ETGG3802	Lab1: Making the Project	Points: 50[1]

1. Create a new VS2019 x64 "Empty" project. Do the project reorganization from Chapter 1 - 2 of my "C++ guide" if you've forgotten how to do this. Make sure to get rid of the x86 (Win32) configuration to simplify the number of project settings.
2. (**10 points**) Do the project reorganization discussed in Chapter 1g.
    a. Make sure to set the Project's working directory to the output location (copy your setting from the "General" property page).
3. (**10 points**) Incorporate the Ogre dependency from blackboard (Chapter 2)
    a. Additional include directories are:
        i. …dependencies\ogre1.12.2_vc2019_x64\include\OGRE
        ii. …dependencies\ogre1.12.2_vc2019_x64\include\OGRE\Bites
        iii. …dependencies\ogre1.12.2_vc2019_x64\include\OGRE\Overlay
        iv. …dependencies\ogre1.12.2_vc2019_x64\include\OGRE\RTShaderSystem
        v. [There may be more later]
    b. Lib files to link against (which are all in …\dependencies\ogre1.12.2_vc2019_x64\lib\OGRE) are:
        i. OgreBites[_d].lib
        ii. OgreMain[_d].lib
        iii. OgreOverlay[_d].lib
        iv. OgreRTShaderSystem[_d].lib
        v. *The _d versions are for Debug builds, the non-d are for Release.*
    c. Move:
        i. all dll's (and optionally pdb's) and plugins[_d].cfg from the ogre dependency folder to our bin/Debug and bin/Release folders
        ii. resources.cfg to the bin folder
        iii. The media folder from the ogre dependency to our bin folder – this has some temporary models / textures we can use until we create our own.
4. (**30 points**) Read the "Setting up an OGRE project" (from "Application" skeleton on down) and "Your First Scene" in the Ogre manual (https://ogrecave.github.io/ogre/api/latest/tutorials.html) with these modifications:
    a. Call the class **Application** instead of MyTestApp.
    b. Put all method bodies in the .cpp (not in-line in the .h file)
    c. Make a "createScene" method that actually constructs the scene (creating lights, cameras, etc.) – make sure you think about the code you've written and *ask questions!*
    d. Put the camera at location (0, 15, 30).
    e. Put the ogre at (0, 5, 0)
    f. Now read through the "Lights, Cameras, and Shadows" section of the manual and add:
        i. A 100x100 ground plane at the origin pointing up
        ii. Add shadows
    g. Now add a skybox (mentioned in "Terrain, Sky, and Fog"
    h. You should see this:

[1] I'm shooting for finishing this between our first and second classes. If we *really* need a full week, this'll be worth 100 points.

5. Note: Ogre stores two important files in your Documents\window_name folder:
    a. ogre.cfg – this is the settings (render system, full-screen, etc.). If you delete this, you can re-select these options.
    b. ogre.log – a log of everything ogre does. Useful if it's crashing!
6. Now that we've got the basics, let's make a few minor modifications!
    a. ApplicationContext defines a frameStarted and keyRelease event – override them (this will be called every frame).
    b. Use these to rotate the ogre around the world y axis at a rate of 90 degrees per second as long as the left/right arrow keys are pressed (left rotates one way, right the other)
    c. Hint: When creating a scene node, you can optionally give the scene node a name. The SceneManager has a getSceneNode method that can find a node with this name regardless of where it is in the scene. Use this (rather than storing the scene node in the class).
7. Make sure you have a working Release and Debug build. Rather than turning this in on blackboard, I'd like you to demo your work.