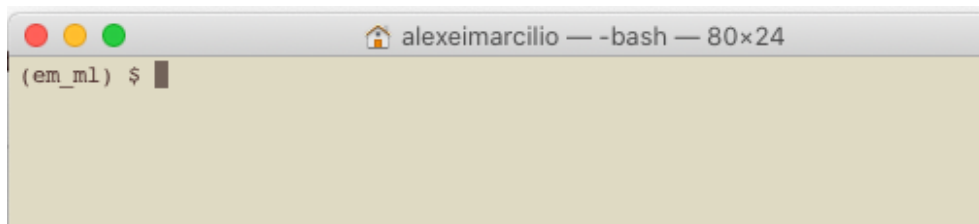


Python Virtual Environment

Setup

- Open a bash terminal in Mac OS
- Change the prompt if necessary:
 - `export PS1="$ "`
- Create virtual environment named `em_ml`:
 - `python3 -m venv em_ml`
- Activate the virtual environment:
 - `source em_ml/bin/activate`
- You will notice the prompt has changed:



- Instead of installing packages individually, pip allows you to declare all dependencies in a Requirements File. For example, you could create a `requirements.txt` file containing:

```
jupyter==1.0.0
lxml==4.5.1
MarkupSafe==1.1.1
matplotlib==3.3.2
notebook==6.0.3
numpy==1.18.1
openpyxl==3.0.4
pandas==1.1.2
Pillow==7.2.0
scikit-learn==0.23.2
scipy==1.4.1
seaborn==0.11.0
SQLAlchemy==1.3.18
```

- Install the python environment with the following command:

- `python3 -m pip install -r requirements.txt`

- Manually add the kernel for the environment in the following way:

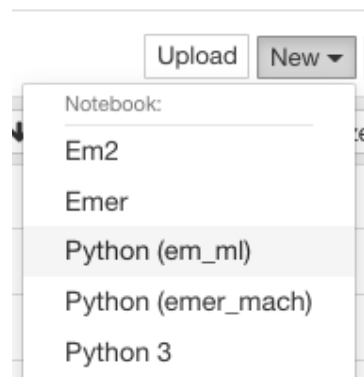
- `python3 -m ipykernel install --user --name em_ml --display-name "Python (em_ml)"`

- You will receive a message to say it's been installed:

```
Installed kernelspec em_ml in /Users/alexeimarcilio/Library/Jupyter/kernels/em_ml
```

- Run jupyter notebook:

- When it opens select “New” and you will see that environment is available:



- No within the new notebook check that the package versions are correct. You will recall above that we have pandas 1.1.2 in the requirements.txt file. Let's see if it matches:

- Import pandas as pd and run the version method to check the version:

```
In [1]: 1 import pandas as pd

In [3]: 1 pd.__version__

Out[3]: '1.1.2'
```

- Voila, it matches, we are all good.

- Now to get started with the environment:

- Open a terminal
- Make sure all default environments are deactivated (twice):
 - `conda deactivate`
 - `conda deactivate`
- Activate the environment:
 - `source em_ml/bin/activate`
- Go to the folder with your current project:
 - `cd Desktop/Courses/Emeritus-Machine/`
- Run jupyter notebook
- Create a new notebook by selecting the correct environment:

