COMP3011 Computer Graphics

Spring 2024

Assessment 3

Report Sheet (v2)

This table will help you prepare for your demo. **Submit this report to Moodle**.

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**I agree for my code & report to be published, with my name, to future students as an example (yes/no): \_yes\_**

|  |  |  |
| --- | --- | --- |
| **Introduction** | | |
| *Please explain why you implemented this scene* | *Describe your inspirations* | *Provide a general description of the scene.* |
| *I would like to get a more aesthetically pleasing sea effect.* | *At first I wanted to try to write a watercolor style shader, but I found it very difficult. So I tried to write a less difficult shader, and I wrote a shader that simulates a sea surface with striped waves.* | *The scene has a large sea with shaders for art effects, a boat on the sea that can be maneuvered with the W, A, and D keys, and transparent clouds in the sky.* |
| **TR 2 – 3D Modelling** | | |
| Object 1 - procedurally generated | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of object* |
|  | *ModelManager.h – 58*  *DrawWaterModel()*  *water.frag*  *water.vert* | *A large procedurally generated sea with shaders for art effects.* |
| Object 2 - OBJ parser | | |
| *Please give a screenshot* | *Provide the URL for the OBJ file(s) you submitted* | *Describe what you did to extend your OBJ parser from CW2.* |
| 蓝色的水里  描述已自动生成 | objects/boat2.obj | A simple boat with wood texture. |
| **TR 3 – 3D Transformations** | | |
| Object 1 - procedurally generated | | |
| *Please give a screenshot of transformed object* | *reference specific code (filename and line)* | *Description of transformations* |
| *The sea is changing all the time and I'm sorry the pictures can’t show it.* | *water.frag - 130*  *water.vert - 107* | *Dynamically changing normals to simulate water waves, increasing amplitude and frequency* |
| Object 2 - OBJ parser | | |
| *Please give a screenshot of transformed object* | *reference specific code (filename and line)* | *Description of transformations* |
| 蓝色的水里  描述已自动生成 | *Main.cpp – 216*  *processBoatMovement()* | *Control the forward and left/right steering of the boat by listening to keystrokes.*  *The boat on the sea that can be maneuvered with the W, A, and D keys.* |
| **TR 3 – Animation** | | |
| *Please give a screenshot of animated object* | *reference specific code (filename and line)* | *Description of animation* |
|  | *Main.cpp – 152*  *CloudShift()* | *Control the cloud cyclic movement by listening to time changes.* |
| **TR 4 – Camera** | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of camera* |
|  | *camera.h* | *Camera implementation from labs.* |
| **TR 5 – Texture** | | |
| Object 1 - procedurally generated | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of texture* |
|  | *Main.cpp - 200 - GenerateWhiteTexture()* | *A simple white procedurally generated texture for clouds.* |
| **TR 6 – Lighting** | | |
| Object 1 - procedurally generated | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of light(s) on object* |
|  | *Water.frag-141* | *Lighting on the sea.* |
| Object 2 - OBJ parser | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of light(s) on object* |
| 蓝色的水里  描述已自动生成 | *Phong.frag-51* | *Lighting on the boat.* |
| **TR 7 - Shadow** | | |
| Object 1 - procedurally generated | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of shadow on object* |
|  | *Shadow.vert*  *Shadow.frag*  *ModelManager.h-63-drawShadowMap*  *Water.frag* | *Shadow on the sea.* |
| Object 2 - OBJ parser | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of shadow on object* |
|  | *Shadow.vert*  *Shadow.frag*  *ModelManager.h-63-drawShadowMap*  *phong.frag* | *Shadow on the boat.* |
| **TR 8 - Interactive object** | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of interactive object* |
| 蓝色的水里  描述已自动生成 | *Main.cpp – 216*  *processBoatMovement()* | *Control the forward and left/right steering of the boat by listening to keystrokes.*  *The boat on the sea that can be maneuvered with the W, A, and D keys.* |
| **TR 9 – Curves** | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of curve(s)* |
|  |  |  |
| **TR 10 – Transparency** | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of transparency* |
|  | *Main.cpp-450-render cloud part* | *The clouds are transparent.* |
| **R&D**  Please provide details of any research and development you conducted, as additional technique(s) not in the lecture notes. | | |
| *Please give a screenshot* | *reference specific code (filename and line)* | *Description of Research including websites, articles, references, etc.* |
| 蓝色的水里  描述已自动生成 | *Water.frag* | *Fresnel effect:*  [*https://www.ronja-tutorials.com/post/012-fresnel/*](https://www.ronja-tutorials.com/post/012-fresnel/)  *Adding Noise:*  *https://catlikecoding.com/unity/tutorials/pseudorandom-noise/hashing-space/* |