

**This page has some obsolete information and is in the process of being updated.**

# Setting Up a Windows 98/2000/XP OpenGL Environment

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## Required Files

For our purposes, an OpenGL environment will consist of the OpenGL API library, the glu toolkit that is built on top of OpenGL, and the GLUT toolkit, which provides interaction with the Windows 95 windowing environment.

There are nine files required to implement the OpenGL environment: three each for the **opengl** library, the **glu** library, and the **glut** library. There are also two implementations of OpenGL: one by Silicon Graphics Inc. (SGI) and another by Microsoft. For convenience, I have provided zip archives in my directory containing the required files:

- [Silicon Graphics Implementation](#)
- [Microsoft Implementation](#)

These files may also be downloaded from several sources. The Microsoft version of the OpenGL library and glu library may be downloaded from the [SGI site\(!\)](#)

The latest version of GLUT may be obtained from [Nate Robbins' site](#), along with the documentation. I also have a [.pdf version](#) of the documentation on this website.

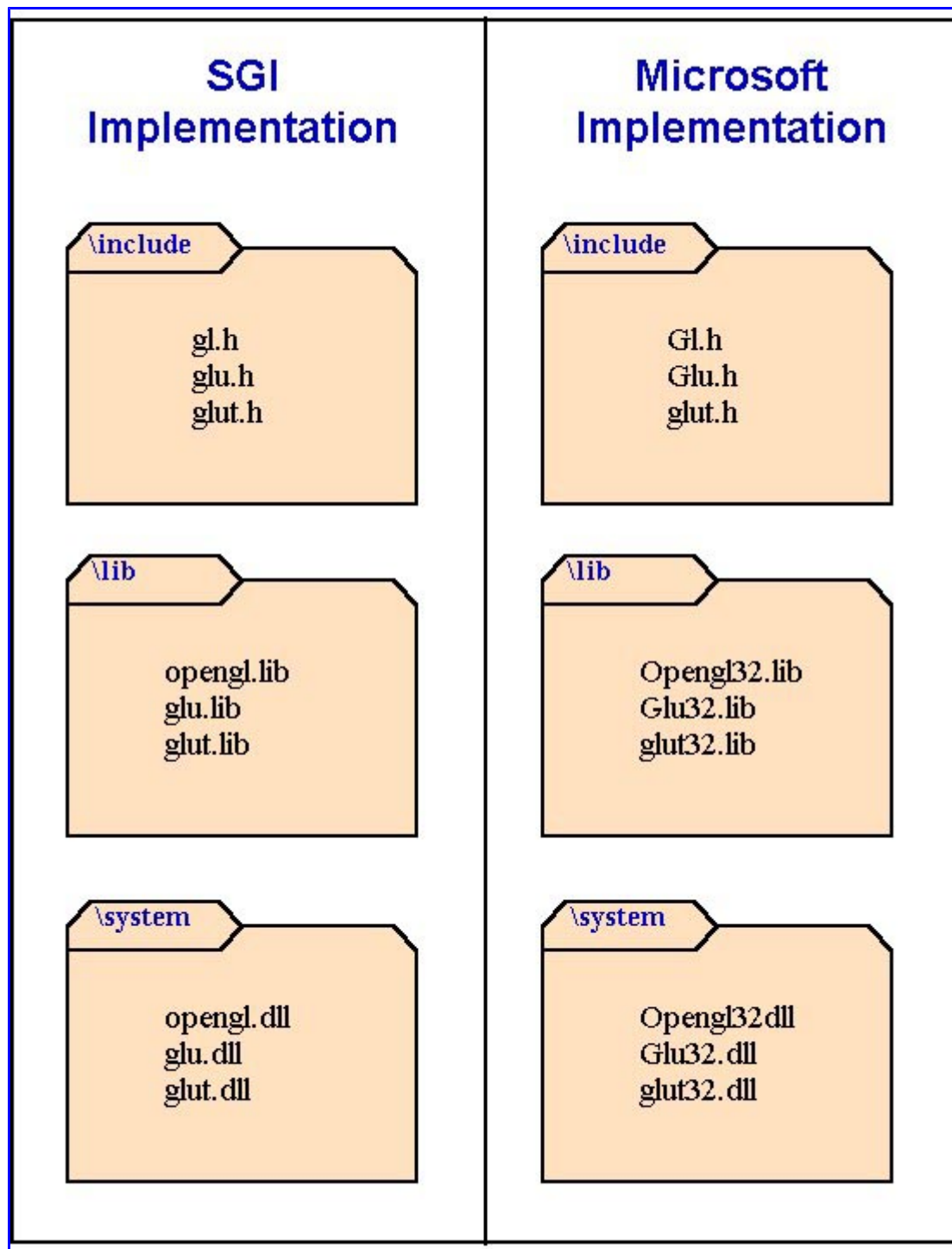
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## Installing the Files

Select either the Microsoft or the Silicon Graphics implementation. For our simple applications, I am not aware of a reason to prefer one over the other. As we gain experience with the latest releases, we may discover differentiating factors. The installation steps are:

- Put the three **\*.dll** files into the directory **C:\windows\system**
- Put the **\*.h** files into a separate directory created for header files.
- Put the **\*.lib** files into a separate directory created for library files

Note that the Microsoft files for the OpenGL and glu libraries end in 32 while the SGI files do not. The drawing below illustrates the file arrangement:



## Building an OpenGL Application under Microsoft Developer Studio

The following steps will build an application under Microsoft Developer Studio (Visual C++).

1. Start Microsoft Visual C++.
2. Select **File | New** to open a new project workspace.
3. Select **Win 32 Console Application** as the type of project to open and enter the subdirectory where the project files will be stored.
4. Select **Project | Settings** and select the **Link** tab.
5. At the bottom right of the window that appears will be a space for project options beginning with

kernel.lib. Enter **opengl.lib (Opengl32.lib if using Microsoft), glu.lib (Glu32.lib if using Microsoft), and glut.lib (glut32.lib)** into this list. Make sure there is a space between each filename.

6. Select **Tools | Options | Directories** . A list of directories will appear in a new window.
  7. Select **Include files** from the pull down menu. Add to this list of directories the subdirectory in which you stored the \*.h files.
  8. Select **Library files>** from the pull down menu. Add to this list of directories the subdirectory in which you installed the \*.lib files.
  9. Select **Project | Add to Project | New** and select **C/C++ source file** to start a new C file.
  10. To compile, select **Build | Rebuild All**.
  11. To run, select either **Build | Debug | Go** or simply press F5.
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## Other Compilers/Development Environments

The procedures for building OpenGL/GLUT applications under other compiler environments will be similar to that for Visual C++. If an integrated development environment is used, it must know where to look for include and library files, and what files comprise the project source code. A command line/makefile approach may also be used to initiate compilation and building.

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