WaMDaM Directions and Use Cases

By Adel M. Abdallah, Jan 2022

Step 1: Set up a local Jupyter Notebook server on a local machine

i. Download or clone the GitHub the repository for the Jupyter Notebooks

Download it from here https://github.com/WamdamProject/WaMDaM_JupyteNotebooks to a folder on your machine. **Make sure you dont have empty spaces** in your folder name or path where it exits at.

For this paper, you only need to work with the files inside the folder called **2_VisualizePublish**

The GitHub Desktop App is very useful in case you're not aware of it. Download it at: https://desktop.github.com/

ii. Install and set up Jupyter Notebook Server for Python 3.8

It requires some basic programing experience

Install Anaconda for Python 3.8 which already comes with the most common Python libraries are already installed. https://www.anaconda.com/download/

If you're interested in more info (not needed though), follow instructions here http://jupyter.org/install

Next, install a library called *Potly* which is used to plot the use case figures as it does not come with Anaconda:

Run the Anaconda Command Prompt application, you can do so by clicking at the Windows start menu, then select Anaconda Prompt. Right click and **Run as Administrator** (Figure 2) then type

```
conda install -c conda-forge plotly
```

Or try

```
conda install -c plotly plotly
```

or

pip install plotly

If asked to Proceed ([y]/n)? type

```
y
```

Next install a library called *hs_restclient* which the HydroShare client library as it does not come with Anaconda:

```
conda install -c conda-forge hs_restclient
```

or

```
pip install hs_restclient
```

If you have issues installing it, try other commands here
https://anaconda.org/conda-forge/hs_restclient

Next install a library called *gdxpds* which is the GDX/Python Pandas client library for the WASH GAMS model as it does not come with Anaconda:

```
pip install gdxpds==1.0.4
```

See the library info here https://github.com/NREL/gdx-pandas#install

If you have issues installing it, try other commands here
https://anaconda.org/conda-forge/hs_restclient

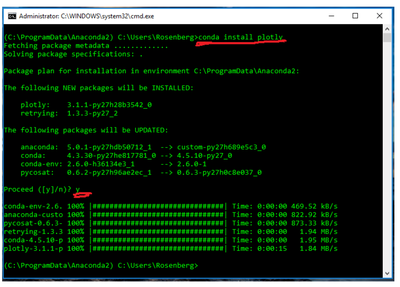

Figure 2: Anaconda Command Prompt and installing new libraries

iii. Launch Jupyter Notebook Server on your local machine

Run the Anaconda Command Prompt application, you can do so by clicking at the Windows start menu, then select Anaconda Prompt. Navigate to the directory to the Jupyter Notebook folder you downloaded earlier (Figure 3). For example, type this command:

```
cd C:\Users\Adel\Documents\GitHub\WamdamProject\WaMDaM_JupyteNotebooks\3_VisualizePublish
```

Before you move on, make sure that the base directoy has changed to the above path you entered. For example:

```
C:\Users\Adel\Documents\GitHub\WamdamProject\WaMDaM_JupyteNotebooks\3_VisualizePublish
```

Next, type this command in the Anaconda Prompt to launch Jupyter Notebook server on your local machine

```
Jupyter Notebook
```

Or alternatively, you try this more recent *Jupyter* environment

```
Jupyter lab
```

If you need to shutdown the *Jupyter* Notebook server, in the Anaconda Prompt, use the keyboard

```
CTRL + C
```

To start it again anytime later, follow the steps in this section iii

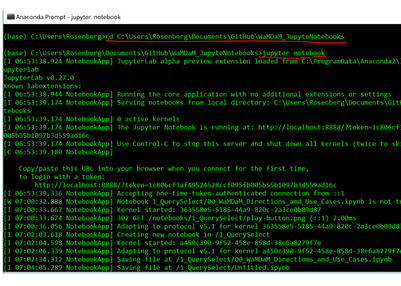

Figure 3: Using the Anaconda Command Prompt to launch Jupyter Notebook

For further details on *Jupyter* Notebooks (not needed), see instructions at http://jupyter-notebook-beginner-guide.readthedocs.io/en/latest/execute.html

Your default browser will launch as in Figure 4.

In the Jupyter Notebook server landing page @ http://localhost:8888/tree? (Figure 4), click at the Notebooks one after another.

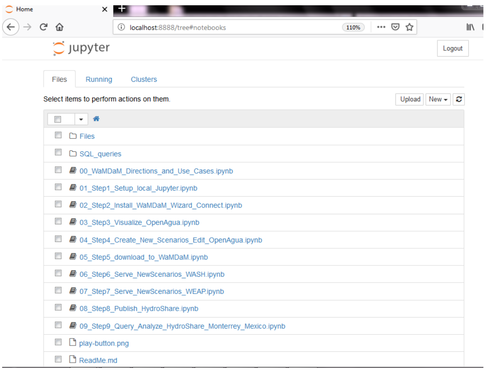

Figure 4: Jupyter Notebook landing page and WaMDaM use case notebooks

Congratulations!

Next, install the WaMDaM Wizard

iv. Check on the version of OpenSSL you have and update it if older than 2016

Older SSL versions may cause this error below when trying to read use case SQL script from GitHub

```
IOError: [Errno socket error] EOF occurred in violation of protocol (_ssl.c:590)
```

In [ ]:

```
import ssl
print (ssl.OPENSSL_VERSION)

# Update it
!pip install --upgrade requests[security]
```

In [ ]: