CMPM 163 Notes

Malcolm Riley

Winter 2019 — April 11, 2019

Detecting Input in Unity

- All script-based input detection in Unity is handled via the `Input` class in the `UnityEngine` namespace.
- To query mouse position, use `Input.mouseposition.x` and `Input.mouseposition.y`
- To query for a particular keypress, use `Input.GetKey("name")` where `name` is the name of the key to query for.

Textures and Shaders

- Texture coordinates, the **UV** of the texture, are a pair of floating point values u and v in the range $[0, 1]$
- Unity automatically generates UV coordinates for basic game objects, as will most 3D modeling programs.
- The mapping between the UV coordinates of a particular polygon in a mesh and the corresponding UV coordinates of the input texture file determines how that particular polygon will be textured in the shader.
- Conceptually, all fragments in the fragment shader are processed simultaneously (and thus, independently of the others)

Edge Detection in Shaders

- See: Sobel Operator and Edge Detection on Wikipedia
- The fundamental idea is to examine the image for discontinuity between color of the current pixel and its neighbors. If there is a high discontinuity, color as the edge color.
- There are different types of edge detection, including comparison of normals, etc.