Contents

Geography 485L/585L "Deep Dive" Assignments

The four assignments that constitute the class's "Deep Dives" consist of a series of activities that build upon each other and the smaller assignments accomplished as "Milestones" in the development of your course portfolio. These assignments will be added to your portfolio content and evaluated in conjunction with the mid-term and end-of-term portfolio assessment and grading. The approximate timing of these assignments is provided below, though may be subject to change as progress through the class material continues.

Week 4: Creation of a a Google Maps Web Page with Custom Points and Labels

In your milestone for Week 4 you built a styled Google Maps base map for a particular region of interest. For this *deep dive* assignment create a new free-standing web page that includes a brief description of the topical focus of your mapper:

- The type of information that you want to depict in your map
- Your reasons for selecting the specific area shown in the map
- A description of what you are trying to communicate with the map

Embed the base map that you initially created for your lab assignment into this new web page.

- Add 5 overlay objects to the map that relate to specific items of interest or importance. These overlay objects may be *markers*, *polylines*, or *polygons*. Make sure to include descriptive titles for each object.
- Add an *infobox* to each object that contains additional detailed information about the object

Week 6: OGC Service Concepts

Question 1 What request type is common across all three (WMS, WFS, WCS) OGC web services that we have learned about?

Answer the following questions about a WMS GetCapabilities request

Question 2 What are the required parameters, and what do they represent?
What is returned in response to a WMS GetCapabilities request?

Answer the following questions about a WMS GetMap request

Question 3 What are the required parameters, and what do they represent?

What is returned in response to a WMS GetMap request?

What is the significance of transparency in WMS requests?

Question 4 What OGC request would you use to inform the configuration of a client application (like ArcGIS) about an OGC service that you want to add layers from?

Which OGC request would you submit under the following circumstances (include both the service type [e.g. WMS, WFS, WCS], and the request [e.g. GetMap, GetCapabilities, GetCoverage, etc.] in your answer)

Question 5 You want a map image representing three layers of data in a single JPEG for a specified area of interest.

You want to retrieve data representing geometries and associated attributes for a road network, with the returned data in GML.

You want to retrieve data representing a digital elevation model (a raster dataset) in the form of a GeoTIFF.

Question 6 - What are the EPSG codes of the following Spatial Reference Systems WGS 84 (Geodetic CRS [geographic 2d])

NAD83 / UTM zone 13N

NAD27 / UTM zone 13N

Use the `cs2cs` utility to convert the following WGS84 Geographic Coordinates into UTM Zone 13, NAD83 coordinates. Include your `cs2cs` command and output in your writeup.

Question 7 35°14 19.29 N, 107°36 30.67 W (Mount Taylor Summit)
34°16 40.34 N, 103°19 28.49 W (Blackwater Draw)

Retrieve the GetCapabilities XML response from the following WMS, and answer the following questions.

http://gstore.unm.edu/apps/rgis/datasets/715663ba-c1c3-414c-84a7-c671526f8316/services/ogc/wms?SERVICE=wms&REQUEST=GetCapabilities&VERSION=1.1.1

Question 8 What is the Title of the service?

Who is the Contact Person for questions about the service?

What are the available image formats for the GetMap request for this service?

What are the SRS/CRS's for which layers from this service are available (remember that nested layers inherit the SRS/CRS of their parent layers).

Question 9 Formulate a GetMap request for the "tl_2010_35_bg10" layer from this service, for a 500x500 pixel map image that is 0.05-degrees wide and 0.05-degress high, with the SW corner of the map image located at 35°N and -106°45'E. Include in your write-up the complete GetMap request and the returned map image.

Week 11: Problem Definition and Data Acquisition

TBA

Week 14: Data Integration and Styling in GeoServer

TBA