

Introduction to Python Programming

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Python



What



What

- Programming language
 - Open-source
 - Interpreted
 - High-level
 - General-purpose
- Code readability
- Object Oriented Programming



What

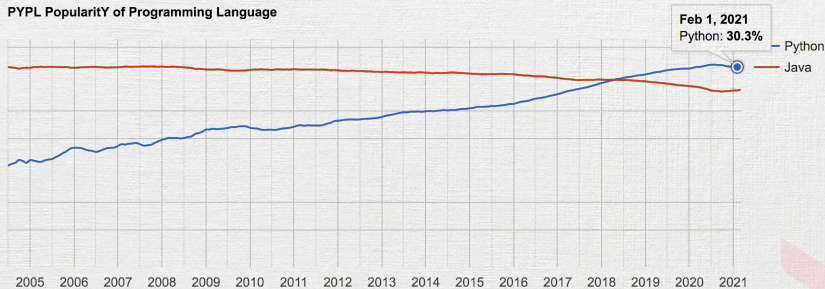
Worldwide, Mar 2021 compared to a year ago:

Rank	Change	Language	Share	Trend
1		Python	30.17 %	-0.2 %
2		Java	17.18 %	-1.2 %
3		JavaScript	8.21 %	+0.2 %
4		C#	6.76 %	-0.6 %
5	↑	C/C++	6.71 %	+0.8 %
6	↓	PHP	6.13 %	+0.0 %
7		R	3.81 %	+0.0 %
8		Objective-C	3.56 %	+1.1 %
9		Swift	1.82 %	-0.1 %

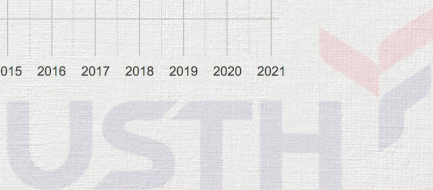
What

Worldwide, Python is the most popular language, Python grew the most in the last 5 years (-2.0%) and Java lost the most (-7.5%)

PYPL PopularitY of Programming Language



Source



Why

- Easy
- Flexible
- Readability
- Projects
- Jobs



Why: Easy

- Syntax
- Natural
- Intuitive
- Python:

```
print("Hello world.")
```

- Java:

```
public class Test {  
    public static void main(String args[]) {  
        System.out.println("Hello world.");  
    }  
}
```


Why: Flexible

- Script
- Backend
- Machine Learning, Deep Learning
- Apps
 - Mobile
 - Desktop
 - Web



Why: Readability

- Indents ftw!
- Line breaks ftw!



Why: Projects

- Full list
 - Browser
 - Youtube-dl
 - Music Player
 - Video Editor
 - Bittorrent client
 - Text Editor



Why: Jobs!1!!



Devops Engineer (Python, NodeJS) ~ 2000\$

Hot

(\$ [Sign in to view](#) ▶)

- Mức lương khủng tới 2000\$
- Performance review: 2 lần/năm
- Nghỉ thứ 7, Chủ Nhật

Ha Noi

DevOps Python NodeJS

3d



Why: Jobs!1!!



AI Engineer (C/C++, Python) Up to \$2500

Hot

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- Opportunities to work oversea
- Competitive salary package
- Creative working enviroment

Ha Noi

C++ Python C language

4d



Why: Jobs!1!!



Embedded Dev (C/C++/ Python) Up to \$2000

Hot

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- Opportunities to work abroad
- Competitive salary package
- Creative working enviroment

Ha Noi

C++ Python Embedded

4d



Why: Jobs!1!!



4 Backend Dev (Python/Django, SQL)~\$1600

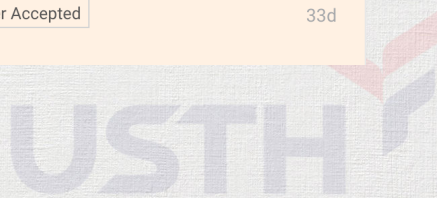
Ha Noi

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- Flexible working time
- International exchanges
- Active team & modern tech

Python SQL Django Fresher Accepted

33d



Why

That's 4 ECTS btw...



Why NOT?

- Intepretation, not compilation
- Slow
 - GIL...
- Not optimized for
 - Mobile
 - Web client



Get started

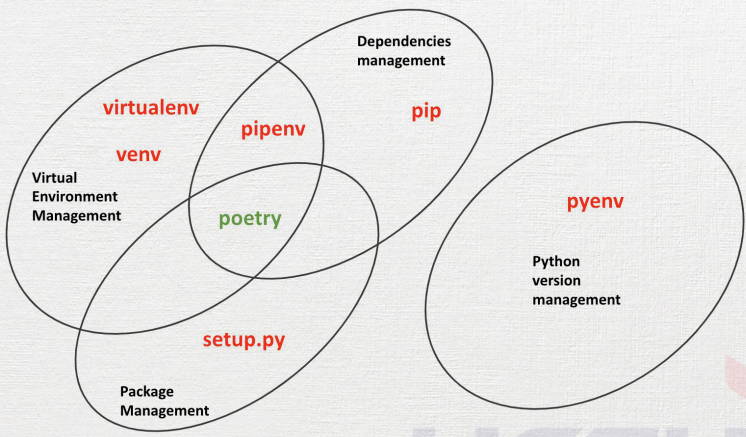


Python

- Python
 - Python 2.x: discontinued
 - Python 3.x
- Download

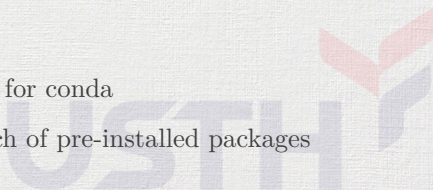


Versions, Environments, Packages



Versions, Environments, Packages

- pyenv: manage Python versions
- virtualenv: isolate Python environments
- pip:
 - install Python packages
 - from Python Package Index
- conda:
 - isolate environments
 - install packages
 - miniconda: minimal installer for conda
 - anaconda: miniconda + bunch of pre-installed packages



IDE

- Full fledged IDEs
 - PyCharm
 - Visual Studio Code
- Better live code
 - Jupyter notebooks
 - Spyder
- Simplicity: any text editor
 - Atom
 - Sublime Text
 - Notepad
 - vi/vim/nano...



Jupyter Notebook

- Written in Python
- Fork of IPython
- Open-source *Web app*
 - live code
 - equations
 - Computational output - visualizations
 - explanatory text
- Popular for Data Science
- JupyterLab



Jupyter Notebook

- Main components
 - IPython
 - ØMQ
 - Tornado (web server)
 - jQuery
 - Bootstrap (front-end framework)
 - MathJax



Jupyter Notebook

- Install

- pip

```
pip install notebook
```

- * conda

```
conda install -c conda-forge notebook
```

- Launch

```
jupyter notebook
```

