

Recipe For CS3241 (Computer Graphics) Labs

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1 Ingredients

Ensure that you have a setup that can be used to compile and run OpenGL programs.

- **Visual Studio:** Check if you have a recent version of *Visual C++ Express Edition* or *Visual Studio* installed. Visual C++ Express Edition is available for free and can be downloaded here: <http://www.microsoft.com/Express/>
- **GLUT:** Check if you have *GLUT* installed. If not:
 - Download it from: <http://www.xmission.com/~nate/glut.html>
 - Unzip the GLUT zip file. The files we need are: `glut.h`, `glut32.lib` and `glut32.dll`.
 - Copy the `glut.h` header file to the `Include/gl` subdirectory in your Platform SDK directory. For example:
 - * If you are using Visual Studio 2005, this is `C:/Program Files/Microsoft Visual Studio 8/VC/PlatformSDK/Include/gl`
 - * If you are using Visual C++ 2008 Express Edition, this is `C:/Program Files/Microsoft SDKs/Windows/v6.0A/Include/gl`
 - Copy the `glut32.lib` library file to the `lib` subdirectory in your Platform SDK directory. For example:
 - * If you are using Visual Studio 2005, this is `C:/Program Files/Microsoft Visual Studio 8/VC/PlatformSDK/Lib`
 - * If you are using Visual C++ 2008 Express Edition, this is `C:/Program Files/Microsoft SDKs/Windows/v6.0A/Lib`
 - Copy the `glut32.dll` DLL file to your `C:/Windows/System32` directory.

2 Cooking

Follow these steps to get your first OpenGL program running:

- **Create a project:**
 - Open Visual Studio or Visual C++ Express Edition.
 - Choose `File` → `New` → `Project`.
 - In the `New Project` dialog, choose `Visual C++` → `Win32 for Project Types` and `Win32 Console Application for Templates`. Give the project a name in the `Name` box. Click `OK`.
 - In the next wizard dialog, press `Next`.
 - In the `Application Settings` dialog, choose `Console application` as the `Application type`, un-check `Precompiled header` and choose `Empty project`. Click on `Finish`.
- **Add code:** Your new project is now created. Add some C++ code that creates an OpenGL program.
 - In the `Solution Explorer` right-click on `Source Files` and choose `Add` → `New Item`.
 - In the `Add New Item` dialog, choose `C++ File (.cpp)` and give the file a name. Now a new CPP file is created.
 - Add your code to this file. You can use simple code from the lecture notes or your lab assignment for example.
- **Add library dependencies:** Before we compile our code, we need to tell the Visual C++ compiler to link our OpenGL code with OpenGL, GLU and GLUT libraries.
 - Click on `Project` → `Properties..`
 - In the `Properties` dialog that pops up, choose `Configuration Properties` → `Linker` → `Input` → `Additional Dependencies`.
 - Type in `opengl32.lib glu32.lib glut32.lib`
- **Compile and run:** You are now ready to compile your program. Press `F7` to compile. If this is successful, then run the compiled program by pressing `F5`. If you get errors in any of these steps, you need to check your setup or code for possible mistakes.

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