Developers | Enterprise teams

Language | Community

Python for the Enterprise
The python language
Why Python?

• Open source, rigorous contribution policies
• Famously “batteries-included”, infinite libraries
• Exceptional attention to security, stability and backwards compatibility
• Time-based releases, always improving
What’s new in 3.4

New library modules

• asyncio: New provisional API for asynchronous IO.
• enum: Support for enumeration types.
• selectors: High-level and efficient I/O multiplexing, built upon the select module primitives.
• statistics: A basic numerically stable statistics library.

New built-in features

• PEP 442: Safe object finalization.
• PEP 445: Configurable memory allocators.
• PEP 446: Make newly created file descriptors non-inheritable.

Major improvements to Library Modules

• Single-dispatch generic functions.
• SHA-3 (Keccak) support for hashlib.
• TLSv1.1 and TLSv1.2 support for ssl.
...
Software Integrity Report

Target Level 3 ACHIEVED
Project Name: Python

Version: 3.4dev

Project Description: http://python.org/

Project Details:

Lines of Code Inspected: 396,738

Project Defect Density: <0.01

High-Impact and Medium-Impact Defects: 1

<table>
<thead>
<tr>
<th>DEFECT DENSITY BY PROJECT SIZE COMPARISON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lines of Code</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>100,000-499,999</td>
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</tbody>
</table>
python is good for...?
Web

Just about everything!

The whole dang site:
https://github.com/reddit/

http://xkcd.com/802
Science

AstraZeneca
Collaborative drug discovery

NASA
Glue language for many platforms

NOAA
Forecasting

Los Alamos
Large-scale physics simulations

Sunday, October 27, 13
Why is Python so popular in the sciences?

• Killer libraries (NumPy, SciPy, IPython, SymPy, scikit-learn, matplotlib, pandas...)
• Scientific Python distributions (Enthought)
• Language interoperability
• All of the things developers love about Python
Games
"Python plays a key role in our production pipeline. Without it a project the size of Star Wars: Episode II would have been very difficult to pull off. From crowd rendering to batch processing to compositing, Python binds all things together." - Tommy Burnette, Senior Technical Director
Finance

Python powers the New York Stock Exchange’s web based transaction system.
Business

- Rackspace Hosting
- Nokia
- "CORE" CRM and ERP platform
- High-level programming environment for Symbian
- Dropbox
- Red Hat
- Desktop client
- Installer and configuration utilities
Hardware
Even mobile

A multi-touch Android app written in Kivy.
How is Python ubiquitous in so many domains?
Python is fast enough...

- CPython: the default / reference implementation for the Python bytecode interpreter
- Written in C!

See also:
...and the ecosystem makes it even faster

- PyPy: a Python implementation with a Just-In-Time compiler
- C extensions
- Highly-optimized domain libraries
The Python community
Python is popular

- JavaScript: 491,172
- Ruby: 420,759
- Java: 328,151
- Python: 247,070
- PHP: 241,925
- C: 129,235
- C++: 121,835

35925 packages on PyPI
<table>
<thead>
<tr>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
<td>Java</td>
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<tr>
<td>2</td>
<td>2</td>
<td></td>
<td>PHP</td>
<td>13.9 %</td>
<td>-0.0 %</td>
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<tr>
<td>3</td>
<td>3</td>
<td></td>
<td>C#</td>
<td>10.0 %</td>
<td>+0.4 %</td>
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<tr>
<td>4</td>
<td>6</td>
<td>↑↑</td>
<td>Python</td>
<td>9.9 %</td>
<td>+1.7 %</td>
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<tr>
<td>5</td>
<td>4</td>
<td>↓</td>
<td>C++</td>
<td>9.0 %</td>
<td>-0.7 %</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>↓</td>
<td>C</td>
<td>8.5 %</td>
<td>-1.4 %</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td></td>
<td>Javascript</td>
<td>7.1 %</td>
<td>+1.3 %</td>
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<tr>
<td>8</td>
<td>8</td>
<td></td>
<td>Objective-C</td>
<td>5.6 %</td>
<td>+0.4 %</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td></td>
<td>Visual Basic</td>
<td>3.1 %</td>
<td>-0.6 %</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td></td>
<td>Ruby</td>
<td>3.0 %</td>
<td>+0.2 %</td>
</tr>
</tbody>
</table>

https://sites.google.com/site/pydatalog/pypl/PyPL-Popularity-of-Programming-Language
PyPL
Popularity of Language Index
PyPL
Popularity of Language Index

Python
4. THE TWENTY-SIXTH REID LIST

Table 4. The programming language(s) used and the frequency of occurrence

<table>
<thead>
<tr>
<th>Language</th>
<th>Programs using it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Java</td>
<td>197</td>
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<tr>
<td>C++</td>
<td>82</td>
</tr>
<tr>
<td>Python</td>
<td>43</td>
</tr>
<tr>
<td>C</td>
<td>18</td>
</tr>
<tr>
<td>Scheme or Racket</td>
<td>11</td>
</tr>
<tr>
<td>Java with another language</td>
<td>9</td>
</tr>
<tr>
<td>Visual Basic</td>
<td>7</td>
</tr>
<tr>
<td>Ada</td>
<td>5</td>
</tr>
<tr>
<td>C/C++</td>
<td>4</td>
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<tr>
<td>Ada or Python</td>
<td>2</td>
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<tr>
<td>Alice and Java</td>
<td>2</td>
</tr>
</tbody>
</table>

Coursera + Udacity + edX > 300,000 online learners
Python Meetup Groups
Meet other local Python Programming Language enthusiasts!

> 200 communities on [http://wiki.python.org/moin/LocalUserGroups](http://wiki.python.org/moin/LocalUserGroups)
## Regional Python conferences

<table>
<thead>
<tr>
<th>Region</th>
<th>Conference Name</th>
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</thead>
<tbody>
<tr>
<td>North America</td>
<td>PyCon</td>
</tr>
<tr>
<td>Europe</td>
<td>EuroPython, EuroSciPy</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Kiwi PyCon</td>
</tr>
<tr>
<td>Pacific</td>
<td>PyCon Asia Pacific</td>
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<tr>
<td>Argentina</td>
<td>PyCon AR</td>
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<tr>
<td>Australia</td>
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<td>Brazil</td>
<td>PythonBrasil</td>
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<tr>
<td>Canada</td>
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<tr>
<td>China</td>
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<tr>
<td>Germany</td>
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<tr>
<td>Spain</td>
<td>PyCon ES</td>
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<tr>
<td>Finland</td>
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<tr>
<td>France</td>
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<tr>
<td>India</td>
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<tr>
<td>Iran</td>
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<tr>
<td>Ireland</td>
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<td>Italy</td>
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<td>Japan</td>
<td>PyCon Japan</td>
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<td>Philippines</td>
<td>PyCon Philippines</td>
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<td>Poland</td>
<td>PyCon PL</td>
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<td>Russia</td>
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<td>Singapore</td>
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<td>Taiwan</td>
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<td>UK</td>
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<tr>
<td>Venezuela</td>
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<tr>
<td>South Africa</td>
<td>PyCon ZA</td>
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<tr>
<td>United States</td>
<td>SciPy</td>
</tr>
<tr>
<td>India</td>
<td>SciPy.in</td>
</tr>
</tbody>
</table>

SciPy conferences

SciPy in the United States
SciPy.in in India
Regional Python conferences

PyCon in North America

PyCon Ireland
PyCon Italia in Italy
PyCon Japan
PyCon Philippines in the Philippines
PyCon PL in Poland
PyCon Russia in Russia
PyCon Singapore in Singapore
PyCon Taiwan in Taiwan
PyCon UK in the United Kingdom
PyCon Ukraine in Ukraine
PyCon Uruguay in Uruguay
PyCon Venezuela in Venezuela
PyCon ZA in South Africa

PyData conferences

SciPy in the United States
SciPy.in in India

Sunday, October 27, 13
“Making scientists more productive by teaching them basic software engineering skills.”

- Version control
- The shell
- Testing
- Regular expressions
- Databases
- Automation

Most bootcamps taught in Python™
The Python community’s killer feature:
Grants program

http://python.org/psf/grants/
Outreach and Education
Python is popular, effective, and constantly investing in the language and community.
Python for the Enterprise Developers

Language

Enterprise teams

Community
Thank you!
Questions?

Developers
Enterprise teams
Language
Community