Python Programming Basic

Python Introduction

Foreword

In this course, we are going to learn what Python is and how to use Python.

Objectives

Upon finishing the course, you will be able to :

- Know how to use Python

- Know what Python is

- Create your own Python program

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What is Python?

Python is a simple, open-source, multi-paradigm and object-oriented, scripting programming language.

Python was created by **Guido van Rossum in 1989**, which is a successor to the ABC programming language.

History of Python

◆ First public in 1991.

◆ Python 2 released in 2000.

◆ Python 3 released in 2008.

Note: Python 2 and Python 3 are not compatible to each other. Python 2 has reached end of life on January 1st, 2020.

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Python Features

- High-level
- Simple syntax
- Third-party libraries
- Multi-paradigm
- functional
- imperative
- object-oriented
- Structured
- reflective

- But low performance compared to C&C++

Python vs C

```python
In [6]: nterms = int(input("Number of terms: "))
        print("Fibonacci Series: ")

        n1, n2 = 0, 1
        count = 0
        while count < nterms:
            print(n1, end=', ')
            nth = n1 + n2
            n1 = n2
            n2 = nth
            count += 1

Number of terms: 9
Fibonacci Series:
0, 1, 1, 2, 3, 5, 8, 13, 21,
```

```c
1   #include <stdio.h>
2   int main() {
3       int i, n, t1 = 0, t2 = 1, nextTerm;
4       printf("Number of terms: ");
5       scanf("%d", &n);
6       printf("Fibonacci Series: \n");
7
8       for (i = 1; i <= n; ++i) {
9           printf("%d, ", t1);
10          nextTerm = t1 + t2;
11          t1 = t2;
12          t2 = nextTerm;
13      }
14
15      return 0;
16  }
17
```

```
mber of terms: 9
bonacci Series:
 1, 1, 2, 3, 5, 8, 13, 21,
```

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Python Application Fields

- ◆ Artificial Intelligence
  - ➤ Machine Learning

- ◆ Data Science
  - ➤ NumPy, Pandas, Matplotlib

- ◆ Software Programming
  - ➤ Functional and Object Oriented Programming

- ◆ Web developing
  - ➤ Django, Tornado, Flask

- ◆ Automation scripting
  - ➤ Saltstack
  - ➤ Ansible

- ◆ Web crawler
  - ➤ Scrapy

- ◆ Cloud computing
  - ➤ Openstack

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Python Installing

Official Website: https://www.python.org/

Download the version you need from the Official Website for your local system.

Python Installing

Anancoda Website: https://www.anaconda.com/

Install Python and its third-party libraries by Anaconda.

Anaconda Installers

Windows	MacOS	Linux
Python 3.8	Python 3.8	Python 3.8
64-Bit Graphical Installer (457 MB)	64-Bit Graphical Installer (435 MB)	64-Bit (x86) Installer (529 MB)
32-Bit Graphical Installer (403 MB)	64-Bit Command Line Installer (428 MB)	64-Bit (Power8 and Power9) Installer (279 MB)

Common IDEs

IDE stands for Integrated Development Environment, it can increase programmer productivity by integrating common programming activities into a single software.

We can edit source code, run the program and debugging using an IDE.

Common Python IDEs:

➢PyCharm

➢Jupyter Notebook

➢VS Code

➢Spyder

PyCharm
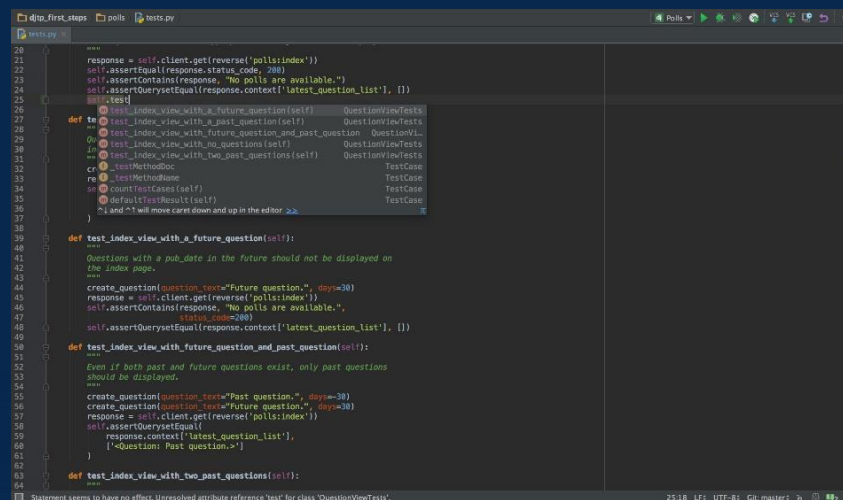
https://www.jetbrains.com/pycharm/

PyCharm is a dedicated Python IDE providing a wide range of essential tools for Python developers, tightly integrated to create a convenient environment for productive Python, web, and data science development.
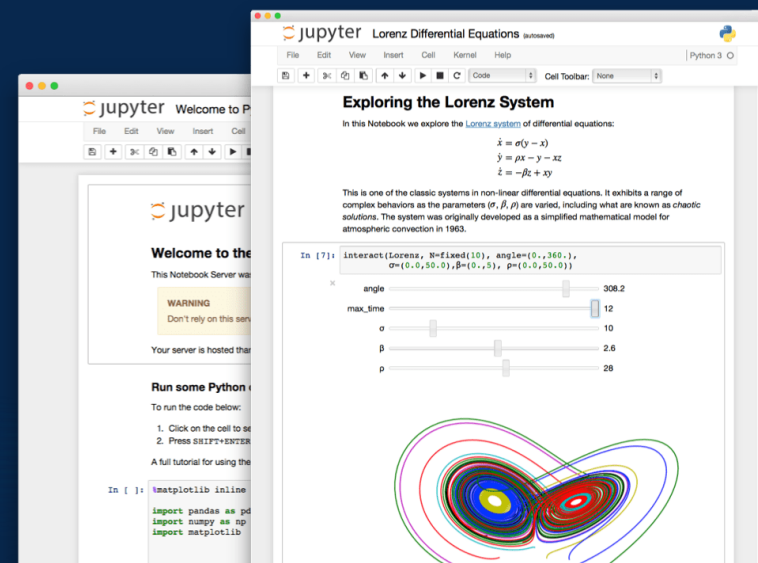
Jupyter Notebook

https://jupyter.org/

The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. Uses include: data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more.

Summary

This chapter introduces what Python is, why people like Python, how to use

Python and common Python IDEs.

More Information

Online learning website
- ➤ https://e.huawei.com/en/talent/#/home

Huawei Knowledge Base
- ➤ https://support.huawei.com/enterprise/en/knowledge?lang=en

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