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**CS405 HOMEWORK 2**

To change the color to blue, we need to change numbers of gl\_FragColor. Colors are represented using the RGBA (Red, Green, Blue, Alpha) model, where each component (R, G, B, and A) is a floating-point value between 0.0 and 1.0.

1. RGBA Components: The Red (R), Green (G), and Blue (B) components of the RGBA color model control how much of each primary color is used in the final color, while the Alpha (A) component regulates how transparent or opaque the color is.

2. Setting Blue Color: The Red and Green components are set to 0.0 and the Blue component is set to 1.0 to create the color blue. We get a solid blue color as a result.

gl\_FragColor = vec4(0.0, 0.0, 1.0, 1.0);

- Red (R) = 0.0 (No red).

- Green (G) = 0.0 (No green).

- Blue (B) = 1.0 (Full blue).

- Alpha (A) = 1.0 (Full opacity).

3. Output Color: The color of the currently selected fragment is set using the 'gl\_FragColor' variable. We instruct the fragment shader to output this blue color for each pixel it processes by allocating the vector {vec4(0.0, 0.0, 1.0, 1.0)} to {gl\_FragColor}.

In conclusion, we change the shader to produce a blue color by setting the Red, Green, and Blue components to 0.0 and 1.0, respectively. For complete opacity, the Alpha component stays at 1.0. The RGBA color model, which is widely used in computer graphics, serves as the foundation for this reasoning.