

Session 10: Introduction to QGIS (interface, main functionalities)

Navigating the Interface:

Desktop

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Layers Browser	

QGIS interface is divided into 5 main areas:

- 1. Layers List / Browser Panel
- 2. Toolbars
- 3. Map canvas
- 4. Status bar
- 5. Side Toolbar

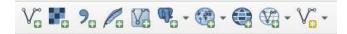








Manage Layers Toolbars



- Add Vector Layer
- Add Raster Layer
- Add Delimited Text Layer
- Add SpatiaLite Layer
- Add/Edit Virtual Layer
- Add PostGIS Layers
- Add WMS/WMTS Layer
- Add WCS Layer
- Add WFS Layer
- New Shapefile Layer

Map Navigation Toolbars

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- Pan Map
- Pan Map to Selection
- Zoom In
- Zoom Out
- Zoom to Native Resolution
- Zoom Full
- Zoom to Selection
- Zoom to Layer
- Zoom Last
- Zoom Next
- New Map View
- New Bookmark
- Show Bookmarks
- Refresh



Attributes Toolbar



- Identify Features
- Run Feature Action
- Select Features by area or single click
- Select Features by Value
- Deselect Features from All Layers
- Open Attribute Table
- Open Field Calculator
- Toolbox
- Open statistical summary
- Measure Line
- Show Map Tips
- Text Annotations



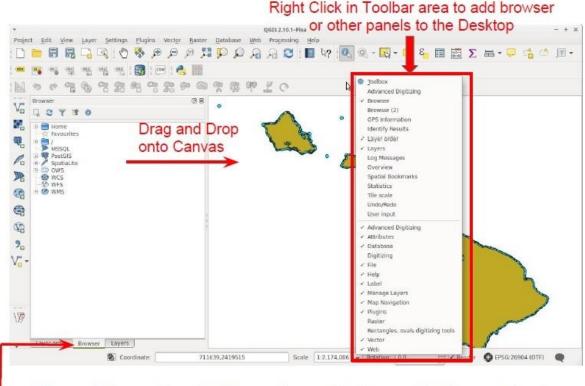
Saving Project Files

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- QGIS can save user sessions. (A QGIS file is called a project.)
- Project > Save
- Type in a file name and save your project as a QGZ file (.qgz)
 - QGZ file format is a new default format for QGIS. It is a compressed format with the .qgs file (former default format) embedded in it together with its associated sqlite database (.qgd) for auxiliary data.



Browser Tab



- Browser Tab

From the Manage Layers Toolbar and the Browser Panel you can add Shapefiles, Databases, WFS, WMS, and several other types of files.



Project Properties

*Untitled Project - QGIS Project Edit View Layer Setti	ngs <u>Plugins</u>	Vect <u>o</u> r <u>R</u> aster <u>D</u> atabase <u>W</u> eb		
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Properties §napping Options Import/Export	Ctrl+Shift+	•	🔶 🌐 CRS 🛛 🔶	Assign Default symbols and set transparencies
New Print Layout	Ctrl+P			Layer Capabilities
Report Layout Manager Layouts		5	Data Sources 🔶	Define 1:n relations
Exit QGIS	Ctrl+Q		Variables	Manage project-level variables
			Macros	Edit Python Macros
Layers Browser		t 105.067,11.725 🏽 ai 1:632	QGIS Server	Configure project in order to publish it online

Project Properties changes the default project setting for the **CURRENT** QGIS project.





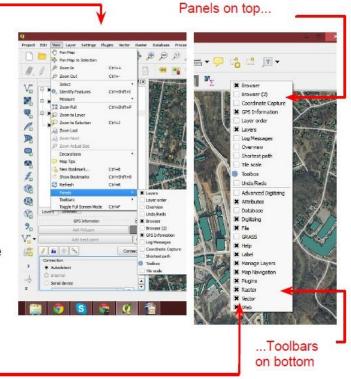




Panels and Toolbars

Panels and Toolbars:

- Turn them on and off by going to View > Panels or Toolbars.
- Panels provide interactive "windows". Examples: Layers,GPS Information, and toolbox
- Toolbars are a grouping of tools
- Panels/Toolbars can also be added/removed by rightclicking on the toolbar area





Vector Layer Properties

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	· 😼 🛗 🎬 🌞 Σ 🛲 · 🌄 Τ -	Information Used to define general settings for the vector layer
Layers × β τ γ ε	00 • II II .	Provides a comprehensive tool for rendering and symbolizing vector data
COM Kam	npong-Cham	Symbology Provides the capabilities to configure smart labeling on vector layers
	D Zoom to Selection	Allows to add a graphic overlay to a vector layer
š.	Show in Overview	Diagrams Enables 3D rendering
	Copy Layer	SU View
5	Re <u>n</u> ame Layer	Source Fields
2	Duplicate Layer	Helps set up the form to display when creating new features
5	<u>Open Attribute Table</u>	Allows to join a loaded attribute table to a loaded vector layer
	Toggle Editing Eilter	Auxiliary Storage Allows to store properties for layers that are not editable
	Set Layer Scale Visibility Set CRS →	Actions Provides the ability to perform an action based on the attributes of a feature
	Export >	Display Helps configure fields to use for feature identification
	Styles >	Allows to set the scale dependent visibility and simplify geometry
Layers Browser	Properties	C Variables Lists all the variables available at the layer's level
Type to locate (Ctrl+K)	Read oordinat 103,488,12.069 🕷 :al 1:1549	
		Allows to declare data dependencies between layers
		Provides advanced settings for the Layers panel and/or the print layout legen
		Consists of Description, Attribution, MetadataURL, and LegendUrl sections
		Gives access to options that help to ensure the quality of digitized geometries

The (Vector) Layer Properties window provides information about the vector layer and provides general settings to manage appearance of layer features in the map (symbology, labeling, diagrams) and interaction with the mouse (actions, map tips, form design).



Data Projections

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All vector/raster layers have a projection or CRS. The quickest way to check projections is to right click on the layer > Properties > Sources



Raster Layer Properties

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abe	Duplicate Layer		Source ←	Displays basic information about the selected raster
(abe)	<u>S</u> et Layer Scale Visibility Set CRS	, 4	🐳 Symbology 🖕	Allows to change to the band and color rendering and raster resampling
	Export		Transparency 🗲	Allows to set the transparency level of the raster layer
	Styles Properties		Histogram	Allows to view the distribution of the bands or colors in the raster
	10	h	🞸 Rendering 👅 🗲	Allows to set scale dependent visibility and refresh layers at interval
Layers Browser			🖄 Pyramids 🛛 🗲	Allows to build pyramids to improve raster performance
Q. Type to locate (Ctrl+K)	1 legend entries removed. Coordinate 10	4.471, 12.41	Metadata 🕳	Provides options to create and edit a metadata report on a layer
			E Legend	Provides a list of widgets that can be embedded in the Layers panel
			🖾 QGIS Server 🔶	Consists of Description, Attribution, MetadataURL, and LegendUrl sections

The (Raster) Layer Properties window provides information about the layer as well as the ability to set pyramids levels, adjust appearance, and view the histogram.



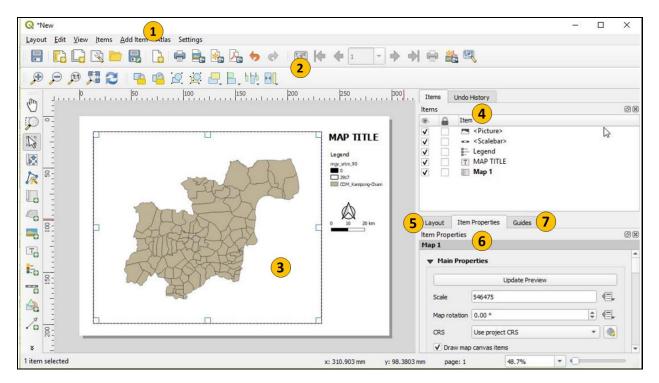
Layout Manager

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Layout Manager Layouts Exit QGIS	Ctrl+Q	•		Close		Enter a u	inique print layout title ill be automatically generated if left emp
	r						OK Cancel

The Layout Manager allows you to create a new map layout either from an empty layout or a template. It can be accessed from the Project menu (Project > Layout Manager) or in the Print Layout window (Layout > Layout Manager).



Print Layout



Print Layout interface: 1. Menu Bar; 2. Toolbar; 3. Map Layout; 4. Items and Command History; 5. Layout Properties; 6. Item Properties; 7. Guides









Layout Toolbar



- Save project
- New layout
- Duplicate layout
- Layout manager
- Add items from template
- Save as template
- Add Pages...
- Print Layout
- Export as image
- Export as SVG...
- Export as PDF...
- Undo
- Redo

Navigation Toolbar

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- Zoom in
- Zoom out
- Zoom to 100%
- Zoom full
- Refresh view

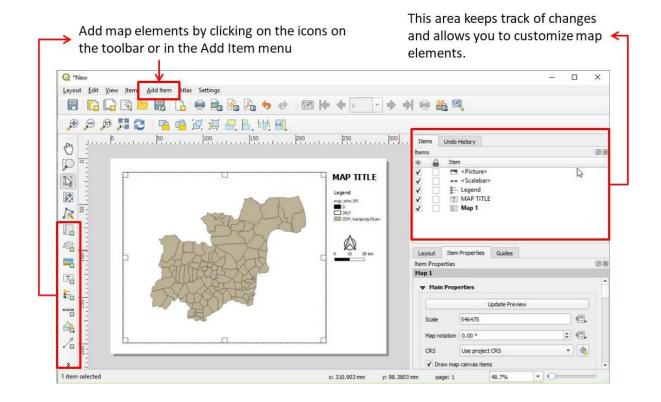


Print Layout

Click on the Add Map button then draw a rectangle for where the Map Canvas will appear. Q *Print Layout × _ Layout Edit View Items Add Item Atlas Settings 🖥 🚺 🕞 😂 🛅 🔜 🔓 🚔 🎭 🏷 🔶 🛷 💷 🖊 🔶 🔶 🖊 🖶 🥰 ✐♥♬2 雪哈区区是目,┉图 3 ØX Items Item 0 . Map 1 1 13 3: Layout Item Properties Guides 40 100 Item Properties ØX -Map 1 To ▼ Main Properties 120 Update Preview €. Scale 429806 4 : 🕄 Map rotation 0.00 ° 10 00-• CRS Use project CRS V Draw map canvas items * _ • 0= 1 item selected x: 291.336 mm y: 100.554 mm page: 1 48.7%



Map Elements



Once the map has been added, the other map elements can be added. Their properties, as well as the page properties, can be viewed and modified. The Print Layout tracks changes in the Undo History window.

Layout	Item Properties
 Set the grid spacing and snap 	• Set the font
tolerance	 Set scale bar properties
 Export settings 	 Set legend properties
 Resize layout to content 	 Set map element properties