NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO

ENGINEERING FACULTY

USER MANUAL

Group：04

Teacher:
Roman Balbuena Carlos Aldair

Student:
Mora González Alan Francisco

Semestre 2022-2
19 May 2022

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General index

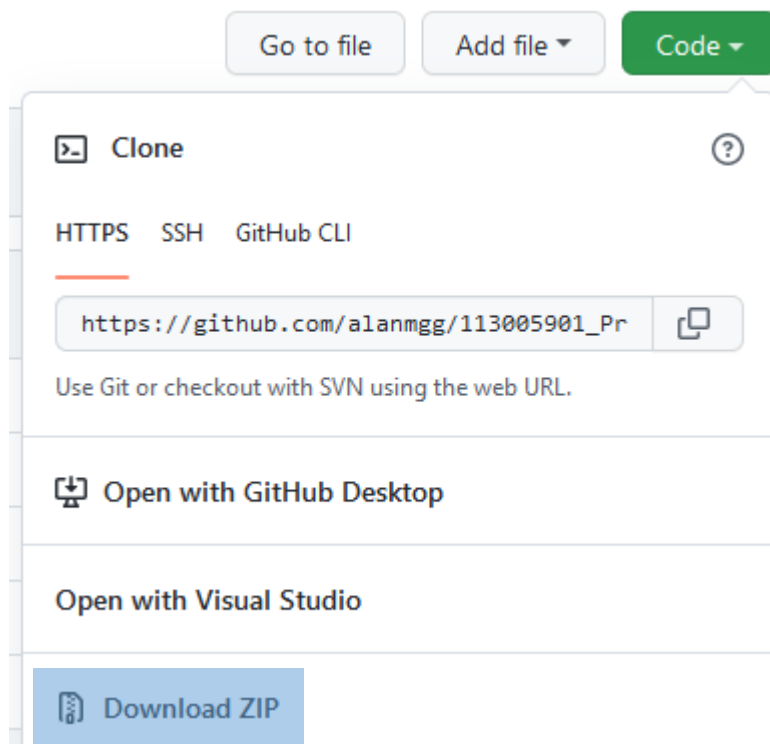|	User manual Final Draft	No. Pagina:	2
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Requirements

In order to make use of this project it is necessary to have certain hardware and software requirements within our computer, such as:

- Windows 7 (Last generation) or Windows 10 (version 1703 or higher).
- 1.8 GHz processor (recommended 4 cores or more, a 2.80 GHz processor was used for development)
- 4 GB minimum RAM, 8 GB recommended (16 GB RAM was used for development).
- 25 GB on disk, recommended.
- Indispensable 64-bit operating system (due to project configuration).

Project download

To download this project we will use the technique of compressing the code in a ZIP, because if we try to clone the repository to be used we will not be able to do it by new GitHub policies. Having said that we proceed to download the ZIP of the project.

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Once this is done, we proceed to unzip the project so that we can view the code made. We will get the following:

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cto_GPO12-main

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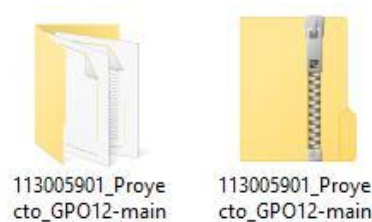
Within the folder of our project open several subfolders, which have different files:

- Assets: Inside this we will find the models made in Maya and the OBJs used, in addition to the subfolder called "Textures", where it contains all the texturing of the OBJs.

- Images: Folder where we will find images from our project, we can view the reference images, as well as see images from the compilation.

- ProyectoFinal: Here we will find all the relevant code, shaders, models and libraries that we must use for its correct functioning.

- Finally, we will see three files, which are used by GitHub for making changes during the development process.

Assets   Images   ProyectoFinal   .gitignore   LICENSE   README
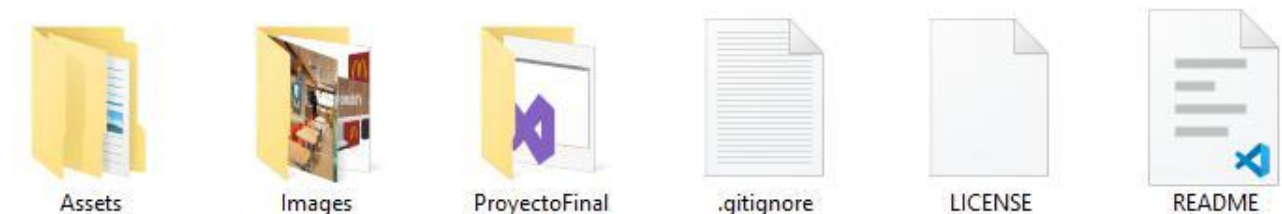
Models and texturing

Within our Assets folder we will find as already mentioned the models of our modeling software, such software is from the company Autodesk called Maya. We will have binaries of them, just give double click, or otherwise right click on the model to use followed by the open option.
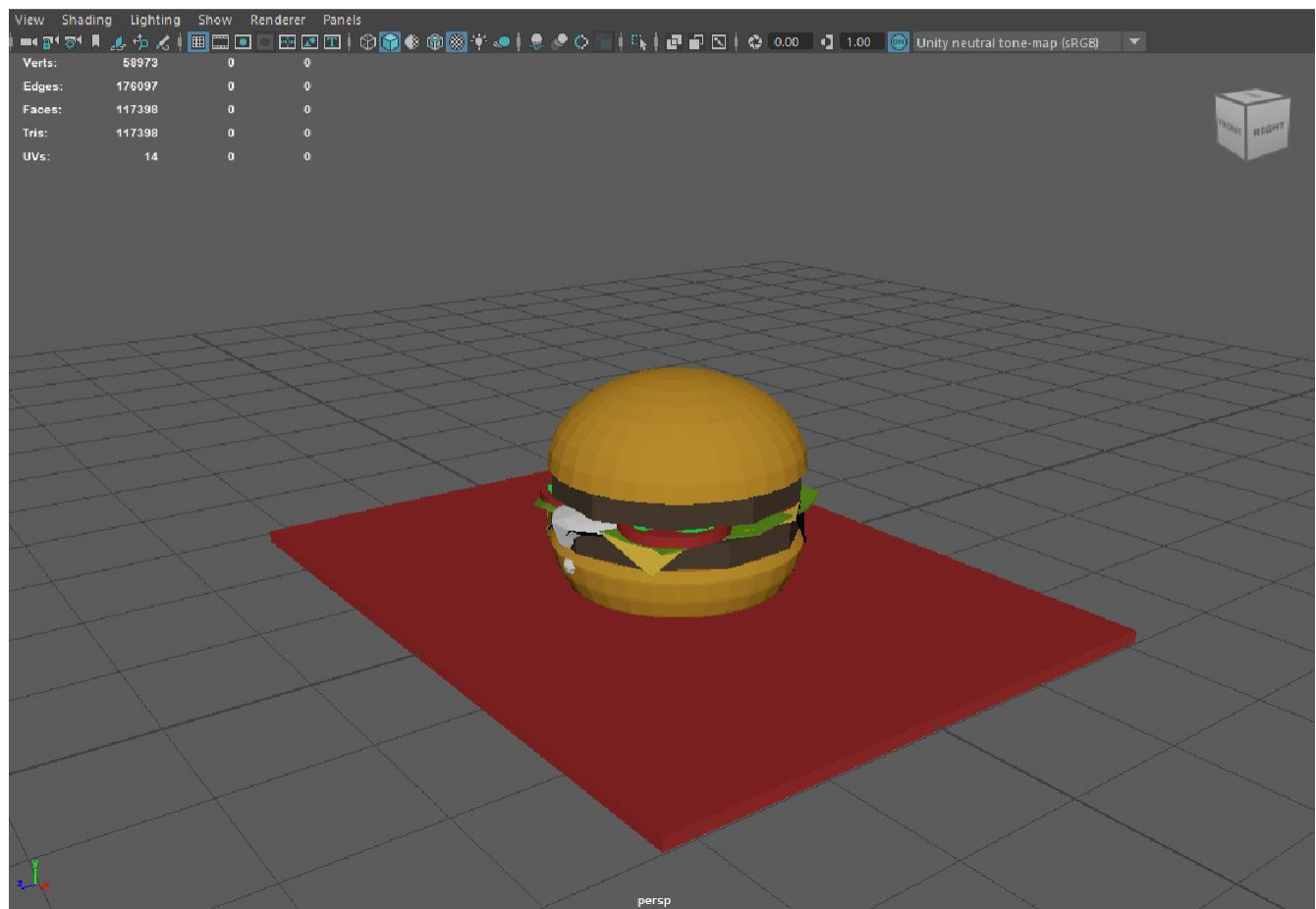
The models can be used and are already properly textured supporting us from the folder "Textures".

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Modelos   Obj   Texturas

	Bote	07/05/2022 04:23 p. m.	Maya Binary File	58 KB
☑	Burger	07/05/2022 04:23 p. m.	Maya Binary File	7,428 KB
	Chair		Binary File	1,076 KB
	Lamp		Binary File	100 KB

Abrir

Render

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Programming

To be able to make changes in the programming of the project it is necessary to enter the ProyectoFInal folder, once done we will get the following:

We will have to double click on the file with name ProyectoFinal.sln, or in its default right click followed by open. (It should be mentioned that for the correct opening of the file it is necessary to have Visual Studio 2019 or higher than this).

In order to have the proper configurations of the project it is necessary to verify that our top panel is as follows:
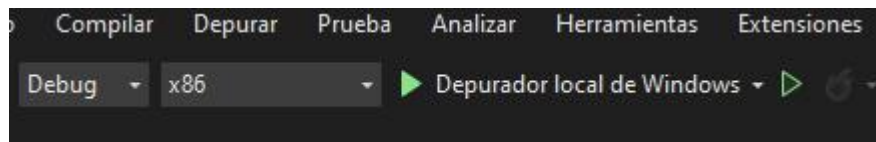
This because our configurations were done this way, in case it was not that way at the time of compiling we will get errors. Ready, we are ready to program on our project.

Interaction with the environment

Inside the project folder we will find a subfolder called Release, inside it we will see the executable file previously built, we will double click and we will be able to see the previously developed project.

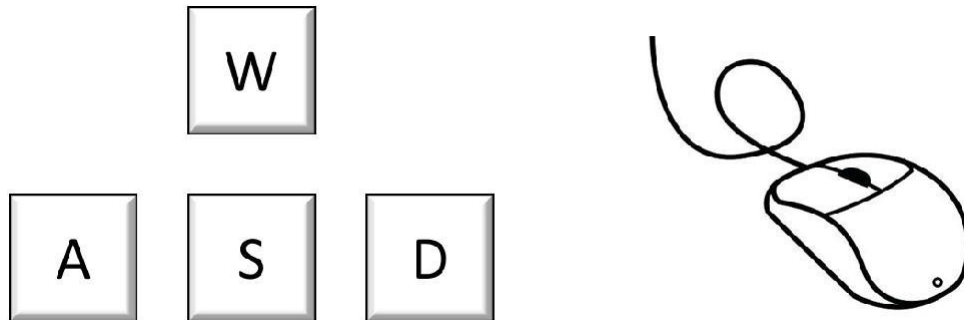| ![INGENIERIA logo]	**User manual** **Final Draft**	No. Pagina:	6
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Animations.

Once the window is opened, while inside the virtual space the mouse is captured to work only inside it, so the cursor is not observed. The mouse will help us move the camera inside the virtual space. We will also use the keys [W, A, S, D] to be able to move within our environment.

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W

A   S   D

R   Once entering the restaurant if we press the key [R] we can see an animation of the first chair. Simple rotation and translation were used in this animation.

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F	The next animation will be activated with the [F] key, so we can open and close the lids of the garbage cans, here only one rotation was used on the lid, had to load separately the models of the trash can and the lid to recreate this animation.

| T	In addition, in this project lights were used using the models of lamps made, this animation of lights on is made with the [T] key. It was decided to turn on static lights instead of oscillating lights with the sine function.

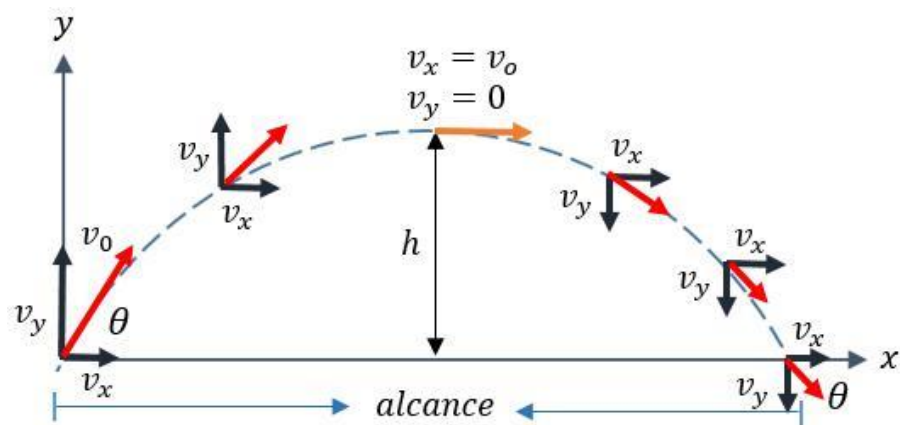|	User manual Final Draft	No. Pagina:	9
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Z

Another animation made was to raise the chairs to the table, simulating a cleaning of the restaurant, the animation is reproduced with the [Z] key. Here rotations and translations were calculated a little more complex to raise the chairs, rotate them and put them on the table.

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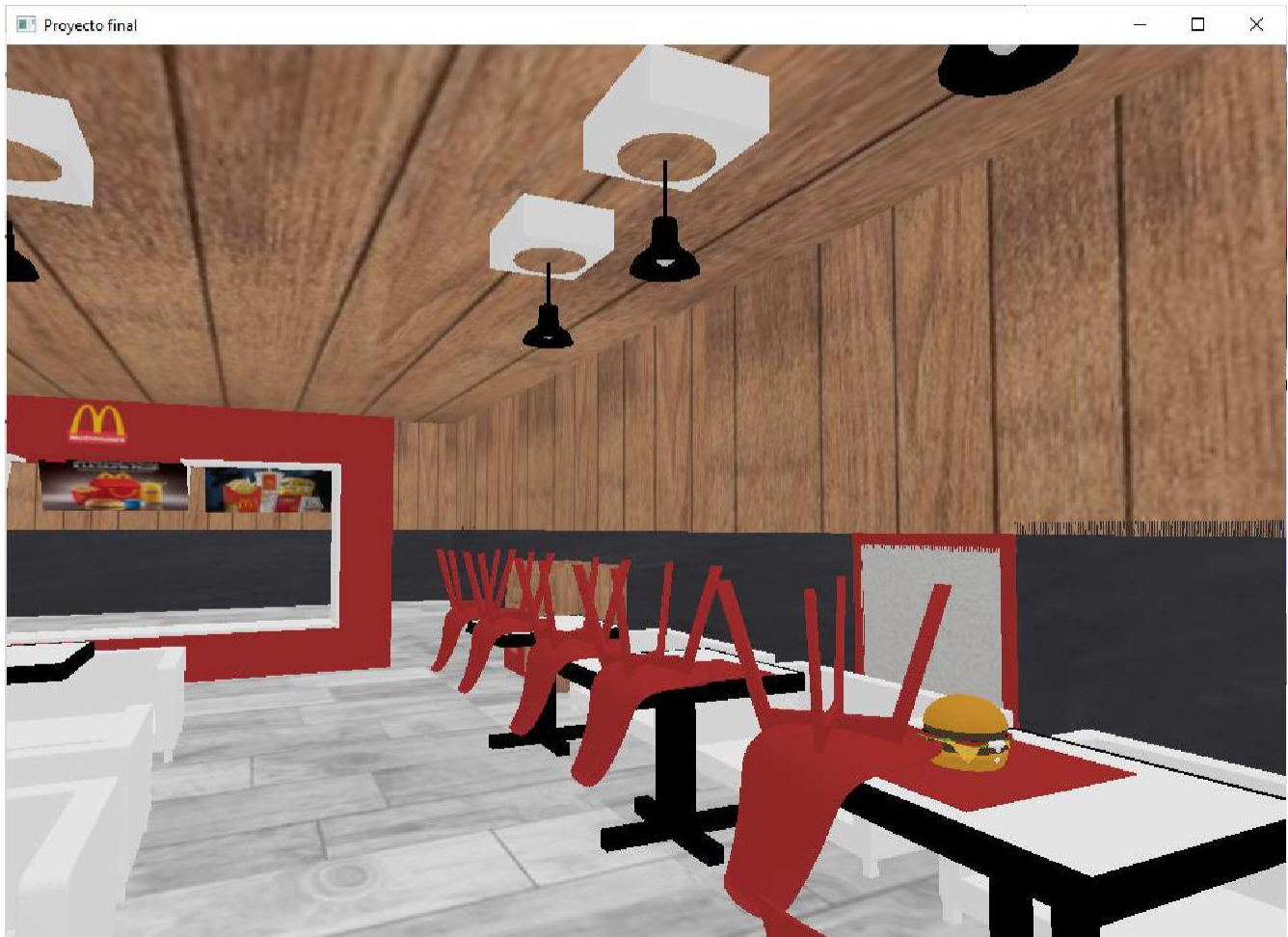
The last animation was made with a parabolic shot, calculating the initial speed on the Y axis, also the initial speed on the X axis.

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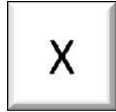
X   This animation is a little more complex than the others, since the acceleration in the Y axis must decrease when it goes up and accelerating as it falls, so we find a parabolic shot, which is exemplified by throwing a hamburger from one table to another. This animation is started with the [X] key.