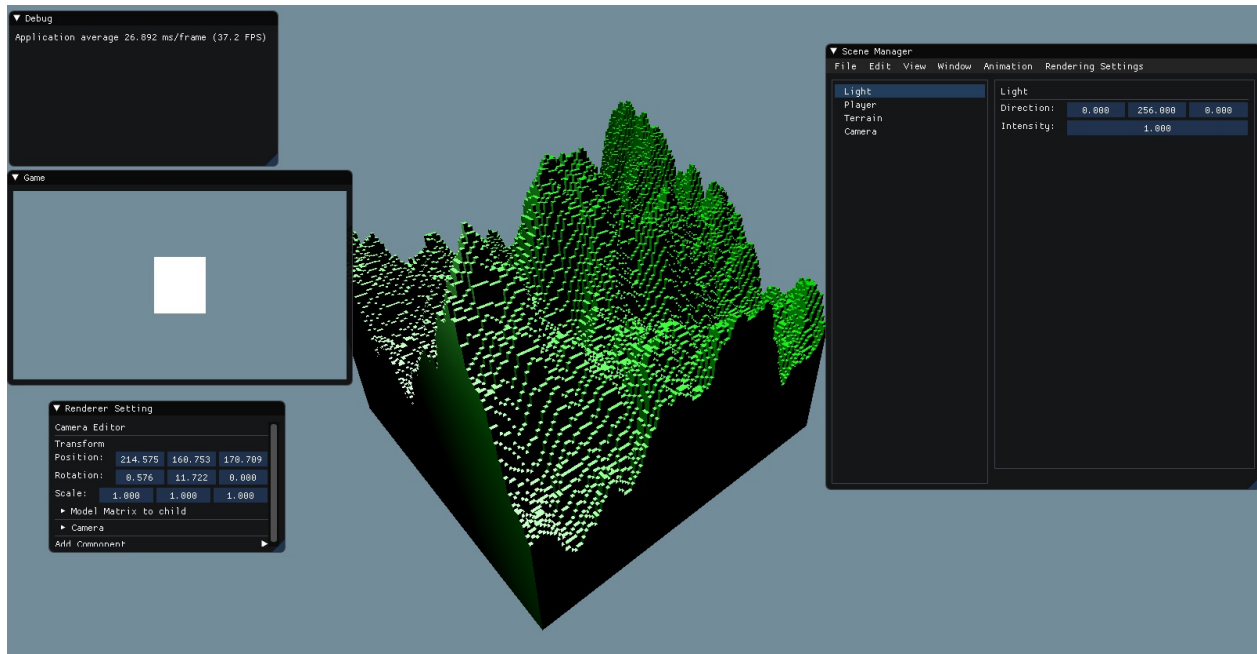


Voxel-Engine

build **passing**

Voxel-Engine is a WIP game engine specialized for voxel rendering. It is made by 2 students to learn the process of creating a game engine.



Features

Jeu

- you can shoot projectile by pushing F

Change transform

- Change position
- Change orientation
- Change scale
- Animate orientation

Change tools position

- Change camera position, fov, orientation
- Change light position

Display

- Activate/Deactivate display in wire frame

Components

The components are in the folder `src/components/`

- Camera Follow : follow the objet attached to
- Axis Renderer : display axis in the camera Editor

- Camera Controller First Person : allow to move and rotate the camera with left and right click
- Camera Projective : functions needed to make a projective camera
- Camera Renderer : WIP, display the camera in the editor
- Chunk Renderer : display a terrain composed of chunks with OpenGL
- Controller : allow to interactively strafe and go forward and backward
- Mesh Renderer : display in the screen with OpenGL the mesh
- Third Person Controller : allow to move the camera around an object like in a third person game

How to clone

```
git clone --recursive https://github.com/TheSpyGeek/VoxelEngine.git
```

Build

On Linux

Dependencies :

```
sudo apt-get install -y build-essential cmake xorg-dev libgl1-mesa-dev libfreetype6-dev
```

To build :

```
mkdir build && cd build && cmake .. && make
```

On Windows

Dependencies :

- [Mingw](#)
- [Cmake](#)

To build :

- Create a directory `build`
- Run `Cmake`
- Configure with `Mingw Makefile`
- Run `mingw64`
- Go to `build` directory
- Compile with `mingw32-make`

On MAC OSX

Should work

Resources

- <https://sonarlearning.co.uk/coursepage.php?topic=game&course=ext-bb-3d-ged>
- <https://www.3dgep.com/courses/>
- <https://github.com/nothings/stb>
- <https://jheer.github.io/barnes-hut/>
- <https://www.youtube.com/watch?v=BP6NxVxDQIs>
- Let's make a voxel engine : <https://sites.google.com/site/letsmakeavoxelengine/home/>
- <https://community.khronos.org/t/how-to-draw-one-line-on-top-of-another-in-opengl-without-z-fighting/68922>
- Free look camera : <https://gamedev.stackexchange.com/questions/60266/create-a-fly-camera-with-lookat>
- Third person camera : <https://www.youtube.com/watch?v=PoxDDZmctnU&list=PLRIWtlCgwaX0u7Rf9zkZhLoLuZVfUksDP&index=19>
- Voxelizer sur blender : <https://www.youtube.com/watch?v=ntVhi8SIoZA>
- Voxelizer algorithm : <https://github.com/davidstutz/mesh-voxelization>

- Travis Windows build : <https://github.com/open-license-manager/open-license-manager/blob/dfddf5294677407c3a01b3a13c8348f02fe993ee/.travis.yml>
- FBX loader : <https://github.com/nem0/OpenFBX/blob/master/demo/main.cpp#L203>
- Procedural generation : <https://www.youtube.com/watch?v=wbpMiKiSKm8>
- Multi-threading : <https://www.randygaul.net/wp-content/uploads/2014/09/MultiThread.pdf>
- Intersection : <https://noonat.github.io/intersect/>