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ISTA 352

Homework 7

Pt 1)

The idea is to represent the processes that occur in my ISTA 420 final assignment, or at least the outward appearance of it. The project uses various servers to compute SIFT data in parallel, thus cutting down the time that it takes to extract data from images. In all we were able to cut down the time it takes to extract key points from 16 hours for a 15 min video, down to 46min, all on 1 machine, running 22 threads, if you were to upscale that to multiple machines, the computer time will be significantly less. The final result would look something like a network where you can see the data being passed between nodes and back to the storage server. Ideally there would be some visuals indicating that the data is being worked on, before being passed to the next node, or to storage.

Pt 2)

Ok, so here is the point where I say that you were right, this job was a little bit too ambitious. I was able to implement a clockwork like data passing system between objects (a poor one, but useable), that would in the future allow for me to implement some sort of user interaction to control the number of computation. Actually, in I try to implement things such that add-on could be easily added. The sheer number of similar code, does make that a bit difficult still. I also have problems with collision detection, and have not found a good tutorial that explains its implementation well (perhaps something for future iterations of this class). At this point, the only interaction is the movement of the camera.

Here is the break down of how the script is suppose to work:

A command is sent from the home terminal to the central node that in our case would represent UA-HPC. The data on UA-HPC is then converted to grey scale (not seen) and sent in packets to iPlant Collaborative cloud storage system. The User then tells the two other computers (in this case Lima and Delta) to send workers to UA-HPC to receive instructions on the task at hand. They send messages to iPlant to give them a packet for computation as indicated by the orange/yellow sphere (raw data). The servers then do analysis on the data before sending it back as raw sift data (as indicated by the large purple spheres) and send a message to UA-HPC on the next task. In all this process occurs about 10 times as the script is written now. This can be adjusted by going into the script and adjusting the variable total and in the

future could easily be adapted to be used from the users control (that is once I learn how to implement user controls).

TODO:

Implement user defined parameters

Define better calculated parameters

Implement Collision detection (learn how)

Revamp objects.

ALSO:

Remember I turned in homework 6 late.