CS7.302: Computer Graphics

Hello World!

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OpenGL is a cross-language, cross-platform application programming interface for rendering 2D and 3D vector graphics and is the API that we'll be using through the majority of this elective! This PDF is to help you get started with its interface and to direct you to some online C++ code tutorials that use OpenGL.

GLFW is a library, written in C, specifically targeted at OpenGL. It allows us to create an OpenGL context, define window parameters, and handle user input and more.

GLAD retrieves OS specific information about the location of OpenGL functions as implemented by your drivers on your system.

CMake To lazily quote their 'About' page: *CMake is an extensible, open-source system that manages the build process in an operating system and in a compiler-independent manner.* What this means is that with CMake, we can write instructions on how to build our code once and have it work in a variety of environments. In order to make use of CMake, you'll need to download and install it from https://cmake.org/download/

1 Installation

These are the steps for installation on Ubuntu. To avoid having to switch between doubly booted OSes, we recommend activating the Windows Subsystem For Linux, and installing the Ubuntu 18.04 LTS from the Microsoft Store, on Windows.

```
sudo apt-get update
sudo apt-get install libglu1-mesa-dev freeglut3-dev mesa-common-dev

```

Once you are done with the above, head to https://github.com/Graphics-Elective/Hello-World and run the following commands after cloning the repository.

```
cd Hello-World
mkdir build
cd build
cmake ..
make
./Hello-World
```

You should now be able to see a green window occupying the entirety of your screen! Welcome to Computer Graphics!

2 Tutorial Links

- Notes based: Link
- Video based: Link

Feel free to contact the TAs in case of any installation issues.