Module 3-2 Milestone Two:

Enhancement One: Software Design and Engineering

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For this Enhancement I have taken code from my Computational Graphics and Visualization.

The code I will be enhancing was from my module 6 assignment called tutorial 6-3. I chose this

scene to showcase software design and engineering because lighting can enhance the depth and

realism of the scene by creating shadows, highlights, and reflections that mimic real-world

lighting conditions. It can help define the shapes of objects, create mood and atmosphere, and

draw the viewer’s eye to certain areas of the scene. By adjusting the intensity, color, and

direction of lights, you can control the visual impact and overall aesthetics of the 3D model. It is

like painting with light to bring your scene to life and make it more visually appealing and

engaging.

In a 3D design you can adjust the lighting components by manipulating the ambient, diffuse, and

specular properties. For example, in C++, you can set the ambient, diffuse, and specular values

for a material and light source, then calculate the lighting at each pixel on the object’s surface.

Using Ambient, diffuse, and specular values in coding showcases skills by demonstrating my

understanding of how light interacts with the surfaces in a 3D environment. By manipulating

these values effectively, you can create a realistic lighting effect that enhance the visual quality

of your 3D models. It shows that you have a strong grasp of computer graphics concepts and the

ability to implement complex algorithms to achieve desired visual outcomes. Mastering the

manipulation of these values can elevate the overall look and feel of your 3D scenes creating a

visually stunning and immersive environment.

A screenshot of a computer

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Before

A screenshot of a computer

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After.

While working on this enhancement I learned a lot about my current skills and reflected on how

far I have come and how much more I can learn. I have come to understand that being a

developer is an ever-evolving career and I look forward to my continued understanding of the

area.