OpenGL is a low-level, procedural API, requiring the programmer to dictate the exact steps required to render a scene. OpenGL's low-level design requires programmers to have a good knowledge of the graphics pipeline, but also gives a certain amount of freedom to implement novel rendering algorithms.

Description: A description...

Fig 2.2 The OpenGL rendering pipeline

**2.3 Advantages of OpenGL**

With different 3D accelerators, by presenting the programmer to hide the complexities of interfacing with a single, uniform API.

To hide the differing capabilities of hardware platforms, by requiring that all implementations support the full OpenGL feature set (using software emulation if necessary).