Google **My Maps** exercise
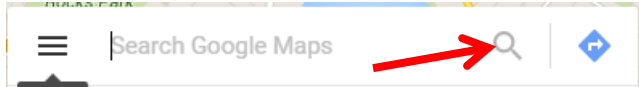
Exploring Google's Mapping Products Workshop, Fall, 2016

Part A: First, let's just look at what regular Google Maps has to offer.

1 Open the Google Chrome internet browser Start > All Programs > Google Chrome , and go to http://maps.google.com.

Type a location into the search box and hit Enter, or click the magnifying glass button (see image at left).

The Map will automatically zoom to that location (or give you choices if more than one location exists). Enter these different types of location searches:

- A street address
- A City
- A Country
- A physical feature (an ocean, the Grand Canyon, etc.)
- A man made feature (Eiffel Tower, Taj Mahal, etc.)
- A latitude, longitude coordinate (for example **42.374, -71.116** where is this?) A map showing the latitude, longitude grid of the earth is at the end of this document for your reference.

In addition to knowing where latitude, longitude coordinates are, Google Maps has a huge gazetteer (database of geographic places) that is accessed every time you search. There is also satellite imagery available in Google Maps, and other map layers.

2 Click the Menu (see screenshot at right) button, and explore the different options. Choose "Satellite" to see a satellite imagery map. Choose "Traffic" to see real time street traffic.
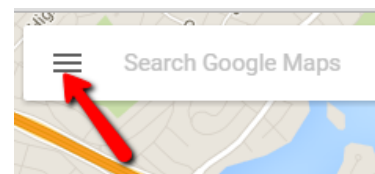
3 Click the Directions button. Enter two places, and the map will show the distance along roads, straight line distance, and travel time by car, bus/train, and airplane between the two places.
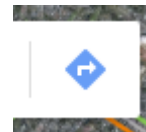
4 Click the little orange man: located in the bottom right of the screen. Drag him over to the map, and unclick to drop him on a location. This will switch your view to "Street View". Street View isn't available everywhere, but most major cities have it. Many locations have several images over time, which is indicated with a little clock icon in the upper left of the map:
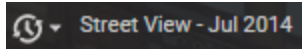
 . Navigate around street view using the arrows on the screen, or clicking and dragging. To get out of street view, click **Back to Map** in the lower left of the screen.

Part B: Now let's create a custom map. Let's imagine we are art historians, and want to create a map with museum locations that display pictures of the art in each museum, in the city of Prague, Czech Republic.
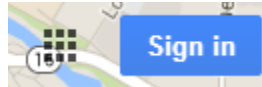
1 Click Sign in (upper right):

2 Login with your Google account.

3 Click Menu >> **Your Places. Click the MAPS option, and CREATE MAP** (at the bottom).

4 Click on Untitled Map and Enter "**Prague Museums**" as the title for the map, and click **Save**. Now it is time to add two museums and works of art you want to map and share with your colleagues.

The museums / art you want to include are:

1) Prague Museum of Decorative Arts / Venetian glass exhibit
2) Museum Kampa Prague / The Jan and Meda Mladek Collection

5 In the search window:

Search for "**Prague Museum of Decorative Arts**". Click the top search result "Museum of Decorative Arts in Prague". A popup window will open over the location of this point. Click the **Add to map** button in this window .

Let's say the work of art you want to highlight at this museum is a Venetian glass, as shown at this link on the museum website.
Now you'll copy the link to this picture, and embed the picture of this work of art in the Museum's placemark on your map.

6 Right click on the picture of the Venetian glass and choose **Copy Image address** if using a Chrome browser, and **Copy** if using Internet Explorer.
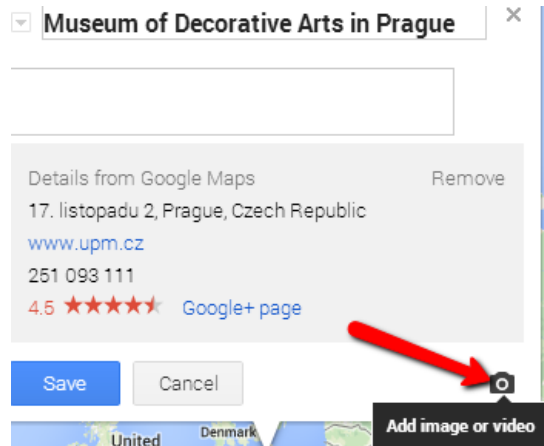
Back on your Google Map, click on the "Museum of Decorative Arts in Prague" placemark on the map. This will bring up the information window for this location.

Click the EDIT button: This will allow editing of this point.

7 In the information window, click the **Add Image or Video** button.

8 In the Choose an image or a video dialog window, choose **Image URL** button .

9 Right click in the text box, and choose **Paste**. The image of the Venetian glass should appear in the information window now. Click the **Select** button to close this window, and **Save** to save your changes.

10 Now change the marker icon to something more representative of a museum. Click on the
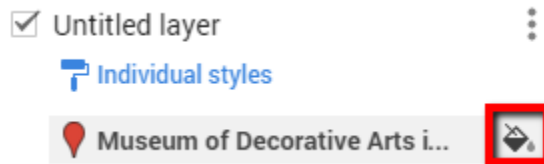
paint bucket icon (boxed in red at right):   in your map's table of contents. This will bring up additional icons to change the image to. Then click the **More icons** button at the bottom. Choose one, and then cilck OK in the information window to save your changes.
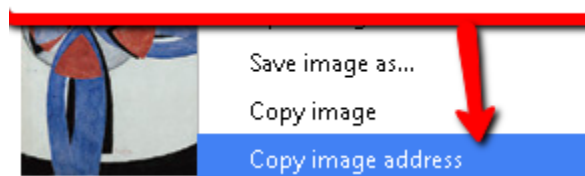
Repeat steps **4** through **10** above, except this time search for the "Museum Kampa Prague". For the image to insert, go to this museum's collection website:
http://www.museumkampa.com/en/Collections-102.htm
We're interested in the Jan and Meda Mladek Collection link. Click on this choice. This is the image addres to copy (see below).

Now that you've identified two museum and works of art in Prague to share with your colleagues, let's mark the map up with a recommended walking route, and picnic area.

11 Click the "Draw a line" button on the top of the map.
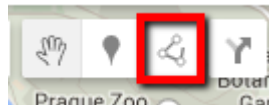Now click on the map at one museum to start the line. Keep clicking along the walking route you want to define. Double click to end the line. Type in a description for the line, and practice changing the line symbol.
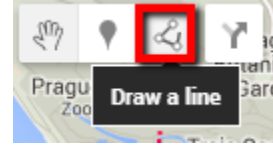
12 Now you'll identify the exact picnic area to meet by drawing a shape around it. First, change your basemap to the Satellite view by clicking the dropdown arrow to the right of Base Map in your maps Table of Contents:
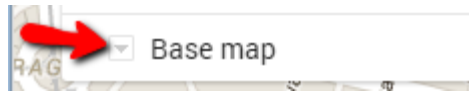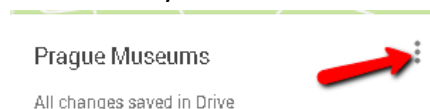

 Zoom in to the area you want   to mark on the map to have a picnic.
Use the "Draw a Shape tool:

Draw the shape by clicking to define it, and double clicking to end it. Enter a description "nice place to have a picnic".

12 Now you'll export the features you added to this map to a KML file. Click the button that

looks like three dots: and choose **Export to KML**. Click the blue **Download** button, and save the KML file to your Desktop.

If you want to share this map with someone, click the **Share** button on the top of the table of contents. You can choose the permission access to this map.

Save the map….and you're done for now.

Google Earth Exercise

Watch the **Learn Google Earth: Searching for Places** video
http://www.youtube.com/watch?v=PE04XuxgXzI

Open Google Earth *Start > All Programs > Google Earth > Google Earth*

1 Use the Search Panel (type in a place and click Search)
2 Practice using the Navigation tools
3 Practice using the Show Historical Imagery tool on specific
  places.
4 Practice using the Ruler to measure lengths and areas
Explore contents of some of the Map Layers listed on the
.
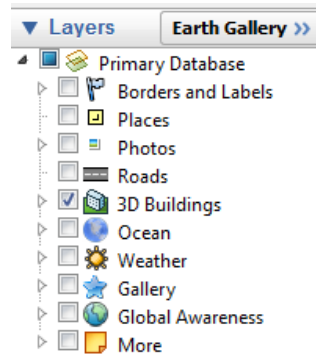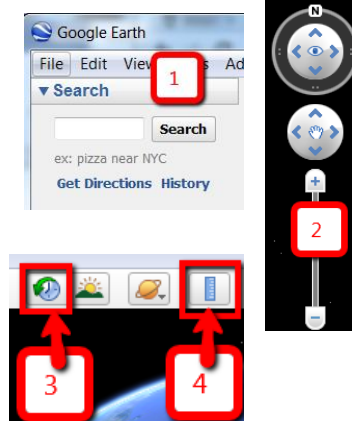
Now you'll create placemarks, and a tour of these placemarks. Watch the first minute **Learn Google Earth Placemarks and Tours** video at:
http://www.youtube.com/watch?v=WqDQec1itqg
5 Create three placemarks with custom views, and make a tour of these placemarks.
   o   Make sure your "3D Buildings" layer is turned on.
   o   To adjust how long the tour waits at placemark and how fast it flies between
        placemarks, click Tours > Options and the Touring tab.
   o   Make sure your placemarks are all directly under the My Places tab. If they are not, click
        and drag them there.
   o   To play the tour, click My Places, and then the Play Tour button (see below)
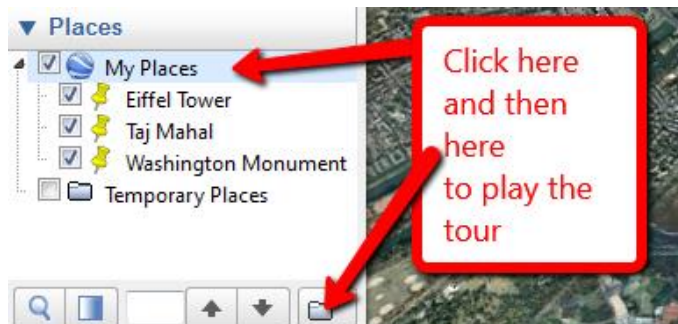
5.1 Now, we'll continue the Prague Museum exercise, add more museums to Google Earth using a search, and save these places and the tour into one kmz file. First, add the data in Prague that you already mapped by clicking **File** > **Open**. Browse to your Desktop and your Prague Museums.kml file. You'll now see these locations in google earth.

Expand this layer so you can see each feature. **Highlight** the walking route you mapped by clicking on it, and click the **Play Tour** button. Google Earth will follow this tour! Click Tools > Options, and Touring to change the camera tilt, range, and speed parameters for the tour.
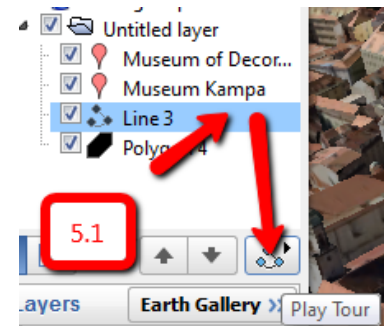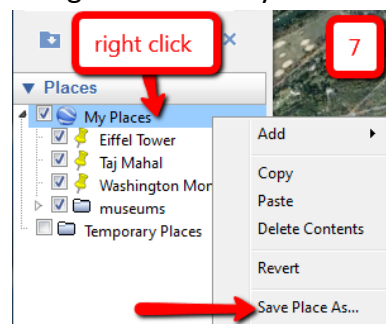
While zoomed into Prague, enter the search term "museum". A bunch of museums will appear with red placemarks on the map.

6 On the bottom of the search results panel, click the "Copy the current search results to My Places" button.
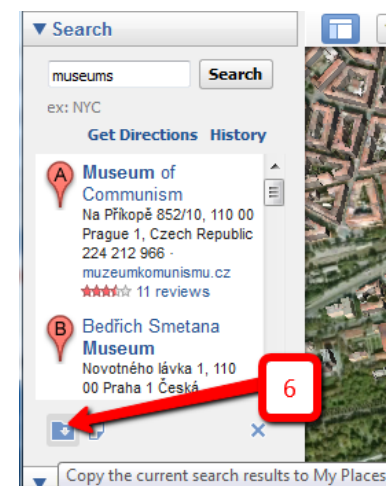
7 Right click the My Places folder, and choose "Save Place As"

Choose to save as My Places.kmz on your Desktop. This .kmz file can now be opened by anyone using Google Earth, and they will see the three placemarks you made, plus the museum locations saved.

Georeference an image in Google Earth

Google Earth can also be used to georeference images, such as historic maps, to their proper geographic location. Then, you can digitize features off of the historic map, save them as KML, and they will be accurately located for further analysis and map display.

8 Double click the Africa_1885_Webster.jpg in your Google_Workshop folder. This is a map of Africa showing the countries and territories that existed in 1885. Let's say for your research you are interested in comparing the exact "Basin of the Congo" region on this map to modern day country locations.

9 In Google Earth, zoom to show the continent of Africa. Click **Add > Image Overlay**. You may have to close the tours window by clicking the small gray X in this window to access Add > Image Overlay:


In the New Image Overlay window, click **Browse**, and then choose the 1885_Webster.jpg file on your Desktop, and click **Open**. This map will appear overlaid on Google Earth.
Now adjust the position of the image to match Africa by clicking and dragging the green plus in the middle of the map: adjust the image size using the green corners:
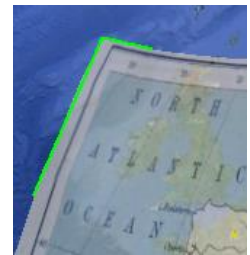
And to see the Google
Earth imagery and
map layers underneath
your historic map,
adjust the Transparency:
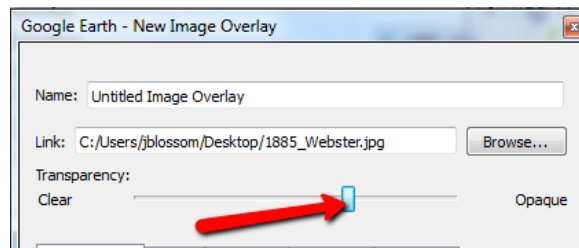
Click **OK** when you have
The map positioned properly over Africa.

10 Now, to trace the "Basin of the Congo" on the historic map, zoom into this region, and choose the **Add a Polygon** tool. Click to start the polygon, and click to add vertices, and double click to

finish your polygon, tracing around the Basin of the Congo. Also, holding down the mouse button will draw a continuous line. The resulting shape can be saved as KML.

Much more on Google Earth, and exercises to try out:
http://www.google.com/earth/learn/

Google Fusion Table exercise

A Google fusion table is essentially a spreadsheet on the web that can contain thousands of rows of data. Fusion tables can be linked to one another based on common columns, similar to what a database can do. Also, a column containing geographic information in a fusion table can be mapped. In this exercise you'll load a couple of Excel spreadsheets into fusion tables, and map them.

1 Open the sustainable_cities.xls spreadsheet from the Google_Workshop folder. Notice it contains a list of city, state locations for cities in the U.S., and a "sustainability" ranking. This was a report from Popular Science magazine circa 2010

2 Go to the Google Fusion tables website: http://tables.googlelabs.com/ Click on "**CREATE A FUSION TABLE**"

This will launch the Import new table wizard. Click **Choose File**, and browse to the sustainable_cities.xls spreadsheet. Choose the spreadsheet, and click **OK**. Then click **Next**. The Import new table wizard will show a preview of your table. Click **Next** again, and **Finish**. Now you've created a fusion table with your data in it.

In the fusion table, click **Edit** > **Change columns**. Choose the **Location** column. Change the **Type** to **Location**, and click **Save**. The table will recognize locational data, and highlight it in yellow.
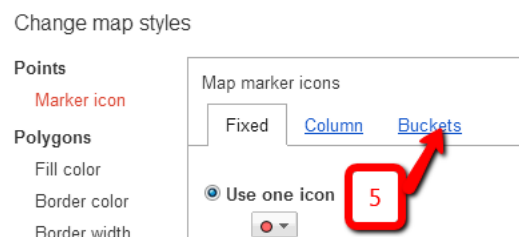
3 Click the red button (see arrow at right) and choose **Add Map**. Make sure Location is set your Location field, and your cities will be mapped. Next an interactive map of these locations will appear.
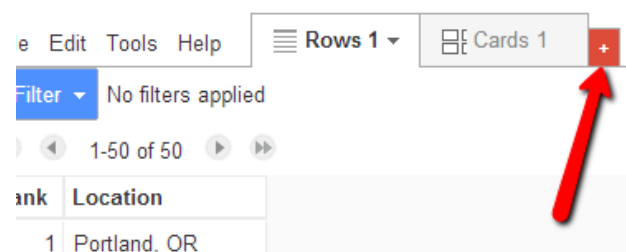
Now let's color the dots based on their sustainability ranking.

4 Click the "Change feature styles…" button.

5 In the Change map styles window, click on Buckets.

Specify:

- o 4 buckets
- o Column "Rank"
- o And click the "use this range" link next to 1-50. Your screen should look like this:

Still within the Change map styles window, click "Automatic legend" which is the last choice on the left. Check the box next to "Show marker legend".

Click Save **Save** Now your cities will be colored according to these data classifications, or "buckets".

Click the Heatmap option to see a density map of your data.

Google Fusion tables will also geocode address lists. To see this in action, follow steps 1-4 above, except use the Atlanta_Businesses spreadsheet from the Google_Workshop folder. 1 – 4 above. Note: To add this additional spreadsheet, from your existing map click **File** > **New Table**.

- - The map and fusion table can be shared with others by clicking the Share button.
- - The locations can be downloaded into a kml file by clicking File > Download.

More tutorials on Google Fusion Tables:
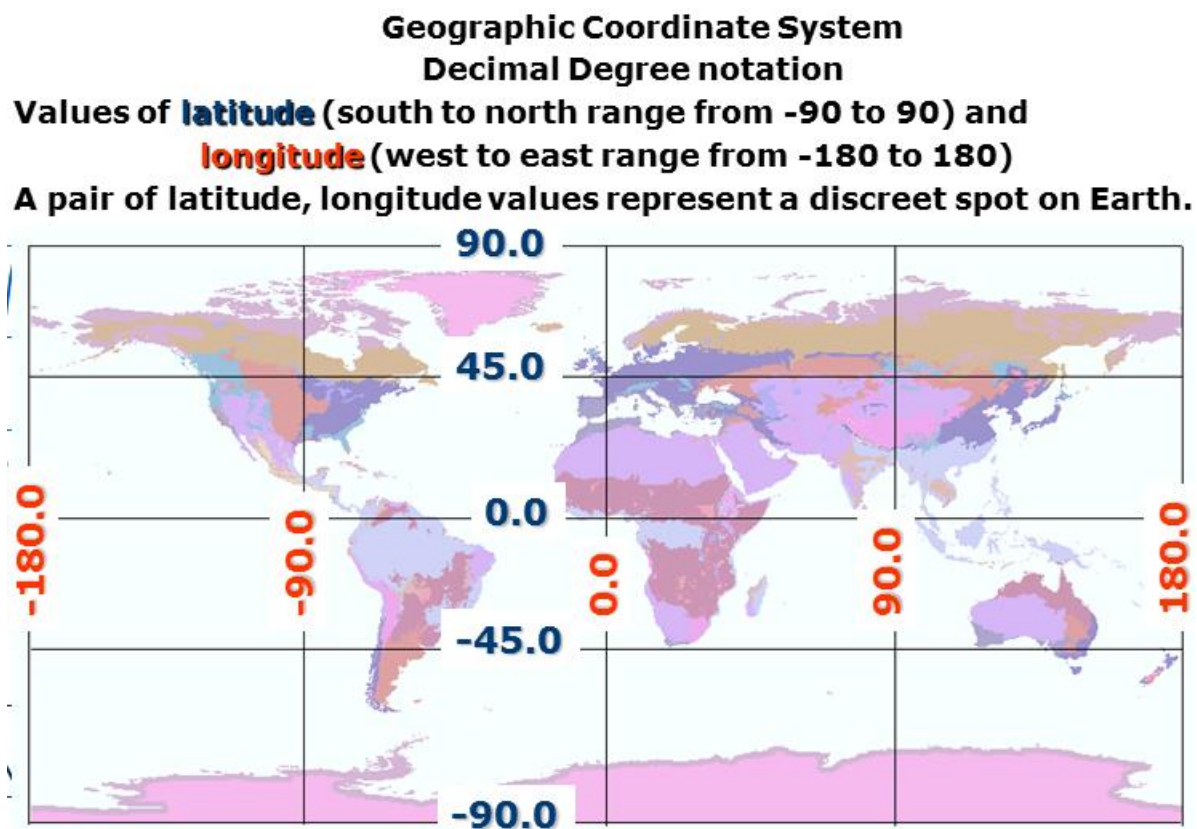http://support.google.com/fusiontables/answer/184641

Google Map Mashup Exercise

Go to: http://maps.cga.harvard.edu/gmaps_instruction/exercise01.html
This exercise walks the user through how to create a "Google Map Mashup" i.e. a custom
Google Map on your own website. We'll do the first 7 steps in this exercise.

Google Maps and Earth use latitude and longitude from a geographic coordinate system to
reference locations on earth. Here's a general reference showing a global latitude/longitude
grid.

END OF EXERCISES