

CG Programming - S0006E - 2016

Week 5 - Mesh Files, Light, Shaders

Object Files

Add support for loading a *MeshResource* from a OBJ file. A definition of the OBJ file format can be found e.g. here:

<http://www.martinreddy.net/gfx/3d/OBJ.spec>

or here:

http://www.andrewnoske.com/wiki/OBJ_file_format.

You do not need to implement support for parsing of the accompanying MTL files. Use vertex, texture coordinate and normals from the OBJ files and create a *MeshResource* with vertex buffers for the vertices, normals (you will have to add another vertex buffer or additional values per vertex to your class) and texture coordinates. Examples of OBJ files can be found for example here:

<http://tf3dm.com>

Note that faces sometimes can contain four vertices (a quad) that will have to be split into two triangles.

Light

1. Add a new node class representing a point light source. It needs to contain position, colour and intensity.
2. Implement a Blinn-Phong shader that will show the effect of light on the shaded object. It has to implement diffuse lighting and specular reflectivity. The light source class has to apply its values to the phong shader in order to update the properties.

Delivery

Commit your complete project to a dedicated folder inside your SVN repository (e.g. S0006E/assignment) and upload the number of the revision to Canvas.