

Python Fundamentals

Welcome

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Presenter

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pluralsight 
hardcore developer training





Duck typing



Duck typing

Lists



Duck typing

Comprehensions

Lists



Duck typing

Comprehensions

Lists



Classes

Duck typing

Comprehensions

Lists



Standard library

Classes

Duck typing

Comprehensions

Lists

Modules



Standard library

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Modules



Standard library

Classes

REPL

Duck typing

Comprehensions

Lists

Modules

Resource
management



pythonTM

Standard library

Classes

REPL

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python™

Exceptions

Standard library

Classes

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Packaging

Resource
management



pythonTM

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Resource
management



pythonTM

Exceptions

Standard library

Iteration

Classes

REPL



Powerful

Powerful

```
def fetch_words(url):  
    """Fetch a list of words from a URL."""  
    with urlopen(url) as story:  
        story_words = []  
        for line in story:  
            line_words = line.decode('utf8').split()  
            for word in line_words:  
                story_words.append(word)  
    return story_words
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Persistence
Math
Operating System
Cryptography
Concurrency
Web Protocols

Powerful

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Powerful

Web Frameworks
Scientific Computing
Image Processing
Databases
Build Systems
Documentation

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Image Processing
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Powerful



Open Source



A Venn diagram consisting of two overlapping squares. The square on the left is blue and contains the text 'Open Source'. The square on the right is orange and contains the text 'Popular'. The two squares overlap in the center, creating a white rectangular area.

Popular

Open Source



Accessible

Open Source

Popular

Accessible

Everywhere

Open Source

Popular

Accessible

Everywhere



Open Source

Popular

FLIND!

Course Overview

Structure

- 10 modules
- In order
- Language features
- Libraries
- Idiomatic usage
- Example-driven

Course Overview

Structure

- 10 modules
- In order
- Language features
- Libraries
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Outcome

- Language essentials
- Library development
- Third-party packages
- Delivering code

Course Overview: Modules

Course Overview: Modules

1. Getting Started

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2. Strings and Collections

Course Overview: Modules

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2. Strings and Collections
3. Modularity

Course Overview: Modules

1. Getting Started
2. Strings and Collections
3. Modularity
4. Built-in Types and the Object Model

Course Overview: Modules

1. Getting Started
2. Strings and Collections
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4. Built-in Types and the Object Model
5. Collection Types

Course Overview: Modules

1. Getting Started
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6. Handling Exceptions

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Course Overview: Modules

1. Getting Started
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3. Modularity
4. Built-in Types and the Object Model
5. Collection Types
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7. Comprehensions, Iterables, and Generators
8. Defining New Types with Classes

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9. Files and Resource Management

Course Overview: Modules

1. Getting Started
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7. Comprehensions, Iterables, and Generators
8. Defining New Types with Classes
9. Files and Resource Management
10. Shipping Working and Maintainable Code

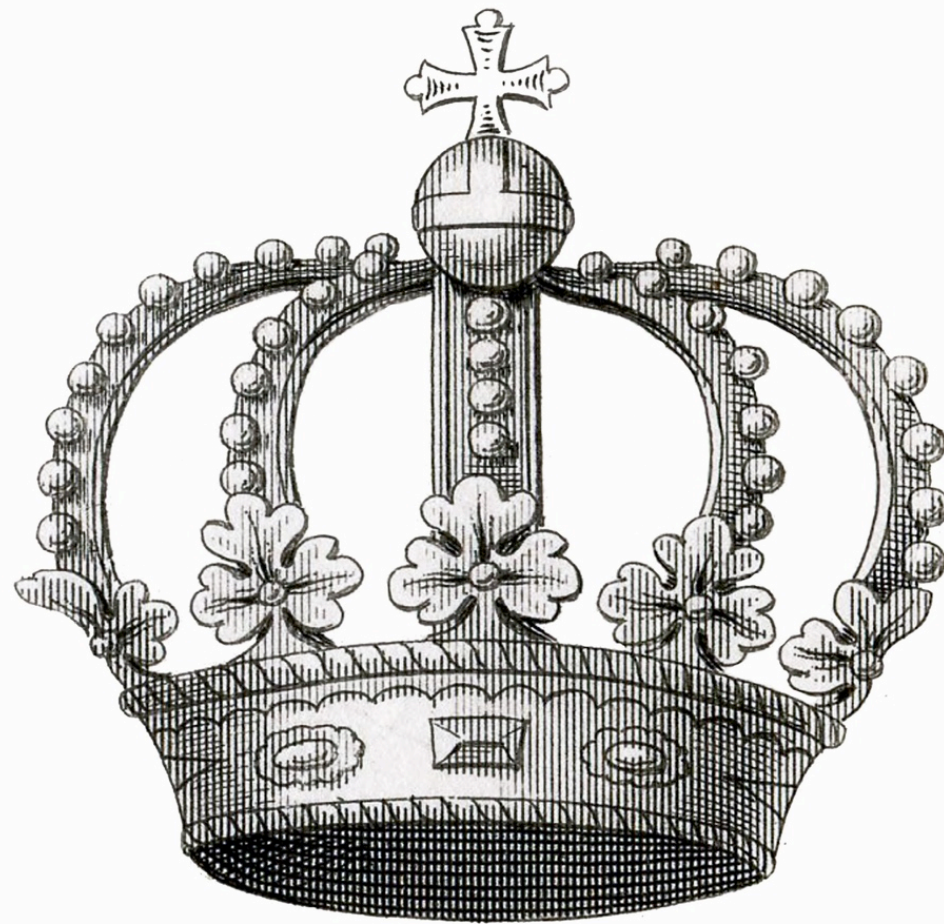
What is Python?

What is Python?



source: CIA World Factbook

What is Python?

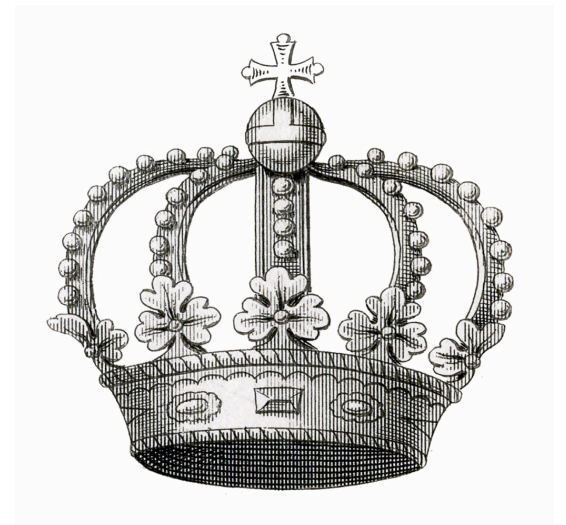


What is Python?



What is Python?

Python Software Foundation



Python is general
purpose

Who is using Python?

Who is using Python?

Google

Who is using Python?

Google

Quora

Who is using Python?

Google

Reddit

Quora

Who is using Python?

Google

Reddit

Blender

Quora

Who is using Python?

Google

Reddit

YouTube

Blender

Quora

Who is using Python?

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CERN

Reddit

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Who is using Python?

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Who is using Python?

SurveyMonkey

Bitly

ESRI

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CERN

Industrial Lights and Magic

Reddit

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Blender

Quora

Dropbox

Who is using Python?

SurveyMonkey

Bitly

ESRI

Google

CERN

Industrial Lights and Magic

Reddit

YouTube

Blender

OpenStack

Quora

Dropbox

Who is using Python?

SurveyMonkey

Bitly

ESRI

Google

CERN

European Space Agency

Industrial Lights and Magic

Reddit

YouTube

Blender

OpenStack

Quora

Dropbox

Python is interpreted

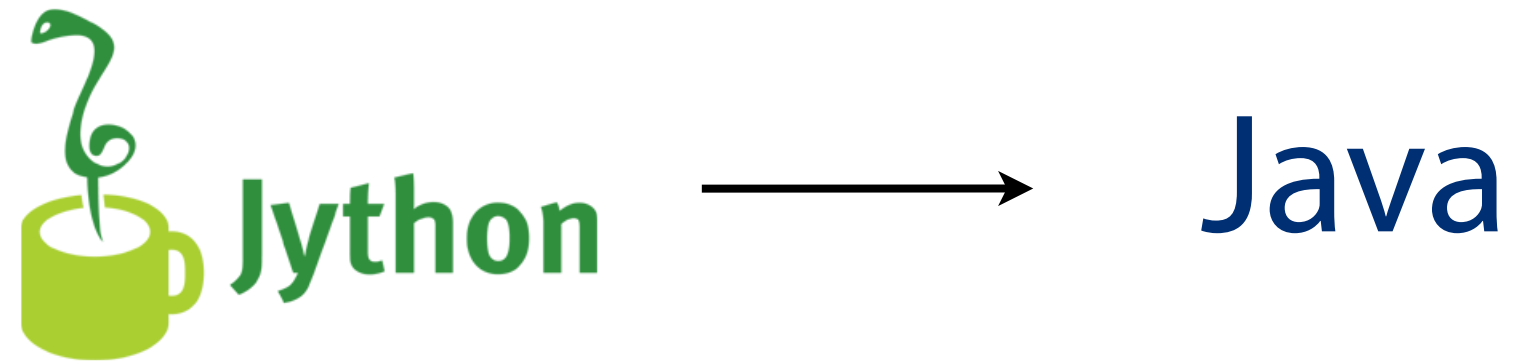
Python is clear, readable,
and expressive

Python Implementations



CPython → Written in C

Python Implementations



Python Implementations



Jython



Java

IronPython



.NET



pythonTM

Python Implementations



Jython



Java

IronPython



.NET



PyPy

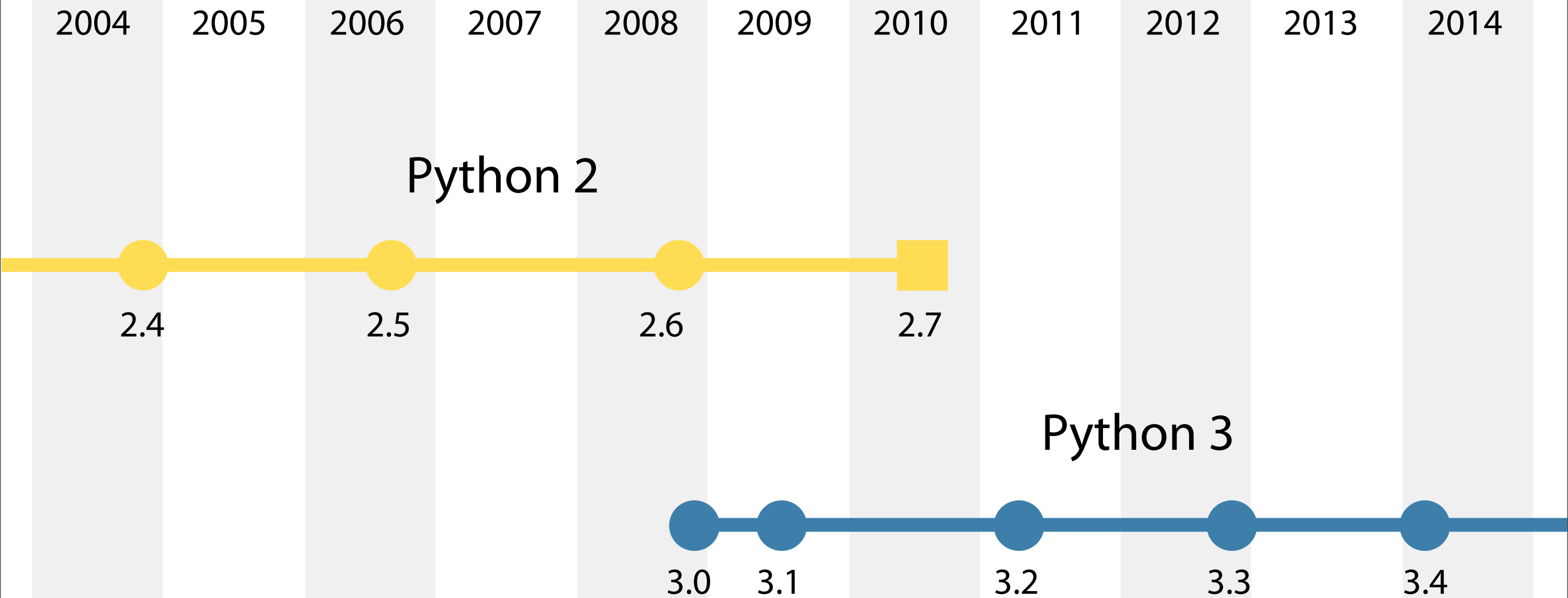


RPython



pythonTM

Python 2 vs. Python 3





Batteries Included

Python Standard Library

Python Standard Library

string

Python Standard Library

string
difflib

Python Standard Library

string

difflib

textwrap

Python Standard Library

string

difflib

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Python Standard Library

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Python Standard Library

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functools

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functools

filecmp

Python Standard Library

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fraction

random

itertools

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filecmp

tempfile

Python Standard Library

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functools

filecmp

tempfile

glob

linecache

Python Standard Library

| | | |
|----------|-----------|--------|
| string | numbers | pickle |
| difflib | fraction | |
| textwrap | random | |
| struct | itertools | |
| codecs | operator | |
| datetime | functools | |
| heapq | filecmp | |
| weakref | tempfile | |
| copy | glob | |
| pprint | linecache | |

Python Standard Library

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configparser

Python Standard Library

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Python Standard Library

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textwrap

struct

codecs

datetime

heapq

weakref

copy

pprint

numbers

fraction

random

itertools

operator

functools

filecmp

tempfile

glob

linecache

pickle

marshal

configparser

hashlib

logging

Python Standard Library

string

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textwrap

struct

codecs

datetime

heapq

weakref

copy

pprint

numbers

fraction

random

itertools

operator

functools

filecmp

tempfile

glob

linecache

pickle

marshal

configparser

hashlib

logging

time

Python Standard Library

string

difflib

textwrap

struct

codecs

datetime

heapq

weakref

copy

pprint

numbers

fraction

random

itertools

operator

functools

filecmp

tempfile

glob

linecache

pickle

marshal

configparser

hashlib

logging

time

threading

Python Standard Library

string

difflib

textwrap

struct

codecs

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heapq

weakref

copy

pprint

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fraction

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itertools

operator

functools

filecmp

tempfile

glob

linecache

pickle

marshal

configparser

hashlib

logging

time

threading

concurrent

Python Standard Library

string

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struct

codecs

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heapq

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numbers

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glob

linecache

pickle

marshal

configparser

hashlib

logging

time

threading

concurrent

email

Python Standard Library

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| codecs | operator | logging |
| datetime | functools | time |
| heapq | filecmp | threading |
| weakref | tempfile | concurrent |
| copy | glob | email |
| pprint | linecache | etc., etc., etc! |



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Write



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Write
Read



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Write
Read
Discover



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Write
Read
Discover
Adventure!

