

Computer Practical 2

Outline of the Class

- Reading Plume Data
- Reading Home AQ data
- Creating figures in QGIS
- Writing out filtered *.csv files

Activities

- Creating more figures in GIS
- Filtering complex data
- Creating figures for your reports / papers / presentations

Welcome to our workshop today, where we'll be diving into advanced techniques for reading in data, performing statistical analysis, and plotting them on a GIS. Our data sources will include plume sensor data, home sensor data, perception data, index of multiple deprivation data, and asthma numbers collected by the older hey Children's Hospital.

Although today's lecture content may be sparse, our aim is to provide you with ample time to familiarize yourself with the Python tools we've given you. We're not forcing you to use Python, but we want you to appreciate the technique's usefulness in reading air quality data. It's essential to note that data science roles often involve working with data like this, and you'll need some computer programming skills to access and manipulate data into various figures and plots. You may even notice that some of the figures you create using Python are visually striking and could impress the markers of your dissertations!

Today's workshop is an opportunity for you to explore the tools and data while following some of the steps we've outlined earlier. By the end of the workshop, we hope you'll have mastered the following skills:

- reading data into Python
- performing basic statistics on data in Python
- creating attractive figures and plots with ease
- exporting data in either a GeoTIFF or CSV format
- importing data into QGIS

Congratulations on completing this small course in Python! We hope you've gained useful tools that you'll continue to use throughout your careers. As previously mentioned, programming is now a pivotal part of environmental sciences, and without it, we wouldn't be able to examine significant data sets like the ones we've explored in this module.