Notebook and virtual environment

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Creating a Virtual Environment

- The python -m venv command tells python it is creating a virtual environment
- The --system-site-packages parameters indicates that the packages already installed in the server's main python instance should be included in the virtual environment
- The ~/virtualenvs/environment01 directory path parameter indicates where the virtual environment should be created

```
\ACM-Summer-School-2021-AI>python -m venv --system-site-packages ~/virtualenvs/environment01
```

```
\ACM-Summer-School-2021-AI>python -m venv ~/virtualenvs/environment01
```

Activating and Deactivating virtual environments

To activate:

- If your OS is Unix based use:

```
[wrds-cloud] $ source virtualenvs/environment01/bin/activate
(environment01) [wrds-cloud] $
```

- If is Windows:

```
C:\Users\TheRealRondon\Desktop\ACM-Summer-School-2021-AI>.\environment01\Scripts\activate

(environment01) C:\Users\TheRealRondon\Desktop\ACM-Summer-School-2021-AI>
```

Activating and Deactivating virtual environments

To deactivate::

- If your OS is Unix based use:

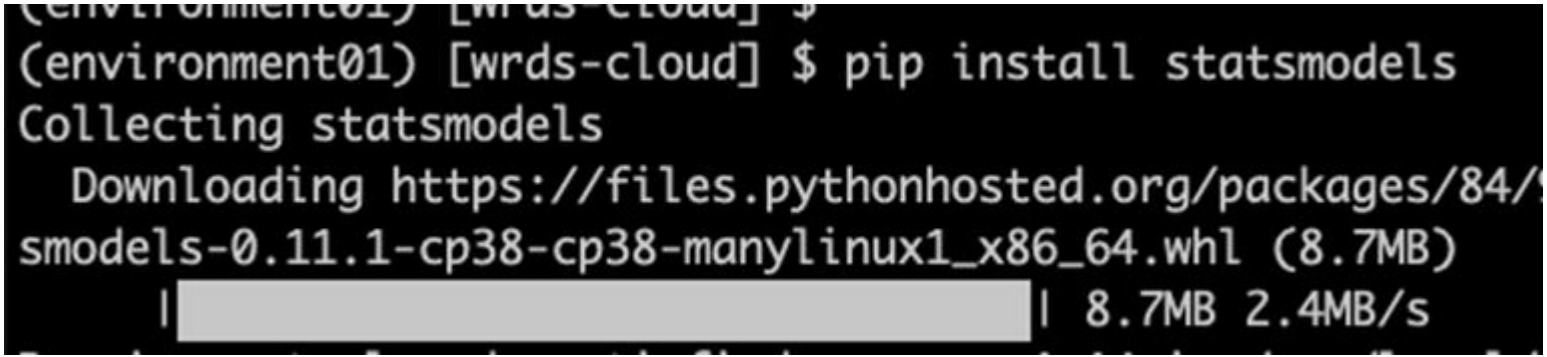
```
(environment01) [wrds-cloud] $ deactivate
[wrds-cloud] $
```

- If is Windows:

```
(environment01) C:\Users\TheRealRondon\Desktop\ACM-Summer-School-2021-AI>.\environment01\Scripts\deactivate
C:\Users\TheRealRondon\Desktop\ACM-Summer-School-2021-AI>
```

Using pip to install python packages

- The pip install command can be used within an activated virtual environment to install a package



- Also you can use pip freeze to see all of your packages
- To see other commands just use pip

What is Notebook document?

- Notebook documents (or “notebooks”, all lower case) are documents produced by the Jupyter Notebook App, which contain both computer code (e.g. python) and rich text elements (paragraph, equations, figures, links, etc…). Notebook documents are both human-readable documents containing the analysis description and the results (figures, tables, etc..) as well as executable documents which can be run to perform data analysis.
- The *Jupyter Notebook App* is a server-client application that allows editing and running notebook documents via a web browser. The *Jupyter Notebook App* can be executed on a local desktop requiring no internet access (as described in this document) or can be installed on a remote server and accessed through the internet.

Jupyter Slides

Matthew

localhost:8888/notebooks/Jupyter%20Slides.ipynb#

jupyter Jupyter Slides Last Checkpoint: 17 minutes ago (unsaved changes)

Logout

File Edit View Insert Cell Kernel Widgets Help

Python 2

Toggle Header
Toggle Toolbar
Cell Toolbar

None
Edit Metadata
Raw Cell Format
Slideshow

Markdown CellToolbar

Jupyter Not Demonstration

by Matt Speck

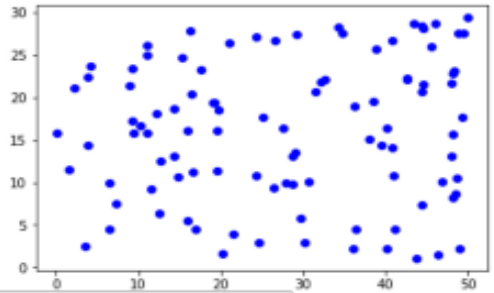
Overview:

Jupyter Notebooks can be easily converted into slideshows for presenting code.

Notes for presentation

In [6]:
```
import numpy as np
import matplotlib.pyplot as plt
X = np.random.uniform(0,50,100)
Y = np.random.uniform(0,30,100)

plt.plot(X,Y,'bo')
plt.show()
```



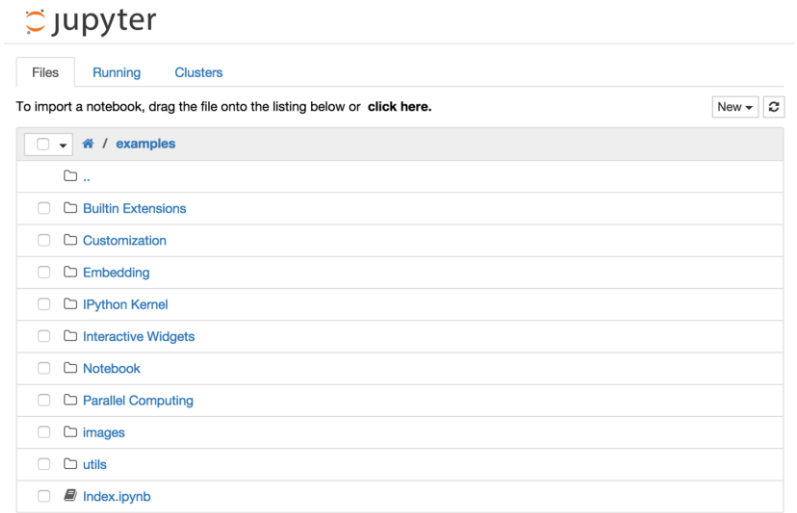
localhost:8888/notebooks/Jupyter Slides.ipynb#

Kernel

- A notebook *kernel* is a “computational engine” that executes the code contained in a Notebook document. The *ipython kernel*, referenced in this guide, executes python code. Kernels for many other languages exist (official kernels).
- When you open a Notebook document, the associated *kernel* is automatically launched. When the notebook is *executed* (either cell-by-cell or with menu *Cell -> Run All*), the *kernel* performs the computation and produces the results. Depending on the type of computations, the *kernel* may consume significant CPU and RAM. Note that the RAM is not released until the *kernel* is shut-down.

Notebook Dashboard

- The *Notebook Dashboard* is the component which is shown first when you launch Jupyter Notebook App. The *Notebook Dashboard* is mainly used to open notebook documents, and to manage the running kernels (visualize and shutdown).
- The *Notebook Dashboard* has other features similar to a file manager, namely navigating folders and renaming/deleting files.



How to install jupyter?

- One way is to use Anaconda

1. Download Anaconda. We recommend downloading Anaconda's latest Python 3 version
2. Install the version of Anaconda which you downloaded, following the instructions on the download page.
3. Congratulations, you have installed Jupyter Notebook. To run the notebook:

```
jupyter notebook
```

How to install jupyter?

- Also there is an alternative way which is using pip

1. Run command below:

```
pip install --upgrade pip
```

1. Then install Jupyter by below command:

```
pip install jupyter
```