

International workshop on GIS, Remote Sensing and Geoarchaeology

14-19 November 2019, Department of Archaeology, University of Kerala

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Practical -> Install software to get ready

Aims of the training

- Provide external links to 1) download required software and 2) register to data online portals.
- Please install the software in your computer and make sure you have an account for the selected online portals before the training workshop starts.

Required software

- **QGIS** -> It is a free and open-source cross-platform desktop *Geographic Information System* (GIS) application that supports viewing, editing, and analysis of geospatial data.
 - Select the QGIS version in OSGeo4W Network Installer. This is a full install package for Windows that incorporates the last QGIS version, and it also installs GDAL (a geospatial library) and GRASS (another GIS software, *see below*).
 - Select and download 64bit or 32bit installer accordingly to your computer.
 - Once you are on the Setup window, select *Express Desktop Install* and in the next window please select the options for QGIS, GDAL and GRASS.
 - <https://qgis.org/en/site/forusers/download.html>
- **GRASS** -> The Geographic Resources Analysis Support System (commonly GRASS GIS) is one of the most powerful GIS software. It is also free and open-source. GRASS has more than 350 modules for geospatial data analyses and visualisation. GRASS tools can be directly accessed via QGIS user interface.
 - If you have properly installed the OSGeo4W tools mentioned about, GRASS should be already installed in your computer.
- **R Statistical Computing** -> R is a programming language and free software for statistical computing, graphics and modelling. To use R you must learn the basics of R language coding, which is widely used among archaeologists working with large datasets of data. R works only with command lines, but luckily for us there are also graphical user interfaces that make our work much easier, such as R Studio.
 - There are several mirrors (webpages) where you can install R. Try the followings ones.
 - Look here for your version accordingly to your computer:
 - <https://www.stats.bris.ac.uk/R/>
 - For those with Windows, try the stable version 3.6.1 here:

- <https://www.stats.bris.ac.uk/R/bin/windows/base/>
- **R Studio** -> RStudio Desktop is a user interface to write and work with R programming language. It has useful tools so that we can create, display and export data and graphics in a more easier way than just R.
 - It is not an open free platform but everyone uses the free version, which you can download here:
 - <https://rstudio.com/>

Required online registrations

- **Google account** (e.g. gmail) -> We will use our Google account to access Google Earth Engine.
 - If you don't have a Google account yet, you can create one here:
 - <https://support.google.com/accounts/answer/27441?hl=en>
- **Google Earth Engine** -> Earth Engine is a cloud computing platform for processing satellite imagery and other geospatial and observation data. It provides access to a large database of satellite imagery and the computational power needed to analyse those images. The platform uses Python and Javascript application programming interfaces.
 - You can sign up for the online platform here:
 - <https://earthengine.google.com/>
- **Sentinel EO Browser** -> This online platform makes it possible to browse and compare full resolution images from the European Space Agency such as the useful Sentinel 2 images at 10m resolution. You simply go to your area of interest, select criteria such as time range and cloud coverage, and inspect the resulting data from different sources. You can also download and directly export images to QGIS for further analyses.
 - To create an account and start exploring:
 - <https://www.sentinel-hub.com/explore/eobrowser>