

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 first week largely revolved around the introduction to the project. We were able to meet with our advisor (Wong), the client (Lu), and the extended IT help (Li). We also began sifting through the documents sent to us in regards to the actual data we will be modeling ; and plan on sifting through various modeling technologies through the following week. We will meet Wednesday 9/21 to discuss our technological findings and to begin our first round of brainstorming for modeling.

○ **Past week accomplishments (please describe as what was done, by whom, when)**

- Kellen Johnson: Attended first meeting with client. Read through PowerPoint sent to us by Lu to re-understand what project is. Considering database options for historical graph data (versus Text files containing data).
- Anish Kunduru: Attended first meeting with client. Discovered Earth API is depreciated; looking into alternatives.

- Eli Devine: Attended first meeting with client. Looked through given documents. Refresher on html, css, etc. If needed. Wrote down ideas for web design.
 - Julio Salinas: Attended first meeting with client. Read through information sent by client. Looked into different alternative for google earth.
- **Pending issues (if applicable)**
- Kellen Johnson: N/A.
 - Anish Kunduru: Need to have group discussion about an alternative to Google Earth for 3D mapping software.
 - Eli Devine: N/A.
 - Julio Salinas: N/A.

○ **Individual contributions**

| <u>NAME</u> | <u>Individual Contributions</u> | <u>Hours this week</u> | <u>HOURS cumulative</u> |
|--------------------|---|-------------------------------|--------------------------------|
| Kellen Johnson | Found a possible mySQL extension that could be of benefit since it focuses on Spatial Data. | 3 | 4 |
| Anish Kunduru | Communicated with group about potential API issues. | 3 | 4 |
| Eli Devine | Brushed up on HTML / CSS for eventual team website. | 3 | 4 |
| Julio Salinas | Reviewed powerpoint, seeked out alternatives. | 3 | 3 |

○ **Comments and extended discussion**

- Kellen Johnson: As we stand right now (I'm unsure of how realistic this would be), layering would be an interesting functionality to add. For example: being able to

- turn on/off effects of certain compounds as well as being able to turn on/off visual layers (like photoshop) would help visually. We should also find a way to store our historical data in a way that's easier to pull than from reading text files. The .tiff images may be a little too complex to analyze pixel by pixel unless we're just masking the image to project over a plane.
- Anish Kunduru: Earth API will be formally shut down at the end of this year. Possible alternatives include Google Maps, CesiumJS, ESRI/ArcGIS. Maps doesn't have a 3D mode API, so that might be an issue. EISR/ArcGIS seems to be very fleshed out but isn't free. There might be a way to get educational licenses for free/low-cost for non-commercial use if we do our own hosting. CesiumJS is open source and its primary purpose is dynamic-data visualization.
 - Eli Devine: Need to determine what we will use to model the data, what the beginning steps are to working towards that, and the background to make it happen.
- **Plan for coming week (please describe as what, who, when)**
 - Kellen Johnson: Meet with group (on Wednesday), determine technologies that can be used along with Anish. Discuss pros / cons of layering compounds. Search for best load time as far as database pulling goes (likely graph). Look more into the following: <http://dev.mysql.com/doc/refman/5.6/en/spatial-extensions.html>
 - Anish Kunduru: Meet with group; determine what technology we need to make this project happen.
 - Eli Devine: Meet with group to decide where to begin with the provided data from client.
 - Julio Salinas: Meet with group and set a plan of action and how exactly we want to approach some of the issues we will face.
 - **Summary of weekly advisor meeting (if applicable/optional)**

Our meeting this week was our introductory meeting. We were instructed on the details of the project and what is expected (roughly) for a final project. Our project revolves around the idea that modeling of gasses (and other compounds) visually would be beneficial for various users and stakeholders to not only be able to view past historical data, but being able to project future data using various levels the user can input. This project will be mounted on a website, and may possibly have to have an open-source version that can be downloaded by the client to allow for custom inputs.