Virtual Art Gallery

ICG

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The Virtual Art Gallery can be viewed at
https://goncalomaranhao.github.io/ICG-VirtualArtGallery/

1 Introduction

This document is related to the intermediate delivery of my project, Virtual Art Gallery, done with Three.js which is 3D Javascript library.

The project consists in the programming and design of an art gallery with some peculiar functionalities.

This project is helping and will help me in developing relative ease with computer graphics through the use of animations, lightning, shading, and more with Three.js.

In this document, I refer to the person viewing the art gallery as a player. My intention with this project is to create a program that allows the person to explore the space that I'm building, it's an art gallery and a space to explore.

2 Objectives

I have several objectives.

The main objective is to have three different rooms that make use of different graphic aspects.

The sunny room will feature big windows to let the sunlight in. The shadows will play an important role in this room, given the windows and natural light.

The dark room will feature an open sky with a reflective floor. The sky will be reasonably detailed with moon(s), stars, planet(s), etc. This room will also have lanterns that give off different light in terms of color.

The Louvre room will have synthetic lightning and the player, through the use of light switches, will be able to change the lightning in the room. I intended to make a reasonable close representation of the Louvre room which feature the Mona Lisa with some adjustments that better show my capabilities and vision with this project.

All the rooms will feature art (painting, statues, etc) related to the theme of the room. The player will be able to pick up, rotate, and drop objects (at the moment I'm only considering doing this with statues and lanterns) to whatever place the player chooses to.

3   What is already done

At the time of the submission of this document what is done is mostly related to functionalities instead of aesthetics, I took this approach because I wanted to get a deeper understanding of Three.js before starting to do some of the work that I had already done in classes (positioning objects in the scene, making shadow visible, play with the light source position, etc.).

I have done most of the entrance room.

I have three doors and the animation of opening and closing doors is done.

As I said before I want to allow the player to pick up some objects and rotate them, this functionality is also already done with a cube, I still haven't loaded a model.

I also have a painting and a frame on the front wall, this will be very important for the whole project given the theme. I have done the walls, floor and ceiling. The left, front and right wall have a hole where the door fits, so these walls are a single piece but with a hole in it.

I have applied textures to the floor and to the doors just to see how hard it would be, the textures are not very appropriate yet.

4   What is left to do

Building the three rooms connected to the entrance room.

This would involve creating the windows in the sunny room and placing the art related objects in appropriate places.

The dark room will give me a lot of work, since I'm intending to make an artistic night sky. I also have to make all the logic related to the lanterns.

The Louvre room will also entail a lot of work, given what I want to allow the player to do with the lightning.

Most of the project is still not done, but I already gained relative ease with threejs and from this point on development can be faster, at least for the least complicated tasks.
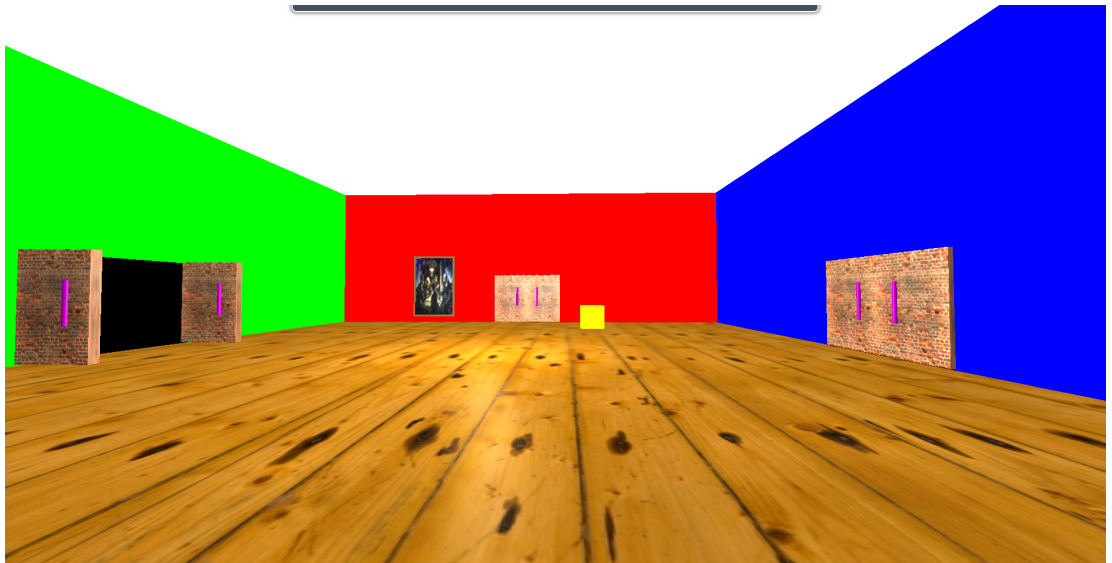
5   Image of current state

Figure 1: Current state of the Virtual Art Gallery