3DViewer v1.0

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Description

The 3DViewer program is designed to display 3D models parsed from files in format file.obj, in wireframe form.

It is able to use vertexes and facets only. Qt library is used for interface realization.

1 Build

To run the 3DViewer you will require following programs - Qt6 or later version (including qmake), bash, GCC compiler, GNU make, Mingw compiler (Qt6 contains it). For Windows OS it might be good to install Cygwin to **make tests**. Also for Windows you need to add the paths corresponding to the following to the PATH variable:
C:\..(path to Qt installed)\Qt\6.4.1(Qt version)\mingw_64(mingw version)\bin
C:\(path to Qt installed)\Qt\Tools\mingw1120_64(mingw tools version)\bin

Maybe it will be necessary to set equivalent paths in MacOS or Linux if build goes wrong. In order to build the program, use **make** in the root directory of the project. Then you may execute program, **3DViewer** is located in the folder **build/bin**.

2 Installation

Tested on MacOS and Windows with Cygwin. You may use **make install** , to install 3DViewer in your home directory.

3 Testing

Testing cover correctness of parsing of the .obj file and the Athenian transformations of the model. For testing, you need to call **make tests**. Test coverage is called by **make gcov_report**.

4 Uninstall

To uninstall the 3DViewer you should at the root directory of the project call **make uninstall**. This will delete installation files and folders in your home directory.

5 Main features of the 3DViewer

In the 3DViewer program you are able to:

- Upload and view model from the file in the fileName.obj
- Save the model as image in .bmp and .jpeg format
- Save GIF animation (640x480, 10fps, 5s)
- To see file path, amount of vertexes and facets

By using mouse, mouse wheel , spin boxes and slide bars:

- Translating - move the model by a specified distance relative to the X, Y, Z axes
- Rotate the model by a given angle around its X, Y, Z axes
- Scale the model for a given value.

By using the Menu File:

- Upload and view model from the file in the fileName.obj
- Close file
- Save the model as image in .bmp and .jpeg format
- Save GIF animation (640x480, 10fps, 5s)

By using the Menu Settings (pop-up dialog window appear):

- Change widget background color
- Change facets parameters - colour, thickness and type of line (solid or dashed)
- Change vertices parameters - colour, size and type of points (none, circle or square)
- Change projection - parralle or central
- Restore default settings and start from the beginning!

The Program will save the settings if you close it.