

Exercise 2 – Getting Started

IMPORTANT! Before starting this exercise, please turn to appendix section at the back of your manual and complete the *Configuring Quantum GIS* document.

Learning objectives: The purpose of this exercise is to become familiar with QGIS's application windows and graphical user interface, and the concept of a project document. You will have an initial look at the basic tools and layouts within QGIS. We shall be working with a range of spatial data for Kenya. Please feel free to explore the data beyond the instructions provided here, experiment with functionality and ask if there is anything you don't understand!

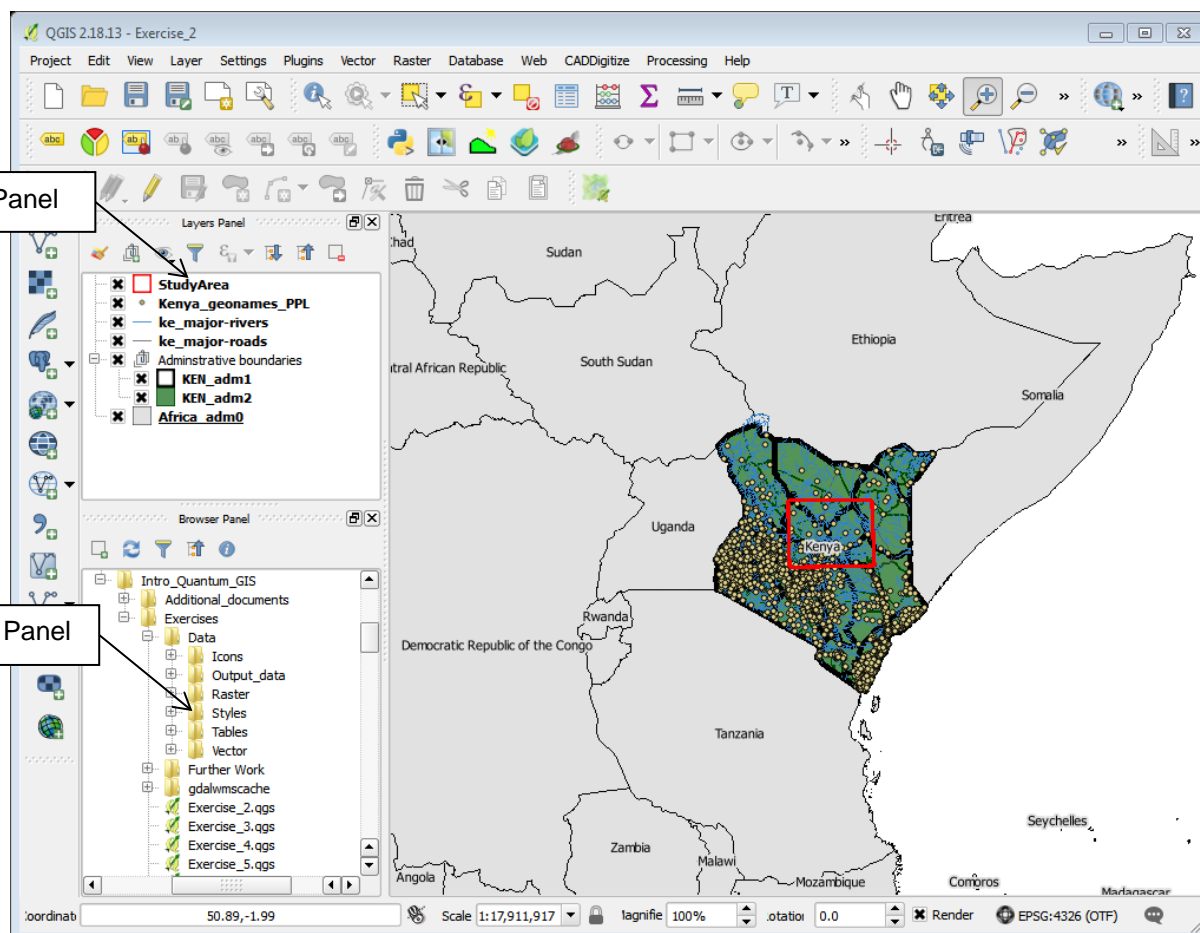
Part 1 - Open an existing QGIS project file and explore the Graphical User Interface (GUI).

1. If not already done so, start QGIS.
 - Click **Start > All Programs > QGIS.... > QGIS Desktop 2.x**
 - You may see a QGIS Tip appear. One of these appears every time you start up the software. **Press OK** to dismiss the tip.

2. Choose **Project > Open**
 - Browse to *C:\Intro_Quantum_GIS\Exercises*.
 - Select **Exercise2.qgs** and click **Open**.
 - This is a QGIS Project. You will see a map of the East Africa region, with some detailed data for Kenya, which we shall explore during this exercise.
 - On the left hand side of the screen you will see a list of layers. This is the layer panel.
 - You will see some group icons in the layer panel. These represent layer groups:



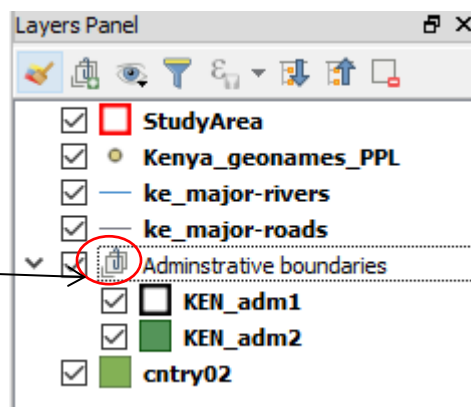
The map shows administrative boundaries in Kenya along with other topographic data such as settlements (from *Geonames*, applying code PPL – populated place used), roads (World Resource Institute source) and rivers (World Resource Institute source). Your map will look similar to this.







Layers Panel

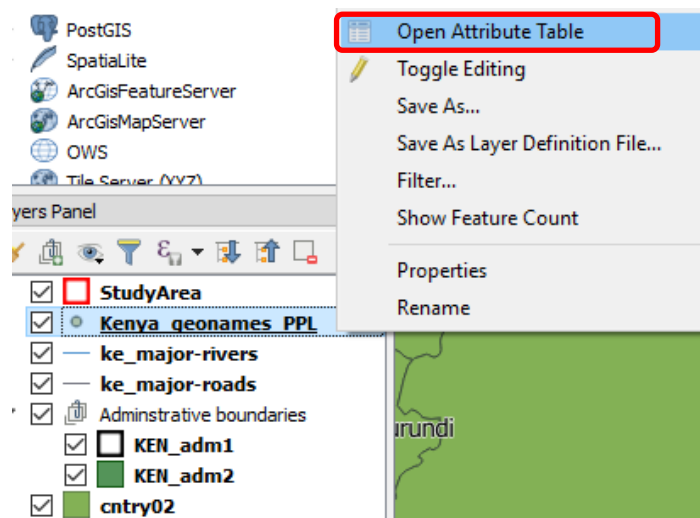
Browser Panel

This icon show you that the data is separated into a group. In this case, Administrative boundaries



3. Click on the  icon next to a group (may display as a + or - in some versions of QGIS). You will notice that all the layers from the group are now hidden in the layer window, but still visible on the map. Click again to view the layers. **Group Layers** make it easier to turn on and off several datasets at once.
4. Find the **Administrative boundaries** group in the Layer window.
 - Click on the tick    **Administrative boundaries** to make all the layers in the group disappear from the map.
 - Click on it again to make the layers re-appear.
 - Practice turning on and off groups and individual layers.

5. Open an attribute table.
 - Find the layer **Kenya_geonames_PPL**.
 - Right click on it and select **Open attribute table**.



Kenya_geonames_PPL :: Features total: 2580, filtered: 2580, selected: 0

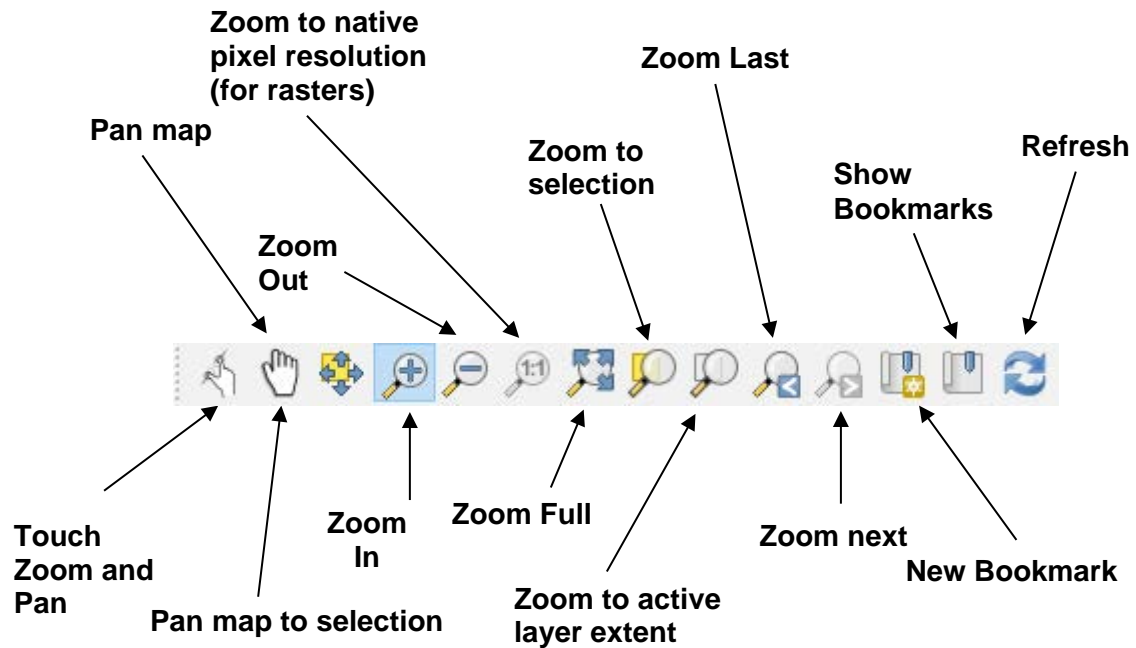
	geonameid	name	asciname	alternaten	latitude	longitude	feature_c
1	190188	Kusitawi	Kusitawi	Kusitawi	-3.950100000000...	39.507230000000...	P
2	186088	Mto Panga	Mto Panga	Mto Panga	-4.000000000000...	39.700000000000...	P
3	190191	Kusa	Kusa		-0.316800000000...	34.851520000000...	P
4	194292	Kanyarkwat	Kanyarkwat		1.261860000000...	34.913280000000...	P
5	186092	Mtongwe	Mtongwe	Mtongwe	-4.066420000000...	39.641080000000...	P
6	177896	Miritini	Miritini	Mirihini, Miritini	-4.009610000000...	39.584569999999...	P

Show All Features

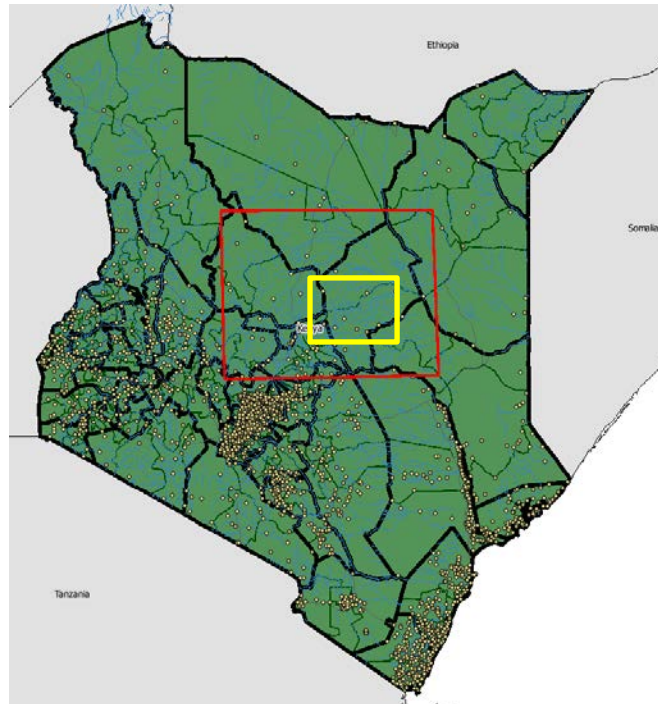
- There are several buttons along the top of the attribute table which we will be looking at in more detail later in the course. For now just look at the table with its rows and columns. Each row represents a different point (or feature) on the map. The columns hold different information about the rows. The “name” column tells you the settlement name that the point in the GIS it is representing.
 - Position the table so that you can see both the table and the map window; try clicking a few of the row headers (circled above) and see if you spot the corresponding yellow highlight on the map window – this visually locates each of the settlements
6. Close the attribute table by clicking on the cross at the top right of the table.

Part 2 – Navigating around the Map canvas

- The Map Navigation toolbar contains various tools to help you move around the map canvas.



- Load the **Map Navigation** toolbar if it isn't already open.
 - View > Toolbars > Map Navigation**
- Zoom in to the Garba Tulla area, Isiolo County (highlighted yellow, the smaller of the highlighted boxes, in the screenshot below).
 - Click on the **Zoom in** tool on the map navigation toolbar.
 - Left click and hold and drag on the map to zoom in to the area shown within the square below. As you drag the Zoom in tool on the map, you will see it draws a temporary grey square over the area where you are zooming in
 - Click on the **Zoom last** button. This will zoom back out of the map canvas to the previous extent.
 - You can also use the scroll wheel on the mouse to zoom in and out of the map canvas. Practice doing this.



3. Zoom back out to the full extent of the data.
 - Click on the **Zoom full** tool.
 - You will notice that your map canvas zooms back to the full extent of all the layers in your QGIS project, displaying the whole of Africa




4. Click on the **Pan Map** tool.
 - Left click and hold on the map canvas and move the mouse. You will notice that the map canvas moves accordingly.
 - Try zooming in to the map using the scroll wheel and then panning with the **Pan Map** tool. This is a very effective and quick way to navigate around your map.
 - An alternative method for panning is to hold down the middle mouse button (often the mouse wheel) and move the mouse.

5. Zoom to a specific scale.
 - From the scale box at the bottom on the QGIS window, you are able to type in your desired viewing scale. Type in a scale and press the 'Return' key on the keyboard. You should see that your map canvas changes to the scale you typed in.



6. Right Click on 'StudyArea' in the layer window and select **Zoom to Layer**.
 - The map canvas extent is now centred on *Isiolo County*.


Part 3 – Create a Spatial Bookmark





1. Create new spatial bookmarks.
 - In case you have not done so already navigate to the *Study Area* located centrally on the map (red boundary).
 - Click on the **New Bookmark** button. 
 - You should see the *new bookmark* appear in the **Spatial Bookmarks Panel**. It is currently highlighted in blue, and the cursor is active in the name field; rename this bookmark *Isiolo County*.

It will be useful to also have a bookmark for Kenya as a whole country

- Right click on *KEN_adm_1* and select **Zoom to Layer**
- Click on the **New Bookmark** button
- Call this bookmark 'Kenya.'



2. Zoom out to the full extent of the map using the **Zoom full** button.
3. Use the **Show bookmarks** button to zoom back to the bookmark you just created.
 - Click on the **Show bookmarks** button. 
 - The **Geospatial Bookmarks** window will open.
 - You will see the bookmark you have just created (example below).

Spatial Bookmarks Panel			
			
Name	Project	xMin	yMin
Isiolo County	Exercise_2.qgs	36.0599	-0.235194
Kenya	Exercise_2.qgs	31.371	-4.96496

- Select it and click on the **Zoom to** button circled above.
- You will notice that your map zooms to the bookmarked area.
- Close the **Geospatial Bookmarks** window.

Note: Bookmarks are a good way to guide people around your map or to save important geographic extents such as field survey sites and Areas of Interest.

Part 4 – The Identify Features tool

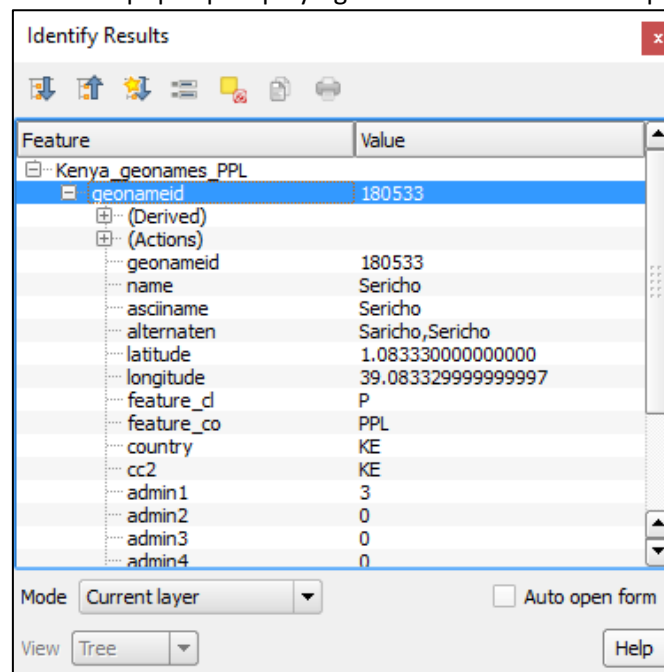
- The **identify feature** tool provides a simple way of retrieving **attribute data** from map objects. The tool is selected from the toolbar and is then used to click on map objects you want to retrieve data for. The **identify features** tool retrieves the attribute data associated with the active layer by default.

- Use the **Identify Features** tool to view the attributes for a map object.



- In the Layers window, click the **Kenya_geonames_PPL** layer to make it the active layer.
- Pan and zoom in to your map until you are able to see one or more points from the **Kenya_geonames_PPL** layer.
- Select the **Identify Features** tool and click on one of the **Kenya_geonames_PPL** points.
- You will notice that the point you selected is highlighted in red.

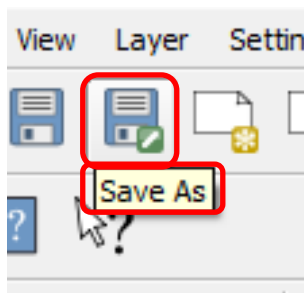
You will see that a new window pops up displaying all the attributes for the polygon you selected.




- Try viewing the attributes for a few more points from the same layer until you are happy with how this works.
- Close the **Identify Results** window.
- Try to view the attributes for one of the polylines in the **ke_major-rivers** layer.
- If you don't see the data you were expecting, make sure that the correct layer is highlighted in the Layers window.

Part 5 – Accessing QGIS Help

1. Move your mouse over the buttons on the QGIS toolbar. A yellow pop-up help box will appear.







- Similar to Windows' 'Tool Tips'

2. Click the button **Help contents**  from toolbar (if it is visible), or alternatively select it from the **Help** drop-down menu

- This starts a web browser displaying QGIS online documentation; it is important to get familiar with this support site
- A PDF is available for download and is updated regularly

3. Explore some vital QGIS functions: hover your mouse over the following buttons to identify them and explore the **Help contents** documentation to learn what they do. In the space below, provide some brief details:

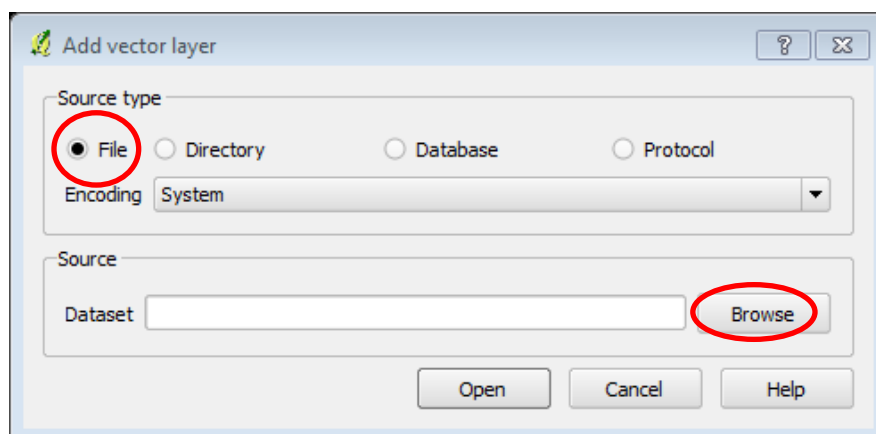
Button	Description
	
	
	
	

Part 6 – Browse for data

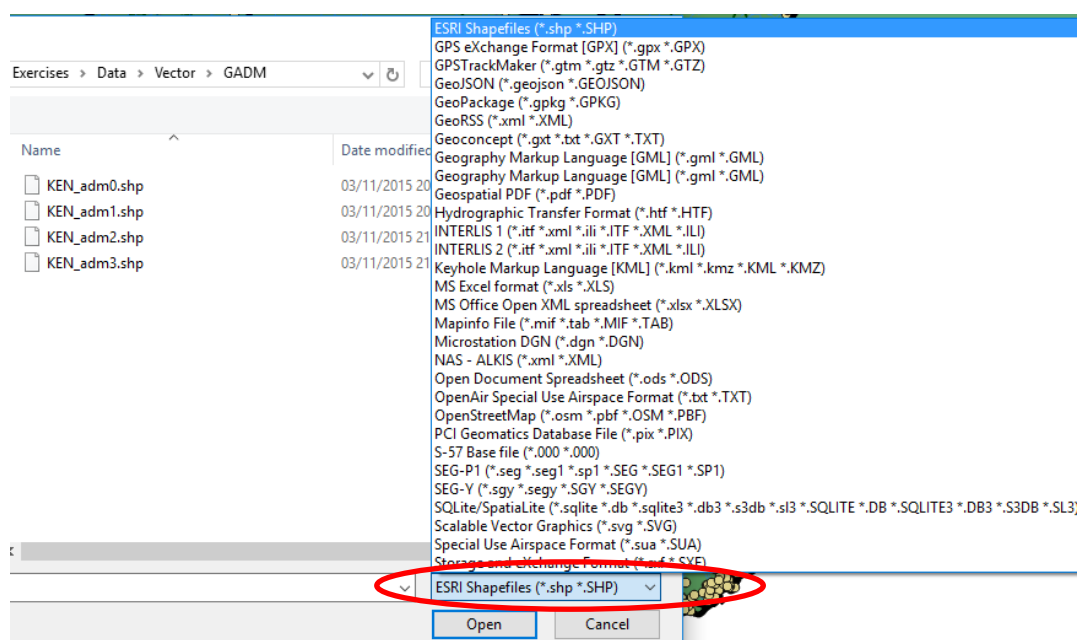
1. Browse for vector data



- Click on the **Add Vector Layers** button .
- Set up the window as below and click on Browse



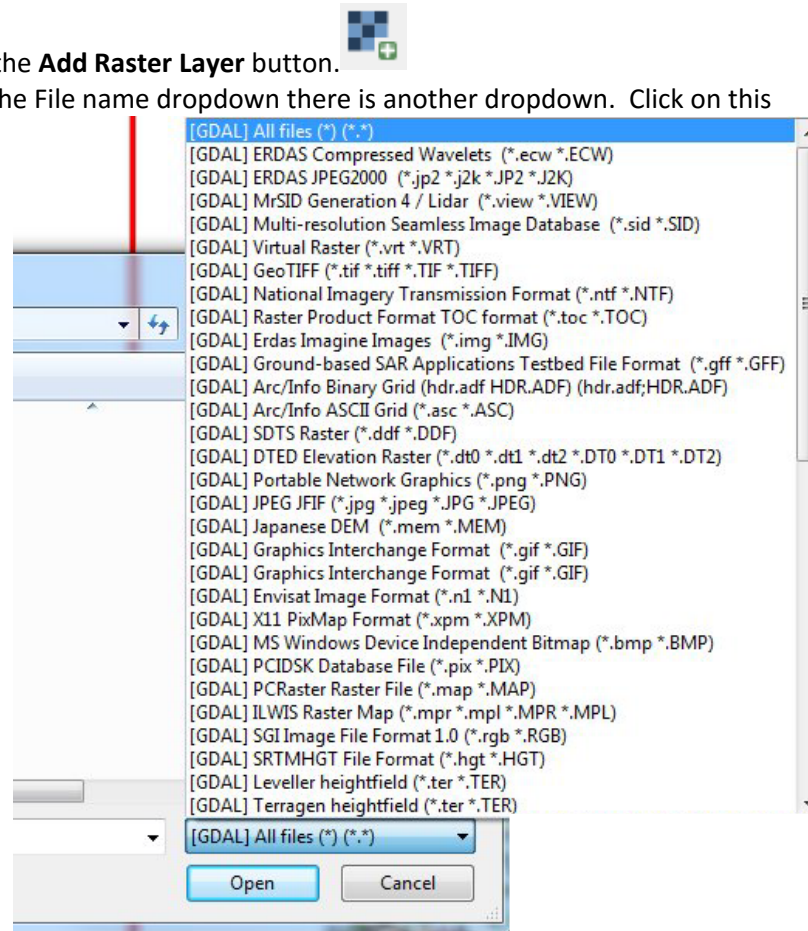
- Next to the **File name:** drop-down there is another dropdown menu. Click on this.



- This shows you all the different vector file formats QGIS is able to open.
- Different file formats will be covered in more detail later on the course.
- Close the **Browse** window and the **Add vector Layer** window.

2. Browse for Raster data

- Click on the **Add Raster Layer** button.
- Next to the File name dropdown there is another dropdown. Click on this



This shows you all the different raster file formats QGIS is able to open.

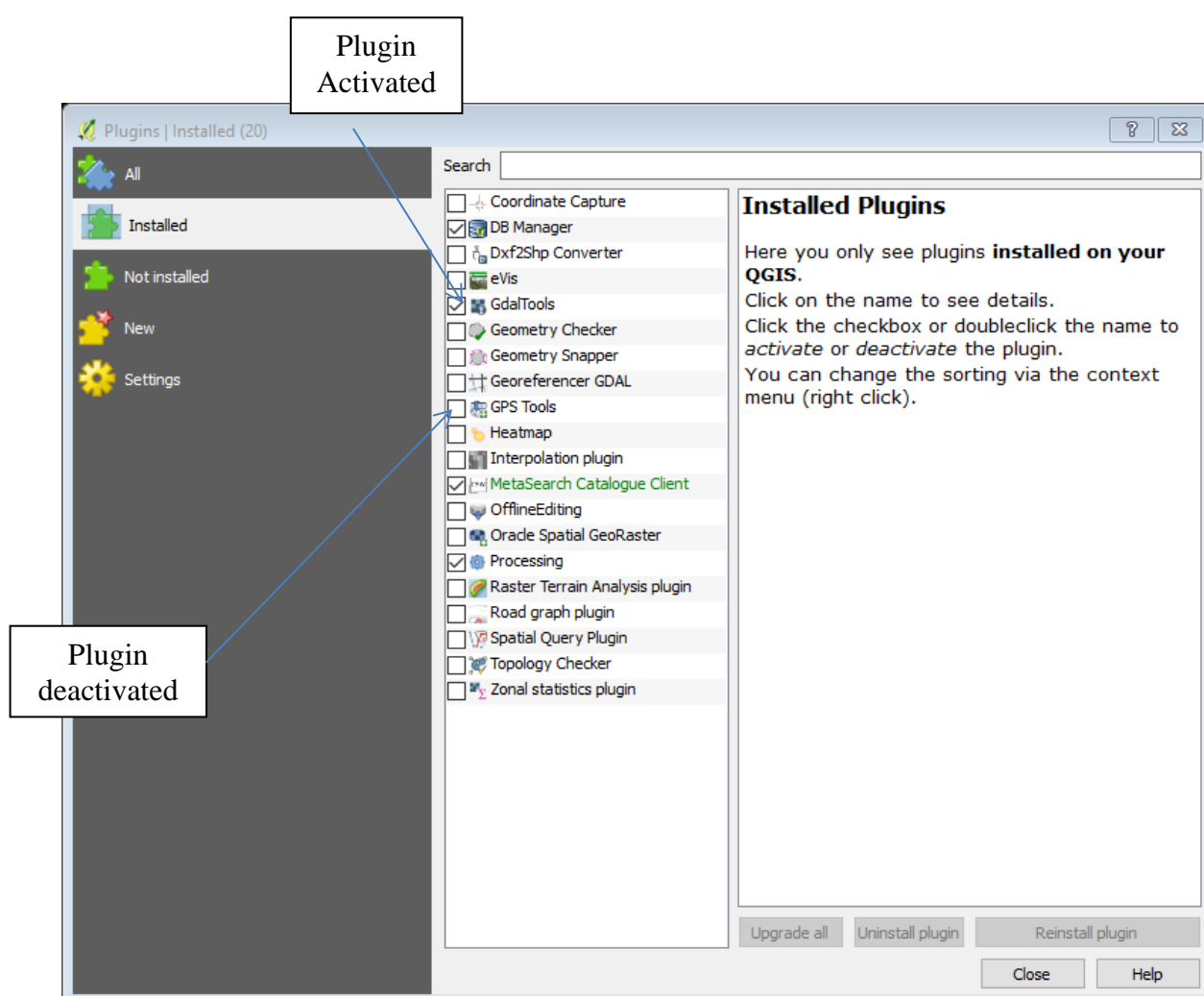
- Close the **Add Raster Layer** window.

Part 7 – Browse for plugins

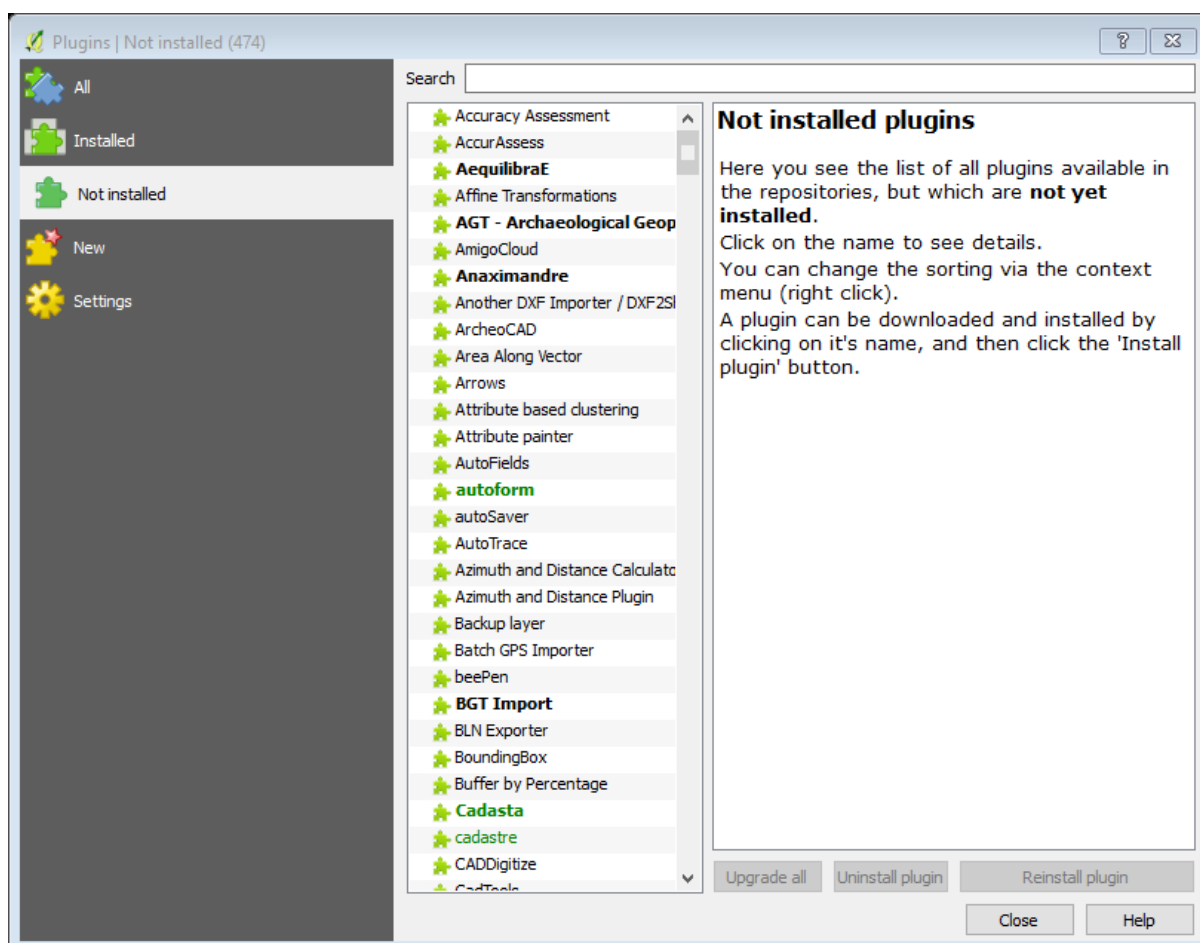
NOTE FOR THIS PART OF THE EXERCISE YOU WILL REQUIRE AN INTERNET CONNECTION

By default no plugins are active, but many plugins are pre-installed with QGIS. You can add many more, covering many different types of analysis, to further enhance functionality.

1. Click on **Plugins > Manage and Install Plugins**
 - This opens the QGIS Plugin Manager.
 - Click on the **Installed** tab
 - Plugins with a cross next to them are currently activated.
 - Plugins without a cross are currently not loaded.



2. Plugin Manager > Not Installed



- This tab shows you a list of plugins available to download and install.
- Each plugin has a description field which tells you a bit more about what it does. You will install some of these during this course.
- Close this window.

3. Save your QGIS project



4. Close QGIS

Challenge

Create a new QGIS project and add the following datasets to it.

- C:\Intro_Quantum_GIS\Exercises\Data\Raster\True_Marble\TrueMarble_250m_E2_N_Africa.tif
- C:\Intro_Quantum_GIS\Exercises\Data\Vector\IsioloCounty.shp
- C:\Intro_Quantum_GIS\Exercises\Data\Vector\OSM\Isiolo\Line_Watercourses.shp

Hint – remember the file type options available from the drop down menus.

Use the navigation tools, Identify tool and open the attribute table to explore the data in more detail