# CSE4GPP Assignment Part 1 User Manual

## Requirements

### Unoptimized

- Graphics card that supports OpenGL 3.1

- At least 64Mb free RAM

### Optimized

- Graphics card that supports OpenGL 3.1

- At least 64Mb free RAM

- A CPU that supports SSE 4.1

## Installation

None, however the following files must be present for the program to work. These should be distributed with the executable.

- DevIL.dll  
- data/font.png  
- data/vertex.vp  
- data/fragment.fp

## Usage

### Mouse control

Click and dragging with the **left** mouse button will cause the camera to orbit around the centre of the bottom of the tank.

Click and dragging with the **right** mouse button will cause the camera to zoom in and out.

### Keyboard controls

The **+** key on the Numpad will add 1000 spheres to the tank.

The **–** key on the Numpad will remove 1000 spheres from the tank.

The **arrow** keys and **WASD** keys move the white sphere along the X-Z plane.  
The **Page Up**/**Down** and **QE** keys move the white sphere along the Y axis.

The number keys **1** through **9** will change the size (and mass) of the white sphere. The white sphere starts off as the same as key 1.

# Acknowledgements

NeHe’s tutorials, for the use of the Win32 windows creation code. http://nehe.gamedev.net/

Josh Beam’s tutorials for shader loading, compiling and usage. http://joshbeam.com/