GEOG 485L/585L - Spring 2018

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Introduction

The Google Maps API provides one method for presenting an interactive mapping tool within a web browser, but there are restrictions for free use based upon Google's license agreement, and the API is completely controlled by Google - changes are limited to those that Google enables. The OpenLayers Javascript framework which (as quoted from the OpenLayers 2 project home page)

> has been developed to further the use of geographic information of all kinds. OpenLayers is completely free, Open Source JavaScript, released under the 2-clause BSD License (also known as the FreeBSD).

Given its Open Source model, OpenLayers is managed as a community software project, with the development of specific capabilities driven by particular project or functionality needs that come out of the community.

This week's class focuses on the basics of designing an OpenLayers interactive mapping client, including

- The required structural (HTML) and behavioral (Javascript) components
- Examples of creating and adding layer objects to a map
- Examples of a variety of base maps that can be added to a map
- The controls that may be added to a map, and the methods for managing and positioning those controls

Expected Outcomes

At the end of this class the students will be able to:

- Create a new web page that includes an interactive OpenLayers mapper
- Define one or more base map layers as part of the mapper
- Define an appropriate map center and zoom level for the desired map
- Enable and position controls within the map

Key Concepts

At the end of this class students will understand that

- OpenLayers is a Javascript framework that enables web-based interactive mapping
- The OpenLayers framework supports the integration of a variety of proprietary and open source base map services
- Map size, center, zoom level, and layers may all be defined through the Javascript API
- A wide variety of map controls (informational and interactive) may be added to maps

Class Prep

OpenLayers Quick Start Page

OpenLayers Basic Concepts

OpenLayers Workshop

Gratier, T., Spencer, P., & Hazzard, E. (2015). *Openlayers 3 beginner's guide : Get started with openlayers 3 and enhance your web pages by creating and displaying dynamic maps.* Birmingham, England: Packt Publishing. eBook Chapters 1-3. **Read for concepts - the framework has changed enough since the publication of this book that much of the code doesn't work as you would expect**

Reference Materials

OpenLayers API Reference

OpenLayers Sample Maps

Weekly Milestone - OpenLayers Mapping

Following the model used in Milestone 3 for your first Google Map web page, you should answer the questions in Learn about what and how you want to map - *relating to a different focus than you have used in your previous assignments*. As you define the type of map you want to build, think about a specific problem or topic that you would like to address with your map.

In this exercise you will be generating the configuration for the base map (i.e. including one or more OpenLayer enabled background layers), adding controls, and defining an appropriate map center and zoom level for the map. You will add your own custom content (i.e. the answers to the following questions) to a free-standing web page that include an interactive mapper and the reasoning behind the design of the map.

Once your have answered the questions in Learn about the map that you wantn to create, refer to the examples in the lecture notes, the OpenLayers Examples (http://openlayers.org/en/latest/examples/), and this week's reading assignment to create a custom OpenLayers map.

Provide the link to your new OpenLayers map in response to the last question in the assignment in Learn.

Peer Review

This week's assignment includes a peer review component that is provided in the Learn environment's assignments area.
