Faculty of Science

Course:	CSCI 4110U: Advanced Computer Graphics
Lab Assignment:	0
Topic:	Preparing Your Environment

Overview

In this lab, you will prepare your development environment for working with OpenGL. You will get to choose among several different environments:

- Windows
    - Visual Studio IDE
    - Visual Studio Command Prompt with Nmake
    - Windows Subsystem for Linux
- Linux
    - Terminal Shell with Make
- MacOS
    - Terminal Shell with Make

Visual Studio IDE

Note: This is the recommended platform, since it generally supports newer versions of OpenGL.

Visual Studio 2017 should be available at the UOIT software portal (https://software.uoit.ca) for download (for free). If it doesn't, you can also install the Community Edition of Visual Studio 2017 from Microsoft directly (https://visualstudio.microsoft.com/downloads/). Follow the instructions found at either website to install the IDE.

Once Visual Studio 2017 has been installed, you can download the base OpenGL solution from:

- https://github.com/randyfortier/CSCI4110U_BaseProject_VisualStudio

This solution contains everything you should need to run the example provided. When you build and run this solution, a window containing a red rectangle should appear.

Visual Studio Command Prompt with Nmake

Visual Studio 2017 should be available at the UOIT software portal (https://software.uoit.ca) for download (for free). If it doesn't, you can also install the Community Edition of Visual Studio 2017 from Microsoft directly (https://visualstudio.microsoft.com/downloads/). Follow the instructions found at either website to install the IDE.

Once Visual Studio 2017 has been installed, you can download the base OpenGL solution from:

- https://github.com/randyfortier/CSCI4110U_BaseProject_Multiplatform

This project contains everything you should need to run the example provided. To build this project, first open the Visual Studio command prompt (`Visual Studio 2017 → Developer Command Prompt for VS 2017`), then use the following command:

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```
> nmake /F Nmakefile.Windows
```

To run this solution, use the following command:

```
> main
```

When run, this project should display a window containing a red rectangle.

MacOS with Make

Before you will be able to program in OpenGL in MacOS, you will need to install GLEW. Instructions on how to do this are outside of the scope of this lab document, but for example if you use Homebrew, you can use the following command:

```
$ brew install glew
```

Once GLEW has been installed, you can download the base OpenGL solution from:
- https://github.com/randyfortier/CSCI4110U_BaseProject_Multiplatform

This solution contains everything else you should need to run the example provided. To build this project, first open the Terminal program, then use the following command:

```
$ make –f Makefile.MacOS
```

To run this solution, use the following command:

```
$ ./main
```

When run, this project should display a window containing a red rectangle.

Linux or Windows Subsystem for Linux with Make

Before you will be able to program in OpenGL in Linux, you will need to install GLEW and GLUT. Instructions on how to do this are outside of the scope of this lab document, but for example if you use Ubuntu, you can use the following command:

```
$ sudo apt install libglew-dev libglut-dev
```

Once GLEW has been installed, you can download the base OpenGL solution from:

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- https://github.com/randyfortier/CSCI4110U_BaseProject_Multiplatform

This solution contains everything else you should need to run the example provided. To build this project, first open the Terminal program, then use the following command:

```
$ make -f Makefile.Unix
```

To run this solution, use the following command:

```
$ ./main
```

When run, this project should display a window containing a red rectangle.

Lab Report

To demonstrate to the lab instructor your completion of this laboratory assignment, merely show them the running OpenGL base program.