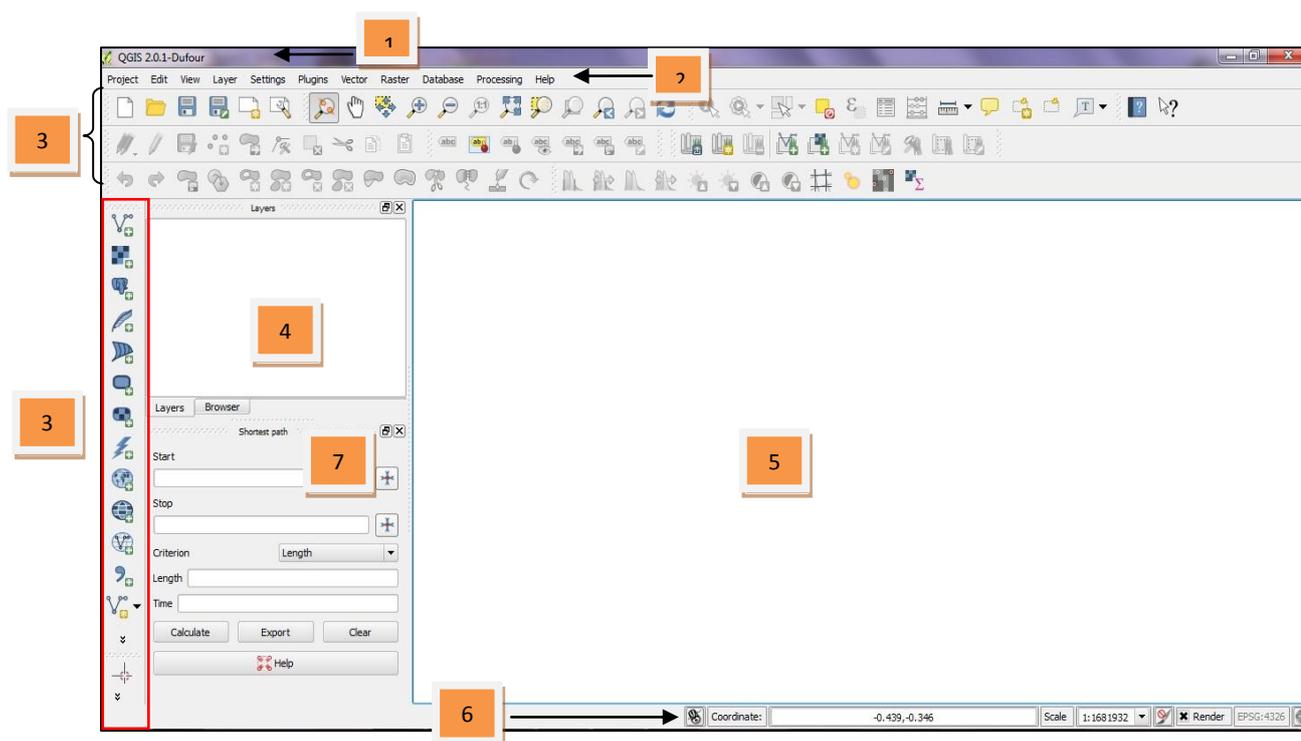---

APPENDIX 1

QuantumGIS main interface

When you first open Quantum GIS, you will see a new window that looks similar to the example below.

Quantum GIS interfaces change from one project to another depending on the required interface of the project. Below are the basic menus that you will encounter in Quantum GIS during the practicals.

1 *Title of the Project* - Shows the title of project that you are going to view.

2 *Menu Bar* – This provides access to various Quantum GIS features using a standard hierarchical menu.

3 *Toolbars* – These provide access to most of the same functions as the menus, plus additional tools for interacting with the map. It shows the command for zoom in, zoom out, pan, back to original view, go back to previous extent, go to next extent, object-information, coordinate read-out, measure, print and help.

4   *Table of Contents/Map Legend* (TOC) - Shows the layers that can be turned on ✖ or off ☐ and the legend, attributes symbols and query symbols available for the corresponding project.
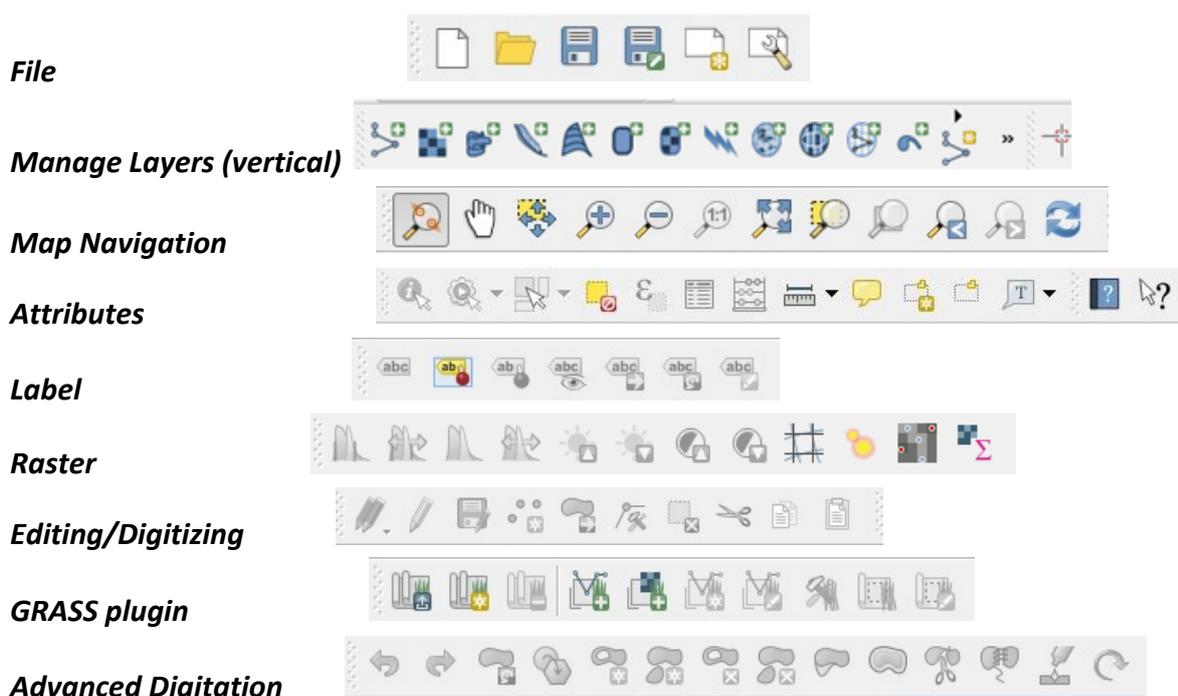
5   *Display Window* - Shows the feature/s that you have turn on ✖ from the TOC.

6   *Status Bar* - Shows you your current position in map coordinates (e.g. metres or decimal degrees) as the mouse pointer is moved across the map view. To the left of the coordinate display in the status bar is a small button that will toggle between showing coordinate position or the view extents of the map view as you pan and zoom in and out.

7   *Data sources browser* – In previous versions, QGIS browser was only provided as an external application which enables us to explore our spatial data sets. In QGIS 2.0.1-*Dufour* this application is also integrated in the QGIS framework as an additional panel just below the Table of Contents.

Quantum GIS toolbars and some other components

Toolbars are divided by thematic (greyed icons means they are inactive because the appropriate conditions to use them are not fulfilled). Some of them are included by default in QGIS and others can be added/removed from the interface:

File

Manage Layers (vertical)

Map Navigation

Attributes

Label

Raster

Editing/Digitizing

GRASS plugin

Advanced Digitation

Key functions

In here, you will able to know on how to use in details the different mapping tools and other components of Quantum GIS which <u>you'll be using in this course</u>.

File Options

New Project
Enables you to create a new project

Open Project
Tool use to open an existing/previous project created in Quantum GIS

Save Project
Enables you to save the project

Save Project As
Enables you to save the project in another format

New Print Composer
Enables you to print the map/layers including the title, TOC, map overview, scale bar, graph/attributes present in the layer, author and map information, logo, toolbar, and other components present in the main page of the project

Composer Manager
Enables us to access to the different composition in progress and manage them; showing, removing, closing, and so on

Help
Provides the basic instruction on toolbar, TOC and other tools

Displaying Layers

Add Vector Layer
Enables you to add any readable existing vector format layer

Add Raster Layer
Enables you to add any readable existing raster format layer

Add Delimited Text Layer

Enables you to load and display delimited text files containing x,y coordinates

New Vector Layer

Enables you to create a new layer or feature similar with Editing Tool

Remove Layer

Enables you to delete unwanted layer/feature. Similar with Delete Selected Tool

Table of Contents. Menu

Turns layer on or off

Click the box to turn on ✖ or off ☐ the layer/s

Folder icon in the TOC

This represents a group of layers in the TOC

Grayed colour means only selected layers are visible in the group of layers

Navigation toolbars

Zoom in

Click once in the map to zoom in or drag a box over the particular area

Zoom out

Click once in the map

Panning

Click in the map, hold down the mouse button, and drag in any direction

Zoom to Full

Click to return to default view or view the full map layer/s

Go back to previous extent

Click to go back to the previous view

Go to next extent

Click to view the next extent of the map/layer

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Using Quantum GIS 2.0.1.-Dufour

Zoom to Selection
Click to view the selected part of map layer/s

Zoom to Layer
Click to view a particular map layer

Refresh
Click to refresh the display window

Object Information

Identify Features
Click to activate and point to the layers you want to view the information

Open Attribute Table
Click to open the table of a layer

Select Features
Click to activate and point to the layers you want to select

Deselected Features from all layers
Click to deselect the features you have previously selected

Measure Line
Click to activate and point to the layer if you want to measure the distance. Use the mouse to draw a line representing the distance you wish to measure. The line can have one or more line segments. Double-click to end the line. The length you measured is displayed in the browser status bar or in the textbox

Measure Area
Click to activate and point to the polygon feature if you want to measure the area

Plugins (Spatial Query and fTools)

Spatial Query
Enables us to make a spatial query (select features) in a target layer with regard to another layer.

Intersect
Overlay layers such that output contains areas where both layers intersect

Union
Overlay layers such that output contains intersecting and non-intersecting areas

Buffer
Create buffer(s) around features based on distance, or distance field

GDAL tool (Geoprocessing tools)

Merge
This utility will automatically mosaic a set of images.

Clipper
This utility enables you to extract a set of raster data using a vector file as contour mask.

Glossary of terms

Attributes. Non spatial information about a geographic feature in a GIS, usually stored in a table and linked to the feature by a unique identifier. For example, attributes of a river might include its name, length, and sediment load at a gauging station. In raster datasets, information associated with each unique value of a raster cell.

Chropleths. A choropleth map ("area/region" + "multitude") is a thematic map in which areas are shaded or patterned in proportion to the measurement of the statistical variable being displayed on the map, such as population density or per-capita income. The choropleth map provides an easy way to visualize how a measurement varies across a geographic area.

COM or serial port is a serial communication physical interface through which information transfers in or out one bit at a time. Throughout most of the story of personal computers, data transfer through serial ports connected the computer to devices such as terminals and various peripherals.

Comma Separated Values (.csv) files. A comma-separated values (**CSV**) file stores tabular data (numbers and text) in plain-text form. Plain text means that the file is a sequence of characters, with no data that has to be interpreted instead, as binary numbers. A CSV file consists of any number of records, separated by line breaks of some kind; each record consists of fields, separated by some other character or string, most commonly a literal comma or tab. Usually all records have an identical sequence of fields.

Feature. A representation of a real-world object on a map (i.e. a building, a road section, a river, etc.).

Geographic Coordinate System. A geographic coordinate system is a coordinate system that enables every location on the Earth to be specified by a set of numbers or letters. A reference system uses latitude and longitude to define the locations of points on the surface of the Earth. A geographic coordinate system definition includes a datum, prime meridian, and angular unit. A common choice of coordinates is latitude, longitude and elevation (e.g. **WGS84**).

Geometry. The measures and properties of points, lines and surfaces. In a GIS, geometry is used to represent the spatial component of geographic features.

Geopositioning. Geopositioning is a method that facilitates the location of a single point relative to the surface of the earth.

GPS (Global Positioning System). It is a global navigation satellite system (GNSS) developed by the United States Department of Defence and managed by the United States Air Force 50th Space Wing.

Histogram. A graph showing the distribution of values in a set of data. Individual values are displayed along a horizontal axis, and the frequency of their occurrence is displayed along a vertical axis.

Labels. In cartography, text placed on or near a map feature that describes or identifies it.

Layer. The visual representation of a geographic dataset in any digital map environment. Conceptually, a layer is a slice or stratum of the geographic reality in a particular area, and is more or less equivalent to a legend item on a paper map. On a road map, for example, roads, national parks, political boundaries, and rivers might be considered different layers.

Legend. The description of the types of features included in a map, usually displayed in the map layout. Legends often use graphics of symbols or examples of features from the map with a written description of what each symbol or graphic represents.

Plugin or Plug-in. A small software application that extends the functionality of a Web browser or any specific software (i.e. Quantum GIS).

Projected Coordinate System. A reference system used to locate x, y, and z positions of point, line, and area features in two or three dimensions. A projected coordinate system is defined by a geographic coordinate system, a map projection, any parameters needed by the map projection, and a linear unit of measure (e.g. WGS84 World Mercator).

Rendering. The process of drawing to a display; the conversion of the geometry, coloring, texturing, lighting, and other characteristics of an object into a display image.

Scale bar. A map element used to graphically represent the scale of a map. A scale bar is typically a line marked like a ruler in units proportional to the map's scale.

Shapefile. A vector data storage format for storing the location, shape (geometry) and attributes of geographic features.

Tab delimited (.tsv/.tab) files. A tab-separated values file is a simple text format for a database table. Each record in the table is one line of the text file. Each field value of a record is separated from the next by a tab stop character – it is a form of the more general delimiter-separated values format.

Thematic map. A thematic map is a type of map or chart especially designed to show a particular theme connected with a specific geographic area. These maps can portray physical, social, political, cultural, economic, sociological, agricultural, or any other aspects of a city, state, region, nation, or continent.

Thumbnail. A miniaturized version of a graphics file. A thumbnail can be used as a visual index for larger data or images.

USB: Universal Serial Bus is an industry standard developed in the mid-1990s that defines the cables, connectors and communication protocols used in a 'bus' for connection, communication and power supply between computers and electronic devices. USB was designed to standardize the connection of computer peripherals to personal computers.

Widget. An interactive graphic component of a user interface (such as a button, scroll bar, or menu bar), its controlling program, or the combination of both the component and program.

World Geodetic System (WGS84). The World Geodetic System is a standard Coordinate System used in cartography, geodesy and navigation. WGS84 is the reference coordinate system used by the Global Positioning System.