CSCI 4250/5250 Project 4: Create A 3D Scene
Worth 300 pts

This is a group project. You can work in groups of two students. We will create a 3D computer graphics scene. The project will be done in 3 stages.

Stage I – due *midnight*, **Friday, November 12th – 100 points**
Each student needs to creates two complete objects. The objects should be appropriate to be included in the final scene:

1. The first 3D object is created using polygonal mesh. It should have at least 6 separate faces. This mesh object should be used to model an object in the scene that is not easily modelled using composite primitives, extruded shape, or surface of revolution.
2. The second 3D object should be formed by composing at least 4 primitive 3D objects (of at least two different types) into one composite figure. Primitive shapes include sphere, cube, cone, cylinder.
3. Use orthographic projection.
4. The complexity and attractiveness of the scene will determine the grade on this part of the project.

Turn in the program in D2L using Dropbox "Project 4 Part I".

Stage II (100 pts) – due *beginning of class*, **November 18th – do class demonstration on that day**
Write a program that add to Stage I:

1. Add one extruded shape object to the scene
2. Add one surface of revolution object to the scene
3. Add one other object, any type of your choice.
4. Animate one of the objects in the scene in some way. This animation should be started and stopped by clicking the key 'a'.
5. Material and lighting properties should be selected for various objects in the scene.
6. The complexity and attractiveness of the scene will determine the grade on this part of the project.

Turn in the program in D2L using Dropbox "Project 4 Part II". (only need to turn in one copy of the project from each team)

Stage III (100 pts) – due *beginning of class*, **Last day of class (Nov 30th) -- do class demonstration on that day**
Add to your program from Part II:

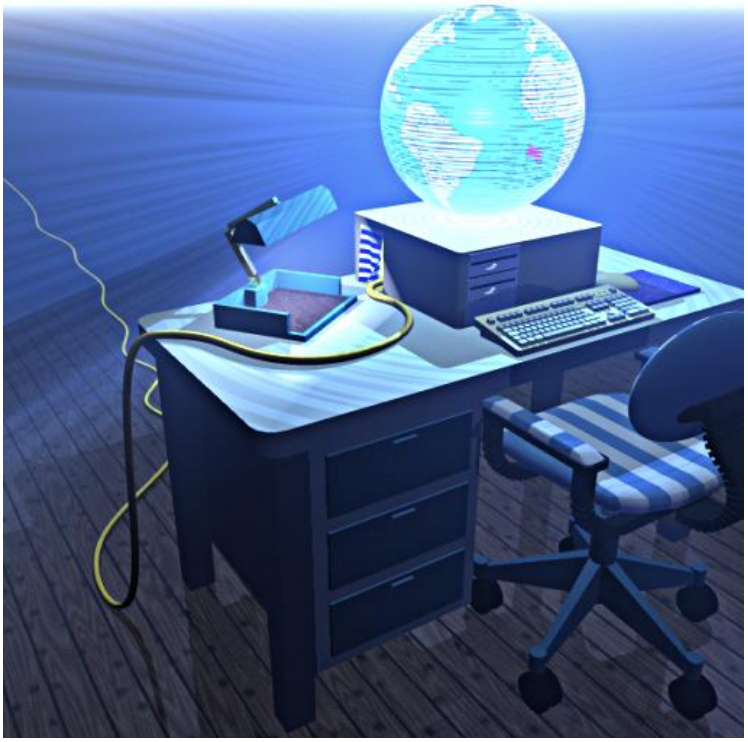
1. Add at least two more new objects to the scene
2. Add texture to at least four objects in the scene.
3. Add sound effect. Sound should be played during animation
4. Add animation so the viewer can "move" a camera about the scene.
5. Allow the user to move back to the original scene by pressing the 'b' key.

Turn in the program in D2L using Dropbox "Project 4 Part III". (only need to turn in one copy of the project from each team)

Notes on in-class presentations:

1. Present the projects in class on Nov 18th and Nov 30th. (Presentation counts 10% each time).
2. During the first presentation, describe the scene and what primitive 3D objects were used to build various parts of the composite objects drawn in the scene. Demonstrate the animation and indicate lighting and material properties. Describe any difficulties you encountered during your object drawing process, and how you solved them if applicable.
3. During the final project demonstration, you are required to point out new shapes added, demonstrate movement, (rotation), point out textures used, demonstrate that the 'b' key works, etc. Describe any problems you encountered and if you were able to solve them and how.

   Here are some graphics from the internet to get started thinking about the 3D scene you would like to create.

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