

# CMPM 163 Final Project

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Jesus Hernandez

# Components

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- Rain
  - Clouds
  - Lightning
  - All with its own vertex/fragment shader → combined in final scene

# Jay - Rain

Inspiration:

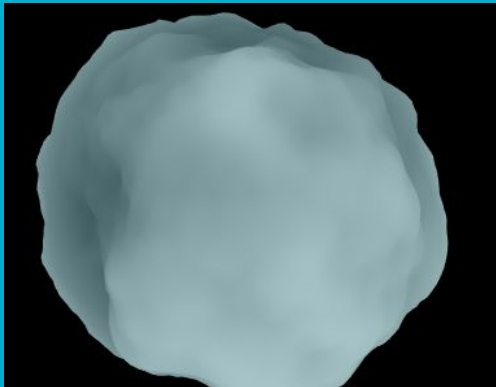


- Particle Systems from three js
- Noise to randomly disperse and alter droplets.
- Wind to make droplets move in different directions
- Blur/condensation effect to make the scene viewed through a window



# Jacqueline - Clouds ☁️☁️☁️

- Displacements
- Perlin Noise
- Sine functions
- Apply cloud.png texture
- Layers of different opacities
- Fog THREE JS library (color, near, far)





# Jesus Hernandez - Lightning ⚡👁️🗨️📺👤

- Lighting
  - Make scene flash white when lightning strikes + glow for lightning. Or,
  - Some sort of glow effect for the lightning that possibly radiates into the rest of the scene
- Geometry
  - Alter geometry to make it thin, tall and jagged like lightning. Through a vertex shader most likely
  - Apply a lightning texture to geometry



This equation has nothing to do with lightning.

$$i\hbar \frac{\partial}{\partial t} \Psi(\mathbf{r}, t) = \left[ \frac{-\hbar^2}{2\mu} \nabla^2 + V(\mathbf{r}, t) \right] \Psi(\mathbf{r}, t)$$

$$\gamma = \frac{1}{\sqrt{1 - v^2/c^2}} = \frac{1}{\sqrt{1 - \beta^2}} = \frac{dt}{d\tau}$$

$$\Delta t' = \gamma \Delta t \quad \Delta x' = \Delta x / \gamma$$

$$m = \gamma m_0 \quad E_0 = m_0 c^2$$





# THANKS!

