Pre-course setup

There are a few things you'll need to get set up before our first class, so that you have everything you need to get the most out of the Python course.

If you have any trouble with these tasks, please make sure you contact an instructor as soon as possible, so they can help you.

Things you need to do:

1. Install Anaconda
2. Create a Python environment
3. Install Visual Studio Code
4. Install Git
5. Make sure you've got a GitHub account

We'll explain each of the above steps in these notes.

1. Install Anaconda

To make your computer understand your Python programs, you need to install a Python interpreter. Installing a Python interpreter and setting it up to function correctly can turn out to be quite complicated, since there are many Python versions available and some operating systems come with a pre-installed Python version which you cannot change easily. That's why Data Scientists prefer installing a program called Anaconda instead.

1. Install Anaconda on your computer, head to https://www.anaconda.com/distribution/ and choose download for the Python 3 version of Anaconda (NOT Python 2 version).

2. Verify that your installation completed correctly, please follow the following instructions: https://docs.anaconda.com/anaconda/install/verify-install/

Once installed, Anaconda lets you create a virtual environment with a Python version of your choice. You can create as many environments as you need, and in fact it is best practice to use a different virtual environment for each of your projects. We will use only one Python environment throughout this course, but feel free to practice creating and using new environments while working on the final project.

2. Create a Python environment

Anaconda comes with a lot of additional tools. One of those tools is Anaconda Navigator and you can open it as shown here: https://docs.anaconda.com/anaconda/install/verify-install/. When you open Anaconda Navigator, you will see a list of tabs on the left and one of those tabs is called "Environments".

1. Click on "Environments" and you will see the list of all environments on your computer.
    - Initially you will have only one environment called `base` (root).
2. To create your first environment, click on the "Create" button at the end of the list. A small dialog window will open which will ask you for the name of your environment and the Python version you want to use.
3. Select Python version 3.8 and name your environment `coding-session`.
    - Make sure there is a checkbox only in front of Python and click "Create".

Congratulations, you've just created your first Python environment in Anaconda!

3. Install Visual Studio Code

Programs are text snippets which can be understood by humans and computers alike. Computers, however, understand only text which is constructed in a very specific way. Therefore computer programmers (software engineers, data scientists and web developers) use special text editors which highlight whether a particular line of text can be understood by a computer very much like spell checkers do for human languages. Those editors are usually called *IDEs*, an abbreviation for *Integrated Development Environments*. IDEs provide programmers with a whole bunch of useful tools they can use while creating programs. One such IDE is Visual Studio Code, also known as VSCode.

In order to get the most out of this course, we recommend that you download and install VSCode before the first session. You can find a version of VSCode for your operating system here: https://code.visualstudio.com/.

1. Download and install VSCode by following the instructions in the installer.
2. Once installed, open VSCode and click on View -> Extensions. Then search for Python, select the most popular result in the top left corner and click on install.

Now your VSCode is ready to understand Python.

4. Install Git

When working on a more complex project, people generally break the work into smaller pieces. After each piece of work is complete, it is quite common to save a version of your work as a checkpoint. This way you can allow yourself to experiment without fear of losing your prior work.

To make this process easier and more efficient, programmers use *Git*. For this course, you will use Git to share your work with your team and the instructors (you will learn Git in depth in session 4).

You can install Git by navigating to https://git-scm.com/downloads and downloading the installation file for your operating system. While installing Git, you might be asked some questions about Git and it is safe to leave everything as defaults suggested by the installer.

For Windows users, you need to make sure you have the following options selected:

- Keep using Git from the Windows command Prompt
- Checkout Windows style, commit Unix-style line endings
- Use Windows' default console window

For Mac users, you might get an installation error `Can’t be opened because it is from an unidentified developer.`. You can bypass the error by installing XCode (an Apple's developer tool) from Mac App Store.

5. Make sure you've got a GitHub account

GitHub is a website where software developers of all kinds share their code with their teams and the world. For some of the exercises in this course you will need to have a GitHub account, so you can share your projects with your group and instructors. If you already have a GitHub account from a previous course or you created it for another reason, you can use your existing account. Otherwise you can create your GitHub account at https://github.com/.

That's everything you need to do for pre-course setup. If you encounter any problems in the above steps, please reach out to the instructors, or come to the first session earlier so they can help you setup your computer.