Setting up the Spectrum and Spectrum Spatial Python Packages

This notebook describes how to install the `spectrumpy` and `spectrumspatialpy` python libraries through examples.

Setup and Prerequisites

Installing Jupyter

Download and install Jupyter using the Anaconda Python 3.6 or later distribution at http://jupyter.org/install. Note do not use Python v2.x. The Anaconda distribution makes it very easy to setup and get up and running quickly.

This notebook, the resources it embeds such as images, etc can be stored anywhere as long as the internal folder structure and file names are retained. Once Jupyter is installed and started, from the Jupyter home page navigate to the notebook and launch it.

Installing the spectrumpy package

In [1]:
```
pip install --quiet git+https://github.com/PreciselyData/spectrumpy#egg=spe
```

Note: you may need to restart the kernel to use updated packages.

Prerequisite to installing the spectrumspatialpy package:

The ***spectrumspatialpy*** package provides Python integration for the Spectrum Spatial services such as the Feature Service for querying spatial data. The package depends on several other packages, many of which will be installed when installing the spectrumspatialpy package. However, there are a few exceptions. From the Anaconda Command Prompt (which can be found in the Windows menu under Anaconda3 (64-bit)) run these commands:

- conda install shapely
- conda install geopandas

In [2]: ▶|
```
conda install -y shapely geopandas
```

```
Collecting package metadata (current_repodata.json): ...working... done
Solving environment: ...working... done

## Package Plan ##

  environment location: C:\Users\RI008PE\Miniconda3

  added / updated specs:
    - geopandas
    - shapely


The following packages will be UPDATED:

  ca-certificates     conda-forge::ca-certificates-2020.6.2~ --> pkgs/main::
ca-certificates-2020.6.24-0

The following packages will be SUPERSEDED by a higher-priority channel:

Note: you may need to restart the kernel to use updated packages.
  certifi             conda-forge::certifi-2020.6.20-py37hc~ --> pkgs/main::
certifi-2020.6.20-py37_0
  conda               conda-forge::conda-4.8.3-py37hc8dfbb8~ --> pkgs/main::
conda-4.8.3-py37_0
  openssl             conda-forge::openssl-1.1.1g-he774522_1 --> pkgs/main::
openssl-1.1.1g-he774522_0



Preparing transaction: ...working... done
Verifying transaction: ...working... done
Executing transaction: ...working... done
```

Installing the spectrumspatialpy package

In [3]: ▶|
```
pip install --quiet git+https://github.com/PreciselyData/spectrumpy#egg=spe
```

```
Note: you may need to restart the kernel to use updated packages.
```

Installing and Enabling Leaflet

`spectrumspatialpy` does not use ipyleaflet, however, the sample notebook for it does. The `ipyleaflet` package enables leaflet maps to be generated and displayed directly within the notebook itself.

```
In [4]:   pip install --quiet ipyleaflet
```

> Note: you may need to restart the kernel to use updated packages.

There are sometimes issues with the map displaying. To enable `ipyleaflet` to display properly, the following command must be run:

```
jupyter nbextension enable --py --sys-prefix ipyleaflet
```

To run this command, either launch an Anaconda prompt from the Windows menu or from the Jupyter main home page, launch a terminal session and enter the command there as shown in the following images.
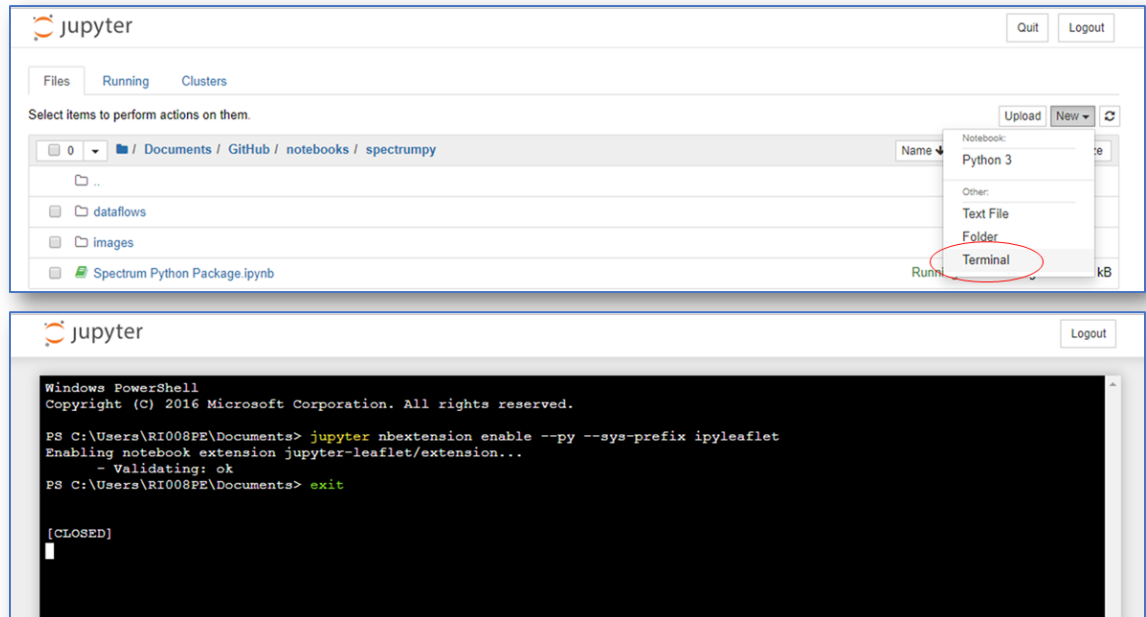
Note: You should restart the kernel before opening and running the Spectrum Spatial notebook.