

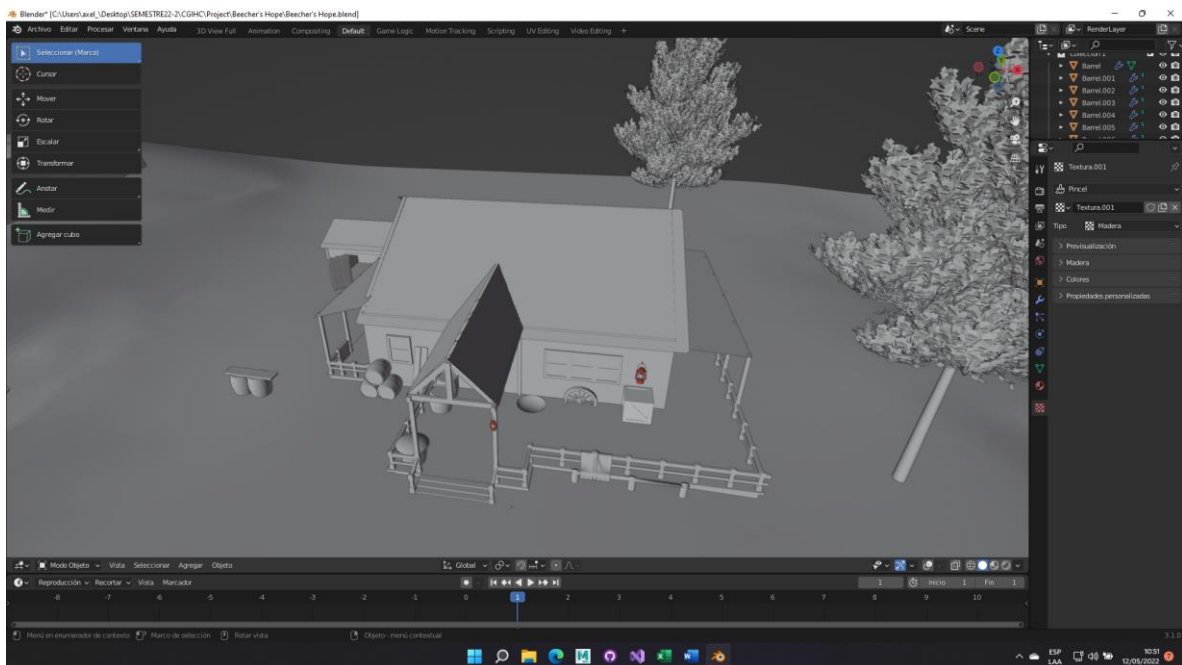
This project was created in conjunction with the theory project.

For the realization of this project several software tools were used (Maya 2022, Microsoft Visual Studio, GIMP, 3DSMax 2022, SketchUp 2021 and Blender). The models and textures except for some (textures) were downloaded from the web pages 3D Models for Professionals :: TurboSquid and 3D Warehouse (sketchup.com).

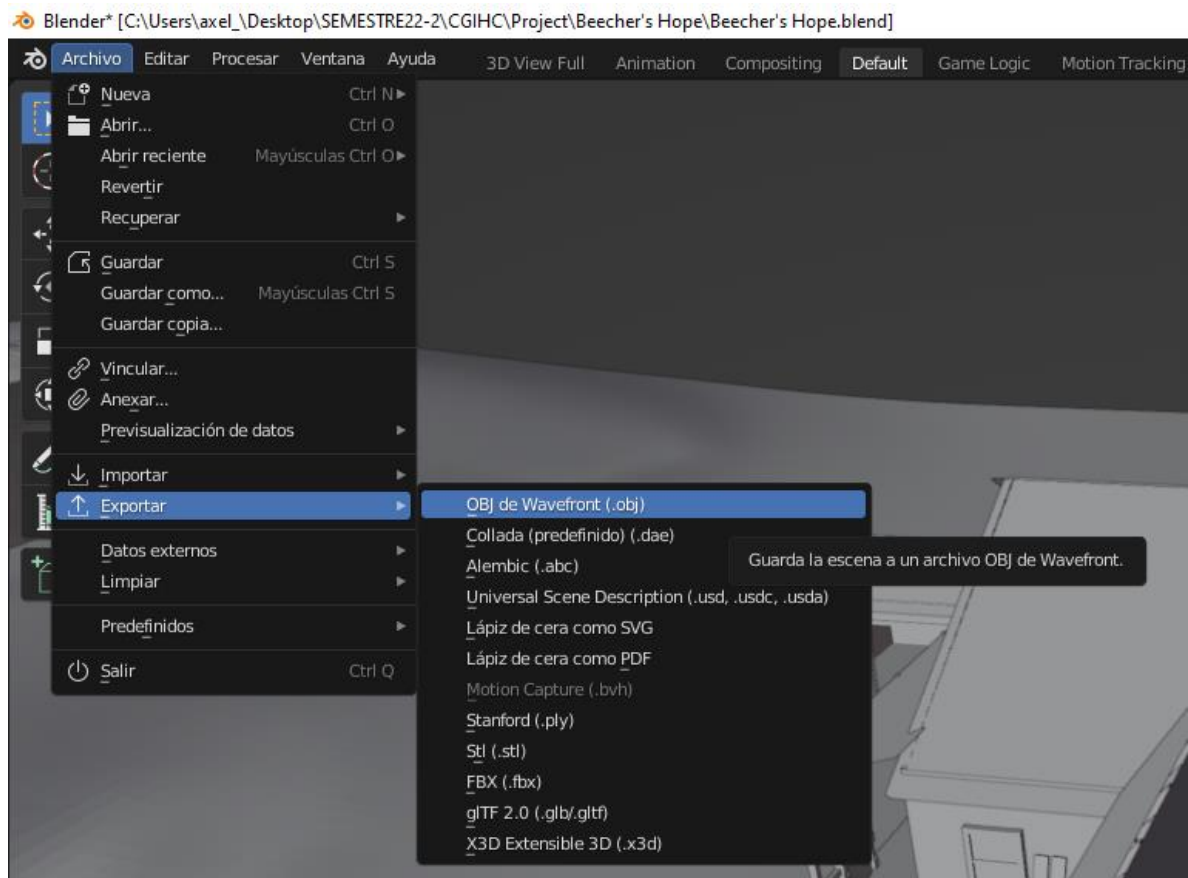
The software 3DSMax, blender and SketchUp were only used to export the downloaded objects since they were only available for these specifically, after the export Maya was used for the texturing, trimming of models and pivots.

### Example

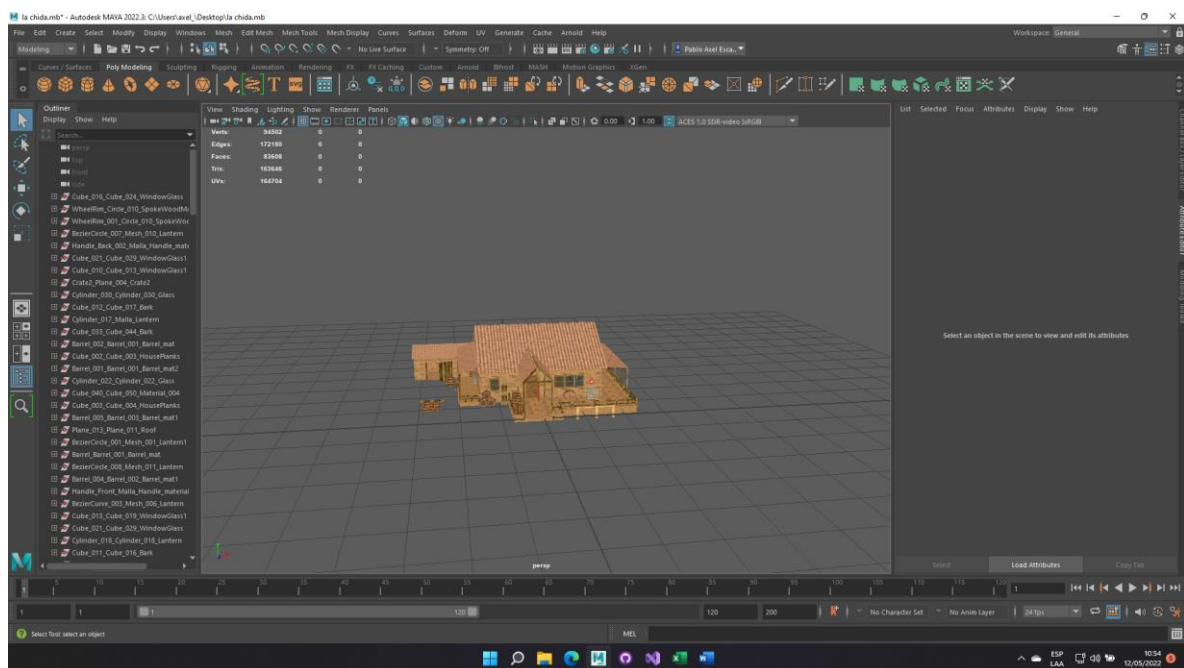
File in blender format:



The file is exported as .obj:



The model can then be manipulated in Maya.



Some models have too many polygons, which need a lot of resources to render, my solution was to use the Maya software tool to reduce them. If you reduce the polygons too much the image will not look the best way.

One model caused the program to not work, I never found the problem so my solution was to change it for one provided by the teacher.

Model



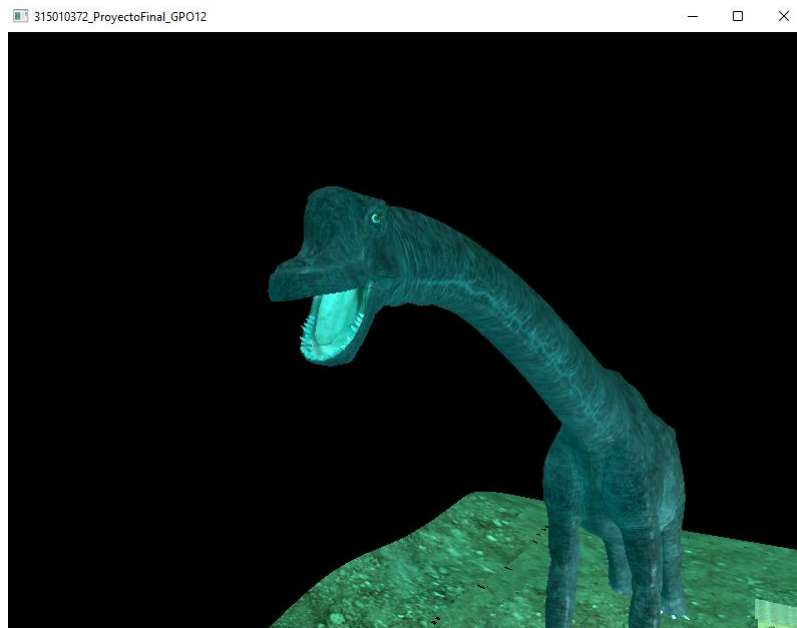
Error en pantalla:

```
Consola de depuración de Microsoft Visual Studio
0.198228
C:\Users\axel\Desktop\SEMESTRE22-2\CGIHC\Repositorio\315010372_ProyectoFinal_GP012\ProyectoFinal\Debug\ProyectoFinal.exe |
e (proceso 14216) se cerró con el código -1073741819.
Presione cualquier tecla para cerrar esta ventana. . .
```

If it is required to animate a model, the model must be in the origin, because, if we don't do it this way, at the moment of taking it to OpenGL the pivots change completely, which ruins the animation.

Other than that, the rest was easy to do.

For the animations, we used what we learned in the practices.



Animation settings:

```
if (keys[GLFW_KEY_5])
{
    animMandBraquio = true;
}

if (keys[GLFW_KEY_6])
{
    animMandBraquio2 = true;
}
```

```
if (animMandBraquio)
{
    if (rotMandBraquio < 35.0f) {
        rotMandBraquio += .35f;
    } animMandBraquio = false;
}

if (animMandBraquio2)
{
    if (rotMandBraquio > 0) {
        rotMandBraquio -= .35f;
    } animMandBraquio2 = false;
}
```

```
view = camera.GetViewMatrix();
model = glm::mat4(1);
model = glm::translate(model, glm::vec3(-6.0f, 8.0f, 9.0f));
glUniformMatrix4fv(modelLoc, 1, GL_FALSE, glm::value_ptr(model));
Dinol.Draw(LightingShader);

view = camera.GetViewMatrix();
model = glm::mat4(1);
model = glm::translate(model, glm::vec3(-6.0f, 8.0f, 9.0f));
model = glm::rotate(model, glm::radians(rotMandBraquio), glm::vec3(1.0f, 0.0f, .0f));
glUniformMatrix4fv(modelLoc, 1, GL_FALSE, glm::value_ptr(model));
MandibulaBraquio.Draw(LightingShader);
```

Además de esta, hay otras animaciones que se detallan en el manual de usuario.

Although it is a somewhat austere project, I dedicated a lot of time and effort to it. I applied everything I learned in practice (modeling, texturing and animation). I consider that time was one of the main limitations. It is somewhat complicated to do practices and at the same time to be developing the project, although it helped a lot that the reports from practice 6 were the progress of our project.

The realization of this project was not difficult, but it takes a lot of time in the process of modeling, texturing and animating.

Although it took me more time than I expected, since I had no knowledge on the subject, I had a lot of fun doing this project.