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Sims
Graphics Component Design

Component Diagram

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SimGraphics
  |  |
  |  ---Camera
  |
  ------OBJ
```

Component Descriptions

SimGraphics
 -this is the main component, it handles all the OpenGL calls that qt's
 gl widget requires. It also store all the objects that will be
 displayed on the screen, and displays them every frame.

 -functions:
  -OpenGL Functions (these are what the qt widget needs)
     -init() - this does the initial opengl setup calls.
     -resize(height, width) - this updates opengl matrixes given a new
                              window size.
          -renderList() - this draws every object. This is called every
                          30th of a second.

  -Camera Functions (these are called by the gui when a mouse interacts)
          -getWorldCoordinates(x, y) - this returns the world coordinates
                          corresponding to a mouse click.
     -cameraPan(x, y), cameraZoom(x, y), cameraRotate(x, y) - these
              update the camera given a given change in mouse location.

  -Preview Functions (these are called by the gui when a mouse interacts
              and the user is about to place a building)
     -previewBuilding(x, y, type), previewRoad(..), previewProp(..)
              -these preview where the building will be, given a location
                           and a type of building/road/prop
          -previewStop() - these stops displaying a preview

  -Terrain Setup (these are called by the logic, to set up the terrain)
     -addTerrain(x, y, type) - this sets the terrain type (grass, dirt,
                     etc) for a given tile.
     -addProp(x, y, type) - same as above, but adds a prop (like a tree,
                           or something similar. Props are items that make the display look
                           good, but have no impact on gameplay.

  -Structure Add/Delete Functions (these add structures or delete them)
     -addBuilding(Building) / deleteBuilding(Building) - these adds a building
                to the list of buildings to be displayed , or removes it.
                           Whenever the user builds a building, it should be added to this
                           list.
          -addRoad/Character, deleteRoad/Character - these work the same way.

Camera
 -this stores the camera information (how much the user has pan/zoom/rotated)
 -this also does the OpenGL calls to move the camera.

 -functions:
  -cameraPan/cameraZoom/cameraRotate - this sets the amount of
      pan/zoom/rotate.
  -view() - this does the OpenGL calls to place the camera.

OBJ
 -this stores the information in an Wavefront OBJ file.
 -it also parses OBJ files, and does the gl calls to draw them.

 -functions:
  -load() - loads a given OBJ file, and stores the information.
  -draw() - does the OpenGL commands to draw an object. Note that the
      corresponding texture must be bound before it is called.

tga.H
  -this isnt an object, but just a bunch of functions that loads a .tga
   file. (taken from the 224 support code)

  -gliReadTGA() - this reads a tga file and puts the data into the
    given data structure.