Setting up OpenGL

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CMSI-371: Introduction to Computer Graphics *Professor Alex Wong*

Installing OpenGL for Ubuntu:

1. Install Mesa Library and Utils
   sudo apt-get install build-essential libgl1-mesa-dev
   sudo apt install mesa-utils
2. Install OpenGL libraries
   sudo apt-get install libglew-dev libsdl2-dev libsdl2-image-dev libglm-dev libfreetype6-dev
3. Verify OpenGL installation
   glxinfo | grep OpenGL

To compile in Linux terminal:

```
gcc -o opengl_test_main_linux opengl_test_main_linux.cpp -std=c++14 -lGL -lGLU -lglut
```

To run application via Linux terminal:

```
./opengl_test_main_linux
```

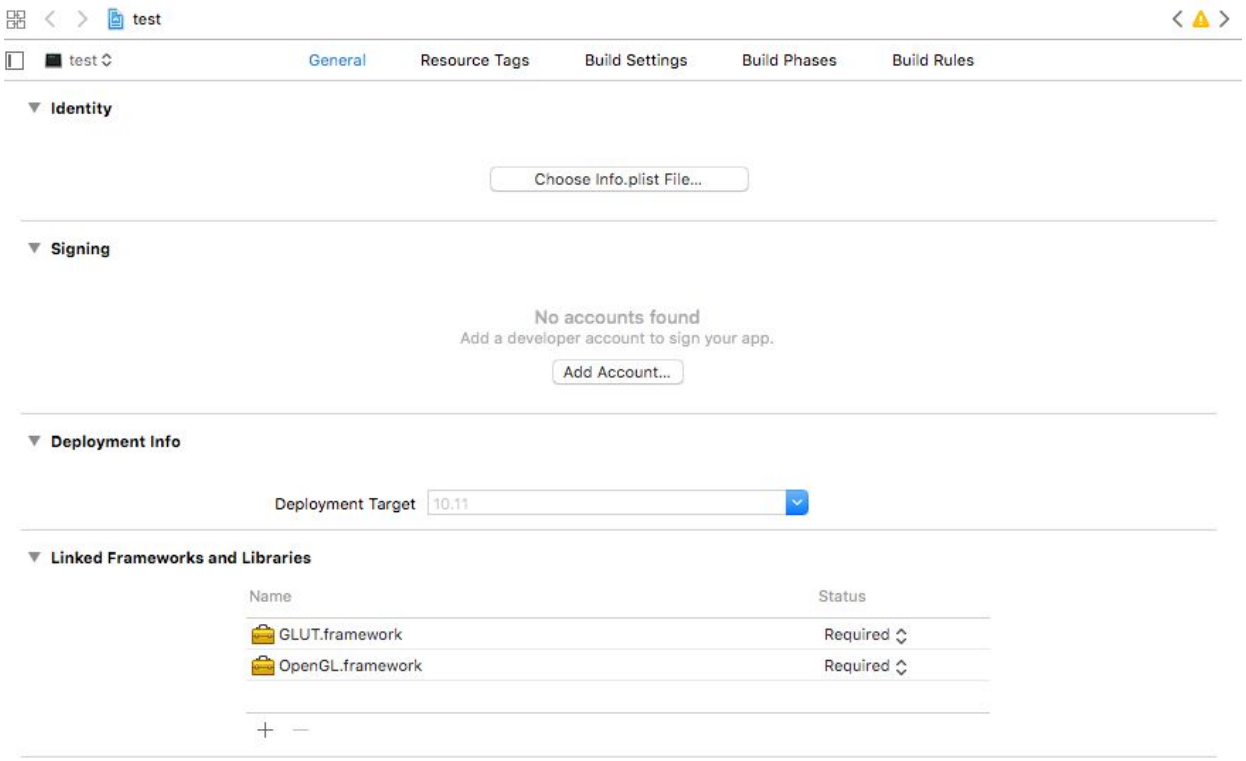
opengl_test_main_linux.cpp

```
#include <GL/gl.h>
#include <GL/glut.h>
#include <GL/glu.h>

void display() {
  // Do nothing for now
}

int main(int argc, char *argv[]) {
  glutInit(&argc, argv);
  glutInitDisplayMode(GLUT_RGB | GLUT_DEPTH | GLUT_DOUBLE);
  glutInitWindowSize(800, 600);
  glutCreateWindow("Test Window Linux");
  glutDisplayFunc(display);
  glutMainLoop();

  return 0;
}
```

Setting up Project for MacOSX:

1. Open Xcode located in "Applications"
2. Choose "New Project" from the file menu
3. Choose "Command Line Tool" under the Application template for Mac OS X
4. Choose type "C++"
5. Enter your desired project name and directory and click create
6. In the "Linked Frameworks and Libraries" area click the "+" button, and select "OpenGL.framework"
7. Repeat for "GLUT.framework"

Your Linked Frameworks and Libraries should look like this after you are done:



To compile and run in Xcode:

`Press the “run” button`

opengl_test_main_osx.cpp

```
#include <OpenGL/gl.h>
#include <OpenGL/glu.h>
#include <GLUT/glut.h>

void display() {
  // Do nothing for now
}

int main(int argc, char *argv[]) {
  glutInit(&argc, argv);
  glutInitDisplayMode(GLUT_RGB | GLUT_DEPTH | GLUT_DOUBLE);
  glutInitWindowSize(800,600);
  glutCreateWindow("Test Window Mac OSX");
  glutDisplayFunc(display);
  glutMainLoop();

  return 0;
}
```