Final Project: Web GIS 205

In this final assignment, you will identify a geospatial problem and a web based solution to the problem. You will need to create a document that states the problem you are trying to solve, identify the geographic area that you'll be using as the study area and the data layers needed. In addition, you'll create a mock-up of what your website should look like, a description of the steps you'll use to solve the problem and web services needed. Lastly, you'll create a website that demonstrates and presents the results from your project. Get creative with your website and have some fun with the final project!

Below are the steps needed to complete your final project successfully.

Step One - Gather and Document Requirements

Create a word document. In the first section, **introduce and describe the geospatial problem** you are trying to solve in your final project. Next, add a section that **documents your project's requirements**, that is what data will be needed, what map **visualization capabilities** will be provided, what **analysis tools** will be used. In this section, identify where you have downloaded or will collect your source GIS data for the project.

Step Two - Document the Software Design

What **map services** will you use to solve the problem for example from MapBox, ArcGIS Online, OpenStreetMap, or other geospatial provider? Will you rely on raster tiles, dynamic map images, vector tiles, feature services, and/or geocoding services. Will you need to add any data from non-GIS data like Comma Separated Values text files, or icon images?

Step Three - Document the User Interface

Include a **sketch or mock-up** of what the website will look like. Use mockflow to create the graphic.

Step Four - Implementation

Build out your web gis site! Your web gis site should include all of the data sources and meet all of the requirements you identified as well as meeting the overall look and feel that you put together in your mockup. If you ran into any obstacles implementing advanced features, document what the problems were and how you solved the problem. Or if you ran out of time, document how you might approach the problem next.

Final Deliverable

Your final deliverable will be a Word Document (or PDF) that includes the requested documentation in steps 1 - 3 above as well as a screenshot of your final web gis site and a link to the repl.it site. Be prepared to present your results to the class via a video recording on **December 8th**. Your final project materials are all due by **December 13th**.

Grading Criteria

Total Points: 100

Documentation (10 points)

- Clear documentation is provided covering steps 1 - 4 of the final project.

Base Map Elements (20 points)

- A minimum of **4 source data layers** have been incorporated into the project and least **1 new data layer** should be included which has not been used in a previous lab or in-class exercise. In addition, appropriate symbology has been set for each layer.

Mashup Layers or Services (20 points)

- Include at least 2 remote map layers or services. For example, if you are relying on MapBox for your basemap layers you could incorporate a remote raster tiles source and a remote feature layer source. Alternatively if you use ArcGIS Online as the source for basemap layers you could incorporate a raster tile service from a remote site and a MapBox geocoding service.

Web GIS functions and analysis (30 points)

- An identify capability exists for one of your map layers of interest. **(10 points)**
- Your web gis site provides a gis data layer resulting from at least two different gis analyses (buffer, overlay, within a distance of) and/or a dynamic analysis capability (for example using turf.js or ArcGIS Online). **(20 points)**

WebSite User Interface (10 Points)

- The website user interface follows the layout of your mock-up in step three. The overall look and feel is aesthetically pleasing.

Class Presentation (10 Points)

- Your results are presented clearly to the class as a video recording and you are able to demonstrate a working web based gis solution that meets the criteria you identified for the final project.