



Research jointly supported by the ESRC and DFID

Practical guidance on mapping and visualisation of crime and social data in QGIS

Preparation: installing and setting up of QGIS



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Introduction

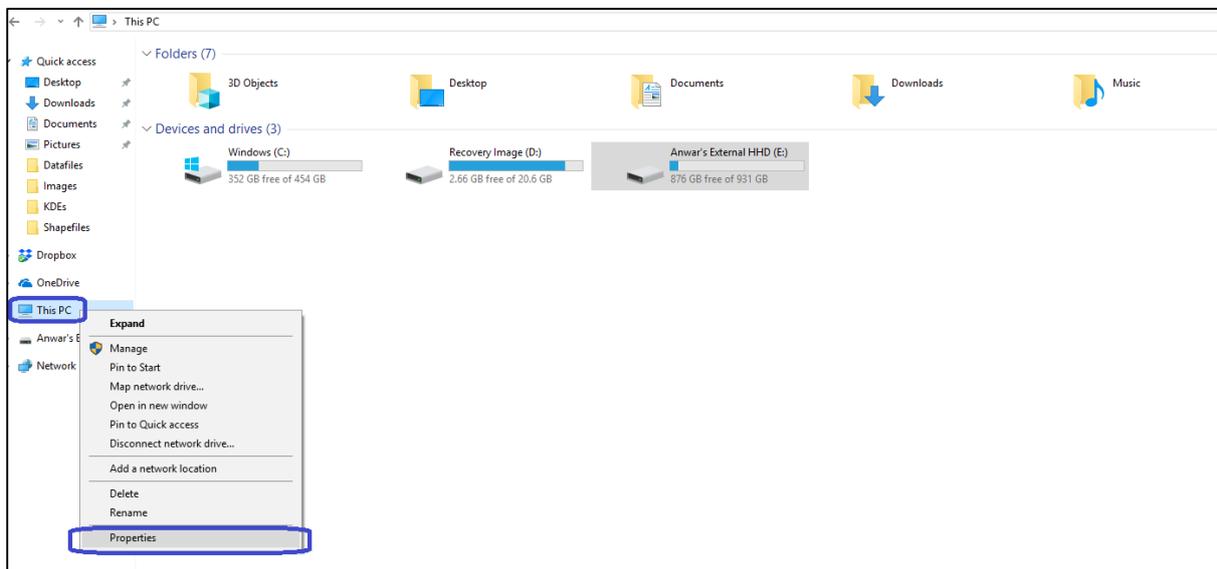
Quantum GIS (QGIS) is a friendly open source geographical information system (GIS) software which is compatible with many operating systems such as Android, LINUX, Windows and Macs. It supports numerous spatial data formats that come as vectors or raster data. It has a wide range of plugins which can be remotely installed to provide additional functionalities for handling spatial data and perform complex spatial analyses. More information about QGIS can be accessed on <https://qgis.org/en/site/>.

Installing the QGIS Desktop version 3.2.0 (Bonn)

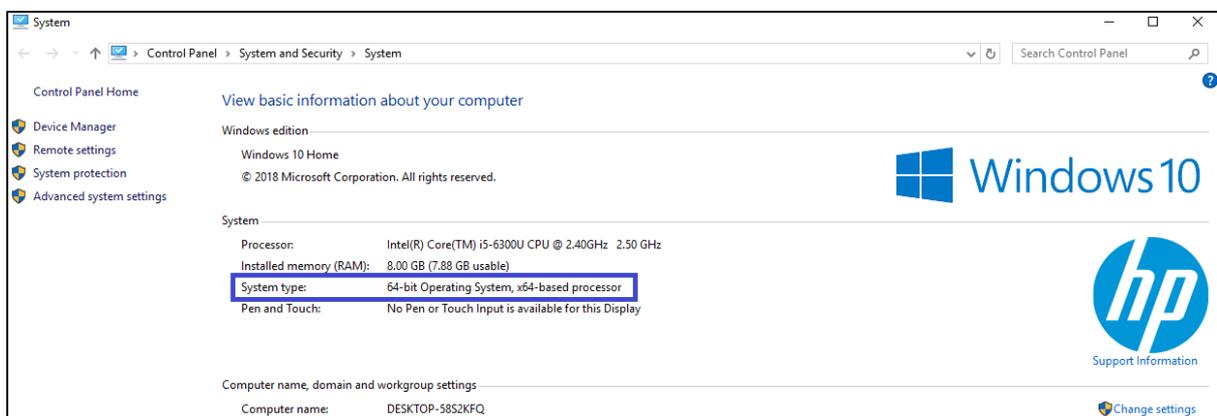
The latest version of QGIS is version 3.2.0 which can be downloaded from the web link on <https://qgis.org/en/site/forusers/download.html>.

Download for Windows: QGIS is available for PCs with system types that are 32- or 64-bit. You can check your computer's system type by:

- Opening the *This PC* folder
- Right-clicking on *This PC* icon and click on *Properties*



- Clicking on *Properties* will bring up a window called *System*. This shows details of the computer's specification. You can access information about the type of system you are using (see section highlighted in blue)



Make sure to download the correct application that corresponds with your computer's operating system:

- Users with a **64-bit Windows OS** should download the latest version of QGIS by choosing the application **QGIS Standalone Installer Version 3.2 (64 bit)**.
- Users should select the latter **QGIS Standalone Installer Version 3.2 (32 bit)** if the machine system is a **32-bit Windows OS**



Download for Apple/Mac OSX: for Apple/Mac Users: expand the section **Download for Mac OSX** and select **QGIS macOS Installer Version 3.2** to download the latest application of QGIS on your Apple/Mac computer



Download the application of QGIS, and install the software onto your computer. Before installing the software ensure to have at least **1.9 GB** free storage space on your console. Installation of QGIS will result in seven different being application being installed which is fine. These are listed accordingly:

- OSGeo4W Shell
- QGIS Browser with GRASS
- QGIS Browser
- QGIS Desktop with GRASS
- **QGIS Desktop**
- Qt Designer with QGIS custom widgets
- SAGA GIS

We will only be interested in **QGIS Desktop** (only) as it will provide us with tools to do the practical lessons.

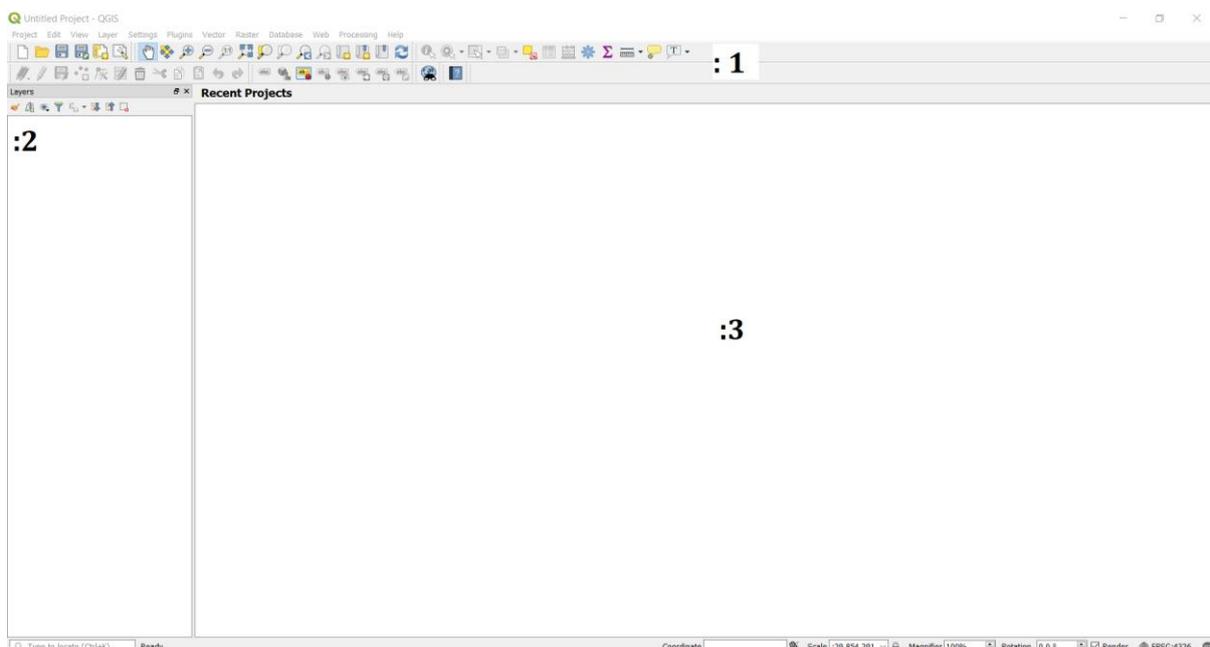
Important note for Apple/Mac OSX users: the images presented throughout the course were generated from a Window OS 64-bit console. Nevertheless, the images and instructions presented in these lessons should not differ. An Apple/Mac user should be able to follow the tutorials as well.

Setting up, and being familiar with QGIS

When the installation of QGIS is complete, the icons for opening the software will be hidden in the *Start windows* section where all applications are listed. Do the following to open QGIS Desktop:

- Click on the *Start windows* button  and browse through the applications that have been listed in alphabetical order. Browse down to the letter *Q* where you should see *QGIS 3.2* folder annotated as *new*
- Expand this folder by clicking on it. There will be 7 other applications. The one we want to open is *QGIS Desktop 3.2.0* (only)
- Click on the icon  to open *QGIS Desktop 3.2.0*

When opening QGIS for the first time, you are greeted with a brand new window which looks like the example below:



This is QGIS main interface. The interface has three components for which the user must be familiar with:

The section labelled **1** is home to the **menu and toolbars**. This tool allows the user to access various menu tabs such as the **Project, Edit, View, Layer** and **Plugins**. The menu tabs are positioned on top of the toolbars. The toolbars correspond to the various icons which allow the user immediate access to some functions.

The section annotated as **2** is the **Table of Contents** or **Layer Panel**. It enables the user to see which list of spatial and non-spatial data are loaded into QGIS.

The section labelled as **3** is the **Display window**. It shows which spatial data are active in our **Layer Panel**. Here, we can visualise our spatial data and see constructions of our maps.

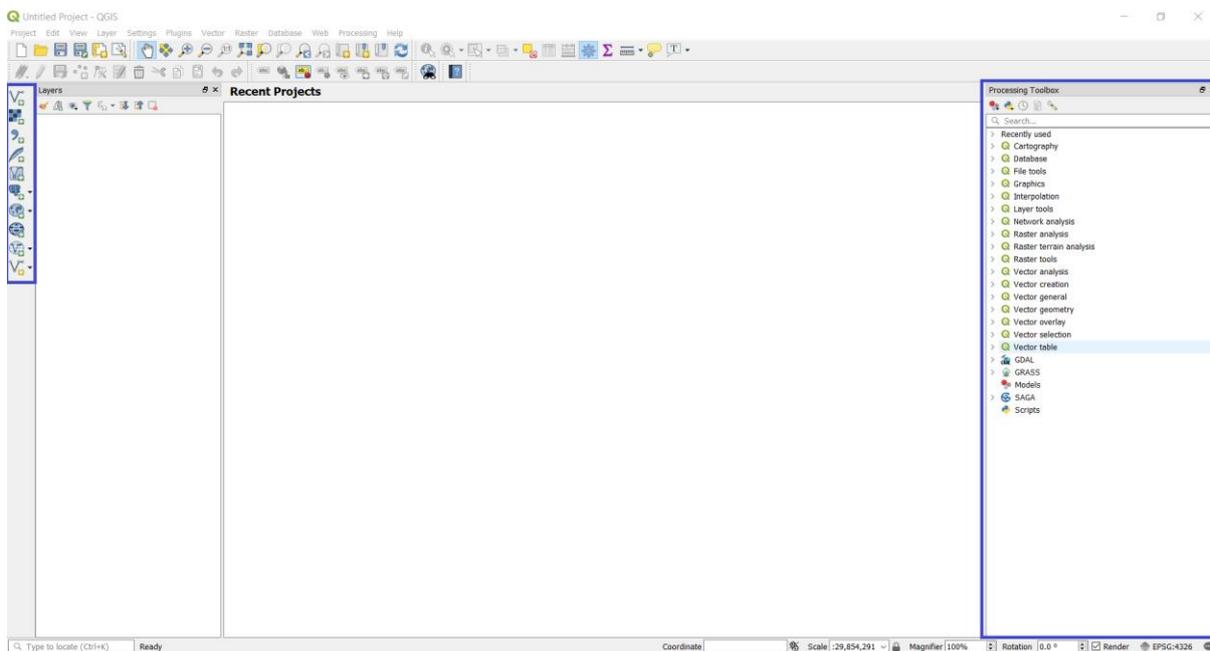
There are some additional toolbars that we will need for the tutorials – we need to activate the **Manage Layers Toolbar**, and **Geoprocessing Toolbox**.

To activate the *Manage Layers Toolbar*:

- Go to the menu tabs and click on the following: *View > Toolbars > Manage Layers Toolbar*.
- This toolbar should appear of the left-side of *Layers Panel*. This is an important toolbar as icons will allow the user to quickly add spatial and non-spatial into QGIS

To activate the *Geoprocessing Toolbox*:

- Go to the menu tabs and click on the following: *Processing > Toolbox*
- The toolbox should appear of the right-hand side panel of the *Display window*. This is another important tool as it contains various function for conducting spatial analysis in QGIS



There are some basic functions in the toolbar will use often during the tutorial series. Here are some of the functions in the Menu's and Layer's toolbars:

Toolbars

Icons	Descriptions
	To open a new QGIS project
	To open an existing QGIS project from a folder
	Save
	Save as
	Create a new print composer
	To manage existing print composers



To pan active layer



To zoom into active layer



To zoom out of active layer



To zoom to full extent of active layer

Layer Toolbar icons



Add vector data to layer panel



Add raster data to layer panel



Add attribute (or comma separated value) data to layer panel