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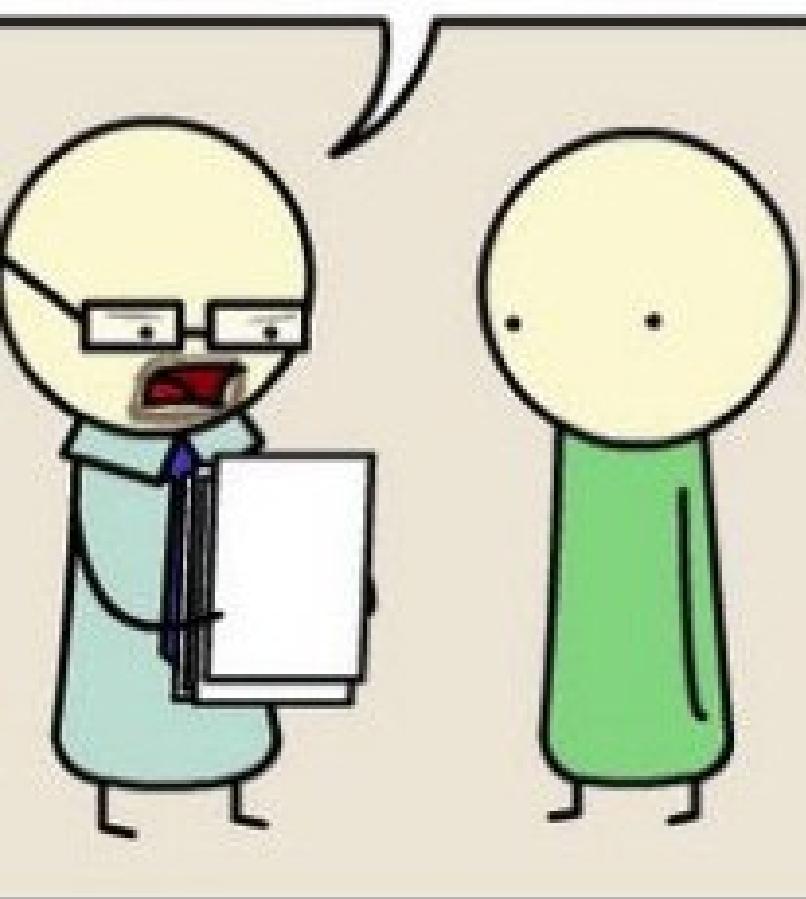


Python: Modules, Packages, Libraries and Virtual Environments

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PYTHON

THIS IS PLAGIARISM.
YOU CAN'T JUST "IMPORT ESSAY."



Module

- A module can be described as a collection of interconnected code components stored within a file bearing the .py extension.
- <https://docs.python.org/3/tutorial/modules.html#>
- e.g. datetime, random, re.

Module

- Create `congratmodule.py` file:

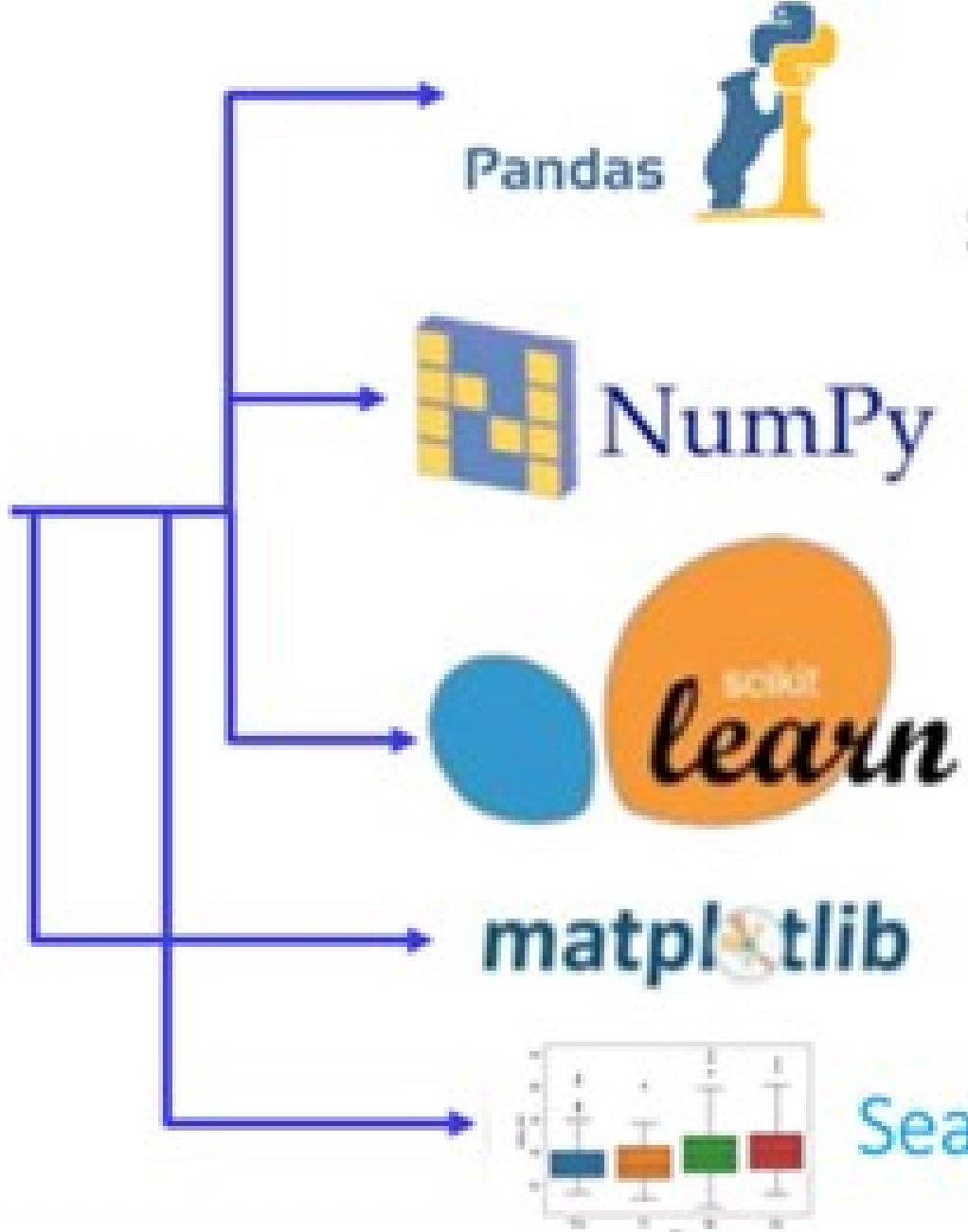
```
def congrat (name) :  
    print("Congratulations, " + name)
```

- Use module:

```
import congratmodule  
congratmodule.congrat ("Jonathan")
```

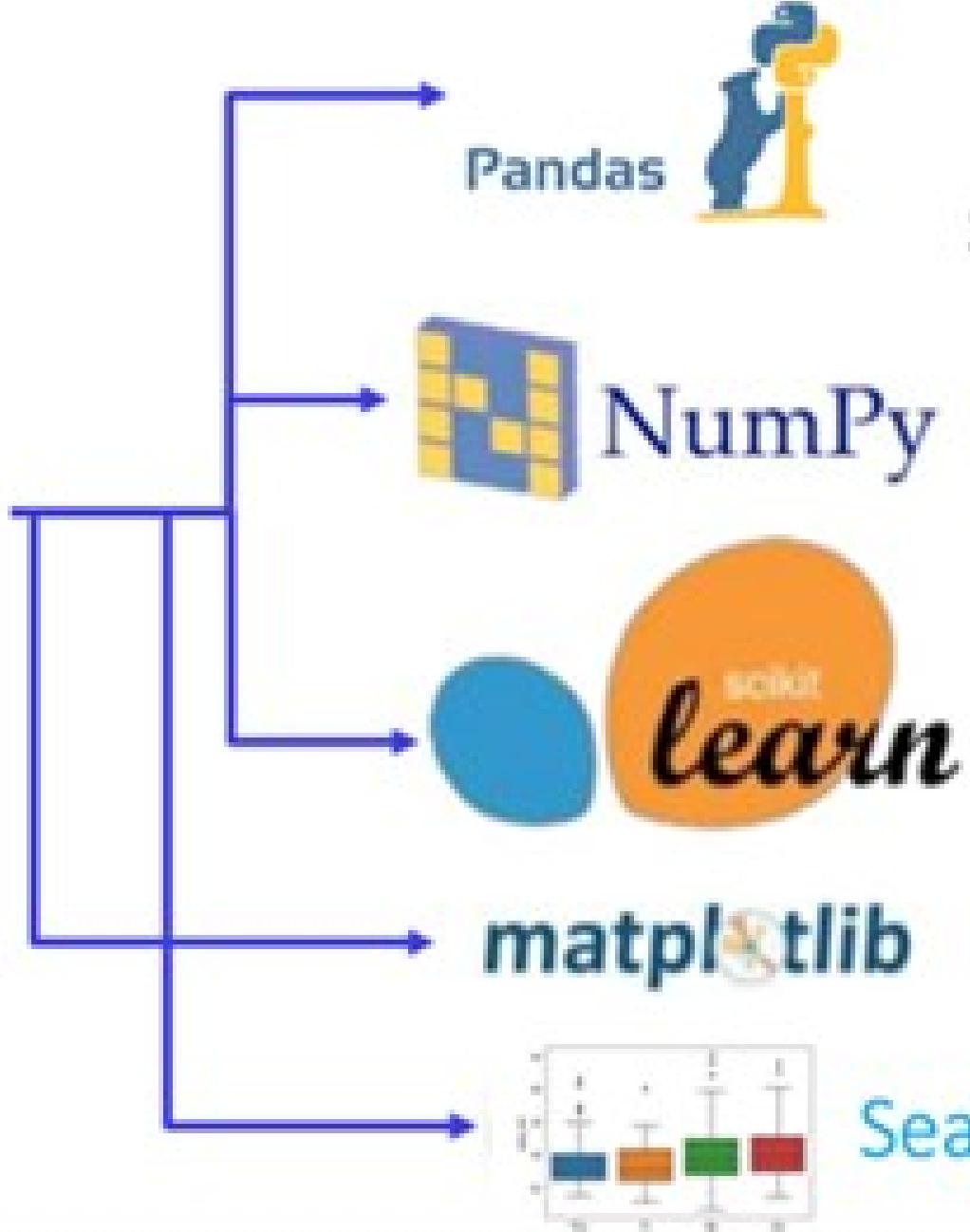
Packages

- Python packages are basically a directory of a collection of modules.
- To be considered a package (or subpackage), a directory must contain a file named `__init__.py`.
- This file usually includes the initialization code for the corresponding package.
- <https://docs.python.org/3/tutorial/modules.html#packages>
- e.g. NumPy, Pandas.



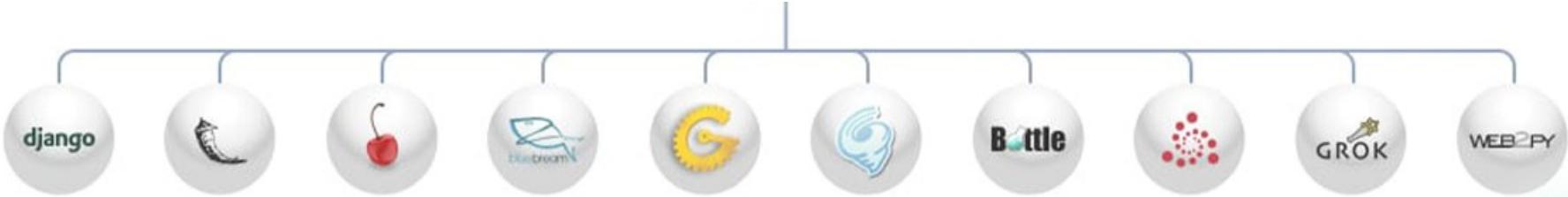
Library

- A library is a comprehensive concept encompassing a reusable block of code.
- e.g. Matplotlib, Requests



Modules/Packages/Libraries

- A package is a collection of modules, a library is a collection of packages.



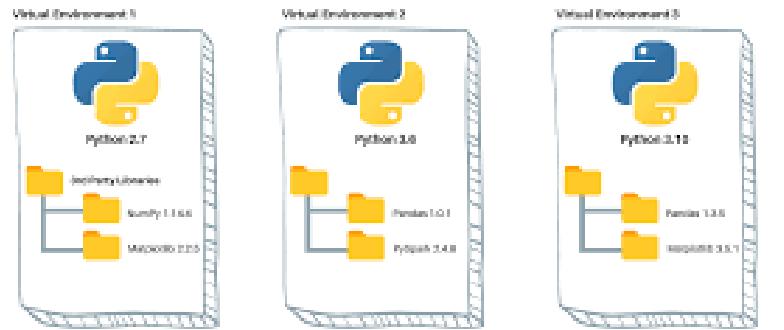
- A frameworks contain the basic flow and architecture of the application.

Framework

- e.g. Django, Flask.

Environment

- A virtual environment in Python is a specialized environment where the Python interpreter, libraries, and scripts are segregated from those present in other virtual environments.
- Furthermore, it inherently shields itself from any libraries integrated into a "system" Python installation, which typically comes as part of the operating system.



datacamp

Environment

- Install pip install (if it is not installed):
 - Download get-pip.py (<https://bootstrap.pypa.io/get-pip.py>) to a folder on your computer.
 - Open a command prompt and navigate to the folder containing the get-pip.py installer.
 - Run the following command:
 - `python get-pip.py`
- Terminal VSCode (windows):
 - `python -m venv .venvtest`
 - `.\\.\venvtest\Scripts\Activate.ps1`
 - `deactivate`

Environment

- Use Anaconda...

