Brett Stelly

Rendering Geometry

**How to generate a sphere given a half circle, and number of meridians.**

My function for generating a sphere takes in an int for the radius, an int for the number of points, and an int for the number of meridians.



To generate a sphere, first declare two variables of type vector of type vec4. One variable will be named “points” and the other variable will be named totalPoints. The first variable “points” will be assigned the returned value of the function genHalfCircle. The arguments for the genSphere function will be passed into the genHalfCircle function.



Next, we create a for loop. This for loop declares a variable of type float called ‘i’ and initializes it with zero. The for loop’s condition is that ‘i’ is less than the meridians passed into the genSphere function. The ‘i’ variable will increment by one every iteration of the for loop.

Within this for loop, we declare a variable of type float and call it angle. We assign angle with the result of pi multiplied by two divided by meridians. Now declare a variable of type float called theta. Theta is assigned ‘i’ multiplied by angle.

After declaring angle and theta, we create another for loop within the current for loop. This new for loop declares a variable of type float called ‘j’ and initializes it with zero. The for loop’s condition is that ‘j’ is less than the size of the points vector. Every iteration of the loop will increment ‘j’ by one.

Within this new for loop,

