

CMSC 405 - Project 2 - Java 2D Graphics

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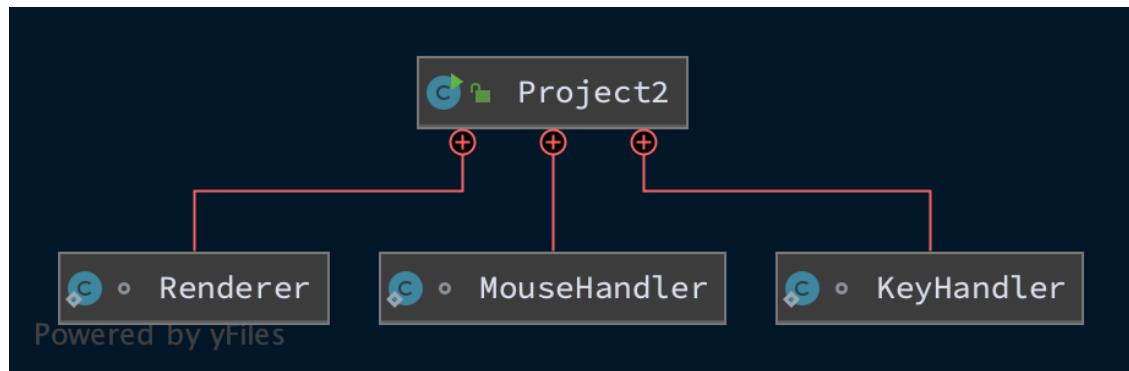
Date: 8 Feb 2021

Description A program that creates a unique 3D graphics scene composed of OpenGL graphic components using transformation methods. The generated 3d images can be rotated by pressing and dragging the mouse, scaled up with the 'a' key, scaled down with the 'z' key, and translated with the arrow keys.

File Layout

```
|__ doc  
| |__ img  
| |__ project1.md  
|__ src  
| |__ main  
| | |__ java  
| | | |__ Project2.java
```

UML Diagram



Running this program

In order to run this program, the user will need to link all of the necessary libraries. These include jogl-all.jar, gluegenrt.jar, as well as the gluegen and jogl jars for your native operating system.

On my machine, I use IntelliJ IDE so, in the project settings, I linked the libraries: File > Project Structure > Libraries > Add

Or they can be linked using the command-line:

```
javac -cp path/to/jogl-all.jar:path/to/gluegen-rt.jar:.
MyOpenGLProg.java
```

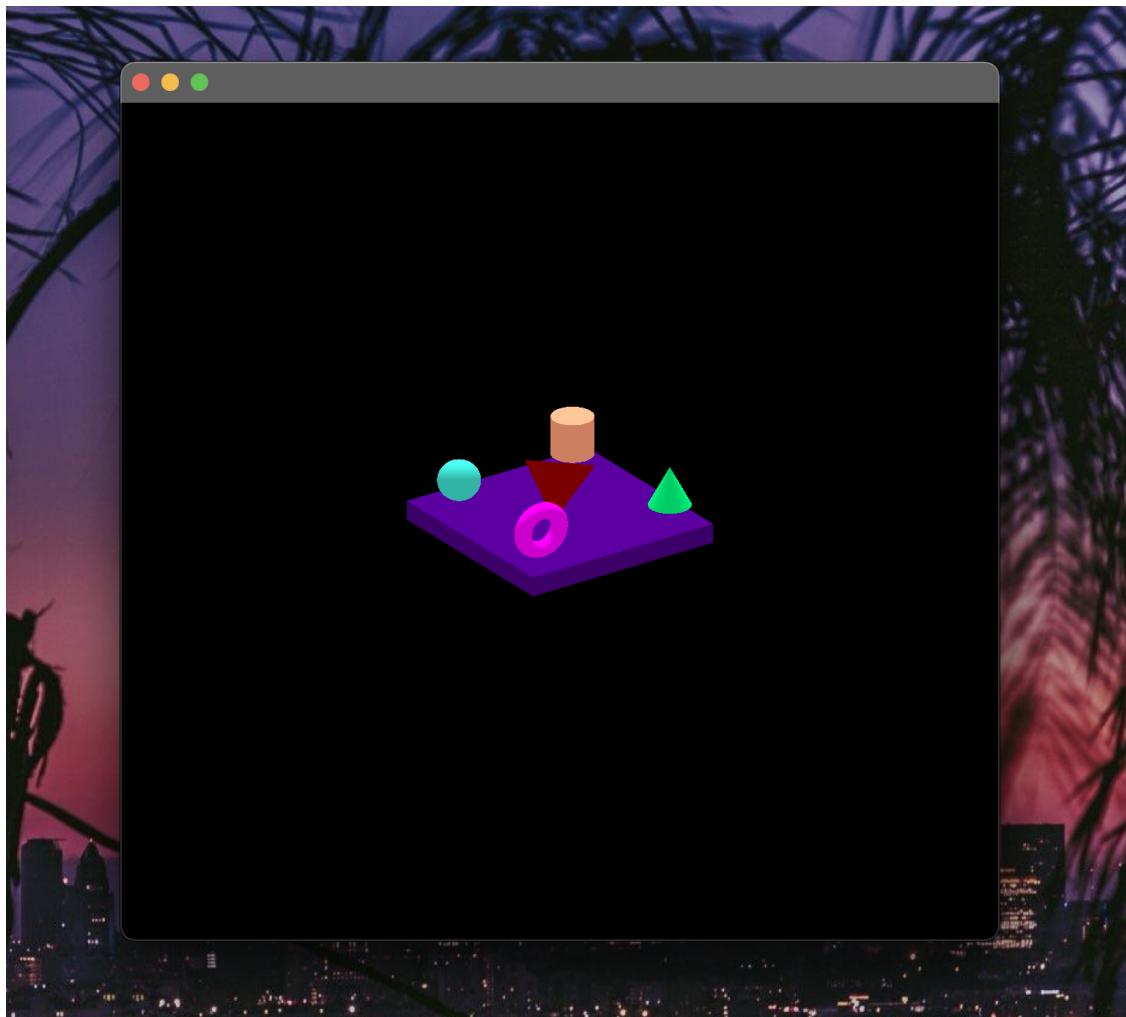
Testing the Program

The following sections will test the program's various functionalities. The program is a scene with various shapes and certain key commands will cause them to translate, rotate, etc..

Test Case	OpenGL Transformation	Input	Expected Output	Actual Output	Pass/Fail
1	None - images unaffected	None	Original images	Original images	Pass
2	Scale	a key(x's 5)	zoomed in image	zoomed in image	Pass
3	Rotate	Mouse press and drag	rotated image	rotated image	Pass
4	Translate	Arrow keys	translated image	translated image	Pass

Screenshots

Test case 1



The original images without transformations

Test case 2



The images scaled

Test case 3



The images rotated via mouse input

Test case 4



The images translated via arrow keys