**Programming for Graphics**

Assignment 1

**Introduction**

This report will evaluate the graphical techniques used in the development of two applications. A clone of Atari’s famous arcade game Breakout and a three-dimensional Snake game that is viewed from an isometric perspective.

**Windowing**

The OpenGL graphics API used to render the graphics within the applications requires a window for it to display graphics within. There are many libraries available that provide windowing functionality and each provide their own strengths and weaknesses.  
  
The OpenGL Utility Toolkit (GLUT) is a library that was created to provide a platform independent windowing solution. GLUT however became unmaintained and fell behind newer OpenGL releases. A separate and more active project named FreeGLUT was created as an open source alternative to GLUT and provides a similar set of functionality (Movania, 2013, p.30). FreeGLUT however provides little to no support for iOS or Android and itself is no longer regularly updated and therefore is not suited for applications that intend to support all major desktop and mobile environments (Holy Ghost Stories, 2012).  
  
Despite its shortcomings, FreeGLUT was used to create the windows for both applications as it is simple to setup, easy to use and thus a good choice for experimenting with and learning OpenGL.

**Graphics Primitives**

Content

**Transformations**

Content

**Textured Meshes**

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**Lighting**

Content

**Conclusion**

Content

**Bibliography**  
  
Ghost Stories (2012), *The Sorry State of Game Portability*. Available at: http://www.jeffwofford.com/?p=1097 (Accessed: 3rd January 2017).

Movania, M.M. (2013), *OpenGL Development Cookbook*, 1st edn, Great Britain: Packt Publishing.