

3DMinecraft

A 3D minecraft-type game using OpenGL library implemented in C++.

This game was developed as the first assignment for the undergraduate course Computer Graphics and Interactive Systems of the Department of Computer Science and Engineering at the University of Ioannina.

Student information

Fotios Mitropoulos 2486

Programming Structure.

- Cube struct holding cube information.
- Camera class with public methods for each function.
- 3d Array holding cube struct objects.

Functionalities.

- Rotating first person camera mode.
- Orbiting 3d person camera mode.
- Zoom in and zoom out with mouse wheel.
- Multiple lightning modes.
- Multiple character models.
- Animated character move.

Rules.

Rules can be found [here](#).

Installation.

This game was developed in Microsoft VisualStudio Community 2015 v.14.0.25431.01 and is also full

compatible with Unix-based or Linux-based systems.

In order to run and play the game, OpenGL libraries are necessary. In Ubuntu 16.04LTS you will need to follow the next steps.

1. `sudo apt-get install build-essential`
2. `sudo apt-get install freeglut3 freeglut3-dev`
3. Download the library from <http://www.rpmseek.com/rpm-pl/libglui2c2.html?hl=com&cs=libgcc1:RE:0:0:0:0:2420> according to your system. Run `sudo apt-get -f install`. Then run `sudo dpkg -i`.

How to compile & run.

You have to compile all source files and an executable file "Assignment1.out" will be created. Make sure that the working directory is the project's directory and run the following commands:

1. `make`
2. `./Assignment1.out`

How to play.

Keyboard functions.

- Esc : exit program.
- a : move forwards.
- s : move backwards.
- a : rotate camera counter-clockwise.
- d : rotate camera clockwise.
- q : destroy the cube in front.
- e : destroy all cubes in Y-axis in front.
- r : drop cubes.
- spacebar : increase cube reserve by 1.
- l : cycle lightning mode (none - spotlight - flashlight).
- c : cycle camera mode (fps - 3d person shooter).
- j : jump to the after next cube.
- m : switch character (Human - Snowman) model.

Mouse functions. (In order to change the default mouse functions you should modify the main.h file on Mouse Parameters section and set the values of your choice)

- Horizontal Move Right : rotate camera clockwise.

- Horizontal Move Left : rotate camera counter-clockwise.
- Mouse wheel up : zoom in.
- Mouse wheel down : zoom out.
- Left Click : add cube in front.
- Right Click : kick cube.

Contact

Feel free to contact me for any reason.

- Personal email : fotismitropoulos@gmail.com
- Academic email : cse32486@cs.uoi.gr