Gokul Kesavamurthy

kesavamg@oregonstate.edu

CS557 - Computer Graphics Shaders

Project #3B: Displacement Mapping, Bump Mapping, and Lighting

Description:

For this project, I built upon the foundation of Project 1. Since I am not using glman, I downloaded the 3D noise texture from the resources page. I implemented a separate function to read the texture and passed it to the shaders. The *NoiseAmp* and *NoiseFreq* parameters were passed as uniform variables using the same techniques applied in Project 1.

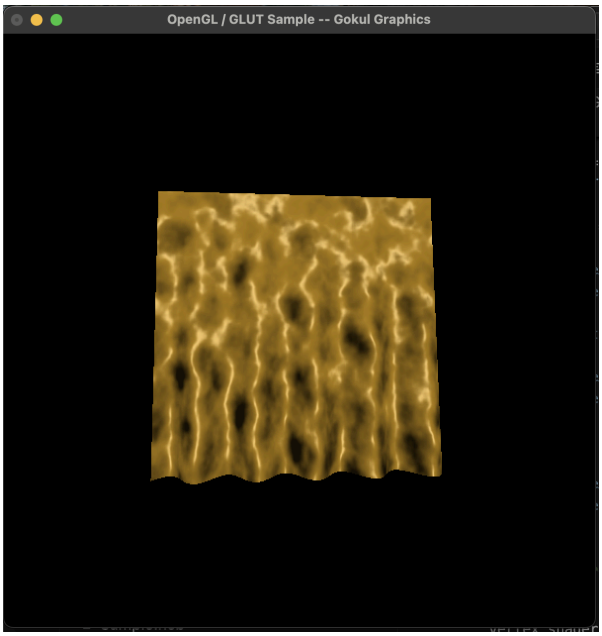
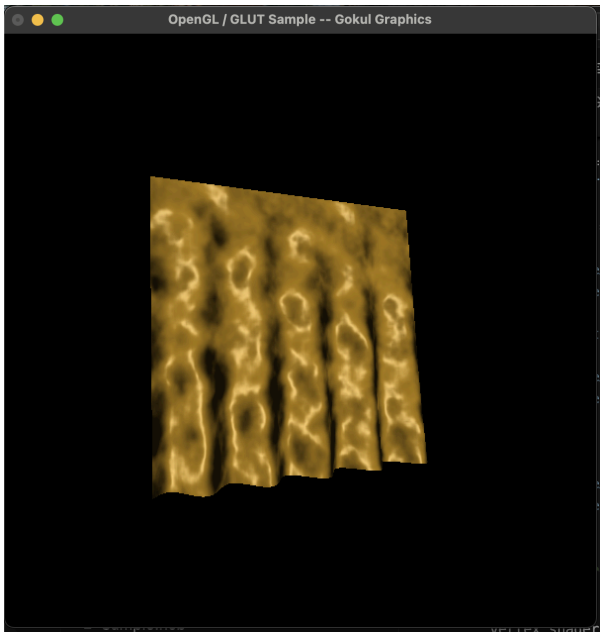
In the shader code, project #3A calculates the pleats, in #3B, the fragment shader just perturbs the normal vectors based on the set uNoiseAmp and uNoiseFreq level. This give the effects of crinkle while they are actually not present.

In this project, I made the two parameters (*uNoiseAmp*, *uNoiseFreq*) variable. Keyboard key 't' is used to toggle between the change. During the first toggle, uNoiseFreq is fixed and uNoiseAmp is varied using keytime. And during the second key press, uNoiseAmp is fixed and uNoiseFreq is varied.

All the following project requirements have been fulfilled:

- **Correctly show the effect of changing uNoiseAmp:** Seen during the first toggle
- **Correctly show the effect of changing uNoiseFreqy:** Seen during the second toggle
- **Use per-fragment lighting to show that you have computed the bump-mapped normals correctly:** The light shines around the crinkles when the object is moved around.

Screenshot:

uNoiseAmp / UNoiseFreq	**uNoiseAmp / UNoiseFreq**
	

Video Link: https://media.oregonstate.edu/media/t/1_4gn2zst5