SE 491 WEEKLY REPORT 5 Date: 10/04/16-10/09/16

Group number: 01

Project title: Visualization of Earth Modeling System (Project 1)

Client &/Advisor: Prof. Johnny Wong (Advisor) & Prof. Chaoqun Lu (Client)

Team Members/Role:

Kellen Johnson – Team Communication Leader

Anish Kunduru – Team Leader

Julio Salinas – Team Concept Holder

Eli Devine – Team Webmaster

- **Weekly Summary**

This week, we were able to get a small demo going for our meeting on Wednesday (10/12). ArcGIS will be perfectly functional for our project requirement. We are looking forward to our meeting this week, as we will be able to show off an example of the 3-D space. We will be looking into changing the datatype in the near future, as this will not only look better visually, but it will be closer to what is wanted instead of just individual points on a graph.

- **Past week accomplishments (please describe as what was done, by whom, when)**
  - Kellen Johnson: Finalized initial configuration of SQL database. Communicated with Josh Obrecht, an ARCGis analyst here at Iowa State, before Anish broke through with the example. Put example onto our server and plotted four corners of ASCII files, along with centerpoint for reference.
  - Anish Kunduru: Created a demo utilizing the ArcGIS API. None of us are familiar with ArcGIS or JavaScript, so this was fun!
  - Eli Devine: Began webpage work, adding copies of our ArcGIS tests.

- Julio Salinas: Looked into some suggested literature to get more familiar with the software, tracked down Josh Obrecht an ARCGis analyst with Kellen. Tried to look into some of the breakthroughs made by our team members.

- **Pending issues (if applicable)**
  - Kellen Johnson: None at this time.
  - Anish Kunduru: The demo is currently using a SimpleMarkerSymbol, while the ESRI API states that is not recommended. They don't go into any more detail, but it might be worthwhile switching to a PointSymbol3D. Additionally, as it currently stands, the size of each symbol is relative to the screen size and/or the view (how zoomed in you are). This is something that is confusing to me, as there are options to set the distance scale (and we have made sure they are selected). Perhaps we will have to use some type of marker than can be filled based on map coordinates to ensure that we can make it relative to the map size instead. Finally, we need to parse one of the ASCII files into a CSVLayer compatible format, but we are stuck on what the coordinates would be to do so (latitude and longitude).
  - Eli Devine:
  - Julio Salinas: None at this time.

- **Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS cumulative
Kellen Johnson	SQL Database setup. Communication with ArcGIS analyst. Plotted points for example.	7	21
Anish Kunduru	Worked on ArcGIS demo.	10	25
Eli Devine	Tested/Programmed/Simulated…	2	10
Julio Salinas	Reviewed Literature…Measured…	3	10

- **Comments and extended discussion**
  - Kellen Johnson: We were able to get the SQL database working at the beginning of the week, but it seems that the way that the CSV (comma-seperated value) files dynamically load the data, we will not need the SQL database at this time.

- Anish Kunduru: We're currently using a CSVLayer with the hopes that we won't need to use an ArcGIS server (more portable for the client, and less setup). However, if we have to change the Layer or use different symbol types (like fill symbols), it might be necessary to publish to a map service. This will greatly increase the complexity of our proposed automation of the ASCII files. I'm honestly not even sure how we'd go about doing that, and Mr. Obrecht might be useful in that regard. It should be noted that one of my concerns is how scalable the CSVLayer is for large data sets (client-side processing). The plus side is many of the client's "pixel data" is empty, and empty cells can be ignored for our case. As such, my priority is getting the demo working with a real dataset and testing on different machines for performance considerations.
- Eli Devine:
- Julio Salinas:

- **Plan for coming week (please describe as what, who, when)**
  - Kellen Johnson: Read ArcGIS API. Become familiar with JavaScript once again, as it will be necessary for fully implementing this project in the future. Will parse one of the ASCII files just to get a full demo for now.
  - Anish Kunduru: Work on getting the demo functioning with the genuine ASCII input whenever Kellen finds out what the lat/long points are (he has sent an e-mail to our client). One of my concerns are fixing the issues with the "billboard-style" symbols. I've tried to use different symbols, but couldn't get it to work. More attention will need to put into this. I will update my team members if I'm still stuck by Friday.
  - Eli Devine: Continue work with webpage. Become more familiar with JS to understand the work that will be done.
  - Julio Salinas: Become more familiar/Learn JavaScript as it will be the tool needed to implement the project.

- **Summary of weekly advisor meeting (if applicable/optional)**

No meeting this week with the advisor. Will meet again on 10/12.