Installation Instructions

In order for us to get on with the course promptly, you **must** install the course materials beforehand. This guide explains how to do this.

Windows

Install Anaconda

Anaconda is free open-source software designed and built for data science and machine learning. It has packages for Python and R, as well as programmes that let you write and run code in them (called "integrated development environments" or IDEs) – for Python this is the "Spyder" IDE and for R, you may have come across "R-Studio".

We strongly urge that you install Python via Anaconda, because it will automatically come packaged with all the individual modules/packages that you need to get started with this course (and in your later data science work). If you do not use Anaconda, you will need to install individual packages yourself, which can be tricky.

Anaconda is free to install, and you do not need to create a user account if you don't want to. There is a detailed guide, including installation instruction videos here: (https://www.anaconda.com/docs/getting-started/anaconda/install#windows-installation).

Alternatively, please follow the guide that you were sent. Make sure you use the "Windows" guide, not the "Mac" one.

Illustrated Guide

You will have been sent an illustrated guide to installing Anaconda. Please follow this guide as it shows every step

Mac

Install Anaconda

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We strongly urge that you install Python via Anaconda, because it will automatically come packaged with all the individual modules/packages that you need to get started with this course (and in your later data science work). If you do not use Anaconda, you will need to install individual packages yourself, which can be tricky.

Anaconda is free to install, and you do not need to create a user account if you don't want to. There is a detailed guide, including installation instruction videos here:

(https://www.anaconda.com/docs/getting-started/anaconda/install#windows-installation). The installation slightly differs for Mac and for Windows users.

Alternatively, please follow the installation guide that you were sent. Make sure you follow the "Mac" guide and not the "Windows" one.

Using Jupyter Notebooks

When working with python, you will see two file extensions going around ".py" and ".ipynb".

".py" files are pure Python files. These can be run using an IDE, or from a command line, and will carry out the instructions in the code on your computer's processor. The downside is that you can't interact with the programme while it runs! In this course, we will not be working with ".py" files.

Instead, everyone in data science uses Jupyter Notebooks to run their code. These are given by the ".ipynb" file extension. These are a way to structure a project so that you can have code, text and results all in one place! This is great for distribution, for experimentation, and for when you come back to check on the code.

In this course, we will show you how to use ".ipynb" files.

Opening the Jupyter Notebook Viewer

- Go to the Anaconda Navigator.
- This will show you all of the programmes that are packaged with Anaconda that you can use.
- Scroll down until you can see "JupyterLab" and click "Launch"
    - Note, this is NOT the same as "Notebook"
- After you click "Launch", a window in your internet browser will open
    - This can take up to a minute, so be patient and do not click "Launch" multiple times
- The window that opens up contains the "JupyterLab" which is the environment we will be working in that allows us to run Jupyter Notebooks!
- On the left hand side of the screen, you can see all of your folders
- Navigate to where you have saved the Course Content
    - E.g. Click on Documents if you have saved the Course Content into the Documents folder
- If you click on an ".ipynb" file, which is a Jupyter Notebook, you will be able to open and view it
- When you click on an ".ipynb" file, you will be asked to "Select a Kernel"
    - The "kernel" is the version of Python that you want to use to run the Notebook
    - Make sure to pick "Python [conda env:base]" to avoid later problems!

You can also start a new notebook for yourself!

- Once you are on the JupyterLab page that opens up from the Anaconda Navigator, you should see a page like this
- This shows all of the versions of Python that you are able to open
- Make sure you click on "Python [conda env:base]" under "Notebook"
    - This will open up a JupyterNotebook using the conda env:base kernel which you can then write code in

Running code in Jupyter Notebooks

- Jupyter Notebooks are a way for you to interactively run your code
- If you have some code in a notebook, you can run it by using the buttons at the top of the screen, or alternatively by using some key combinations
- The notebook is divided into “cells”
    - Each of these can contain code, outputs or plain text

- When you are inside a “cell”, by using “Ctrl + Enter”, the code inside that cell will be executed
- You can delete or move cells using the buttons on the right hand side of the cell
- You can add a new cell below your current one using the “+” symbol next to the save symbol on the top of the JupyterLab window

- Cells can also contain plain text that is not code
- This is useful for describing in words what you are trying to do. It is good practice to be as descriptive as possible in these cells
- You can change a cell from “Code” to plain text (which is called “Markdown”) using the Drop Down Menu at the top of the panel

Checklist

Before the course, make sure that you have done the following. It will mean that we can get on with the data science and precision medicine, rather than focusing on Python installation.

- Install the Anaconda distribution (as described above)
- Make sure that you are able to open the “Anaconda Navigator” application and that it opens as expected
- Make sure that you can open the “JupyterLab” application from “Anaconda Navigator” and that it opens as described here

If you can do all of these things, you will be well set for the course!

Do not worry about all of the features in Anaconda/JupyterLab! We will gradually work our way through these as we do the course!

If you have gotten to this step, your set up should be complete, and ready for our course!

If you have any questions, please contact us at
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