CMSI 371-01

COMPUTER GRAPHICS

Spring 2013

Assignment 0502 Feedback

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2c — You have started to integrate diffuse and specular lighting computations from the sample code into your scene. Some code is there, but it is still buggy. A lot of expected data items are missing. The inline comments should point some of this out. (/)

2d — You were in class to hear me talk about clipping and hidden surface removal. Yay! (+)

3e — Your shader code for lighting appears correct, but remains untested because you haven't gotten there due to the slew of bad data lurking around. (|)

4a — Although your code is overall functional and correct, your lighting-specific code still needs work. One of the issues has to do with computing those normal vertices; they rely on a well-constituted polygon mesh. I've committed a helper function to `Shapes` called `checkMeshValidity`, which I hope will help you home in on the problem. Other issues abound; consult my inline comments for details. (/)

4b — Separation of concerns is mainly hurt hear by your now-quite-repetitive scene object code. You have some distinct objects now—walls, the zombie, maybe others. Instead of calling `Shapes.hexahedron` all over the place, you should put together some meaningfully-named functions that create objects of the same kind (e.g., `createWallSegment`). This would be particularly helpful because of the additional data that your objects are now expected to provide. You also have some glaring repetition in your `assignVerts` and `passSubVerts` functions. (/)

4c — Same comment as before—your code has taken quite a tumble in terms of readability and remains messy and hard to read. Much has already been said about this in previous feedback, so I won't repeat them here. (/)

4d — For this go-round, you are on your way to integrating diffuse lighting from the sample code based on the information given. However, you have a few blanks to fill before everything works. (|)

4e — Commit frequency is good and messages are consistently detailed and descriptive. (+)

4f — Submitted on time, but broken. (+)

Updated feedback for commits up to May 10:

Because Assignments 0319, 0326, 0404, 0418, and 0502 all cover the same code base and may have cumulative results, this feedback sheet covers *all* re-reviewed outcomes from these assignments. The only outcome that is unaffected, because it is time-sensitive, is *4f*.

1b — With the completion of a sphere, you have shown sufficient ability to build polygon meshes. (+)

1c — You have gotten a *kind* of object composition going here, as you show with your zombie, but (a) it remains a one-level construct (i.e., the members of `subshapes` cannot have further `subshapes`) and (b) you never figured out how to do fully functional "transform inheritance." Your approach works for your specific scene, but is insufficient for the general case. (|)

2c — You have the basic diffuse and specular lighting code integrated into your scene, but it is grossly underutilized—only your zombie is properly set up. The catch-all error code is good, but it does not substitute for actual, real normal vectors for every object in your scene. That simply is additional information which is a *must* if you are to have genuine lighting. And to think that it would not have been that much additional code, had you also defined a `createWallSegment` function. (|)

3e — You successfully expanded your shaders to accommodate diffuse and specular lighting. They are underused, yes, but that is covered by *2c*. From a pure shader code perspective, what you have suffices. (+)

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4a — You have gotten your lighting-specific code to work, although as mentioned it is underutilized. Your scene composition code is, at this point, the weakest aspect of your functionality, and that is what keeps this proficiency from topping out. (**|**)

(*4b* and *4c* examine your 3D pipeline code as a whole, and thus represent the overall, final evaluation of these outcomes for all pipeline-related assignments)

4b — You have successfully cleaned up a lot of unnecessary repetition in your code, primarily in your scene composition section. Your `objectsToDraw` remains very repetitive, especially with regard to walls, and as mentioned previously this would have also addressed your lack of normal vectors. Your event-handler code also can use some clean-up—for example, how many times do you need to compute `camPointer.subtract(camPosition)`??? You've done enough to go up a notch, but not all the way. (**|**)

4c — Your code readability is also a little better but still suffers from a degree of busy-ness. The really dense parts still look crammed, but here's the thing: a lot of those dense parts *wouldn't be there* if you had done more consolidation and cleanup of your repetitive code (*4b*). This is definitely a case where one outcome has clear negative impact on another. (**|**)

4d — Your successful completion of diffuse + specular lighting shows good utilization of the sample code that you have been given. (**+**)