Belorussian State University Of Informatics and Radio-electronics.
Faculty of computer system and networks.
Electronic Computing Machines Department.

Why do you need to learn Python?

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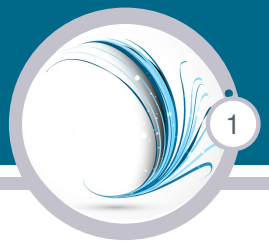
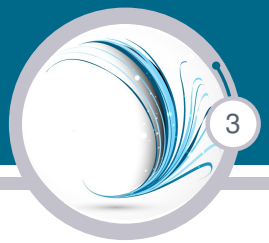
Content




2

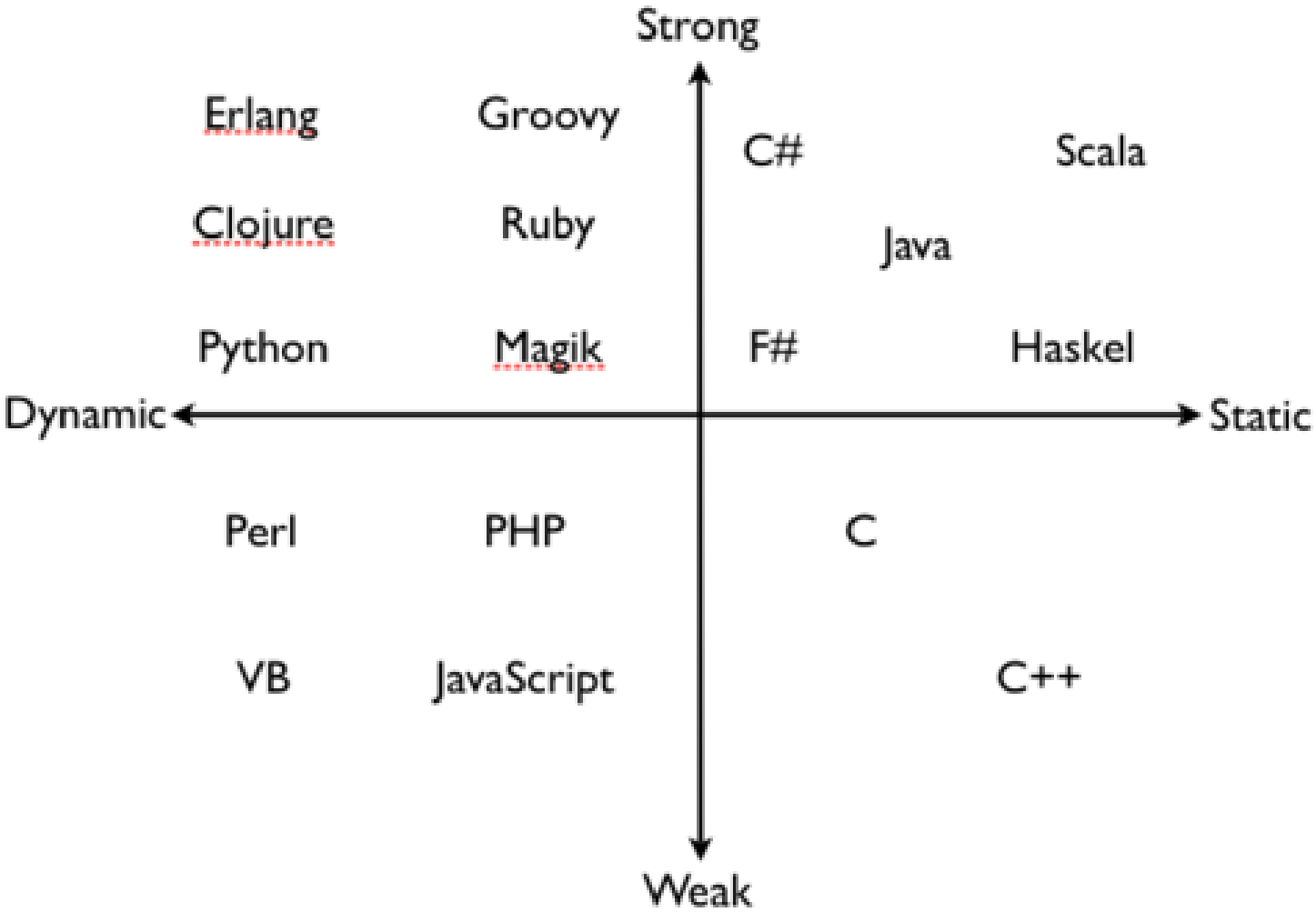

python



Python

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. This is a general-purpose language that can be equally well developed system applications with a graphical interface, command line utilities, scientific applications, games, applications for the Web, and much more.

Introduction
What is Python?



Dinamic – Python

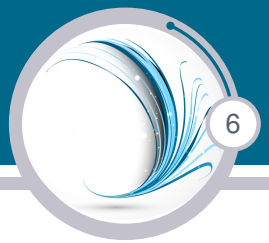
```
1 >>> variable = "string"
2 >>> type(variable)
3 <class 'str'>
4
5 >>> variable = 42
6 >>> type(variable)
7 <class 'int'>
```

Dinamic – Python

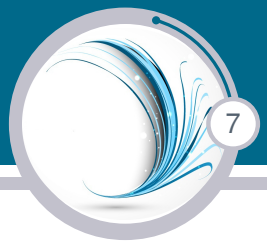
```
>>> variable = "string"
>>> type(variable)
<class 'str'>

>>> variable = 42
>>> type(variable)
<class 'int'>
```

Static – C

```
int i = 10;
i = "string";
Compile Error
```



Let's talk about JavaScript!



Weak – JavaScript

```
1  >>> [] + []
2  >>>
3
4  >>> [] + {}
5  [object Object]
6
7  >>> {} + []
8  0
9
10 >>> {} + {}
11 NaN
```

Weak – JavaScript

```
1  >>> Array(10)
2  ,,,,,,,,,
3
4  >>> Array(10).join("wat")
5  watwatwatwatwatwatwatwatwat
6
7  >>> Array(10).join("wat" + 1)
8  wat1wat1wat1wat1wat1wat1wat1wat1wat1
9
10 >>> Array(10).join("wat" - 1) + "␣Batman!"
11 NaNNaNNaNNaNNaNNaNNaNNaNNaN Batman!
```

Introduction
WAAAAAT?

Strong – Python

```
1 >>> print 13 + "13"
2 TypeError
3 >>> print [] + {}
4 TypeError
```

Strong – Python

```
1 >>> print 13 + "13"
2 TypeError
3 >>> print [] + {}
4 TypeError
```

Strong – Ruby

```
1 irb(main)> 42 + "42"
2 TypeError
3 irb(main)> [] + {}
4 TypeError
```

Introduction
JS

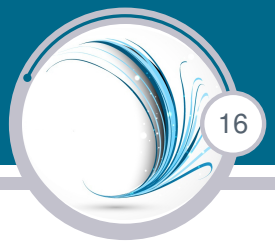
JavaScript

```
1  > '5' - 3
2  2
3  > '5' + 3
4  '53'
5  >'foo' + + 'foo'
6  'fooNaN'
7  >'5' + - '2'
8  '5-2'
9  > var x = 3;
10 >'5' + x - x
11 50
12 >'5' - x + x
13 5
```

Introduction
JS


NO TIME
FOR JOKES

Guido van Rossum is a Dutch computer programmer who is best known as the author of the Python programming language. In the Python community, Van Rossum is known as a "Benevolent Dictator For Life" (BDFL), meaning that he continues to oversee the Python development process, making decisions where necessary.He was employed by Google from 2005 until 7 December 2012, where he spent half his time developing the Python language. In January 2013, Van Rossum started working for Dropbox.



Implementation started | December 1989

- First appeared - 20 February 1991, 25 years ago

Python 1.0 | January 1994

- Python 1.6 - September 5, 2000

Python 2.0 | October 16, 2000

- Python 2.7 - July 3, 2010

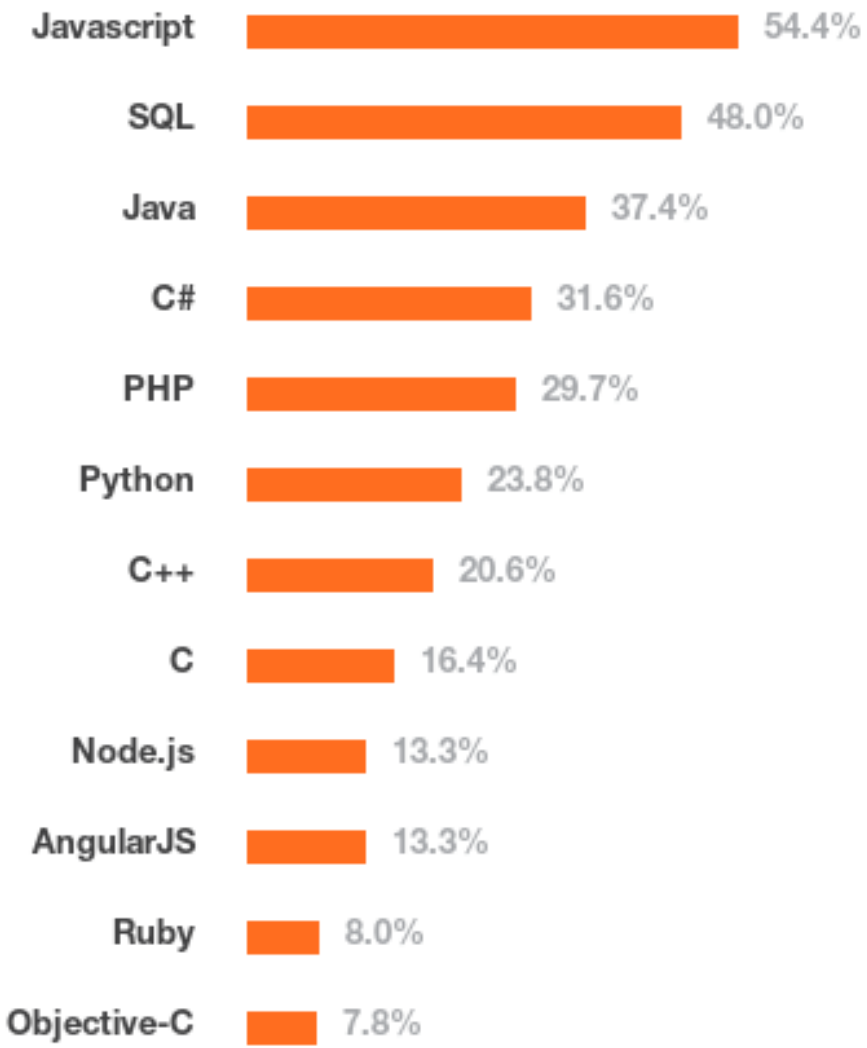
Python 3.0 | December 3, 2008

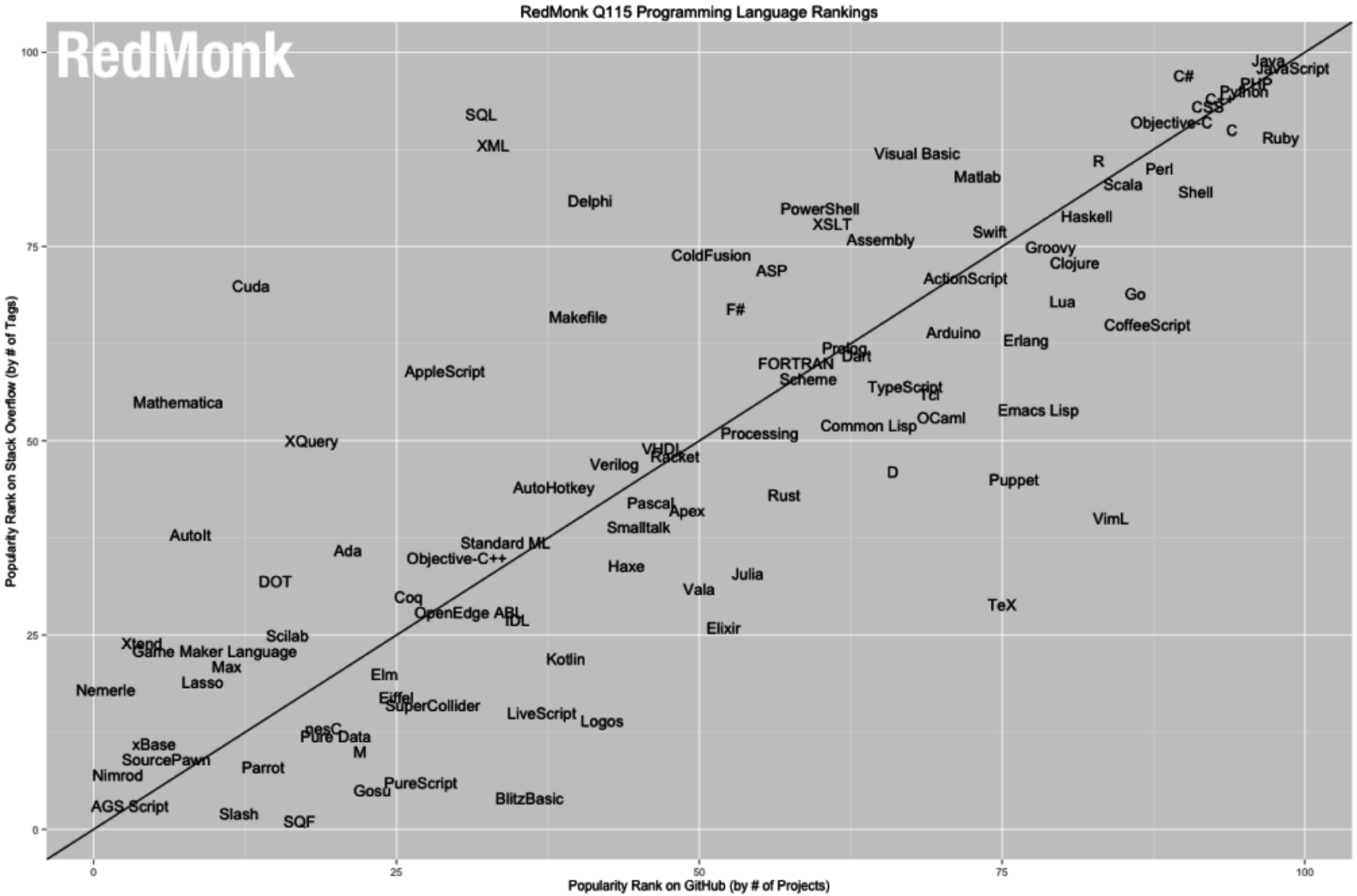
- Python 3.5 - September 13, 2015

Introduction
Pros and cons

- Pross
  - Easy to learn
  - Cross-platform
  - Community
  - Open License
  - Efficiency
  - Simplicity
  - Batteries
- Cons
  - GIL (???)
  - Perfomance (???)

Introduction
Stackoverflow statistic




RedMonk Q115 Programming Language Rankings
RedMonk
Popularity Rank on Stack Overflow (by # of Tags)
Popularity Rank on GitHub (by # of Projects)
0
25
50
75
100
Java
JavaScript
C#
PHP
Python
CSS
Objective-C
C
Ruby
SQL
XML
Visual Basic
Matlab
R
Perl
Scala
Shell
Delphi
PowerShell
XSLT
Haskell
Assembly
Swift
Groovy
Clojure
ColdFusion
ASP
ActionScript
Cuda
Lua
Go
Makefile
F#
Arduino
CoffeeScript
Erlang
Prolog
Dart
FORTRAN
Scheme
AppleScript
TypeScript
Tcl
Mathematica
Emacs Lisp
OCaml
Common Lisp
XQuery
Processing
VHDL
Verilog
Racket
D
Puppet
AutoHotkey
Rust
Pascal
Apex
VimL
Smalltalk
AutoIt
Standard ML
Ada
Objective-C++
Haxe
Julia
DOT
Vala
Coq
TeX
OpenEdge ABL
IDL
Elixir
Scilab
Xtend
Game Maker Language
Kotlin
Max
Lasso
Elm
Nemerle
Eiffel
SuperCollider
LiveScript
Logos
nesC
Pure Data
M
xBase
SourcePawn
Parrot
Nimrod
PureScript
Gosu
BlitzBasic
AGS Script
Slash
SQF

Science

- NumPy - a numerical Python library (a bedrock library for anything to do with matrices)
- Pandas - a library for data analysis, similar to R's data frames or an Excel spreadsheet, built on scipy and numpy
- Scikit-learn - rapidly turning into the default machine learning library, built on scipy
- Biopython - a bioinformatics library similar to bioperl
- SymPy - a symbolic manipulation package, written in pure Python.

Web

- Django
- Pyramid
- Bottle
- Flask
- Tornado

High Perfomance Python

- Cyton
- Numba
- Pythran
- PyPy
- Shed Skin

GUI applications

- PyQT
- PyGTK
- Kivy
- wxWidgets

IDE

IDE

- PyCharm

IDE

- PyCharm
- Sublime Text

IDE

- PyCharm
- Sublime Text
- Atom

IDE

- PyCharm
- Sublime Text
- Atom
- Vim

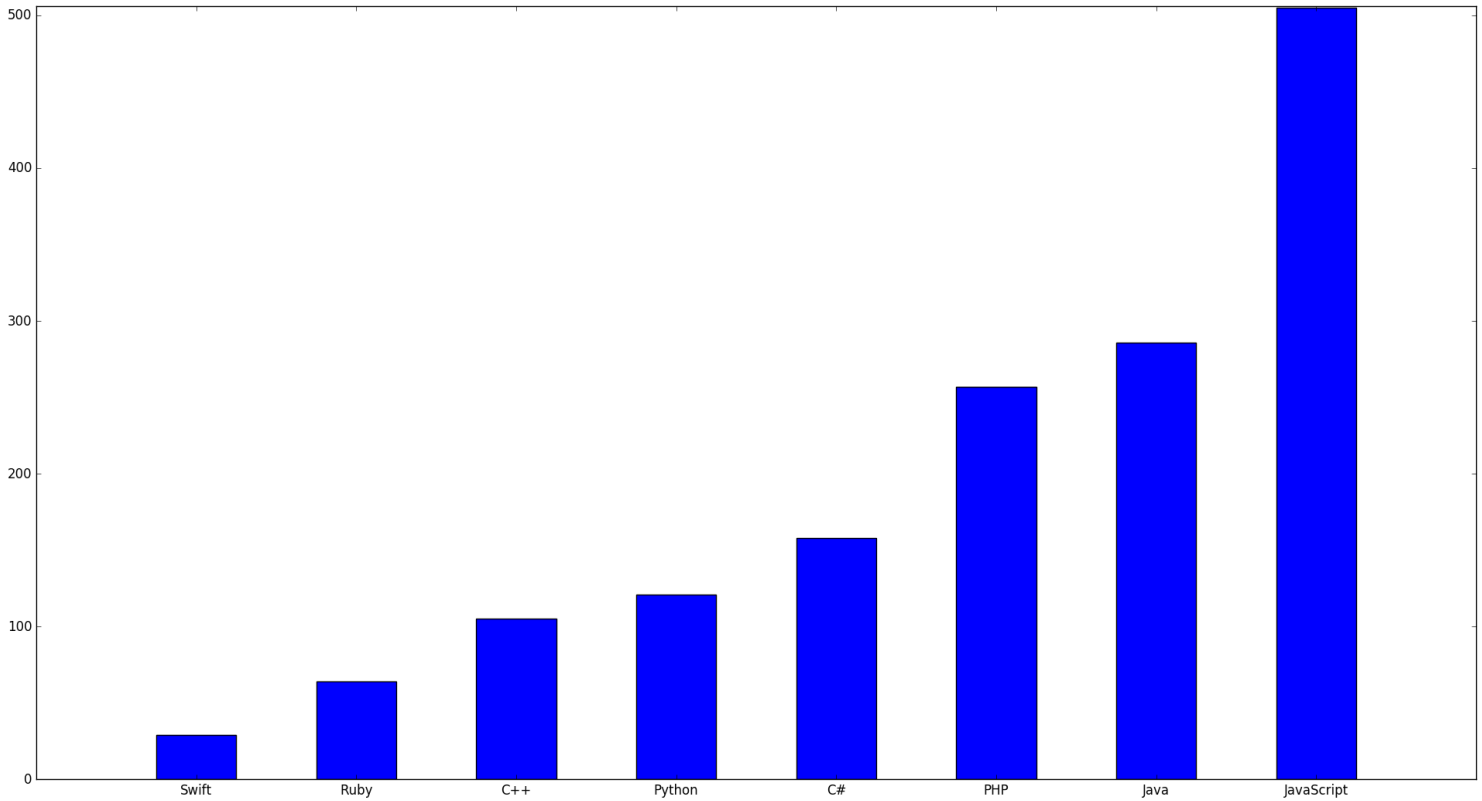
IDE

- PyCharm
- Sublime Text
- Atom
- Vim
- Jupyter

IDE

- PyCharm
- Sublime Text
- Atom
- Vim
- Jupyter
- ipython, bpython

Introduction
tut.by jobs



Indentation

```
1  if True:
2      print("True")
3  else:
4      print("False")
5
6  if True:
7      print("True")
8      print("Error")
9
10 if True:
11     print("True")
12   print("Error")
```

Questions?

Contacts

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