Setting up your workspace

Install Anaconda:

Anaconda is a distribution of python and machine learning libraries that are widely used in the industry. Installation instructions are here: https://conda.io/docs/user-guide/install/index.html. This page lists many requirements; these are the four that I think are most useful to review:

1. 32- or 64-bit computer.
2. For Miniconda—400 MB disk space.
3. For Anaconda—Minimum 3 GB disk space to download and install.
4. Windows, macOS or Linux.

- You will need to choose the distribution and instructions for your OS. The instructions are different for each OS. I would recommend using 64-bit distributions for a 64-bit OS.
- You will need to pick Miniconda or Anaconda. As you can see, Anaconda takes up a lot of space but likely has everything you would ever want in it. I used Miniconda -- that is sufficient for everything we'll use for the MLND program. Anything that isn't included can be installed later.
- Pick the Python 2.7 version (64-bit or 32-bit depending on your machine architecture) of the `conda` distribution for your platform (OS and architecture).

After downloading the distributions files, follow the instructions for installing `conda`. During installation you will get Python 3.6 installed on your machine as the root. Before starting to use it, you will need to set up environments to use with your workspace. These so-called “virtual environments” make it easy to work with different versions of python and their libraries.

We suggest you use Python 2.7 for the MLND program. The official projects use notebooks that rely on older versions of scikit-learn and pandas so you should set up your virtual environment with older versions of these libraries. The commands to create a new environment that runs Python 2.7 are:

```
conda create --name mlnd python=2.7
conda install -n mlnd matplotlib, seaborn, jupyter
conda install -n mlnd scikit-learn=0.18, pandas, numpy
```

This will create a virtual environment on our machine called mlnd. You will need to activate the environment each time you start a new shell or terminal session. The command to activate an environment is:

`activate mlnd` (on Windows)
`source activate mlnd` (on Linux, Mac OS X or later)

Alternative setup

A quicker way to set up your environment is with a configuration file. A copy of a sample file is attached. Save it to the local directory and then run this command from a shell (or terminal session)

```
conda env create -f mlnd.yml
```

The mlnd.yml file lists all the dependencies and you can easily modify it for your own setup. Here is what it contains:

```
name: mlnd
channels:
- anaconda
- defaults
dependencies:
- matplotlib
- seaborn
- jupyter
- pandas
- python=2.7
- scikit-learn=0.18
```

The name of the environment that will be set up is flagged as `name` -- in this case *mlnd*.
If you want to use a specific version of a library as one of the dependencies, you can use = (here are other options that are allowed). If there is version specified, conda will install the most recent version that is compatible with the other requested libraries.