

Computer Graphics – Homework 1

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April 21, 2022

Static Key Controls

- W: solid/wireframe
- Z: previous model
- X: next model
- O: orthogonal projection
- P: perspective projection
- I: information output

Dynamic Key Controls

In the modes below, x-, y-, and z-axis are modified according to mouse's horizontal drag, vertical drag, and scrolling, respectively.

- T: model translation
- R: model rotation
- S: model scaling
- E: camera position translation
- C: camera center translation
- U: camera up translation

Special Key Control

- V: model color inversion

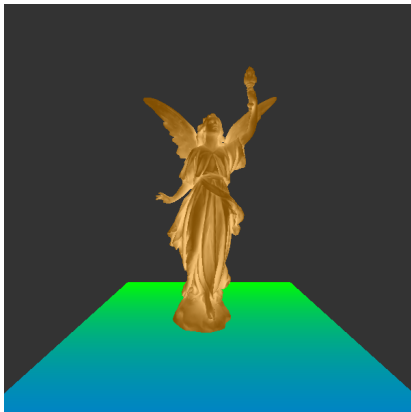


Figure: Model color inversion

Wireframe

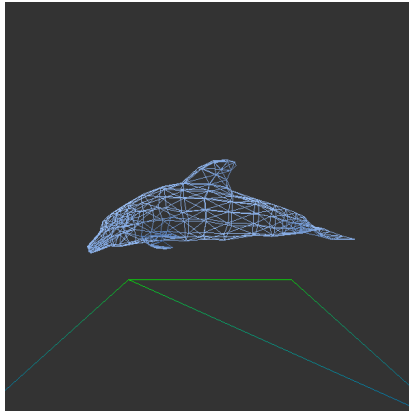


Figure: Wireframe

Orthogonal Projection

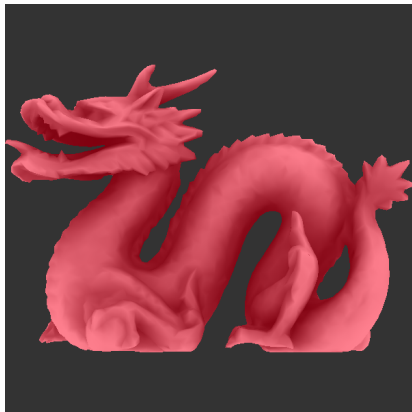


Figure: Orthogonal projection

Information Output

```
Load Models Success ! Shapes size 1 Maerial size 0
Matrix Value:
Viewing Matrix:
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, -2)
(0, 0, 0, 1)

Projection Matrix:
(1.19175, 0, 0, 0)
(0, 1.19175, 0, 0)
(0, 0, -1.00002, -0.00200002)
(0, 0, -1, 0)

Translation Matrix:
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)

Rotation Matrix:
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)

Scaling Matrix:
(1, 0, 0, 0)
(0, 1, 0, 0)
(0, 0, 1, 0)
(0, 0, 0, 1)
```

Figure: Information output

Aspect Change

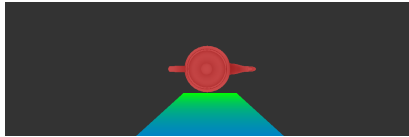


Figure: Aspect change

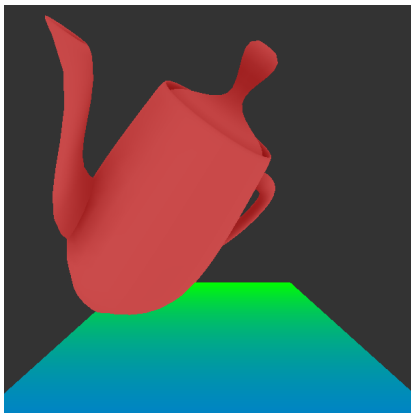


Figure: Model translation, rotation, and scaling

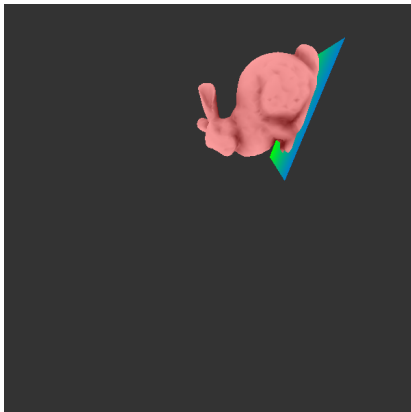


Figure: Camera control