



Universidad nacional autónoma de México.

Faculty of Engineering.

Final Project.

User manual.

Subject: Graphic computing and human-computer interaction.

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Final project of CGeIHC.

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Navigation map:

Requirements:

For execution with Visual Studio 2019 with C++ installation or with the executable:

1. Windows 7 (Last updated), Windows 8 (2919355), Windows 10 (version 1703 or higher).
2. Processor: 1.8 GHz (4 cores or more recommended)
3. 2.5 GB RAM minimum, 8 GB recommended.
4. 20 GB on disk, recommended.
5. Graphics chip of minimum 720p resolution.

Download and run the code:

Download the project from GitHub by clicking the green "Code" button and selecting one of the options.

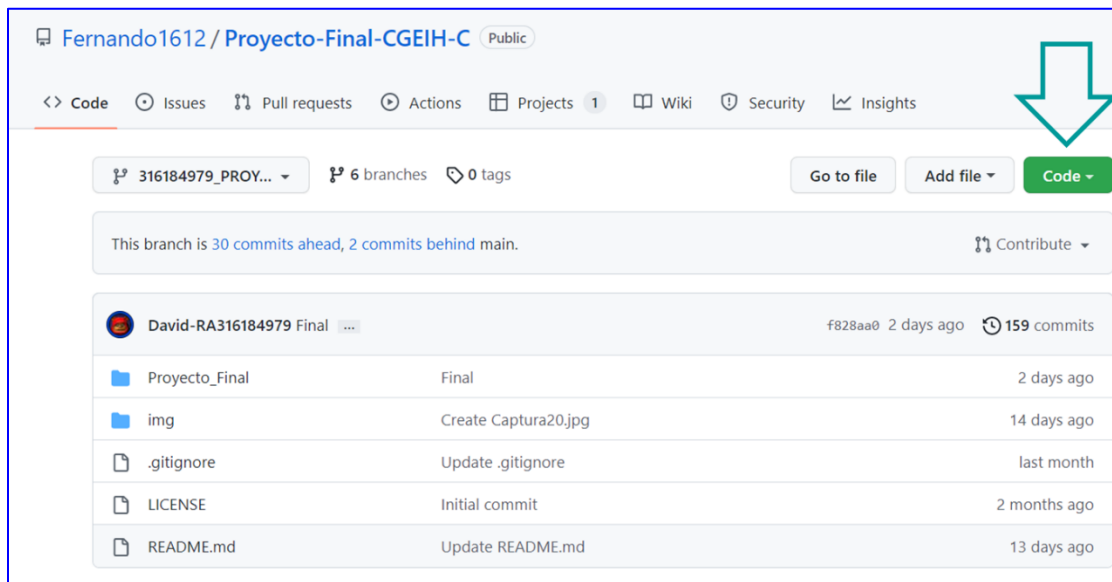


Figure 22. Screenshot showing the button for download.

If you select "Open with GitHub Desktop" you need to have this application installed on your computer and follow the steps to clone the repository locally, once cloned jump to "Run the file .exe".

The selection "Download ZIP" will download a file .zip of the project, you will have to unzip it on your computer, return to this manual and skip to "Run the file .exe".

Running with Visual Studio:

If desired and you have the Visual Studio IDE installed, you can run the application by following these steps. Have downloaded the project from GitHub and have unzipped the zip folder. Once you have this open Visual Studio and select the option "Open a project or a solution".

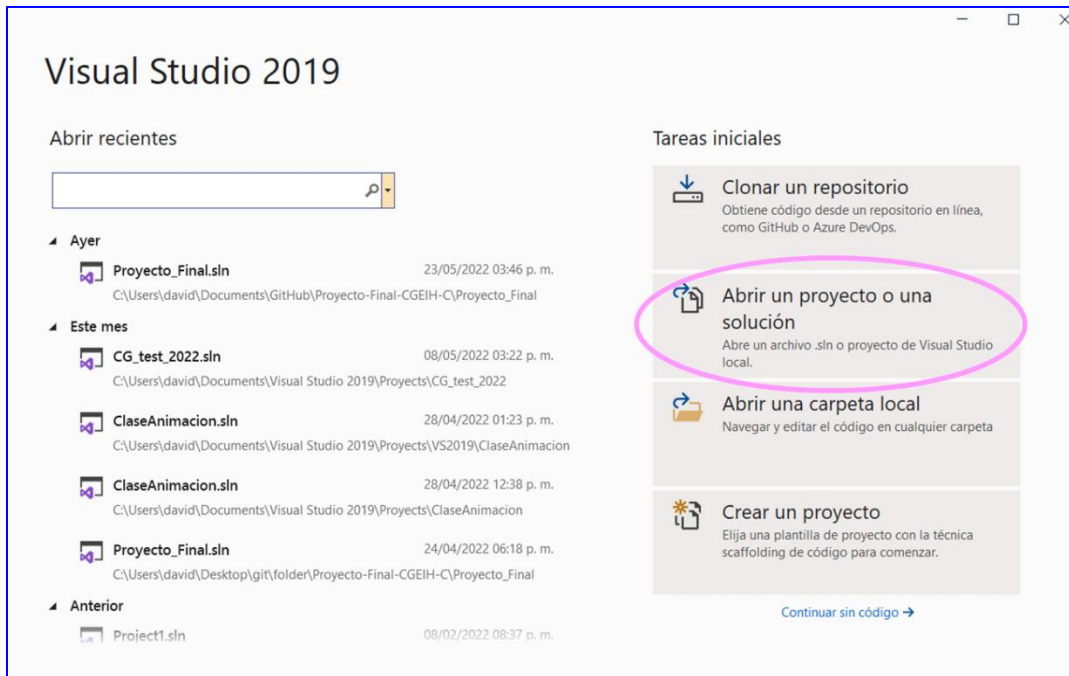


Figure 23. Screenshot showing how to open the project in Visual.

Find the "Proyecto_Final.sln" file inside the unzipped folder and hit the open button.

Nombre	Fecha de modificación	Tipo	Tamaño
Debug	28/04/2022 02:28 p. m.	Carpeta de archivos	
Proyecto_Final	22/05/2022 05:20 p. m.	Carpeta de archivos	
x64	28/04/2022 02:27 p. m.	Carpeta de archivos	
PROPUESTA PROYECTO	28/04/2022 05:59 p. m.	Documento Adob...	1,577 KB
Proyecto_Final	22/05/2022 04:40 p. m.	Aplicación	943 KB
Proyecto_Final.sln	27/04/2022 01:18 p. m.	Visual Studio Solut...	2 KB

Figure 24. Screenshot showing the location of the project in the folder.

Before running the program, we check that all libraries and settings are loaded correctly. We go to the solution explorer, right-click on the project name and select the properties option.

In the "General" section we verify that the Platform Toolset is one that we have downloaded can be v142 or v143.

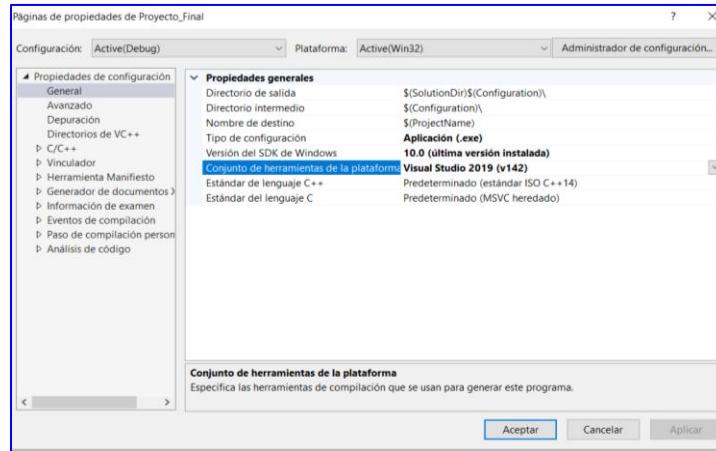


Figure 25. Screenshot showing the set of tools to select in Visual.

Within C/C++ ->general verify that the word include is in additional include directories. In the Linker ->General the word lib. In Additional library directories and finally, in Linker -> Entry verify the following dependencies **Winmm.lib;SDL2.lib;SDL2main.lib;assimp-vc141-mtd.lib;opengl32.lib;glfw3.lib;kernel32.lib;user32.lib;gdi32.lib;winspool.lib;comdlg32.lib;advapi32.lib;shell32.lib;ole32.lib;oleaut32.lib;uuid.lib;odbc32.lib;odbccp32.lib;%(AdditionalDependencies)** must be included in Additional dependencies.

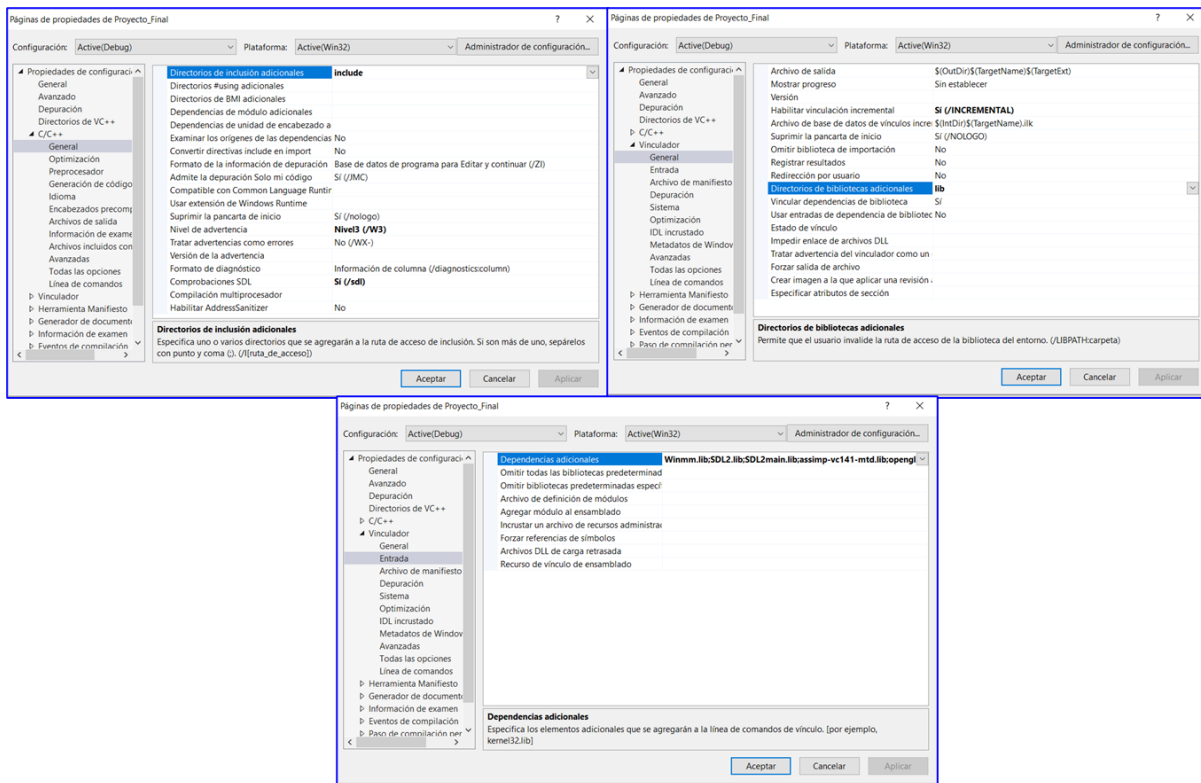


Figure 26. Screenshot showing the project settings in Visual.

To run the project, you must select the "x86" option in the top bar and verify that the "Debug" option is selected as shown in the following image.

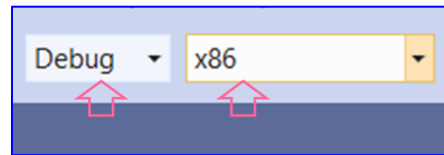


Figure 27. Screenshot showing the Debug option in Visual.

You can now run the project by clicking on the "Windows Local Debugger" button, this will open the program window.

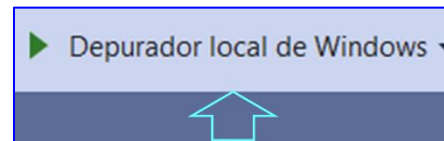


Figura 28. Captura de pantalla que muestra el depurador de Windows en Visual.

Execution with .exe file:

Once the project has been cloned or the ZIP has been unzipped: open the generated folder or repository location on your computer and go to ".\Proyecto_Final\Proyecto_Final", locate the "Proyecto_Final.exe" file and double-click to open. The above will open a window with the virtual space running.

Nombre	Fecha de modificación	Tipo	Tamaño
Debug	28/04/2022 02:28 p. m.	Carpeta de archivos	
Proyecto_Final	22/05/2022 05:20 p. m.	Carpeta de archivos	
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PROPUESTA PROYECTO	28/04/2022 05:59 p. m.	Documento Adob...	1,577 KB
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Proyecto_Final.sln	27/04/2022 01:18 p. m.	Visual Studio Solut...	2 KB

Figure 29. Screenshot showing the executable in the folder.

Interaction with the environment:

Once the window is opened; being inside the virtual space the mouse is captured to work only within it, so the course is not observed, and the movement of the mouse only works inside the window. The interaction takes place through the keyboard and mouse of the computer. The distribution of the models can be seen in Figure 1.

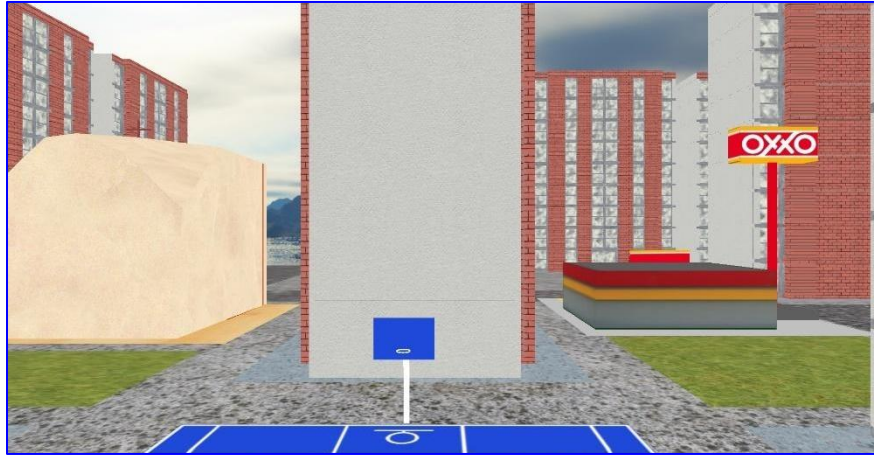


Figure 30. Captures with what is shown when opening when running the program.

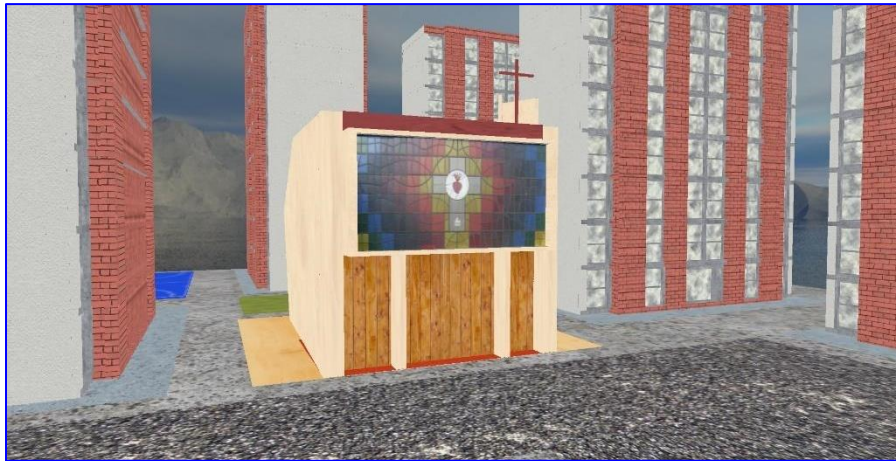


Figure 31. Model of the Church and its location.



Figure 32. Model of the OXXO store and its location.



Figure 33. Model of the entrance and its location.



Figure 34. Location of the furnished building.

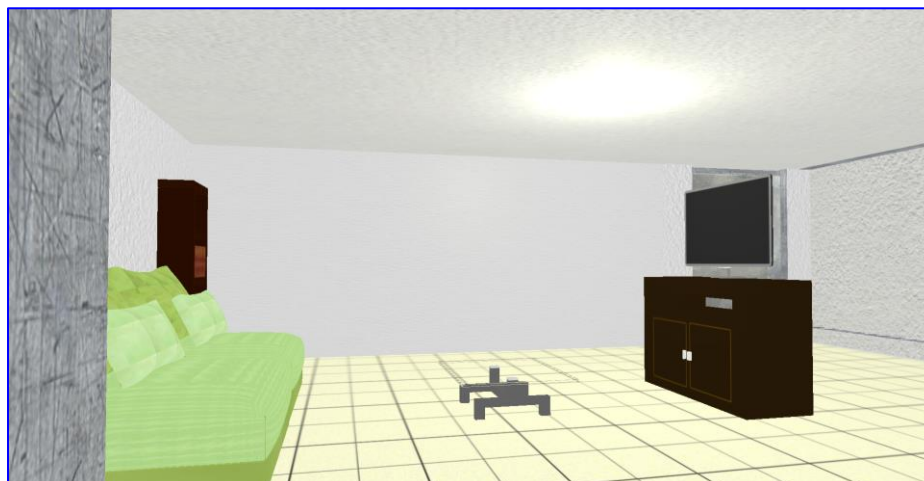


Figure 35. Room 1.



Figure 36. Room 2.

Functions:

Next, it is indicated with which keys the animations are activated or that it can be performed.

- **Keyboard:**
 - ESC: to exit the window / end the program.
 - W: Move the camera forward.
 - S: Move the camera back.
 - A: Move the camera to the left.
 - D: Move the camera to the right.
- **Music:**
 - Z: Turn on the sound.
- **Animations:**
 - SPACE: activate or deactivate the animation of the vehicle.
 - C: activate the animation of the walking person.
 - Tricycle animation does not need user input.
 - The animation of the bicycle does not need a user input.
 - The animation of the person walking does not need a user input.
 - The athlete's animation does not need a user input.
- **Lamps:**
 - 1: Turn on or off the focus of room 1.
 - 2: Turn the focus on or off in room 2.
- **Mouse movements:**
 - Sliding the mouse to the left or right, up or down makes the turn of the camera in that sliding direction, the *field of view* moves as it happens with the cursor of the computer.
 - Mouse scroll zooms + moving it forward and zooms - back.