

Due Monday, Dec. 14, 2009

In this project, you will build an interactive application to *walk through* a multi-floor building. Similar to the previous project, you will use the viewing and modeling capabilities of OpenGL for navigation. **This project can be done in 2 person teams(peer evaluation will be used, in this case, to evaluate the effort of each participant).**

Model Construction

Given that this is a 3 week project, you will model only the 2nd and 3rd floors of Woodward Hall (perhaps CS and SIS department sections only). You can do this either manually or using a modeling program like 3D StudioMax(in this case, you will need to write a loader to read in the model file). The model can be simplified(dimensions can be approximate). Model the offices (most are of the same size), the corridors (floor polygons), and the elevator and stairways (there are 3 stairways and 2 elevators).

Image snapshots of the floor plans of Woodward Hall (all four floors are available) are provided on the course website. You can use these to guide your model development.

Viewer: Movement Constraints

The application is constrained to move typically along a straight path (constant distance from the ground). Controls must be provided to turn and look around. You may restrict the look at direction to be in a plane (turn left or right, but not up/down). Use the staircases or elevators to move up(or down to the next floor). Provide lighting to be able to view the model well.

Extra Credit: Collision Detection, User Feedback

Provide some simple collision detection capability. Moving along corridors, prevent a user from walking into walls on either side. Additionally provide feedback on where the user is within a building. For instance, in a second view (canvas), provide the current location of the user within a floorplan like map, as the user navigates.

Requirements

1. All drawing done with OpenGL.
2. You must model at least 2 adjacent floors of the building, and allow movement between floors via a staircase/elevator.
3. The model needs to be reasonably realistic, but can be approximate, as dimensions are not provided.

Evaluation

Grading will be based on an interactive demo of the program. Turn in source code. If done in teams, each team member must estimate both members' effort in the project (total project effort is 100%)