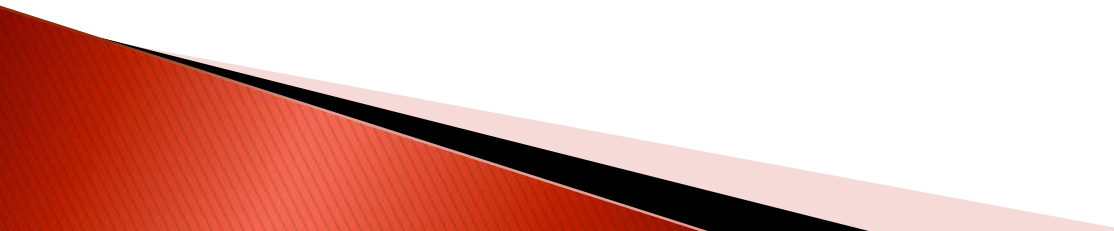


CSI 3200 Micro-Computer Graphics

Atmospheric effects

Presenter: Girendra Persaud
University of Guyana

Outline

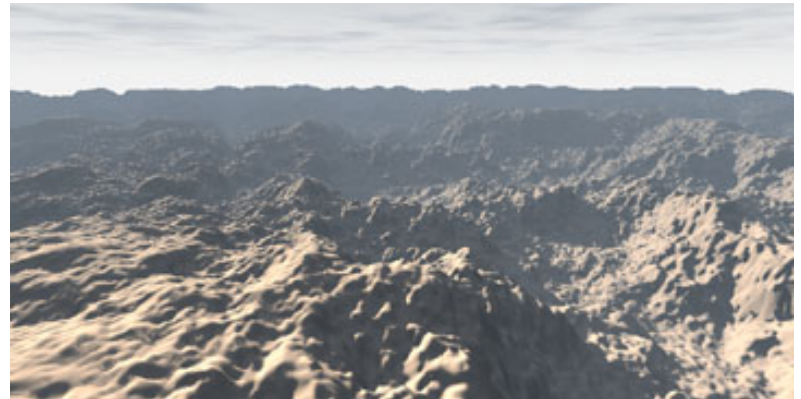
- ▶ What are Atmospheric Effects?
 - ▶ Implementing
 - ▶ Example Program
 - ▶ Questions?
 - ▶ Resources
 - ▶ Review Questions
- 

What are atmospheric effects?

- ▶ *Fog* is a general term that describes similar forms of atmospheric effects; it can be used to simulate
 - haze,
 - mist,
 - smoke,
 - Or any form of pollution

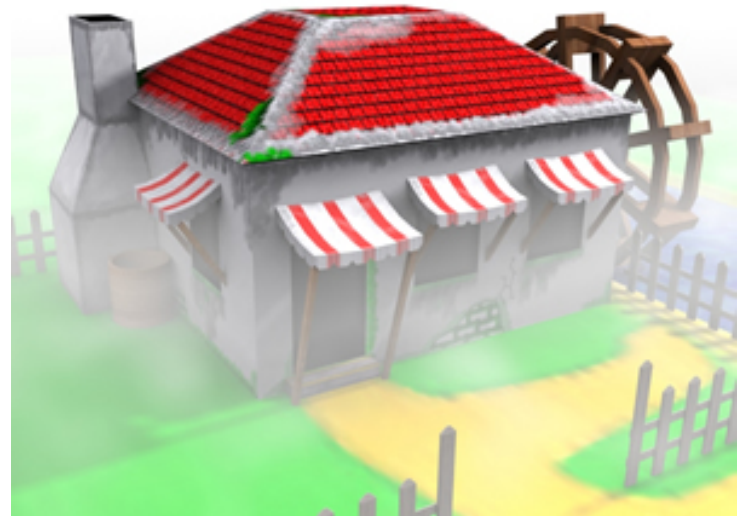
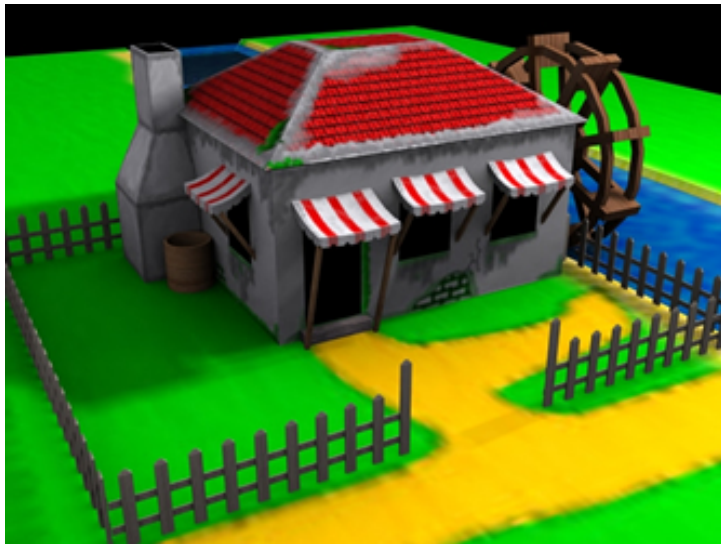
Why put pollution in your 3D scene?

- ▶ A scene without fog appears fake; atmospheric effects is necessary for a more realistic feel



Why put pollution in your 3D scene?

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Fog in CG

- ▶ Fog can improve performance
- ▶ Fog add realism
- ▶ Fog is applied after matrix transformations, lighting, texturing are performed; everything in the scene is affected by it
- ▶ Most CG APIs allow the control of the
 - Density (indirectly allows you to control the fade level by distance)
 - Color (white/grey fog?)

How fog is applied in scene?

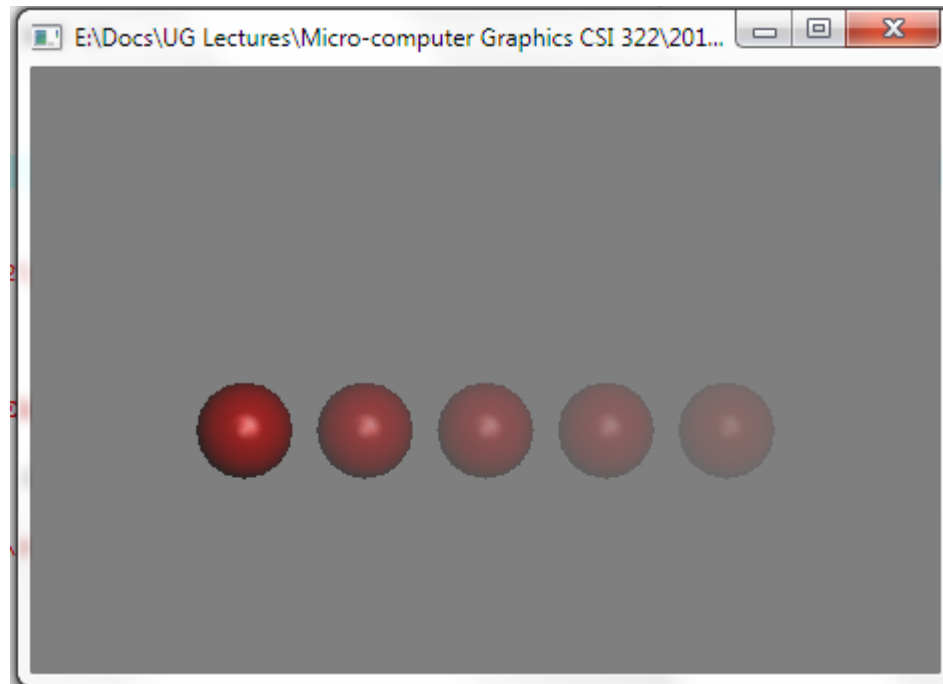
- ▶ Discuss...
- ▶ Can the z-buffer play a part?

How fog is applied in OpenGL

- ▶ Pass GL_FOG to glEnable(),
 - glEnable(GL_FOG)
- ▶ Choose the color and the equation that controls the density with glFog*()
 - you can supply a value for GL_FOG_HINT with glHint()

Example Program

- ▶ Program used five different fog equations to demonstrate fog
 - “f” to toggle through the equations



Questions?

Resources

- ▶ <http://www.iquilezles.org/www/articles/fog/fog.htm>
- ▶ Paper of methods (general)
 - <http://www.cg.tuwien.ac.at/hostings/cescg/CESCG-2004/web/Zdrojewska-Dorota/>