group:WallCracks



## Organising the images

Most of the images come in sets:

Position: Left / Centre / Right

Layer: 1 / 2 / 3



Example Mirrors:

The first 3 images are the left, centre and right, layer 3

Next 3 are left, centre and right, layer 2

Last 3 are left, centre and right, layer 1

The naming convention should reflect this.

