KOLT Python

Introduction

Ahmet Uysal

Tuesday 28th January, 2020

KOÇ UNIVERSITY
OFFICE OF LEARNING AND TEACHING

Agenda

1. Program Information
2. Logistics
3. Installations
4. Introduction
5. References

Course Outcomes

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- Apply basic programming concepts using Python

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- Demonstrate how Python can be used in different areas or disciplines
- Create code that is easy to understand
- **Implement practical challenges** by gaining experience in Python

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- Wide usage area
- Large and growing community

Some of the Usage Areas [2]

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- Data Analysis

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- Web Development

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- System Administration

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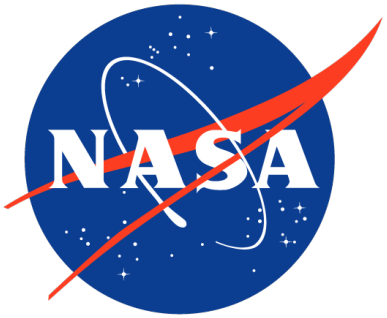
Python at Industry

Google



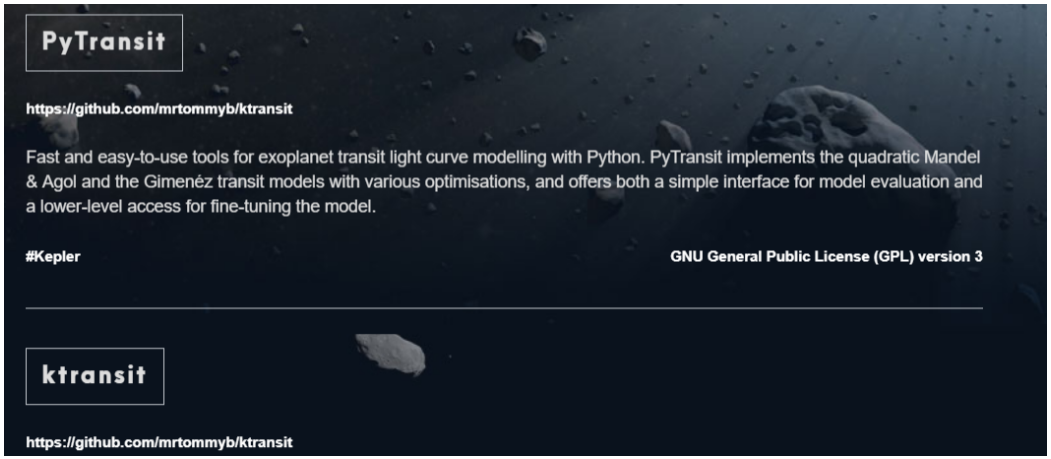
YouTube

Python at Industry [3]

Web Service Efficiency at Instagram with Python

Instagram Engineering Follow
Jun 21, 2016 · 6 min read

Instagram currently features the world's largest deployment of the Django web framework, which is written entirely in Python. We initially chose to use Python because of its reputation for simplicity and practicality, which aligns well with our philosophy of "do the simple thing first." But simplicity can



Python Everywhere

Who Are We?

Ahmet Uysal

Who Are We?

Ahmet Uysal

Ceren Kocaoğullar

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Hasan Can Aslan

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Lecture `Tuesday 14:30-15:45` @SNA 158

- New concepts about Python & programming in general
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`Section`

- Starting next week
- You will receive a Form with possible Section slots
- Please select **every** option that suits you
- Exercise questions for **you** to solve

We need your feedback to get better, don't hesitate to talk with us!

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- 3-4 in total

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- Later assignments will be based on **your interests!** Feel free to recommend subjects.

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- Complying to *Koç University Code of Conduct*.

Extra

We will also organize complementary events throughout the semester,

- Workshops
- Hackathons
- Programming Contests
- . . .

These are not mandatory, but we highly encourage you to attend.

Stay tuned :)

Attendance

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Fill out the attendance form:

tiny.cc/koltpython

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Password: **Canada**

Installing Python

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- Check the installation by running **`python`**(Windows)/**`python3`**(macOS/Linux) in terminal.

```
C:\Users\auysal>python
Python 3.8.0 (tags/v3.8.0:fa919fd, Oct 14 2019, 19:37:50) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print('Hello, world!')
Hello, world!
```

Installing an Editor/IDE(Integrated Development Environment)

- Having a specialized editor/IDE can help a lot.
- We will use Visual Studio Code but you are free to use any editor/IDE of your choice.
- Get Visual Studio Code from *code.visualstudio.com/download*

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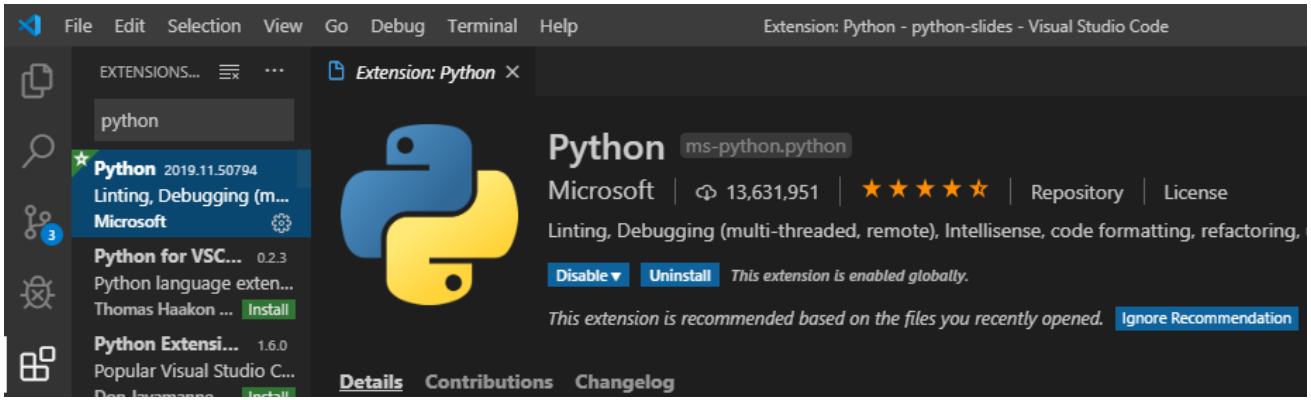
- For more information, visit *VS Code Python Tutorial*.



Comments

```
# Single line comments start with a '#'

"""
Multiline comments can be written between
three "s and are often used as function
and module comments.
"""
print('Hello, stranger!')
```

Python will basically ignore comments, they are purely written **for humans**!

Variables

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- But what are variables?

Variables

Think of them as

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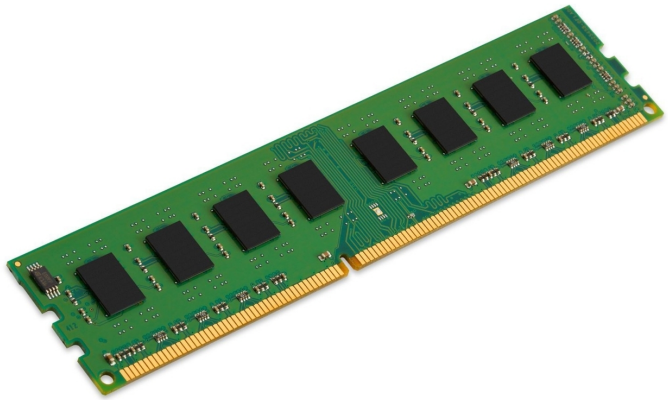

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  - Truth Values?
  - People?

Variables

Type	Explanation	Examples
`int`	represent **integers**	3, 4, 17, -10
`float`	represent **real numbers**	3.0, 1.11, -109.123123
`bool`	represent **boolean** truth values	`True`, `False`
`str`	A sequence of characters.	'Hello', '', '3'
`NoneType`	special and has one value, None	`None`

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OK, but how do we create one?

Variables

```
x = 2
x * 7
# => 14
x
# => 2
x = x * 7

y = 'Hello'
y + ' World!'
# => 'Hello World!'
```

Variables

Variables

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Variables

- Andy could fit all his toys into one box, but this is not the Toy Story.
- These variable boxes can keep only **one thing at a time.**

How about types of variables?

Special method called **`type()`**

```
type(1) # => <class 'int'>
type('Hello') # => <class 'str'>
type(None) # => <class 'NoneType'>
type('') # => <class 'str'>

type(int) # => <class 'type'>
type(type(int))# => <class 'type'>
```

Python knows variables' type even if you don't know it!

Console I/O(Input/Output)

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Let's write our first program!

```
# Print descriptive text to console
# and assign input to variable
name = input('Enter a sentence:')
# Greet user
print('Hello from Python,', name)
```

Console I/O(Input/Output)

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print(*args, sep=' ', end='\n')
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input([prompt])
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`input([prompt])`

- Prints the prompt to Console
- Program is paused until user enters something
- **returns an `str` object!**

Example Program

```
number = input('Rate us out of 100 :')
# Assume user entered 34
result = number + (100 - number)
# What will we see in console?
print(result)
```

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References

[1] P. Guo, “Python is now the most popular introductory teaching language at top u.s. universities.” [Online]. Available: https://cacm.acm.org/blogs/blog-cacm/176450-python-is-now-the-most-popular-introductory-teaching-language-at-top-u-s-unive fulltext

[2] JetBrains, “Python developers survey 2018.” [Online]. Available: https://www.jetbrains.com/research/python-developers-survey-2018/

[3] M. Ni, “Web service efficiency at instagram with python.” [Online]. Available: https://instagram-engineering.com/web-service-efficiency-at-instagram-with-python-4976d078e366