Assignment 5 : Artistic Rendering

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Overview

Using vertex and fragment shaders to implement cartoon-like artistic shading.

Implementation

- `phong.vert` : vertex shader that implements Blinn-Phong shading
  - transforms vertex `position` and `normal` into eye space using the `modelViewMatrix` and `normalMatrix` respectively
- `phong.frag` : fragment shader that implements Blinn-Phong shading
  - performs per-fragment/pixel shading
  - uses half-vector `h` to calculate the specular component
  - uses temporary `vec3` variables, `diffTex` and `specTex` for clarity and readability while using the textures to determine the diffuse and specular components
- `silhouette.vert` : vertex shader that implements artistic silhouette outline
  - transforms `vertex` and normals, `leftNormal` and `rightNormal`, into eye space using the `modelViewMatrix` and `normalMatrix` respectively
  - determines if `vertex` is on the edge by calculating the product of the individual dot products of `leftInEyeSpace` and `rightInEyeSpace` with the `eye` vector
- `silhouette.frag` : fragment shader that implements artistic silhouette outline
  - sets the silhouette/outline to be black

Included Files

`camera.hpp` | `config.hpp` | `draw.hpp` | `engine.hpp` | `grahics.hpp` | `main.cpp` | `mesh.hpp` | `phong.frag` | `phong.vert` | `README.md` | `README.pdf` | `shader.hpp` | `silhouette.frag` | `silhouette.vert`