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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-degrees 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