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# FINAL PROJECT:
# USER MANUAL

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# USER MANUAL – FINAL PROJECT

## Introduction

This program simulates a house based on the design of Charlie Brown's home, a character from the animated series *Peanuts*, using three-dimensional modeling. The simulation applies knowledge acquired about geometric modeling techniques and algorithms, lighting and color, as well as texturing, animation, and interactive environment design. The user can interact with the program by pressing specific keys to activate different animations. This manual serves as a guide for the user to follow the steps required to run the program and explore its features.

## Prerequisites

• Operating System: Windows (compatible with the included libraries). Windows 10 or 11 is recommended.
• Required Files: Make sure all files in the executable folder are present before starting.

- Minimum Hardware Requirements:
  - Graphics Card: Integrated (compatible with 3D rendering)
  - RAM: 3 GB available
  - Processor: Intel Core i5 or equivalent
  - Disk Space: Approximately 800 MB available

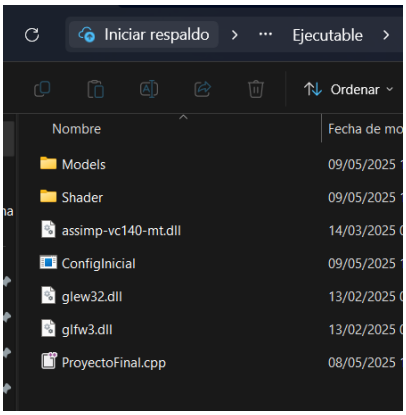


**Image 1.** Required files in the "Executable" folder

## Executable Folder Structure

When opening the executable folder, you will find the following elements:

• Models: Contains a subfolder named *animables*, where the .obj files for the 3D models used in the scene are stored (such as casafinal.obj, snoopy.obj, among others), including both the main structure and the elements with animations.

• Shader: Folder that includes the shader files responsible for lighting and rendering the scene, such as lighting.vs, lighting.frag, lamp.vs, lamp.frag, modelLoading.vs, and modelLoading.frag.

• assimp-vc140-mt.dll: Library required for correctly loading 3D models.

• ConfigInicial: File that may contain the program's default configuration settings.

• glew32.dll: Essential library for handling OpenGL extensions required during the rendering process.

• glfw3.dll: Responsible for window management, user input, and other events; essential for running the graphical environment.

• ProyectoFinal.cpp: Source file containing the project's code. It is not necessary to run it directly, but it is included for reference or modification purposes.

Note: Do not modify or delete any file or folder, as the program depends on all of them to function correctly.

## Steps to Run the Program

1. Download or clone the GitHub repository from the following link:
2. Open the folder resulting from the extraction, named after the project.

Navigate to the folder containing the files mentioned using Windows File Explorer.

Make sure all the files and folders are present.

3. Look for an executable file (.exe) within the folder.

   If you do not see a .exe file, it means you need to compile the ProyectoFinal.cpp source code using a compatible compiler (such as Visual Studio) with the included libraries (GLEW, GLFW, Assimp, etc.). For end users, it is assumed that a .exe file is already provided (e.g., ProyectoFinal.exe).

   Double-click the .exe file (e.g., ProyectoFinal.exe) to launch the program.

   If a Windows security warning appears, click "Run anyway" to continue.


Image 2. .exe file

4. When the program runs, a window titled **"**Proyecto Final **"** will open with dimensions of 800x600 pixels.

   You will see a 3D scene with a house, a character (Snoopy), and light sources represented as small cubes.

Image 3. 3D Scene

## Interface Description and Animation Activation

When the program is executed, a 3D-modeled house is displayed with a synthetic camera.

The user can move the camera's perspective and activate the house's animations.

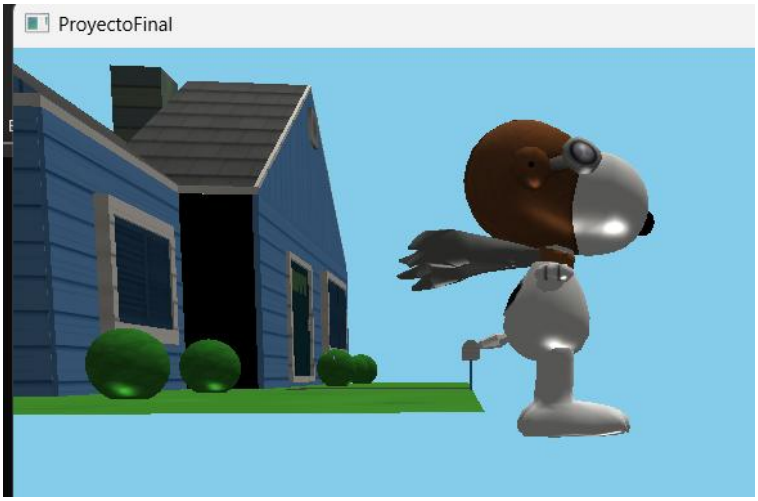


Image 4

Below are the key combinations used to activate animations. Additionally, YouTube links are provided with short videos showcasing the animations in action:

Open/Close Wardrobe Doors 1 and 2:
https://youtube.com/shorts/v7C1XFSjaNs?feature=share

Open/Close Main Bedroom Door:
https://youtube.com/shorts/hcKEldvoJa0?feature=share

Open/Close Odin's Room Door:
https://youtube.com/shorts/dWpBfrrbK9Y?feature=share

Throw/Reset Bottle and Shake/Stop Glass:
https://youtu.be/3zi-6xpGfA8

Clock Hands Movement:
https://youtube.com/shorts/L9wN7hWPXaI?feature=share

Note: Animations highlighted in blue were created by Zair Odin Limón Sosa, those in pink by María Fernanda Verano Peralta, and those in gray represent general project animations.

| Action | Key |
|---|---|
| Open/Close Main Bedroom Door | P |
| Open/Close Odin's Room Door | O |
| Open/Close Wardrobe Door 1 | M |
| Open/Close Wardrobe Door 2 | N |
| Throw/Reset Bottle | B |
| Shake/Stop Glass | C |
| Clock Hands (Can be pressed simultaneously or at different times — ideally at the same time) / Stop | I – Hour Hand<br>U – Minute Hand |
| TV Signal Noise | R |
| Move Snoopy Forward | W |
| Move Snoopy Backward | S |
| Move Snoopy Left | A |
| Move Snoopy Right | D |
| Camera Movement | Move the mouse or trackpad |
| Open/Close Fernanda's Room Door | F |
| Open/Close Windows | B |
| Make Bird Fly | L |
| Teapot | No key assigned – visible in the environment by default |

## Closing the Program

• Press the **Esc** key to safely close the window and exit the program.
• Alternatively, click the **"Close" (X)** button on the window.

## Guide to Troubleshooting Common Issues

a) Unable to download the repository from GitHub:

1. Make sure you have an active internet connection.
2. Try using a different browser or temporarily disable your antivirus.

b) The program does not start correctly:

1. Verify that you have administrator permissions.
2. Ensure your system meets the minimum required specifications.

c) The program window appears blank:

1. Check that your video drivers are up to date.

2. Make sure your graphics card is compatible with OpenGL.

d) Keyboard input is not working:

1. Ensure that the program window is in the foreground and active.
2. Confirm that your keyboard is properly configured and functioning.

e) The scene does not render correctly:

1. Make sure that the files in the *Models* and *Shader* folders have not been moved or deleted.
2. Reinstall the files from the original source if necessary.

f) Movement is slow or erratic:

1. Close other applications to free up system resources.

## Annexes

Download link for the file: https://github.com/zairodin/319255186_ProyectoFinal_Grupo05

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