UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

FACULTAD DE INGENIERÍA

DIVISIÓN DE INGENIERÍA ELÉCTRICA

INGENIERÍA EN COMPUTACIÓN

COMPUTACIÓN GRÁFICA e INTERACCIÓN HUMANO COMPUTADORA

FINAL PROJECT: USER MANUAL

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Introduction

Welcome to the User Manual for the 3D Digital Environment with OpenGL.

This manual provides a detailed guide on using and exploring the three-dimensional environment, designed to offer an interactive and educational experience.

In this environment, users will have the opportunity to immerse themselves in a digital world where they can interact with objects while exploring key concepts related to camera handling and movement control. Through this platform, users are invited to experience an immersive and educational journey that will allow them to acquire practical knowledge while enjoying a visually stimulating experience.

We thank you for your interest in this 3D digital environment with OpenGL and hope that this manual serves as a useful tool to make the most of all the features and functionalities offered by this exciting platform.

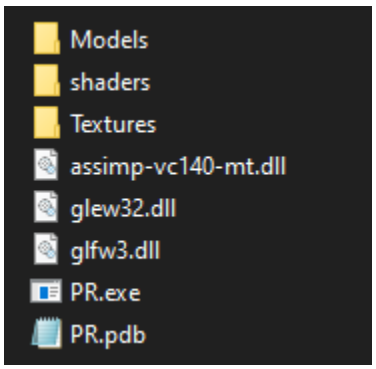
Getting Started

The environment is located within a folder called “Release,” which contains all necessary files, including shaders, models, textures, dlls, and the PR.exe for operation. This folder includes the following contents.

Capture 1: Content of the Release folder.

Within this folder, follow the path to the executable file of the project.

PR\Release\PR.exe

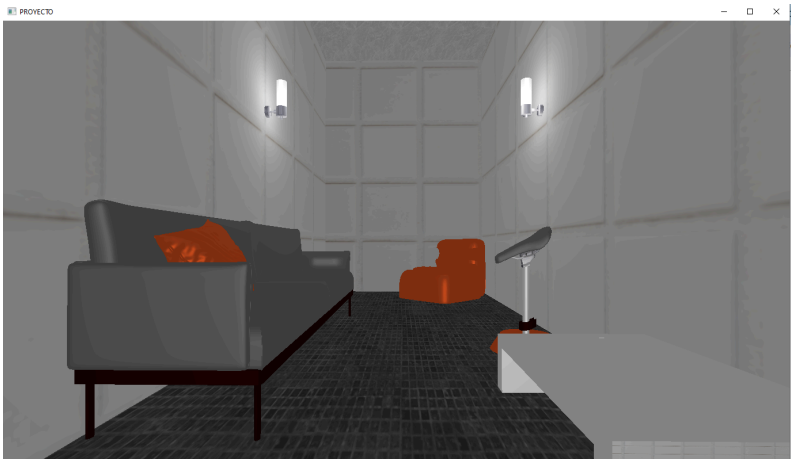


Capture 2: Location of the PR.exe executable file.

Double-clicking this file opens the pop-up window with the 3D environment.

Camera

When the environment starts, the default camera view is displayed, allowing you to explore and visualize the world.



Capture 3: Default camera view.

Moving the mouse cursor over the created tab, controls the camera direction.

Capture 4: Camera movement.

Movement

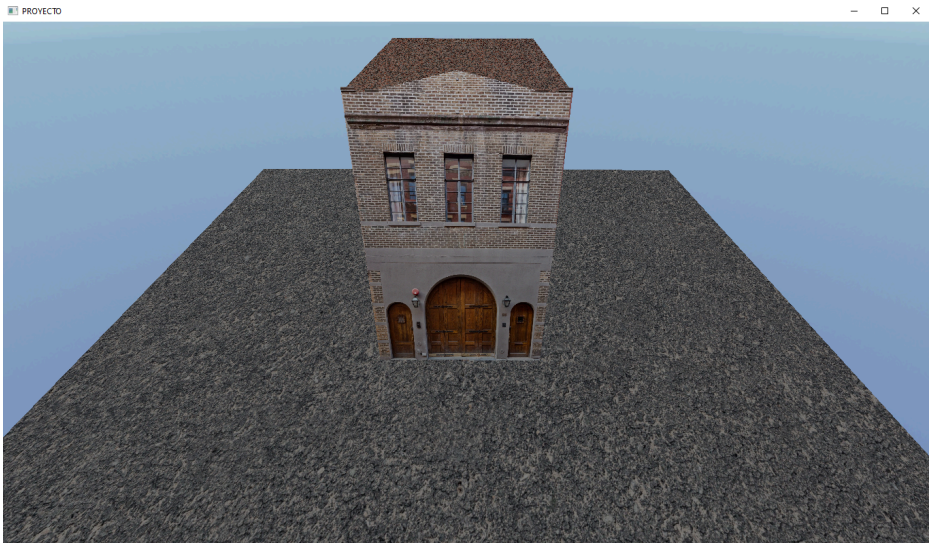
To move the camera, specific keys on the keyboard are assigned to control the position in four different directions:

- Key ‘W’: Forward
- Key ‘S’: Backward
- Key ‘A’: Left
- Key ‘D’: Right

Capture 5: Camera in motion.

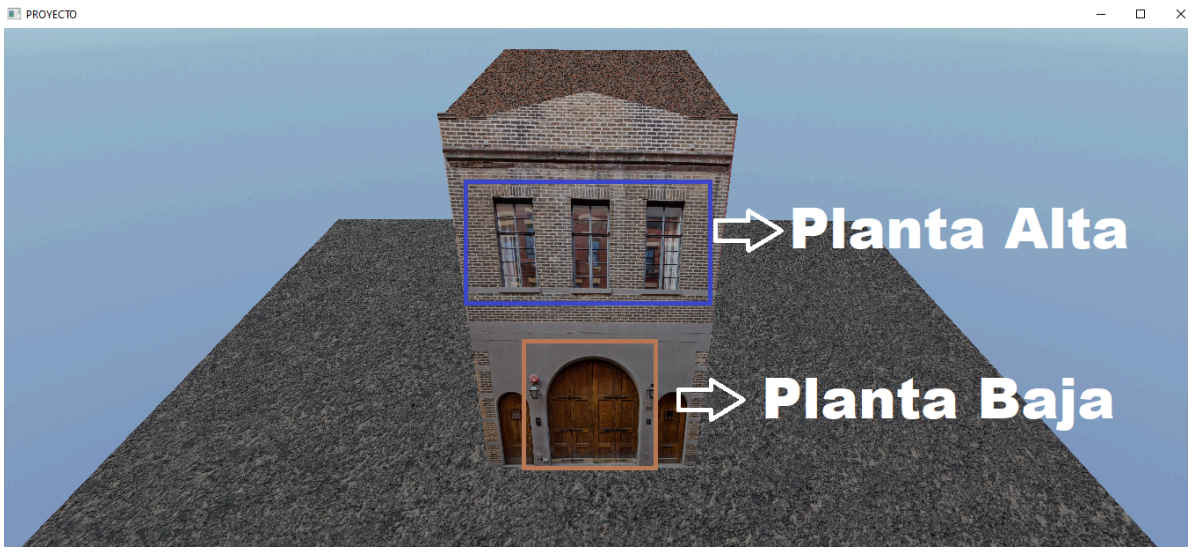
Navigation

Starting at the initial position and moving towards the entrance door, you can exit to appreciate the house from the outside.



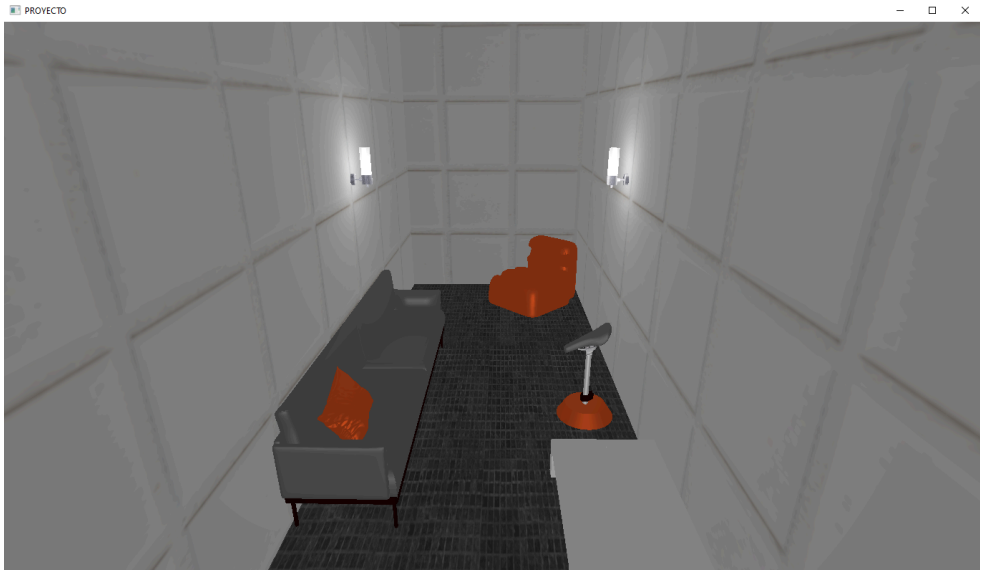
Capture 6: Cornelias Street.

To enter the bedroom, you need to cross the house where the Upper Floor is indicated, similarly to access the garage, you need to enter through the marked area for the Ground Floor.



Capture 7: Room locations.

Entering the ground floor corresponding to the garage, you can observe the composition of the room.



Capture 8: Ground Floor - Garage.

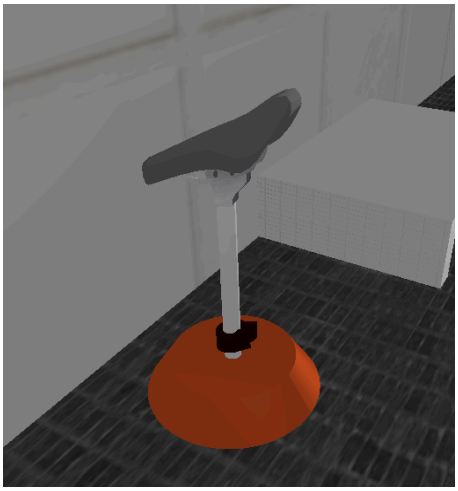
Now, entering the upper floor, you access the bedroom, which is visualized as follows.

Capture 9: Upper Floor - Bedroom.

Animations

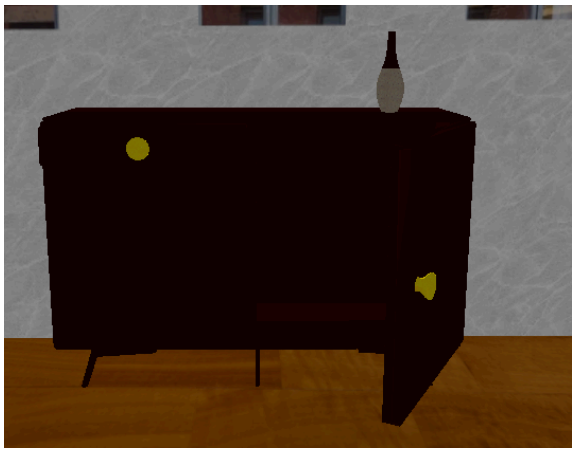
Additionally, there are four additional controls for animations, which are: rotation of the chair shaped like a bicycle seat, cabinet door, drawer, and poster adjustment. To activate or deactivate the animation, simply press the key once to turn the animation on or off. These are assigned to the following keys:

- Key ‘Z’: Automatic bicycle seat rotation.



Capture 10: Bicycle rotation.

- Key ‘X’: Open and close the door.



Capture 11: Door movement.

- Key ‘C’: Open and close the drawer.

Capture 12: Drawer movement.

- Key ‘V’: Poster movement.

Capture 13: Poster lateral movements.

Closing the Program

To exit the environment, simply press the 'Esc' key on the keyboard in the main window, and you’re done.