

Session No 1

Learning Objectives and Introduction to python



Learning Objectives

Learning Objectives

1. Python

- a. Core Python
- b. OOP
- c. Numpy Pandas Matplotlib

2. Machine Learning

- a. Supervised Machine Learning
- b. Unsupervised Machine

Why take this course?

Desktop First -> Web First -> Mobile
First -> Intelligence First

Surprise! Machine learning jobs are high-paying and
in-demand

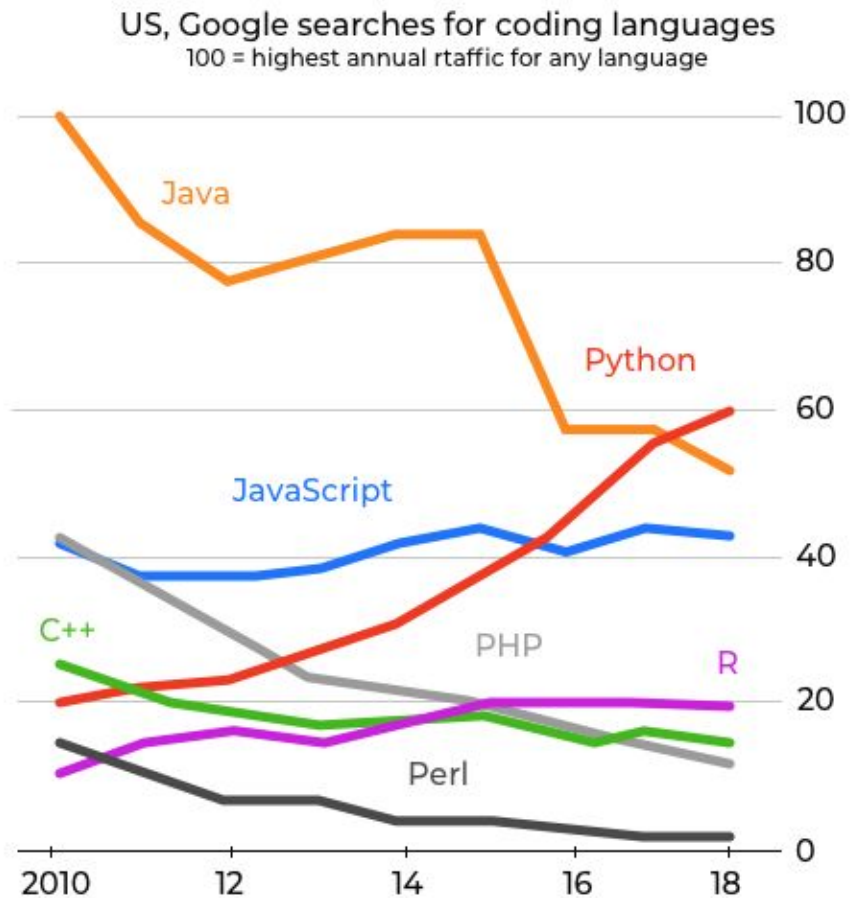
&

Huge Amount of Research

Why Python for Machine Learning?

Popularity

This graph shows python's popularity in terms of google searches



Libraries and Frameworks

Python has extensive range of libraries and framework for machine learning

1. Keras, TensorFlow, and Scikit-learn for machine learning
2. SciPy for advanced computing
3. Matplotlib for data visualization
4. Pandas for general-purpose data analysis
5. NumPy for scientific computing and data analysis



Readability

Easy to Read which makes
debugging easy and making change
simple



Introduction to Python

What is python?

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics.

Python is relatively simple so easy to learn.



History of Python

1. Guido Van Rossum Created Python
2. It was created from ABC a programming language
3. It was started as hobby project
4. Its name is taken from BBC's popular show Monty Python's Flying Circus

A Short History Of Python

Conceived
Python



Release
Python 0.9



Release
Python 2.0



Release
Python 3.7



Late 80s

Dec 1989

Feb 1991

Jan 1994

Oct 2000

Dec 2008

Jun 2018

Started
implementation



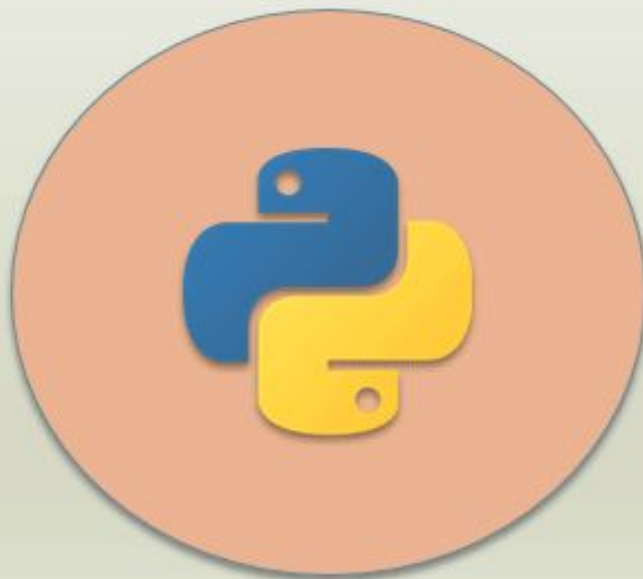
Release
Python 1.0



Release
Python 3.0



Python Features



Easy to Write

Easy to Understand

Object-Oriented

Robust Standard Libraries

**Supports Various
Programming Paradigms**

**Support for Interactive
Mode**

**Dynamically Typed and
Type Checking**

**Databases and GUI
Programming**

Extensible

Portable

Scalable

Integrated

**Automatic Garbage
Collection**

Free and Open Source

Module 1 Core Python

Getting started with Python

Download and Install Python 3

Download and install Sublime, VSCode, Notepad++ or any text editor of your choice

Python is an experiment in how much freedom programmers need. Too much freedom and nobody can read another's code; too little and expressiveness is endangered.

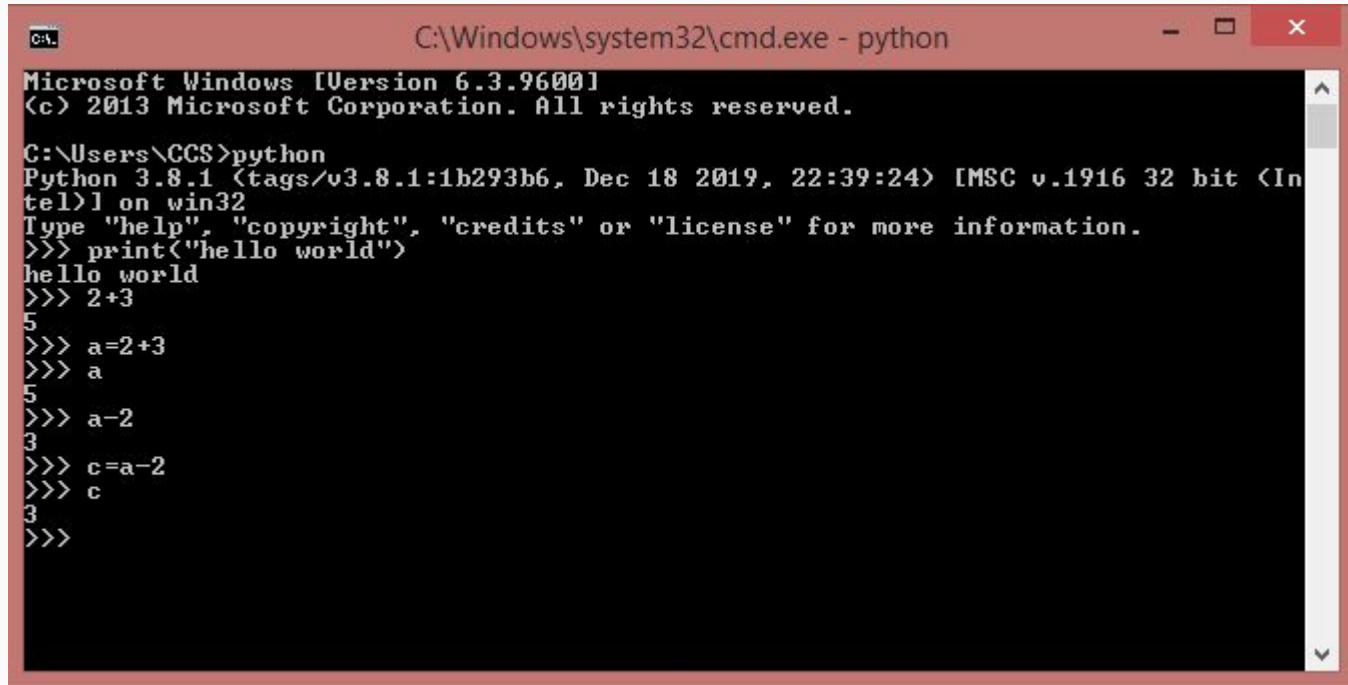

Guido Van Rossum

Programming modes

There are two python programming modes

1. Interactive mode programming
2. Script mode programming

Interactive mode programming

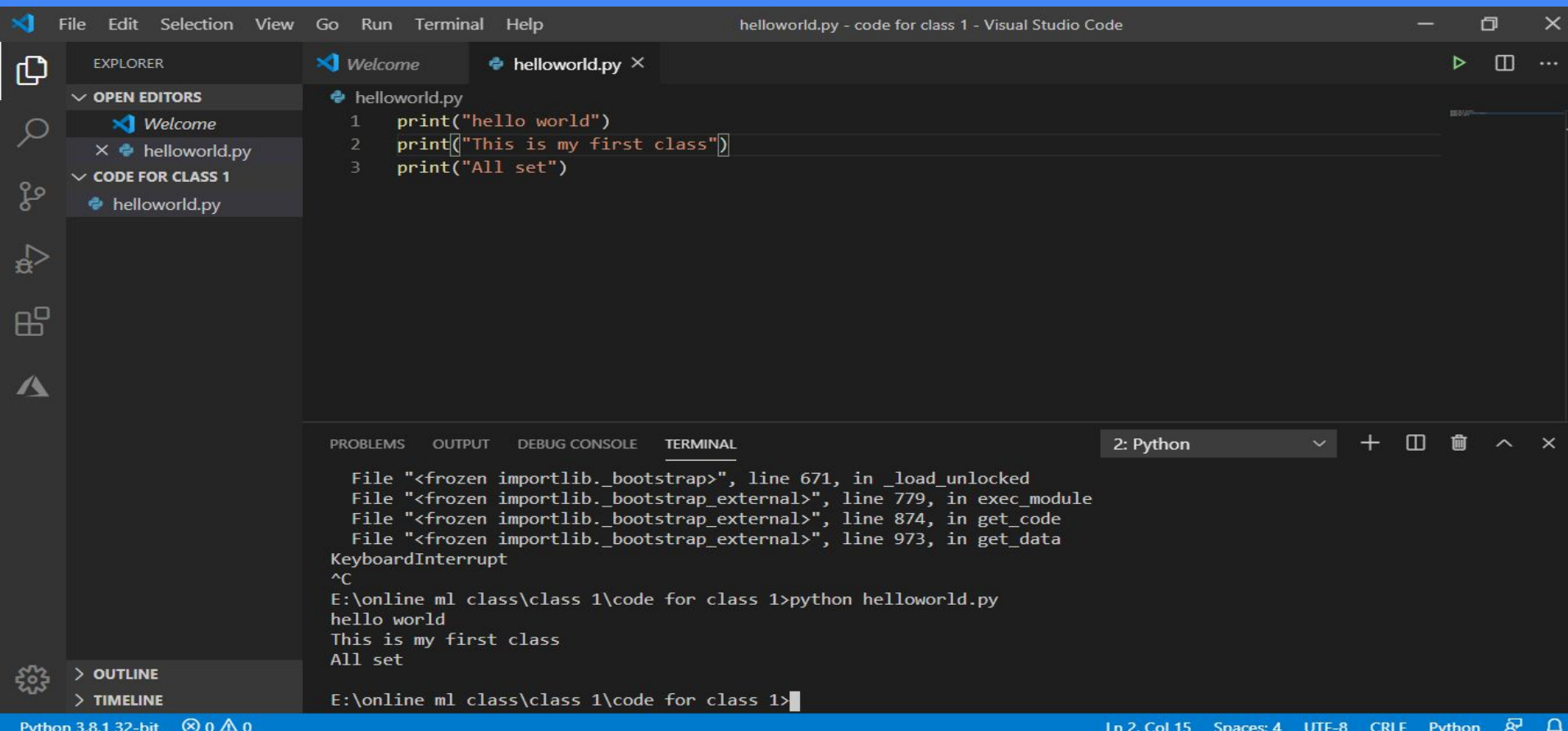


A screenshot of a Windows command prompt window titled "C:\Windows\system32\cmd.exe - python". The window shows the execution of the Python interpreter in interactive mode. The prompt is "C:\Users\CCS>python". The Python version and build information are displayed: "Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (Intel)] on win32". The user is prompted to type "help", "copyright", "credits" or "license" for more information. The user enters ">>> print('hello world')", and the output "hello world" is displayed. The user then enters ">>> 2+3", and the output "5" is displayed. The user then enters ">>> a=2+3", ">>> a", and the output "5" is displayed. The user then enters ">>> a-2", and the output "3" is displayed. The user then enters ">>> c=a-2", ">>> c", and the output "3" is displayed. The prompt ">>>" is shown at the end of the last line.

```
C:\Windows\system32\cmd.exe - python
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\CCS>python
Python 3.8.1 (tags/v3.8.1:1b293b6, Dec 18 2019, 22:39:24) [MSC v.1916 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print('hello world')
hello world
>>> 2+3
5
>>> a=2+3
>>> a
5
>>> a-2
3
>>> c=a-2
>>> c
3
>>>
```

Script mode programming



Assigning Value to Variable

Data Types

Python has five standard data types –

- Numbers
- String
- List
- Tuple
- Dictionary

int	long	float	complex
10	51924361L	0.0	3.14j
100	-0x19323L	15.20	45.j
-786	0122L	-21.9	9.322e-36j

File

Edit

Selection

View

Go

Run

Terminal

Help

variables.py - code for class 1 - Visual Studio Code

EXPLORER

OPEN EDITORS

Welcome

helloworld.py

variables.py

CODE FOR CLASS 1

helloworld.py

variables.py

OUTLINE

TIMELINE

Welcome

helloworld.py

variables.py

variables.py

> [a] a

1

a=100

2

b=1.2

3

c=100000000

4

d=1+2j

5

str="hello world"

6

str2='hi this new world'

7

str3=''

8

this

9

is new world

10

u know

11

'''

12

print(a)

13

print(b)

14

print(c)

15

print(d)

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

1: cmd

+

□

✖

↑

↓

100

1.2

100000000

(1+2j)

hello world

hi this new world

this

is new world

u know

Python 3.8.1 32-bit

0 0

Ln 1, Col 1

Spaces: 4

UTF-8

CRLF

Python

Thanks!

1. owais.leghari@hotmail.com
2. Code Repository
3. LinkedIn

```
31 def __init__(self, path):
32     self.file = None
33     self.fingerprints = set()
34     self.logdups = True
35     self.debug = debug
36     self.logger = logging.getLogger(__name__)
37     if path:
38         self.file = open(os.path.join(path, 'requests.log'),
39                         'a')
40         self.file.seek(0)
41         self.fingerprints.update(self._get_fingerprints())
42
43     @classmethod
44     def from_settings(cls, settings):
45         debug = settings.getbool('DEBUG', False)
46         return cls(job_dir(settings), debug)
47
48     def request_seen(self, request):
49         fp = self.request_fingerprint(request)
50         if fp in self.fingerprints:
51             return True
52         self.fingerprints.add(fp)
53         if self.file:
54             self.file.write(fp + os.linesep)
55
56     def request_fingerprint(self, request):
57         return request_fingerprint(request)
```