UCLA   DIGITAL HUMANITIES

HOW TO USE
GOOGLE EARTH

INTRODUCTION

Google Earth is a "virtual globe program." Similar to Google Maps, it is an interface through which you can view satellite images and user-content within the context of the earth. The principle difference between G-Earth and G-Maps is that this software must be installed on your computer. This means that any created content is stored on your personal machine, and is *not* linked to an online user ID like G-Maps. Being limited to the local drive is a small price to pay for the G-Earth's features: Drawing compatibility with G-Maps, access to "layers" of data generated by users and professionals, full mouse/keyboard control, and "tours."

There is seamless compatibility between G-Maps and G-Earth. This means that you can import your G-Maps content as a .kml/.kmz and display it in G-Earth, or alternatively import your G-Earth content to My Maps. Note that internet is required for G-Earth, which allows access to all public My Maps content.

Unlike G-Maps, this application allows you to manipulate several layers of data at one time and store them together. After creating a grouped set of content, you have the options of navigating it via mouse/keyboard, a preset path, or even a flight simulator. The simulator has few practical applications so isn't described here.

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IMAGE LAYER
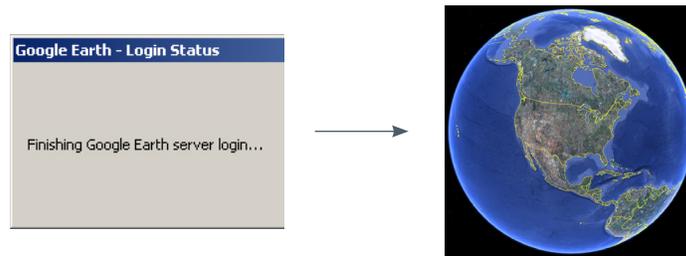> Create/Position
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FIND A LOCATION

Open Google Earth and wait for initialization. If you are not properly connected to the internet, you won't see a planet!

BASIC CONTROLS

You can go to any place, as long as you know where!

> MOUSE - Principle way of honing into a region; cursor icon reflects control type.
> Left-Hold = "Grab" the globe and move it in a direction
> Middle-Hold = "Tilt" between a top-down and street-level view
> Right-Hold = "Pull" in (down), out (up), and rotate (left/right)
> Left-Double = Zoom In
> Right-Double = Zoom Out
> Scroll = Zoom In (up) and Out (down)
>
> NAVIGATION CONTROLLER - The panel on the right side of viewer, all controls accelerate in response to increased cursor distance.
> Look Eye - View surroundings from single vantage point
> Move Hand - Pan in all four directions
> Zoom Slider - Drag or single click for zoom in/out
>
> KEYBOARD - Useful for shortcuts
> Arrows = Move Hand functionality
> Shift + click = Tilt (up/down arrow), Rotate (left/right arrow)
> Ctrl + click = Look Eye functionality
> 'n' = Set compass to North, 'u' = Set tilt to top-down, 'r' = both

Finally, you can also use the left panel's search bar to type a location, using the same formatting (and with the same results) as Google Maps.

ENABLE RELEVANT LAYERS

Explore the "layers" on the bottom of the left panel. This data, contributed by various sources, has been verified by Google. In particular, note the following options:

> TERRAIN - Applies elevation, to highlight hills, valleys, etc.
> 3D BUILDINGS - Displays 3-D models of buildings made by users.

Try finding a modeled landmark or urban area.

ADD DESCRIPTION TO AN OBJECT

Placemarks/points, lines, and shapes can be drawn in the same fashion as My Maps. In fact, the KML coding of these objects are identical in the two apps. Refer to My Maps guide for details on object types. The principle difference is how you select the drawing cursor: Since R-click is for navigation, you must choose from the top panel. For paths and polygons, you can either left-click to place connectors (which you can reposition) or left-hold+drag for smoother edges. You may also notice the appearance of an "edit" window, which is key to embedding description.

Placemark   Polygon   Path
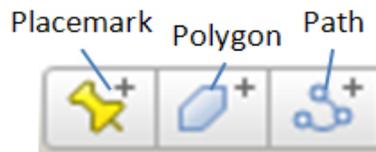
TEXT

All types of information are embedded during the object-drawing stage, before you click "OK". The simplest type of data "tagging" is the insertion of descriptive text. Give your object a name (this name will appear along with the marker) and then add additional information in the description section.

NOTE: All text formatting is done via HTML coding, as seen above. So to add bold, italics, or color to your text, you will need to learn some basic HTML.
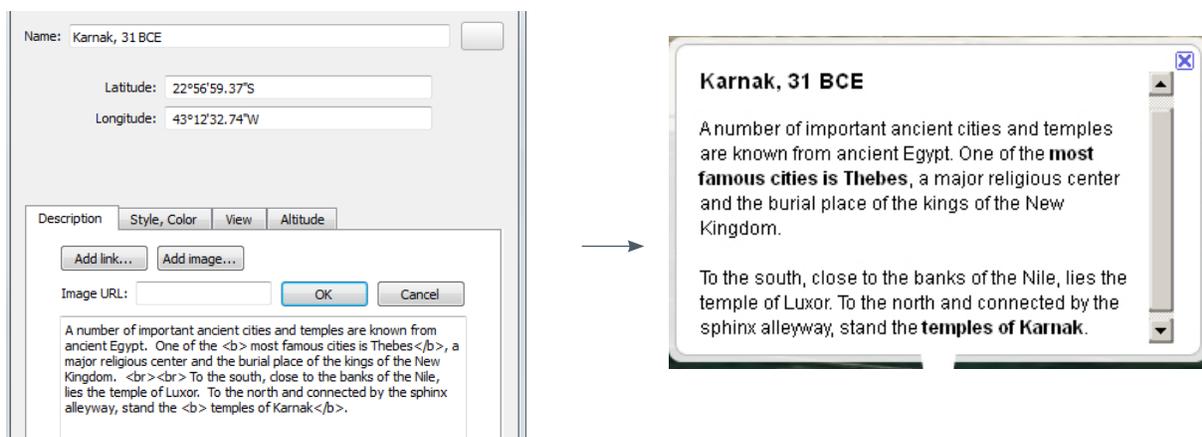

EDITING/DELETING

You can always get back into the editing panel by left-clicking on an object and selecting "properties." That will re-opening the editing window. To delete an object, left-click and select "delete."

IMAGES

Much like My Maps, online images can be referenced in your project. Reference the image file by clicking the "add image" button in the description section. If you would like to link to a URL, click the "add link" button.

NOTE: Make sure your source is of a valid image file type. Often, you can copy an image's direct source code by left clicking on the image, selecting "copy image location," and pasting that URL.

Images are the principle form of data that is *not* stored in a .kml. However, if you are referencing a file from the local drive, G-Earth will include it in a compressed .kmz format (See Save Your Work).
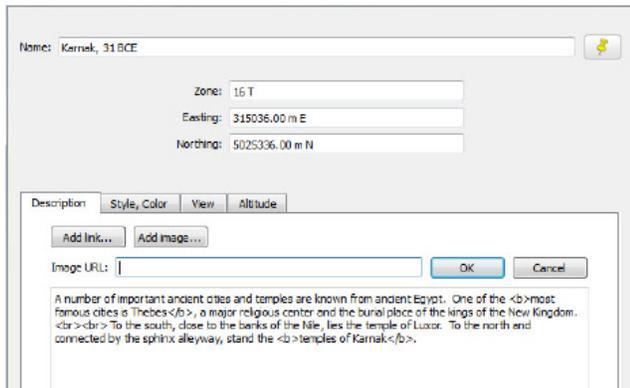
VIDEO

Embedding a video is slightly more complex. You are restricted to online YouTube and Google Videos, where you can find the "embed" html code on the video's web page. Copy and paste that code into the description box. Click OK and your video will play when you click on the object.
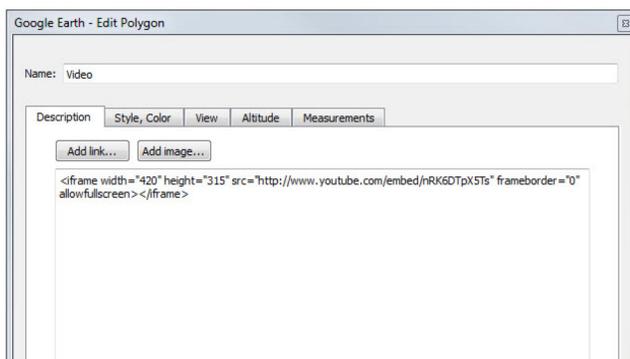
COLOR/POSITION

As you may have noticed, the Edit window contains several tabs besides Description.   These changes help in viewing your data.

> STYLE/COLOR - Alter the color, thickness, scale and/or opacity of an object's elements. These choices vary depending on the type.
>
> VIEW - Use the "snapshot" button to save the angle from which your object is viewed. When the element is double-clicked in the left panel, it will adjust the viewer to this exact spot.
>
> ALTITUDE - By default your objects are clamped to the ground. This setting can be changed to make your shape float/tilt.

An example of these alterations can be seen below:

IMAGE LAYER

The most dynamic G-Earth object is the Image Layer ().   It allows you to add modern or historic plans and maps to your project, representing information not seen in the satellite imagery.

NOTE: Image Overlay objects are memory intensive, so take image file size into consideration and downsample if necessary.

CREATE/POSITION

Before creating the layer, zoom in on the area you want to cover. Click the icon to open the editor.
The field of the edit window accepts a Link: the URL or local directory of your image file. This first tab also contains the Description field (see Text). NOTE: Transparency is re-located to the top of the Edit window.
While in edit mode, you can use the green border to reposition your image borders:

 - Move the entire frame

 - Stretch the sides in/out (Shift+ to keep scale)

 - Stretch the corner in/out (Shift+ to keep scale)

 - Rotate the entire frame

For geographic layers requiring exact coordinates, there is the option of entering Lat-Long values (below).

SETTINGS

There are slightly different edit tabs for the Image Overlay, which is what differentiates the Image layer from other objects:

      VIEW - See Color/Position
      ALTITUDE - See Color/Position
      REFRESH - Useful for URLs of updated images, e.g. weather data
      LOCATION - Set the Lat-Long coordinates of the frame's 4 corners

Example:

ORGANIZING

Once you have created a collection of objects for a certain area or topic of study, you can group and order them.

FOLDER

Create a storage file folder by clicking the top menu [Add->Folder]. Name and edit the folder, as you would with an object. Finally, to place objects in the folder, simply drag+drop in the left panel (). Be sure that all of your objects fall within the folder (to check this, expand and contract the folder by clicking on the triangle next to the checkbox for the folder -if all your objects don't collapse into the folder, they are not inside).

CHECK

The left panel's directory-like organization scheme is fairly intuitive. Use the checkboxes to show (☑) or hide (☐) elements.

ORDER

The order that placemarks, polygons and paths are listed in the left panel dictates the order in which they appear during a tour (see Take a Tour).

SHARE YOUR WORK

Google Earth lets you to share your work in a number of ways, such as e-mail, uploading to servers, and storing as a .kml/.kmz file. You can save an entire group of objects (contained in a folder) as a single file: Right-click the element in the left panel and select "Save Place As..." You now have the choice of .kml or .kmz:

> .kml - Contains all text description and object "calls"; does NOT save image files, but simply references them
>
> .kmz - Compressed file (like ZIP) that preserves ALL data. The compression contains a .kml file (named "doc.kml") plus images. This is ideal for sending or saving a project w/images. NOTE: Saving a project w/o images as .kmz simply contains "doc.kml"

Conversely, you can open the work of others (.kml/.kmz) in Google Earth. These files could have been generated in Google Earth, Google MyMaps (see MyMaps), or many other geography applications. To save a copy, simply drag the file out of the Temporary Places folder.

TAKE A TOUR

Now that you've created a project-full of information, its time to take a tour of your site! This can be done with any folder in the left panel, as well as Path objects. Simply click this Play Tour button to begin:
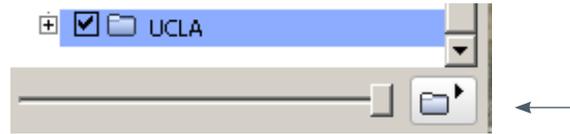
At the bottom of your screen, you are supplied with play/pause and repeat options.

NOTE: Defaults are set for the time spent at each site. This can be adjusted in the top menu [Tools -> Options -> Touring].

RECORD

A new feature to Google Earth, Record ( ) lets you save the tour's motion and audio commentary as a separate .kml. Record allows you to include pauses and free-form motion in the save file.

To save the tour, click the Save ( ) button in the playback controls that re-appear. Your tour appears in the left panel.