Computer Graphics II
– Depth & Stencil Testing
(Questions)

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Possible Questions

When is depth testing applied? After or before the stencil test?

Possible Questions

When is depth testing applied? After!

Possible Questions

What is early depth testing?

Possible Questions

How to enable depth testing?

Possible Questions

How to enable depth testing?

```
glEnable(GL_DEPTH_TEST);
```

Possible Questions

What is the default the depth function?

Possible Questions

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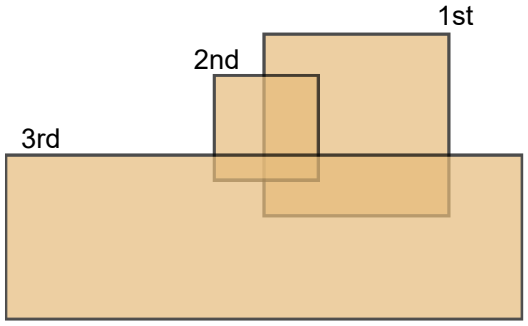
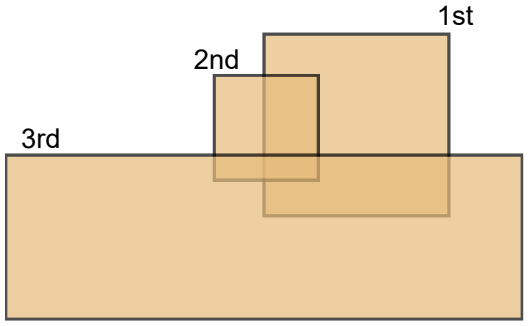
GL_LESS

Possible Questions



Assign the correct depth function: always, never, less, greater [clear depth(0)], notequal

Possible Questions



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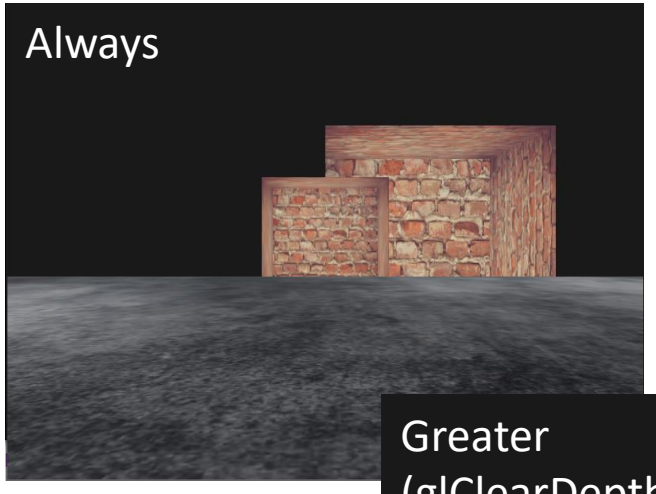

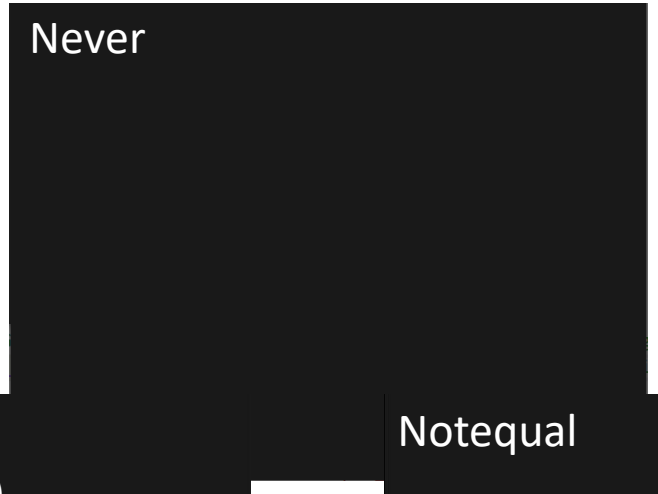

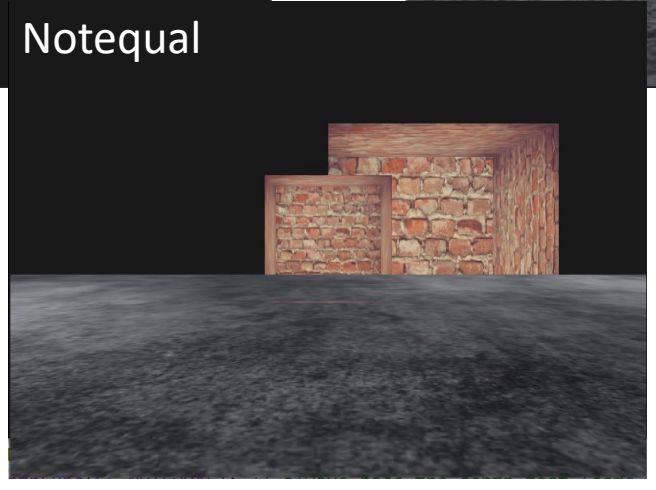

Possible Questions

Name the steps to transform the non-linear depth values to a linear one:

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Name the steps to transform the non-linear depth values to a linear one:

1. Re-transform depth values from $[0,1]$ to NDCs in $[-1,1]$ (clip space)
2. Reverse the non-linear equation
3. Apply this inversed equation to the resulting depth value →result is then a linear depth value

Possible Questions

What is z-fighting?

Possible Questions

How do you enable the stencil testing?

Possible Questions

How do you enable the stencil testing?

```
glEnable(GL_STENCIL_TEST);
```

Possible Questions

Explain two of three options of the glStencilOp function.

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Explain two of three options of the glStencilOp function.

glStencilOp(GLenum sfail, GLenum dpfail, GLenum dppass) contains three options:

- sfail: action to take if the stencil test fails
- dpfail: action to take if the stencil test passes, but the depth test fails
- dppass: action to take if both the stencil and the depth test pass

Possible Questions

What does GL_INCR mean?

Possible Questions

What does GL_INCR mean?

Stencil value is increased by 1 if it is lower than the maximum value

Possible Questions

The routine for outlining your objects is as follows. Complement the missing steps:

1. Set the stencil func to GL_ALWAYS before drawing the (to be outlined) objects, updating the stencil buffer with 1s wherever the objects' fragments are rendered
2. Render the objects
3.
4. Scale each of the objects by a small amount
5. Use a different fragment shader that outputs a single (border) color
6.
7. Enable stencil writing and depth testing again

Possible Questions

The routine for outlining your objects is as follows. Complement the missing steps:

1. Set the stencil func to GL_ALWAYS before drawing the (to be outlined) objects, updating the stencil buffer with 1s wherever the objects' fragments are rendered
2. Render the objects
3. Disable stencil writing and depth testing
4. Scale each of the objects by a small amount
5. Use a different fragment shader that outputs a single (border) color
6. Draw the objects again, but only if their fragments' stencil values are not equal to 1
7. Enable stencil writing and depth testing again

Possible Questions

Explain shortly the steps to pick an object by using the stencil buffer.