Week 3 Cookbook
Web Mapping Applications

Week 3 Overview (9/16 to 9/22)

1. Google Maps and Google Earth
2. Create a Google Account
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4. Create your own maps with Google My Maps
5. Your Turn: Create a Map of WSC
6. Sharing your Google My Maps
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9. Adding videos to Google My Maps
10. Your Turn: Quantitative Analysis in Google My Maps
11. Other cool Web Mapping Applications

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"I can't explain it—it's just a funny feeling that I'm being Googled."

Web Mapping Applications: Using Google Maps as an Example

This week we will explore Web Mapping Applications.
There are a lot of great web mapping application available for free on the WWW, but here we will focus on just one this week: Google My Maps.

We tend to associate Google with fun - not work! That's great, because Google Earth, Google Maps, and the many of the other Web Mapping Applications available for free can be easily used for professional academic work.

This week you will learn how to create a custom map in Google My Maps, complete with imbedded photographs and YouTube videos. You will also perform some quantitative analysis using Google My Maps.

1) Google My Maps and Google Earth

Google My Maps	Google Earth
Simpler	More complex
Less features	More features
Online only!	Create and share files
No software to download	Requires free software download

- Google Maps and Google Earth are compatible – you can create content in one and use it in the other.
- Google Maps and Google Earth use the same image and street data.
- Google Maps and Google Earth are 'free', but require a 'free' Google account to let you use the cool functions.

Now, 'free' is a relative term here. Google is a commercial company and makes money by selling advertisements. Google Earth is great, but not truly a Web Mapping Application since you need to download and install software.

http://maps.google.com/maps
= The passive side of Google Maps

- Allows you to look at the basic Google Map content.
- Search for addresses, businesses, places of interest, etc.
- Base maps: Map layer, Satellite Layer, Terrain Layer
- Live Traffic
- Street View by clicking on the orange person and dragging it around the map.

Type your home address into the search box – does Google Maps accurately find your house? In my case, Google Maps has the correct street, but places my house about 1,000 ft too far down the road!

http://maps.google.com/maps - **My Maps**
= The interactive side of Google Maps

- Create your own content (= your own personal maps).
- Browse and use the interactive content created by others.
- Share your maps and content with others.

➔ **Google My Maps requires a 'free' Google Account**

2) Create a Google Account

Go to: https://www.google.com/accounts/ManageAccount

If you already have a Google Account: sign-in!
If not, click on *Create an account now* and follow the instructions.

➔ You need to have a Google Account to complete the activities and assignments this week.

Your Google Account gives you full access to all kinds of Google Services – the complete list with explanations can be found here: http://www.google.com/intl/en/options/

Here, we are using only two of the services:

1) Google My Maps
http://maps.google.com/maps

2) Picasa Web Albums (= online photo album)
http://picasaweb.google.com
Upload your pictures and organize into albums.

➔ Google Maps – My Maps and Picasa Web Albums can be combined to create cool, personalized maps.

3) The Basics of Google My Maps

Let's explore some of the cool features of Google My Maps.

1. Go to Google Maps: http://maps.google.com/maps

2. Sign-in to your Google Account (upper right-hand corner of your screen)

3. Click on My Maps.

4. Explore some of the **Featured content**. For example, try:
    Gas Prices from GasBuddy.com
    The Weather Channel (try some weather overlays)
    Note: the feature content changes!

5. Click on Browse the directory to see 1,000s of cool tools and custom maps. The following are pretty fun. Select *Add it to Maps* to add the content to Google Maps.

    Position Finder
    Area and Distance Calculator
    Find anything around you (Pizza Places)
    Elevation Contours (zoom into Western MA first!)
    Sea Level Rise

    Careful! Some of these tools take a while to run. Best to add and try them one at a time!

6. Click on Back to Google Maps and start exploring the added content, tools, or maps.

➔ **Spend some time exploring and share cool tools with us in the discussion forum!**

Now this is pretty cool – we can customize Google My Maps to our liking by adding tools and content that we find helpful and/or interesting. Some tools are just fun, others allow for real quantitative analysis, for example the Area and Distance Calculator.

4) Create Your Own Maps with Google My Maps

In Google Lingo, creating your own maps is called: Creating Content. So, let's create an original map.

1. If needed, go to Google Maps and sign-into your Google Account

2. Select 'Create new map'.

3. Enter a Title and a Description
   Select the Privacy settings (Public is the default) and click 'save'.

Now you have created a map – great. Now, let's edit this map and add some content. The new map is now listed under **Created by me** when you click on **My Maps**.

4. Click on the map and click on the Edit box. The screen changes slightly and the editing tools are added.
   Zoom into the area where you want to create your map, for example WSC.
   Choose your background: Map, Satellite, or Terrain.

5. Add a placemark Tool
   Click anywhere on the map to add a placemark. Once you click you get a dialog box to enter a Title and a Description. You can also change the placemark symbol.

6. Draw a line or Draw a shape tool
   Select the tool you want and create a line or a shape. Once finished, you get a dialog box to enter a Title and a Description. You can also change the color, width, and fill. Notice that the Draw a line tool gives you the length of your line. There is a special tool for drawing lines along roads – try it out!

7. Edit and change your places, lines, and shapes.
   Hover over the shape to show the nodes. Now you can drag and change the shape.
   Or, move the placemark.
   Hover over the shape and right-click to edit the properties.

8. When done, hit the Save to save your map and Done to exit the edit mode.

➔ **The best thing to do now is to practice!**

5) Your Turn: Create a Map of Westfield State College

To practice – create a map of Westfield State College.

- Add a few placemarks for the dorms.
- Draw a few lines, for example the walk from your dorm to Wilson Hall and 333.
- Draw a few shapes, for example South Lot and the football field.
- Try the **Draw a line along roads** tool and draw the drive from the college to downtown Westfield. Note that Google My Maps calculates the distance and the approximate time it takes for the drive – pretty cool!

The Week 3 folder contains all kinds of tutorial videos to help you creating your map.

This YouTube video is great – the author shows you how to make a custom map of a walking tour around San Francisco.

Just be aware that she uses a slightly older version of Google My Maps, so the toolbar looks slightly different.

Note that she already shows you how to link pictures and YouTube videos – we'll cover that here as well!

http://www.youtube.com/watch?v=TftFnot5uXw

6) Sharing your Google My Maps

Sharing you Google My Maps with the rest of the world is easy!
You can use the Send or Link option provided in the upper right-hand corner of the map.

Send
The Send option is self-explanatory: just enter the Email addresses and hit the Send button.

Link
The Link option is even better: it provides you with a link that you can simply copy/paste into an Email or a discussion forum posting. It also provides you the HTML code if you want to embed your map in a website.

For Email and Discussion Forums: Simply copy/paste the link, here's how:

    Click on Link (upper right-hand corner of the screen)
    Single-click on the email or IM link (the one starting with http://maps....)
    That will highlight the entire link in dark-blue
    Right-click, select copy, and paste the link into your Map Lounge posting

Don't worry. The link is long and contains a bunch of weird characters…it's not supposed to make sense!

7) Your Turn: Share your Westfield State College Map in the Map Lounge

Take your map from Part 5 and share it with us in the Map Lounge as explained in Part 6.
I'm looking forward to seeing your maps.
Note: This is part of this weeks assignment!

8) Adding Photographs to Your Google My Maps

As long as a photograph is available somewhere online…and is not 'blocked'…you can imbed it into your map. But, with those pictures you never know…they might disappear or they may be deleted at any time. Therefore, it is always <u>better</u> to add your own pictures from Picasa Online (or any other web photo album).

Pay attention to the sequence and details…imbedding photographs can be a bit tricky at first!

1. Start a web browser and go to your Picasa Web Albums.
    Create an online photo album and upload a few pictures.
    This should be easy for you, check the help function if needed.

2. If Step 1 does not work for you, go here:
    http://picasaweb.google.com/carstendude/WSC#
    This is a public photo album within my Picasa Web Album with some pictures of Westfield State College.

3. Single-click on a photo, for example the photo of Bates Hall.

4. Click on **Link to this Photo**.

5. First: **Select size** Small 288px or Medium 400px are best for Google My Maps.
    Always select the size you want first!

6. Click on the **Embed image** link (<table style="….) to highlight, right-click, and select copy.

7. Open a second browser, or a second browser tab
    Go to your Westfield State College Map in Google My Maps
    Start editing the map

8. Add a new placemark on Bates Hall and enter as title: Bates Hall.

9. Then: click **Edit HTML**.

10. Paste the **Embed image link** from Picasa into the **Description** box and click OK.

11. Save your map
    Click Done
    Click on My Maps to refresh Google My Maps

12. Click on the placemark on Bates Hall and see if it worked.

You will have to practice a bit…the sequence is important here!

Here's another option: say there's a picture or photograph on a website that you really want to have on your map, for example this one: http://www.stanleypark.org/images/titlepic2.jpg

This happens to be the picture on the homepage of Stanley Park, but basically it is a picture someone has included on a website…it is <u>not</u> stored inside an online photo album. In this case, the sequence is a little different.

1. You find the photograph you want, for example:
   http://www.wsc.ma.edu/garp/images/garp.jpg

2. You add a placemark for the photo on the map.
   And enter a title.

3. Now click on **Rich text**.
   Then on the Insert Image icon (the right-most icon)

4. Delete the http:// text string in the dialog box
   Copy and paste web address (also called the URL) of the photograph

5. Hit OK twice, Click Save, Click Done.
   Click on My Maps to refresh Google My Maps, and see if it worked.

You will have to practice a bit…the sequence is important here!

Now you know how to embed photographs into your Google My Maps. The basic sequence is the same whether you are dealing with an online photo album (such as Picasa) or a picture that is part of a regular website.

Online photo album: Use the Embed image link from Picasa
                           Use the Edit HTML option in Google My Maps

Regular web site: Use the web address (= the URL)
                           Use the Rich text Insert Image option in Google My Maps

9) Adding Videos to Your Google My Maps

It is easy to imbed videos, for example from YouTube, into your Google My Maps.
Pay attention to the sequence and details…imbedding videos can be a bit tricky at first!

1. Go to YouTube and find a suitable video. For example:
   http://www.youtube.com/watch?v=tn1IMEAbgFo

2. Right-click on the **Embed** link and select copy.

3. Open a second browser, or a second browser tab
   Go to your Westfield State College Map in Google My Maps
   Start editing the map

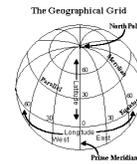4. Add a new placemark and enter as title: YouTube video.

5. Then: click **Edit HTML**

6. Paste the **Embed link** from YouTube into the **Description** box and click OK

7. Save your map
    Click Done
    Click on My Maps to refresh Google My Maps

8. Click on the YouTube placemark to see if it worked.

You will have to practice a bit…the sequence is important here!

10) Your Turn: Quantitative Analysis in Google My Maps

Photographs are fun, videos are even better…but how about some quantitative analysis? For me, this is the best part: Google My Maps allows you to perform some basic quantitative analysis – nothing fancy, but nevertheless very useful.

First, remove all the tools and custom maps you added to Google My Maps in Part 3.
Then, add the GPS Location and Area and Distance Calculator.

Finding Latitude and Longitude in Google My Maps

Home Plate, Fenway Park   Latitude: _____

                                 Longitude: _____

Statue of Liberty   Latitude: _____

                                 Longitude: _____

Wilson Hall, WSC   Latitude: _____

                                 Longitude: _____

The Eiffel Tower, Paris   Latitude: _____

                                 Longitude: _____

Finding the latitude and longitude for any location in the world is actually quite useful – how else would you do it? Sure, you could walk there with a GPS receiver, but is much easier!

Measure the Length/Distance in Google My Maps

You can measure distances simply by drawing = digitizing a line. When you edit your line by moving one of the nodes, the length of the line is displayed and changes accordingly.

You can also use the Area and Distance Calculator.

Walking distance from South Lot to Wilson   _____

Length of the WSC football field   _____

Width of the WSC football field   _____

Shortest Home Run Distance WSC   _____

Longest Home Run Distance WSC   _____

Length of Runway 33 at Boston's Logan Airport   _____

Measure whatever you want   _____

This is pretty handy – for example if you need to measure the length of a building parcel or the perimeter of a wetland.

Area and Distance Calculator
By: mikebrewer.co.uk

Measure the Area in Google My Maps

Area of South Lot (WSC)   _____ acres

Area/footprint of Bates Hall (WSC)   _____ acres

Area of the Reflecting Pool, Lincoln Memorial, D.C.   _____ acres

Area of Porter Lake, Forest Park, Springfield   _____ acres

Here you have to use the Area and Distance Calculator.
The first three examples are easy, since the shapes are simple rectangles. Porter Lake (and every natural feature for that matter) is more tricky. You could spend hours drawing = digitizing every little twist and turn of the shoreline, but that's unreasonable and unproductive. You have to find a reasonable balance between detail and speed!

➔ **Please include your results from this part in your weekly assignment report.**

11) Other Cool Web Mapping Applications

Here's a list of great Web Mapping Applications – there are many more, but these are the ones that I like.

www.mapquest.com
Still the best site for driving directions and distances

http://www.bing.com/maps/
Bing Maps is Microsoft's response to Google Maps. The imagery is amazing, be sure to try the Bird's eye view.

MAPQUEST. INC.

SORRY I'M LATE! IT TOOK ME FOREVER TO FIND THIS PLACE!

VICE PRESIDENT HALLIDAY

Phil blows his interview before even sitting down.

http://www.worldmapper.org/
The best mapping website out there in my opinion since you can download the underlying data.

http://terraserver-usa.com/
Topographic maps and aerial photographs for the U.S.

http://baird.si.edu/minsci/tdpmap/viewer.htm
This Dynamic Planet is a great interactive world map of all kinds of cool geologic features.

http://www.mla.org/map_single
The MLA Map can display the different languages spoken in the U.S. by county or zip code. Note that you can display the county data as a percentage – that's critical!

http://www.socialexplorer.com/pub/maps/map3.aspx?g=0
Social Explorer is a great web mapping tool to show U.S. Census data starting 1790.

http://factfinder.census.gov/jsp/saff/SAFFInfo.jsp?_pageId=thematicmaps&_submenuId=maps_0
The U.S. Census Bureau has all kinds of great dynamic online maps.

http://www.nationalatlas.gov/natlas/Natlasstart.asp
The National Atlas is great!

…and there are many more…

Spend some time exploring these websites. For even more sites, have a look at the compilation by ESRI:
http://edcommunity.esri.com/software/webmapping/

As a reminder – here's our course schedule for this semester:

Week	Date	Topics, Themes, and Tasks		Assignment
Week 1	9/2 – 9/8	Welcome to GARP 0244-Online	Getting Started with Online Learning and GIS	HW #1
Week 2	9/9 – 9/15	What is GIS? Part I	Hardware, software, concepts, data, analysis, and people = GIS	HW #2
Week 3	9/16 – 9/22	What is GIS? Part II	Simple GIS: Web Mapping Applications	HW #3
Week 4	9/23 – 9/29	GIS Tutorial Ch. 1	Introduction to ArcGIS 9.3.1: ArcMap and ArcCatalog	HW #4
Week 5	9/30 – 10/6	GIS Tutorial Ch. 2	GIS Map Design: Classification and Choropleth Maps	HW #5
Week 6	10/7 – 10/13	GIS Tutorial Ch. 3	GIS Outputs = Maps: Creating Meaningful Maps	HW #6
Week 7	10/14 – 10/20	Project 1	'Lying with Maps'	Project 1
Week 8	10/21 – 10/27	Review and Reflection	Basic GIS: Intelligent and Meaningful Maps	
Week 9	10/28 – 11/03	What is MassGIS?	Online Sources of GIS Data: MassGIS and More	HW #7
Week 10	11/04 – 11/10	GIS Tutorial Ch. 6	Spatial Analysis Part I: Creating GIS Data	HW #8
Week 11	11/11 – 11/17	GIS Tutorial Ch. 8	Spatial Analysis Part II: The ArcGIS Toolbox	HW #9
Week 12	11/18 – 11/24	Project 2	MassGIS Project	Project 2
Week 13	11/25 – 12/01	Project 2	MassGIS Project	Project 2
Week 14	12/02 – 12/08	Project 2	Mass GIS Project	Project 2
Week 15	12/09 – 12/15	Project 3	Zoning for Westfield and Holyoke	Project 3