Tutorial 0
Installing OSPRay

Iluminação e Visualização II

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Throughout this tutorial you will install Intel's OSPRay and its dependences on your computer. You will also verify your installation.

Installation

1 - clone the bitbucket repository to your machine:

```
git clone https://lppsantos@bitbucket.org/labcg-uminho/ospray-vi2.git
```

2 - change to the folder where the `builddeps` script is:

```
cd ospray-vi2/local-thrparty
```

3 - run the `builddeps` script (this might take a significant amount of time):

```
./builddeps
```

4 - move to the `build` folder:

```
cd ../build
```

5 - create the `Makefile`:

```
cmake .. -DCMAKE_INSTALL_PREFIX=../local-thrparty/install
```

6 - build the executables and libraries:

```
make
```

Running the example viewer

Move into the folder where you built OSPRay, which probably is `~/ospray-vi2/build`.

A scene that is used often when researching global illumination is the Cornell Box. There are several versions of it on the `./models` folder. There are also a number of scripts in the `build` folder to help you execute OSPray interactively. Let's run it with the version of the Cornell box that was setup to this course:

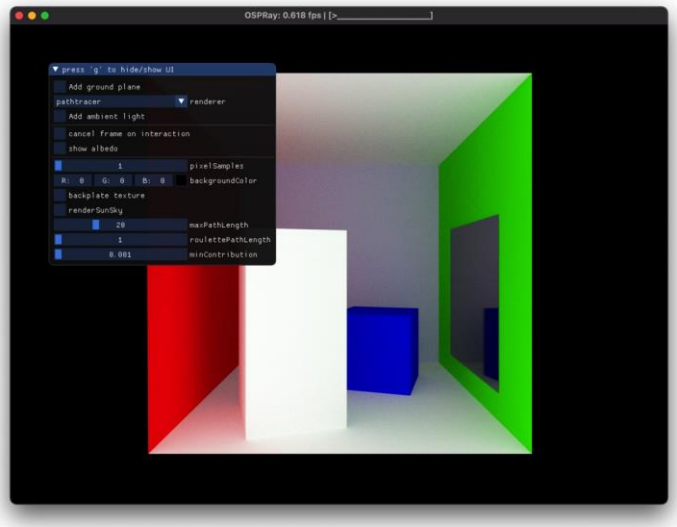
Execute the example viewer:

```
> ./cornell_VI2
```

Try to answer the following questions:

- what is the frame rate for the initial camera position?
- are shadows being simulated?
- are specular reflections being simulated (mirror on the green wall)?
- Is the image getting progressively better (progressive rendering)?

You must be seeing the following image:



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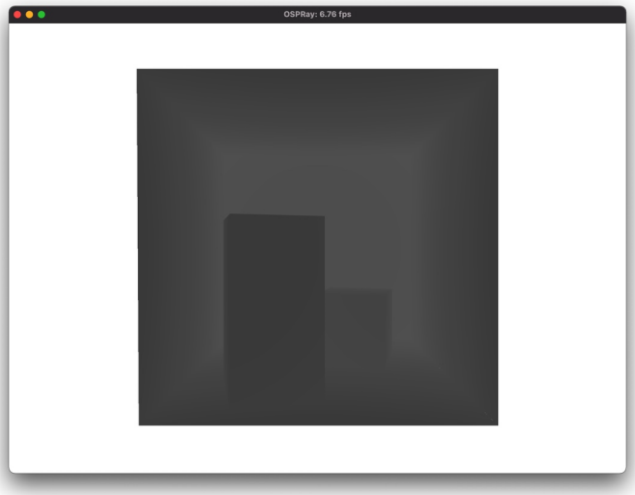
Use the menu to change the renderer. There is a very simple renderer that just returns, for each pixel (corresponding to a primary ray) the depth of the geometry, i.e., the primary ray's length. This depth is mapped to a gray scale, with black being depth 0 and white the maximum depth (maximum distance from the camera). Using the mouse change the renderer on the menu and select '`myrenderer`'. You can afterwards hide the menu by pressing '`g`'. Can you understand the depth image? It must be as shown below:



Press '`q`' to exit the renderer.

Try other scenes that have been included:

```
> ./cornell_OSP
```

```
> ./conference
```

```
> ./sponza
```

Can you explain why is the conference room so noisy? It will have to run for days in order to converge to a minimally acceptable image!!

In the next pages you can find three screenshots of the conference room after some convergence and the depth maps of the conference room and the Sponza Atrium.


OSPRay: 0.148 fps | [==================>__]

That's all, folks!

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