FGS 604: GIS PROGRAMMING
Project
Deadline: 2 weeks before end of semester (date?)

After the exercise the student should:
-Be familiar with the OGC standard Web Map Service (WMS),
-Be able to write basic web pages using HTML and JavaScript.

Preparation

Read the specification of the Web Map Service (WMS). The specification can be downloaded from Open Geospatial Consortium homepage http://www.opengeospatial.org
(click on ”Standards”, ”OpenGIS® Specifications”, ”Web Map Service”, Select the most recent version).
Read the following parts of the specifications carefully:

Introduction 1. Scope
6.3 General HTTP Request Rules
7.1 Introduction
7.2 GetCapabilities
7.3 GetMap

and scroll through the rest of the specification **.

This exercise contains some coding in HTML and programming in JavaScript. To prepare yourself you should:

Read about JS (gave you a book on it)
String Object
JS Window Object (under JS HTML DOM)
JS Form Object (under JS HTML DOM) on the homepage
http://www.w3schools.com/js/default.asp

Read about HTML Forms on the homepage http://www.w3schools.com/html/default.asp

However this does not limit you to JavaScript as long as you can accomplish the same task using other technologies.

Finally, you should read the whole exercise. It is easier if you understand the WHOLE exercise before you start with the first task.

Report

It is compulsory to send a report to: daudi2010@gmail.com with subject *FGM-606_StudentID_Project.*
The report must contain:
- The WMS *getMap* request
- Your own documented code not your friend’s code*(encourage creativity!)
- A printout of the map that you get as a response to your get map request

Everything should be included in a *zip* file containing your code, report as .doc. Make sure that your client is valid according to W3C HTML standard before submitting(must check those tags) or validate your mark up on http://validator.w3.org/

Perform a *getCapability* request

With the WMS client above you cannot change layers and/or request other WMS servers. The reason is that this information is hard-coded in the client. In principal, the following has been done. We have made a WMS *getCapability* request to a WMS server. From this request we received information about the layers, spatial reference systems, etc. provided by the WMS server. Then this information was hard coded into the client.

Your very easy task is now to perform an own *getCapabilities* request to a WMS. Write the following in your web browser

http://atlas.gc.ca/cgi-bin/atlaswms_en?VERSION=1.1.1&REQUEST=Getcapabilities&SERVICE=wms

and you will get a request similar to the figure below. For some browsers you might have to load the files to your own computer (and then open it in a text editor). In Firefox you can easily tell the browser to open it without saving it first.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE WMT_MS_Capabilities (View Source for full doctype...)>
- <WMT_MS_Capabilities version="1.1.1">
  - <Service>
      <Name>OGC:WMS</Name>
      <Title>My GeoServer WMS</Title>
      <Abstract>This is a description of your Web Map Server.</Abstract>
    - <KeywordList>
        <Keyword>WFS</Keyword>
        <Keyword>WMS</Keyword>
        <Keyword>GEOSERVER</Keyword>
      </KeywordList>
      <OnlineResource xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple"
```

Write WMS *getMap* requests on paper

Your task is to formulate a WMS *getMap* request on paper. This request should be possible to send to the WMS server at atlas.gc.ca. That is, you should use the metadata from the *GetCapability* request above to formulate your request (e.g. you have to find out which coordinate system you are allowed to use). General information about how to formulate a WMS *getMap* request you find in the WMS specifications. To write a *getMap* request you, among others, need to specify the following:

layers
bbox
width
height
srs
styles

format
What do these parameters contain? If you are unsure you should read about it in the WMS specifications. You should also read the specifications carefully so that you do not miss any of the mandatory parameters in your *getMap* request.

You can partly design your own WMS *getMap* request, but you should set output format to JPG (image/jpeg).

All questions to : daudi2010@gmail.com