

# **Python Training Workshop 2019**

## **An introduction course to Python**

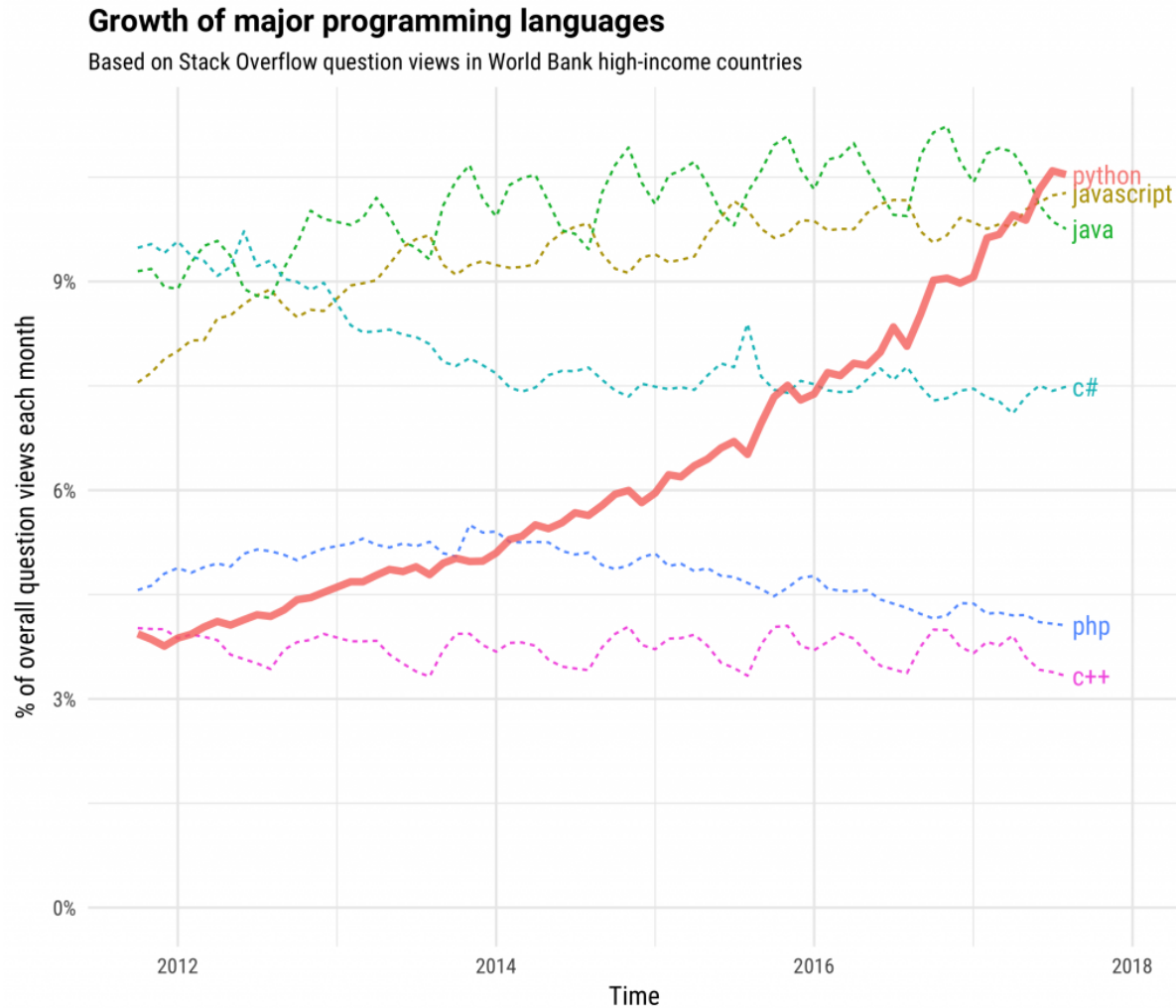
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Please go to <http://goo.gl/> for the materials. :)

# Python: a very fast-growing language



# **A new era of computing**

- Varieties of programming languages
- Multi-core CPU and GPU support
- Easily-accessible cloud computing
- Cloud microservices

# Python: a versatile language



- high-level
- object-oriented, and
- Interpreted

programming language.

# Python: a "High-level language"

- "Low level language": C, Fortran, Basic
- **Level** means the accessibility to system resources.
- **High Level** :
  - care less about memory management or proper declaration of variables
  - less abstract than low-level language
  - less time to write and compile
  - relatively slower running time than some low-level language (not always true).

# Community of Python users

- Web backend developers
- Data science
- Machine learning

Global Community

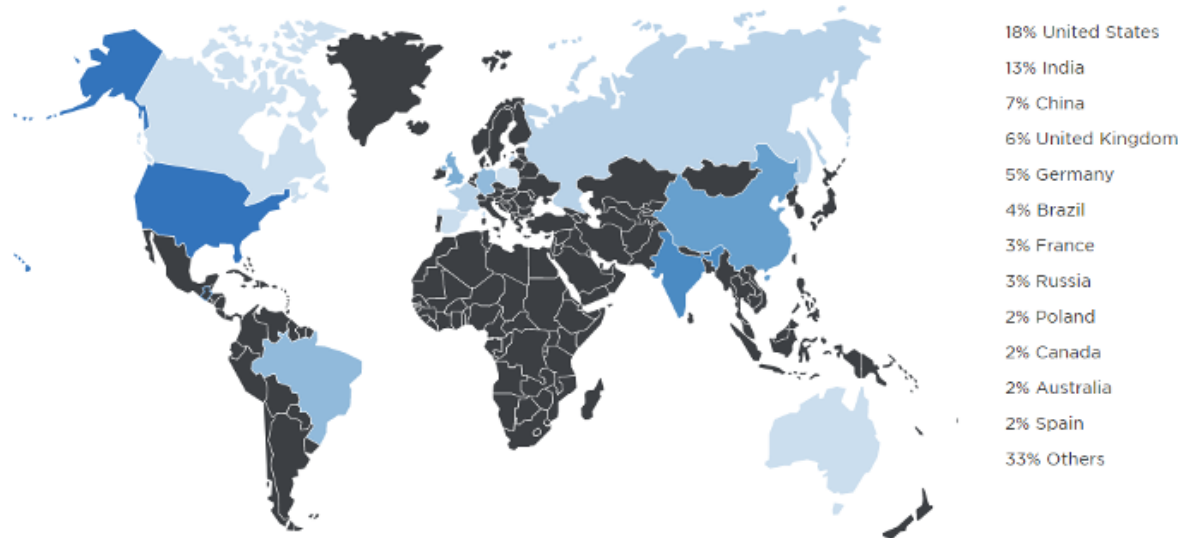


Image courtesy of the Python Developers Survey 2017 Results website

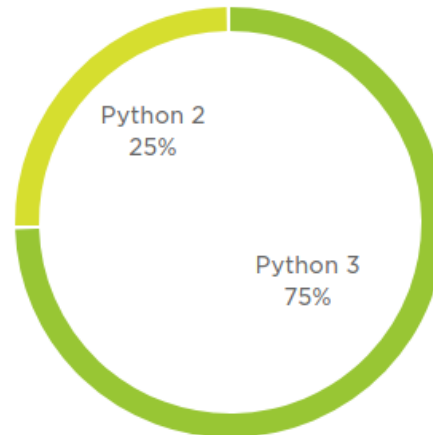
# Python 2 vs Python 3

Results are quoted from

<https://www.jetbrains.com/research/devecosystem-2018/python/>

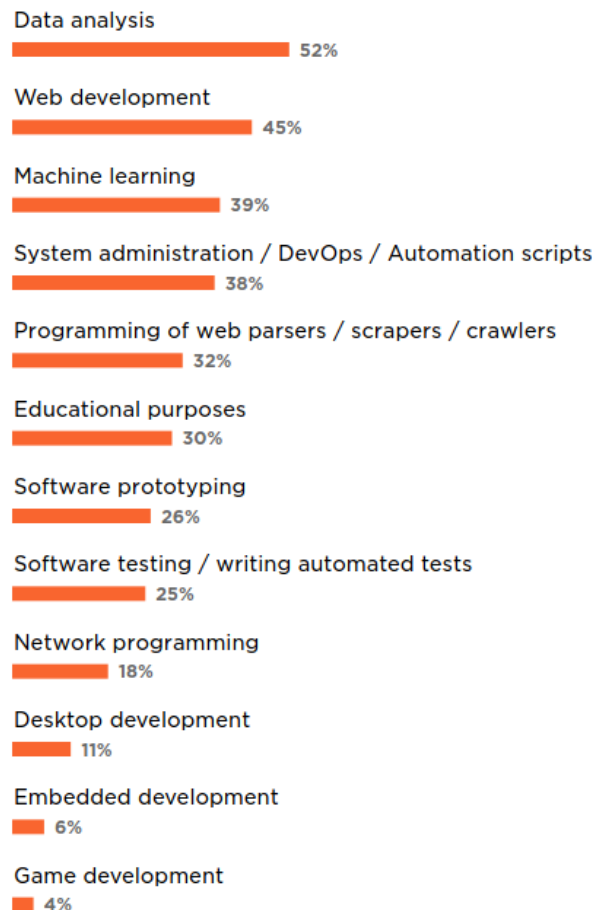


Which version of  
Python do you use  
the most?

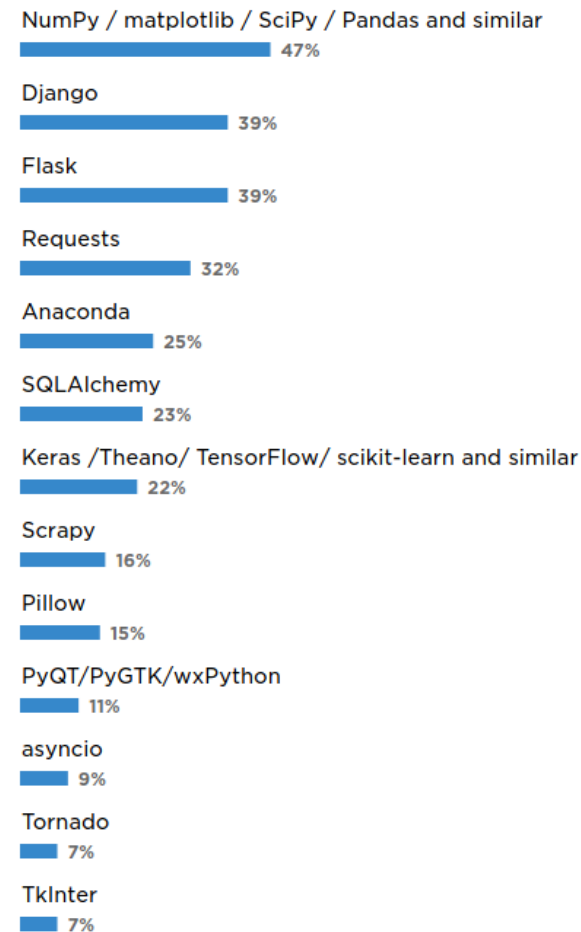


# Python Usages

What do you use Python for?



What libraries and/or frameworks do you use in addition to Python, if any?





# Installation

- Refer to another guide
- Recommendation:
  - Anaconda
  - Google colab

## Install packages (with anaconda)

- `conda search xxxxxx`
- `conda install xxxxxx`

# Install packages (with `pip` )

`pip` is a package management system in Python

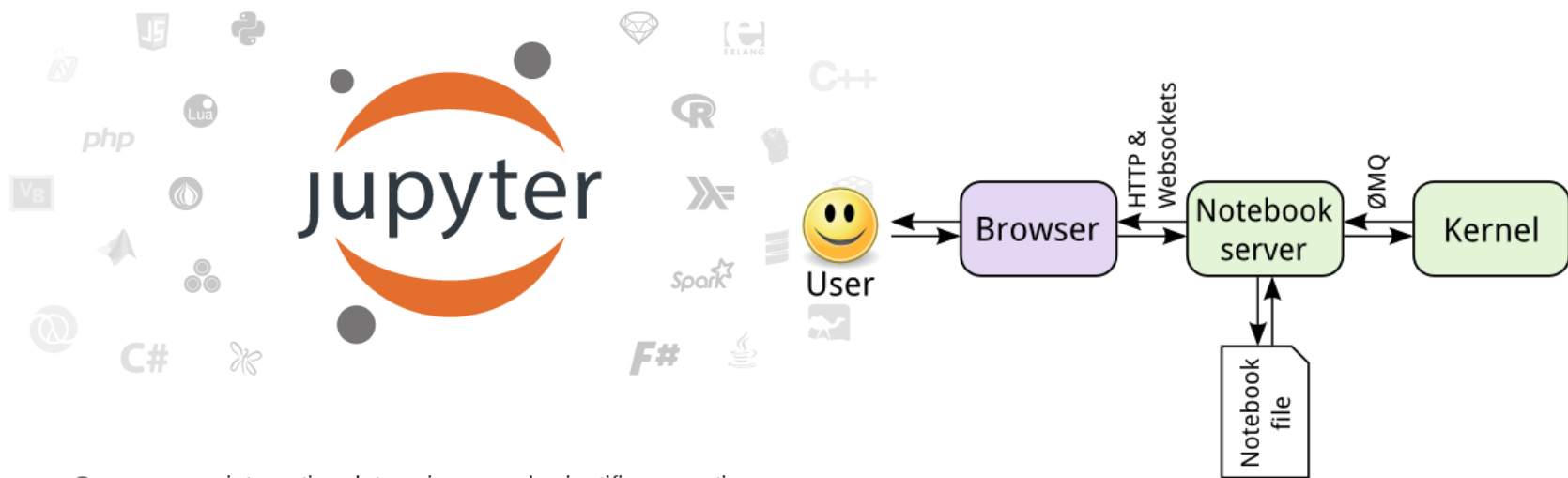
To search/install packages:

- Search package : `pip search xxxxxx`
- Install package : `pip install xxxxxx`
- Upgrade package : `pip install --upgrade xxxxxx`
- Uninstall package : `pip uninstall xxxxxx`
- Install wheel package : `pip install xxxxxx.whl`

# Jupyter Notebook

You may want to run a Jupyter notebook when:

- You want to try out a new experiment or analysis with an existing Jupyter notebook from someone.
- You want to develop an algorithm that run on a large software.
- You have only ten minutes to download a data, plot a graph and send the email to your supervisor in a neat format.



Open source, interactive data science and scientific computing across over 40 programming languages.

# Open Jupyter in Linux/MacOS

Type

```
jupyter notebook
```

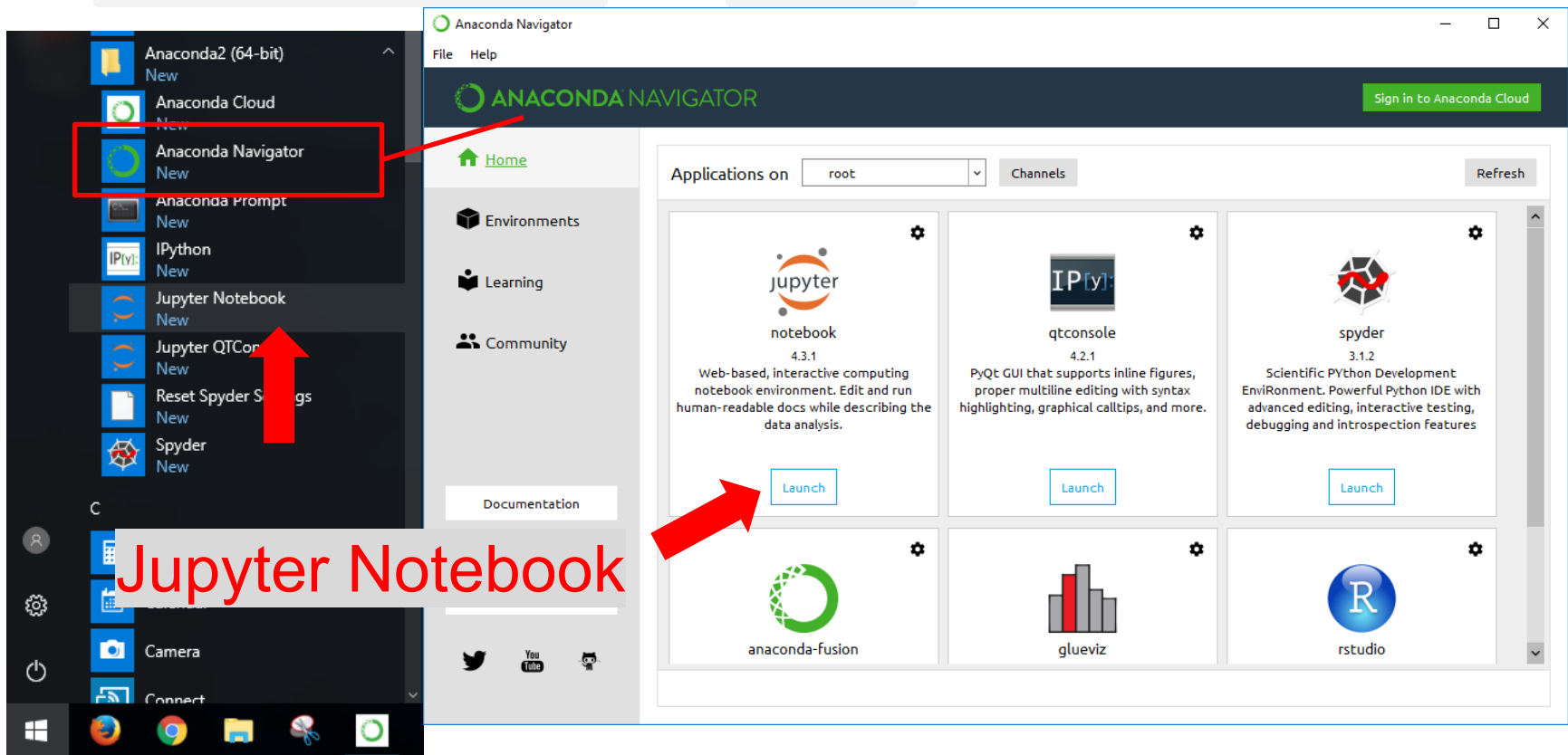
```
# yanyan @ vela in ~/workspace [12:37:07]
$ jupyter notebook
jupyter notebook

# yanyan @ vela in ~/workspace [12:37:07]
$ jupyter notebook
[I 12:38:14.082 NotebookApp] Serving notebooks from local directory: /home/yanyan/workspace
[I 12:38:14.082 NotebookApp] 0 active kernels
[I 12:38:14.082 NotebookApp] The Jupyter Notebook is running at: http://localhost:8888/?token=40a1e1aa7783bb15e5178ec870a0f8bb07470e94d0a02da0
[I 12:38:14.082 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 12:38:14.083 NotebookApp]

Copy/paste this URL into your browser when you connect for the first time,
to login with a token:
http://localhost:8888/?token=40a1e1aa7783bb15e5178ec870a0f8bb07470e94d0a02da0
Gtk-Message: Failed to load module "pk-gtk-module"
Created new window in existing browser session.
[I 12:38:15.159 NotebookApp] Accepting one-time-token-authenticated connection from ::1
```

# Open Jupyter in Windows

Open your Start menu, goes to **Anaconda** Folder,  
Click the **Jupyter Notebook** shortcut (Recommended). Or start  
the **Anaconda Navigator** and **Launch**



**End**

Please continue to the jupyter notebooks.