TDT4230 - Graphics and Visualization

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1k

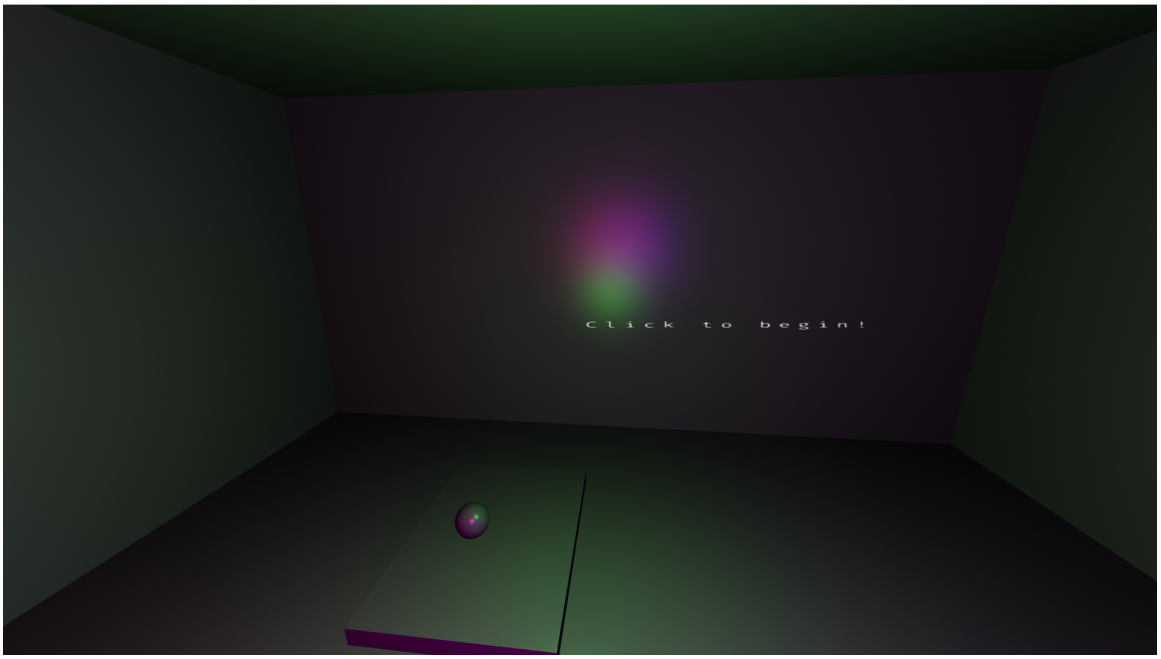

Figure 1: Task 1k showing overlay text.

2a

Q: What is the primary cause for interpolation to be non-linear, and why would a rendered image with linear interpolation of texture coordinates look incorrect?
A: An alternative to linear interpretation is nearest neighbor. This makes the final rendered image look more true to the original texture, however it will result in "blocking" if the original texture resolution is not high enough.

2b

Q:a)Why would a displacement map be an inappropriate thing to use if we wanted more detailed features in the walls of the scene in this assignment?
A: Using it for actual displacement of the mesh would would only move around the corners of the room, only looking weird. However, one could make use of a displacement map if it is first interpreted height in a bump mapping generating a normal map.

Q:b)In what way would we have to change the scene/meshes in order to reap a benefit from using a displacement map?
A: If we would tessellate / subdivide the mesh we could properly benefit from it.

2c

This would result in a blured edge in the middle of the of the rectangle caused by the difficulty of pixels not matching up the border.

3f

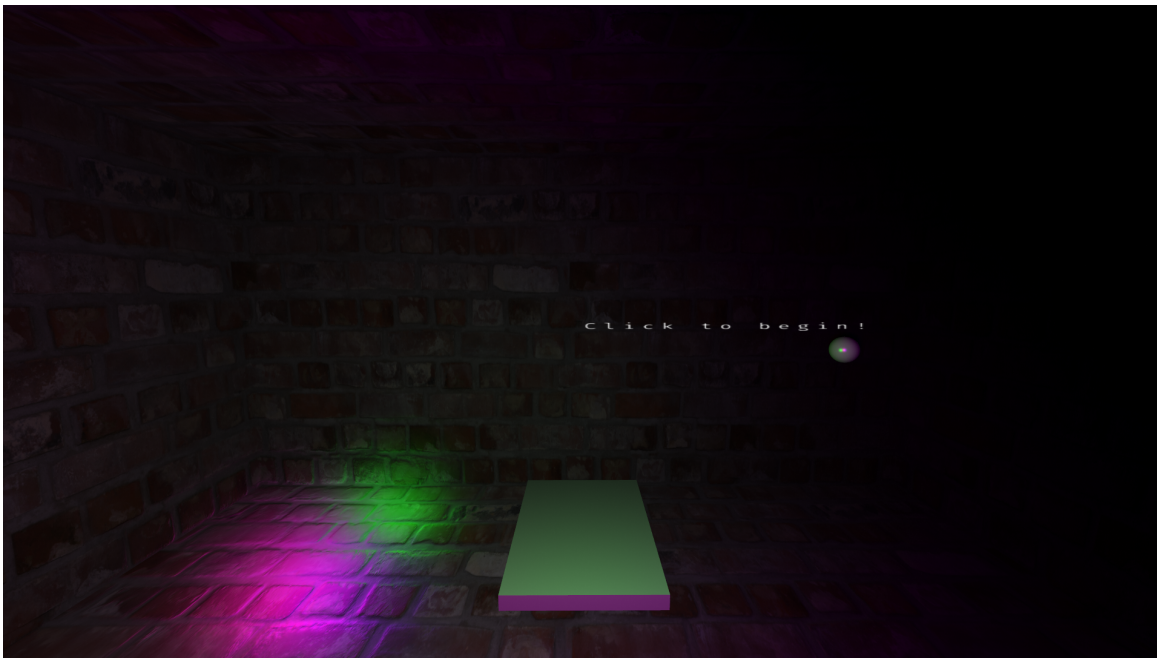

Figure 2: Task 3f initial textured.

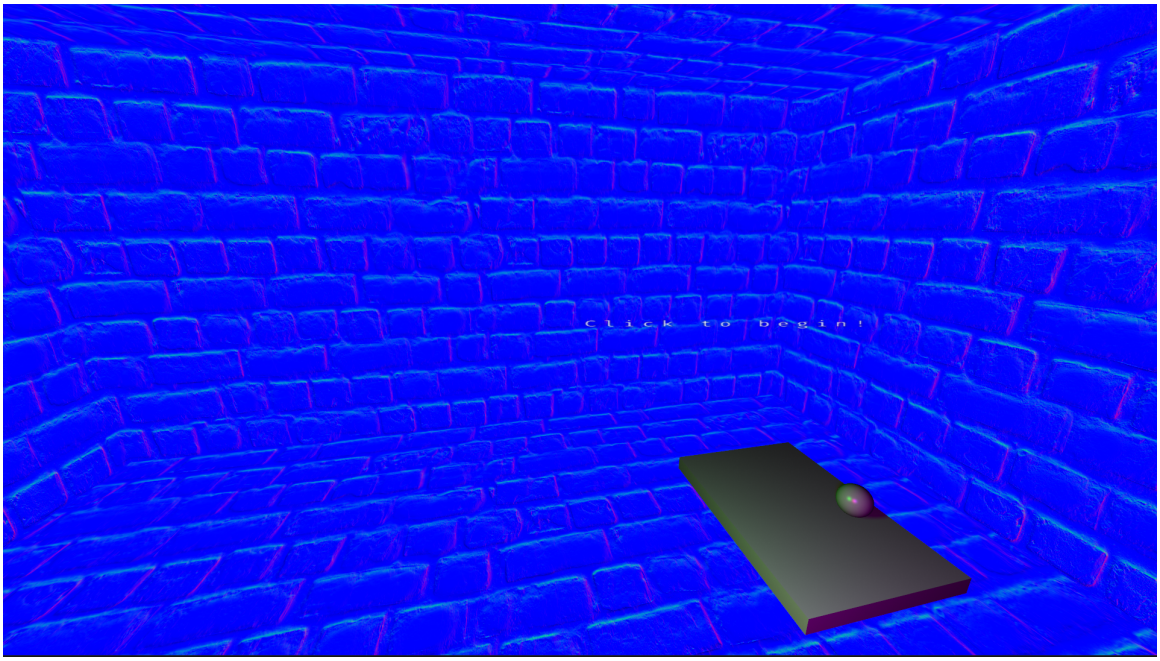

Figure 3: Task 3f initial normals.

3j

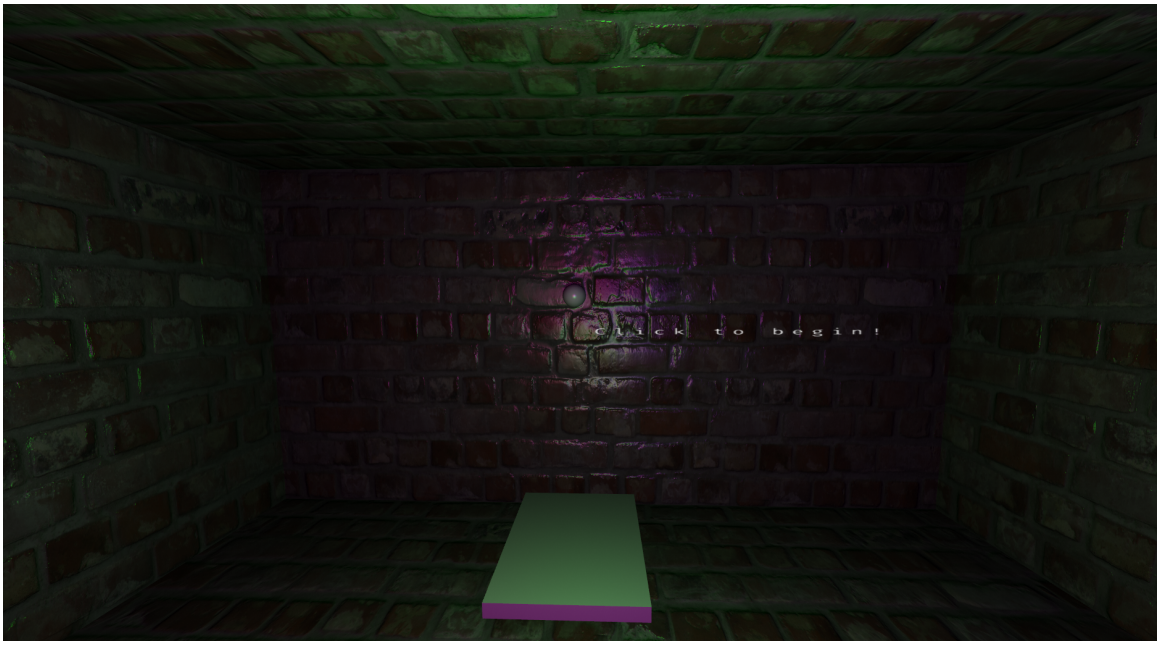

Figure 4: Task 3j corrected textures.

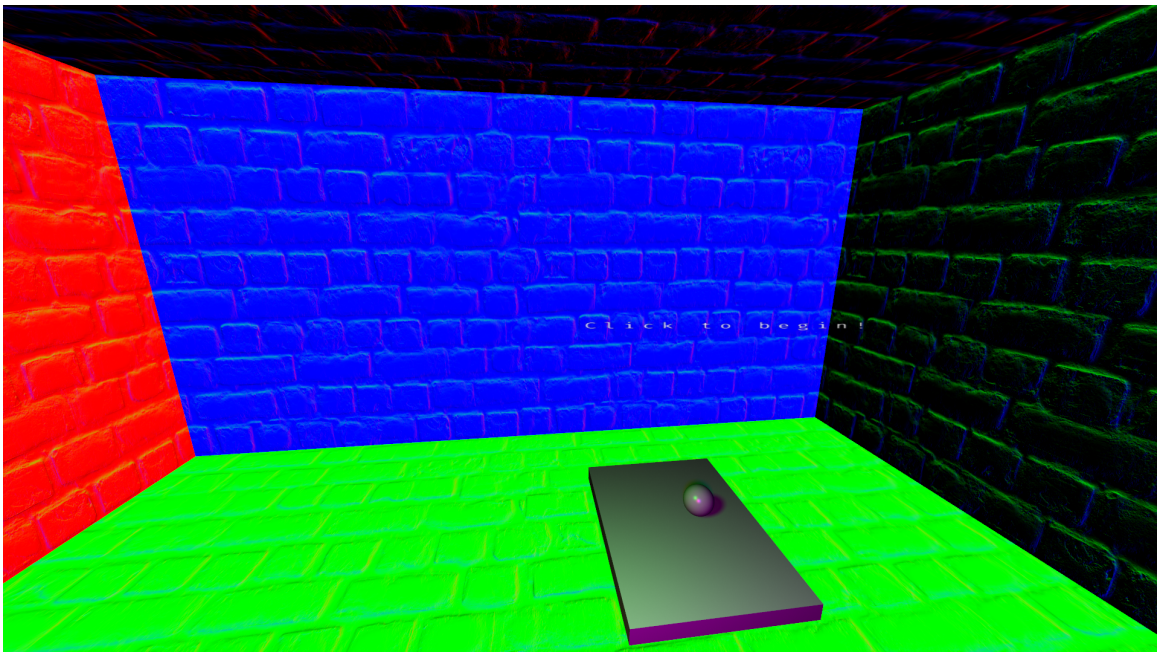

Figure 5: Task 3j corrected normals.

4

Figure 6: Task 4 showing roughness map.