

Introduction to the course and installing and using the Anaconda distribution of Python on your computer

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1 Welcome to the Pathways to Data Analytics

Firstly, allow me to welcome you to the course, I hope you'll find it useful.

Given the current situation, this iteration of the pathways programme is being delivered completely online, instead of face-to-face within the Q-Step's computer lab. This is obviously not ideal, but student and staff safety is our main priority.

In order to alleviate any issues caused by this change in delivery method, I have developed a number of new teaching resources. Firstly, you have the pre-recorded lessons. These lessons are the same as the lessons I normally give to students as an introduction to Python, and even use the same slides. Secondly, I have developed a Jupyter notebook for the course. Jupyter notebooks are excellent teaching resources as they allow me to provide you with block text explaining a concept and interactive terminals in which I can place example code; code that you can then run and edit as you see fit. When studying these notebooks, it is important that you run each of the code cells in turn, otherwise certain functions may not be defined. Finally, we are going to have an interactive lesson day on 15/06/2020, where I will talk you through the content, how to run Jupyter notebooks, etc, as well as give you the opportunity to ask any questions.

Before that point, it would be useful if you could follow the instructions below in order to install Python on to your machines so that you can follow the examples and make use of the course resources.

2 What is Anaconda?

For this course, we are going to use the Anaconda distribution of Python. The Anaconda package is a large package and takes a while to download and install. However, it is a big package because it contains a lot of useful tools. Firstly, it obviously installs the most recent version of Python, as well as roughly 250 of Python's open-source importable packages. Secondly, it installs the pip environment, which makes it incredibly easy to install packages you don't already have. Thirdly, it also installs Jupyter notebooks, which will be a crucial learning tool on this course. Anaconda also installs a bunch of other useful features, so it's worth looking at the documentation to see what else is installed.

3 Installing Anaconda

First, go to <https://docs.anaconda.com/anaconda/install/>. Then, from the tab on the left side of the page, select your operating system. Follow the on-screen instructions to begin the download of Anaconda. Once that is done, click on the downloaded file in order to start the Anaconda installer, then follow the instructions in the subsequent dialogue boxes.

4 Using Python

Once installed, you will have access to three features that will be crucial to your learning on this course and if you decide to code in Python in the future; these are the Spyder editor, the pip system, and Jupyter.

4.1 Opening the Spyder IDE

The Spyder editor is a wonderful IDE for developing and running Python code. Once you have installed the Anaconda distribution, you'll be able to open the Spyder IDE, which is represented by the logo in figure 1.



Figure 1: Spyder logo.

Once Spyder has opened, you'll be greeted with the a window similar to that in figure 2. This is the Spyder IDE. You can type your code in the text editor box on the left and get your output printed to the screen on the bottom right-hand side box. You then run your code by clicking the green play button at the top of the window or by pressing F5. You will see examples of this IDE being used in the pre-recorded lessons that are included as part of this course.

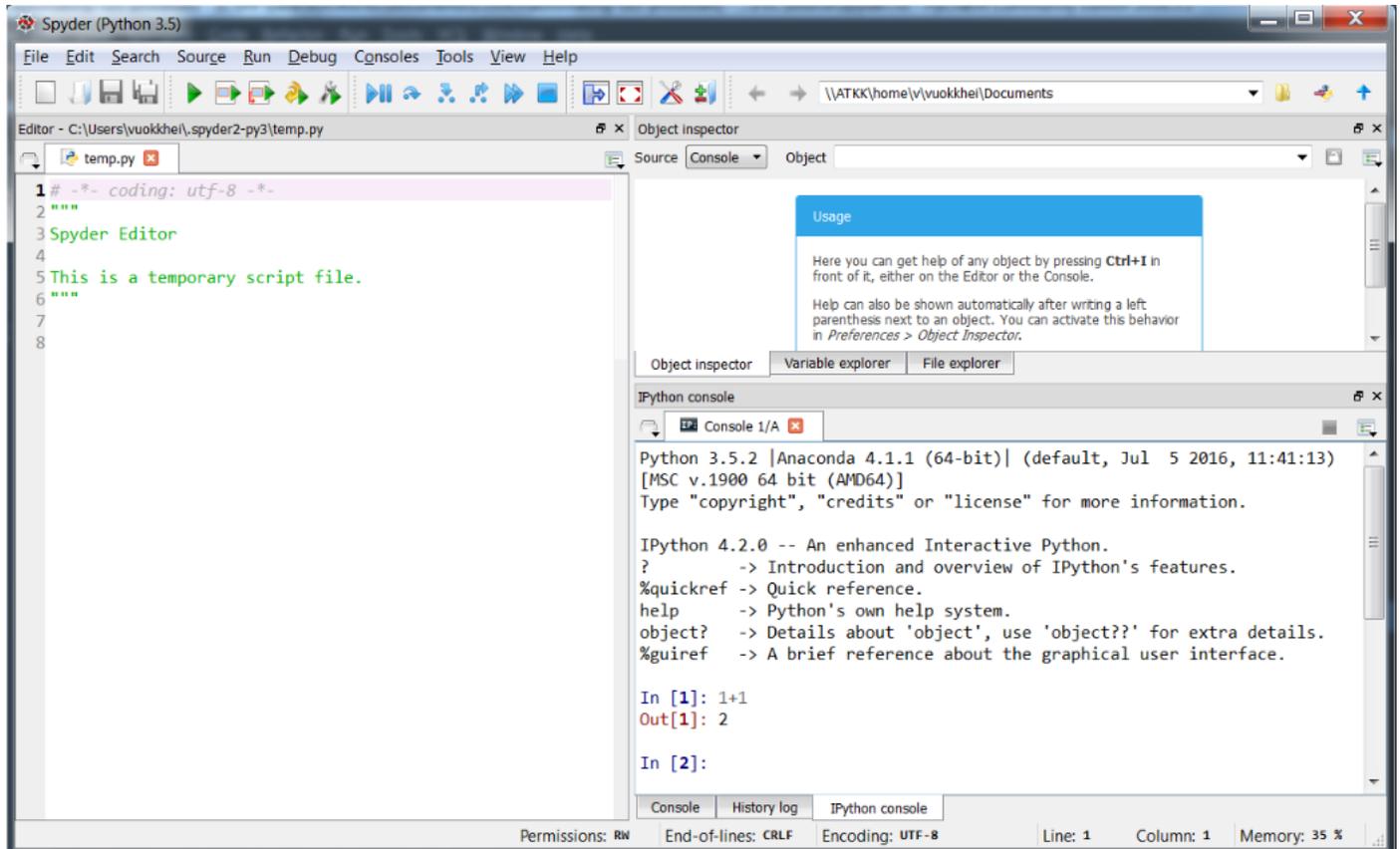


Figure 2: The Spyder IDE.

4.2 pip

For the time being, all you need to know about pip is that it is an incredibly easy way to install Python packages that are not already on your system. To do so, just open up the pip window, which you'll notice looks a lot like the command prompt window. To install a package, you then just have to type “pip install” and then the package name; see figure 3 for an example.

4.3 Jupyter

As stated above, this course will use Jupyter notebooks in order to provide you with an interactive workbook in which to practice your Python skills. To open a Jupyter notebook, first find the Jupyter logo in your installed packages (figure ??), and click on it. Jupyter will then open in your default browser (make sure your default browser is **not** Internet



Figure 3: The pip screen.

Explorer as it limits Jupyter's functionality). Jupyter will then present you with a file explorer that will enable you to click through your computer's folder structure, until you get to the folder where you saved the Jupyter notebooks. Then you just have to click on the notebook you want to open.



Figure 4: The Jupyter logo.