Journal Entry -Ray

Sunday, September 3, 2023 6:18 PM

(30%) Concepts Learned (1-3 paragraphs)

This week, we went over ray intersection. To start this off I am still having trouble with this subject and I do not understand where I am having trouble or how to implement this knowledge into code. In fact, that was one of the most challenging aspects of this week's topic. I do want to further my knowledge of the subject. This is what I seem to understand:

- A ray can intersect a sphere in 0, 1 or 2 ways
- A point can project the distance from the origin (magnitude).

  Therefore they have a fixed position.
- A vector differs from a point by having both a magnitude and orientations.

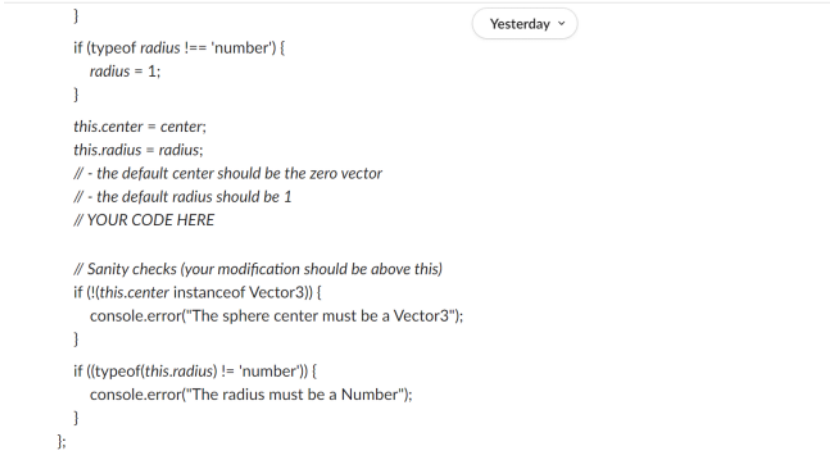
  This can be placed anywhere (displacement).
- This point forward we covered a lot of math:

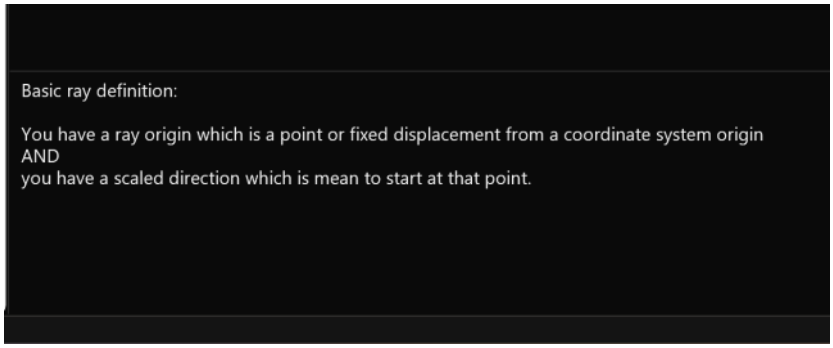
  For example , we went over understanding the space between two points and the many ways we can interpreted the space between the two. We can look at it as just two points in a line where it is either undirected or directed from one point to the other. Then, we include "a" which represents the alpha. The alpha in this instance can either be 0 or 1 as it can give us the answer to be able to figure out that there are two options when trying to discover the pace in between the two points. Thus, showing two options for the point to go from p1 to p2 or p2 to p1. This presents linear interpolation. Now taking a closer look at rays, we try to simplify this by creating an expression that uses the p1 + a(p2-p1) to introduce the points, displacement and scalar. However, there is a more convenient form that makes the alpha similar to the length of a vector. From her we went over explicit equations which are ray equations and implicit equation which are sphere equation and how they differ.

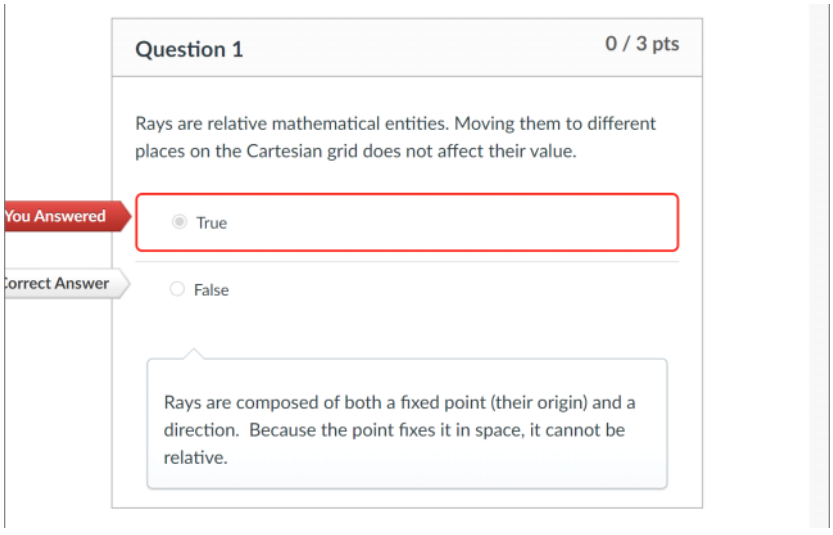
(30%) Application of Concepts (1-3 paragraphs)

Unfortunately I was unable to complete the assignment on time because I had trouble working on the code and was not able to figure out what I was doing wrong because I did not ask questions. However when working on the assignment and trying to understand what I needed to do, my partner reached out to me to see if I needed any help. Why didn't I ask him? I have no idea. It was nerves, it was laziness and or I just slipped my mind. I honestly told him that I didn’t get too far with the assignment and I felt nervous to even tell him! Luke, my partner did a good job to make me feel at ease when discussing what I was doing and what I was doing wrong. For example. I tend to make my code more complicated than necessary and he helped me make my code more clean and fit better to the student prompt. I do still need to go to office hours to maybe work on it or maybe understand it more .

(20%) Visual Documentation







(20%) AI Utilization

https://chat.openai.com/share/ba77b0c2-dcca-4eca-932f-4c0afe3b0cd6