Finantier

Python 101

Basic python in industry

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Hendri Karisma

- Tech Lead for Platform team at Finantier
- Working for Encryption, Credit Scoring, Authentication and Authorization, and billing system
- Part time lecturer at Telkom University for Software Construction Course
- Before working as Research and Development team at an ecommerce for Ai team and developer experience team

What is Python?

- Programming language
- Free and Open source
- The Python Software Foundation is the organization behind Python. Become a member of the PSF and help advance the software and our mission.
- PEP (Python Enhancement Proposal) 8 is Style Guide for Python Code
- PyPI (Python Package Index) is a repository of software for the Python programming language.
- Dynamic Typed Language
- Could use OOP, Functional Paradigm, Parallel programming, async process, etc.
- https://pypi.org , https://www.python.org/dev/peps/
- Has a lot of good packages to support data science activities.

Setup python

- Direct use installed python on top operating system
- Virtual env
- Anaconda

Python for Software and AI Engineering

- Object Oriented Programming
- Functional Programming
- Rest api
- Web App

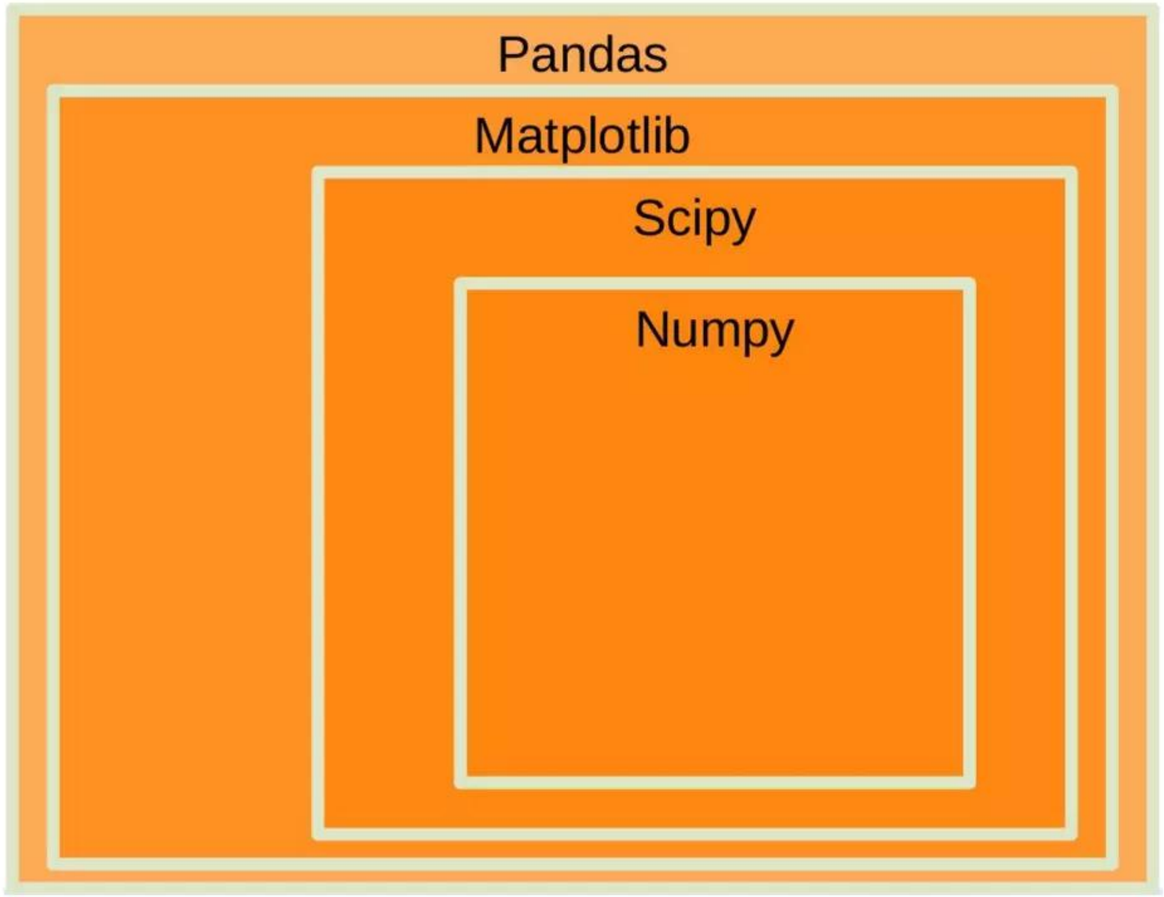
- Flask or FastApi
- db connector lib

For ML or AI Engineer :

- pandas
- numpy
- scikit learn
- tensor
- pytorch

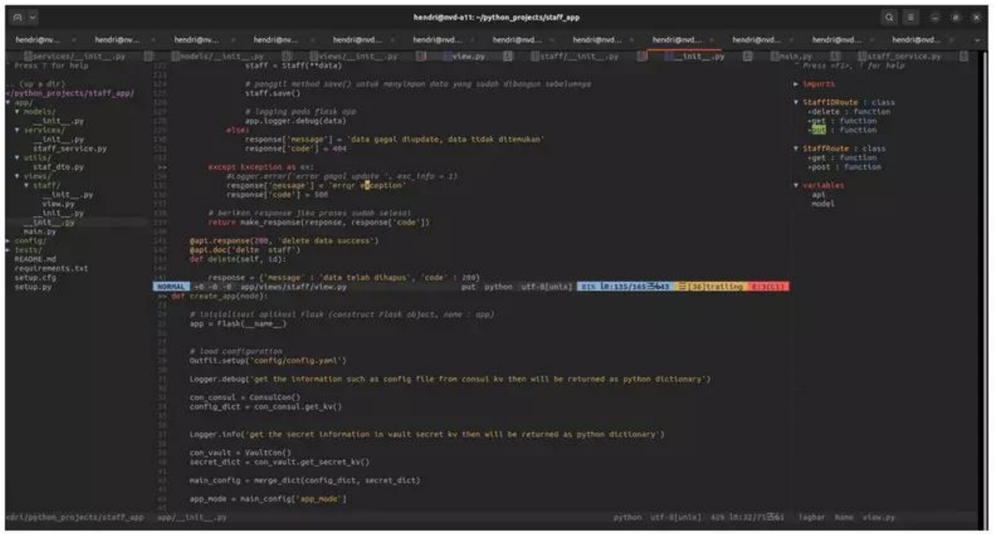
Python for Data science

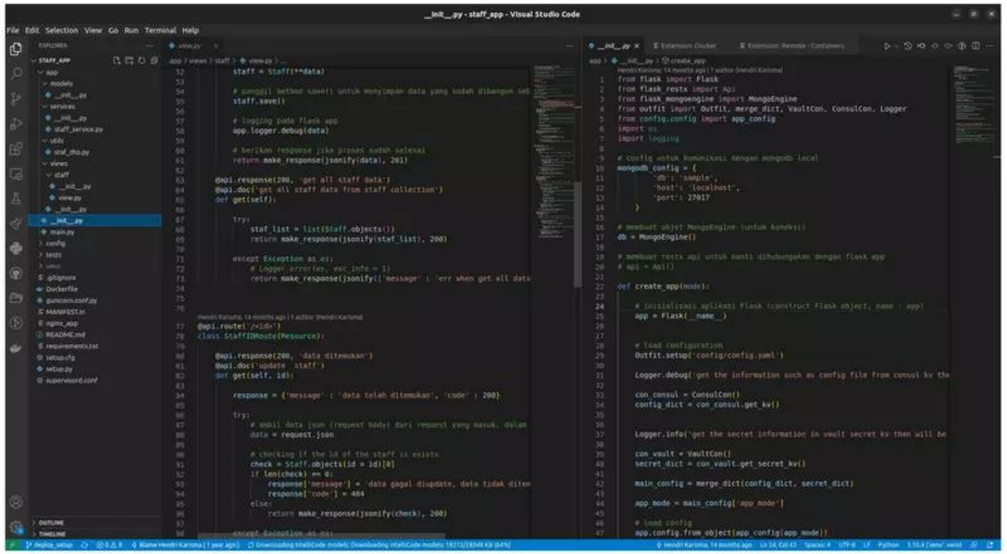
- Jupyter notebook
- Numpy
- pandas
- Matplotlib / seaborn
- statsmodels
- scikit learn
- scrapy
- tensorflow / keras / pytorch



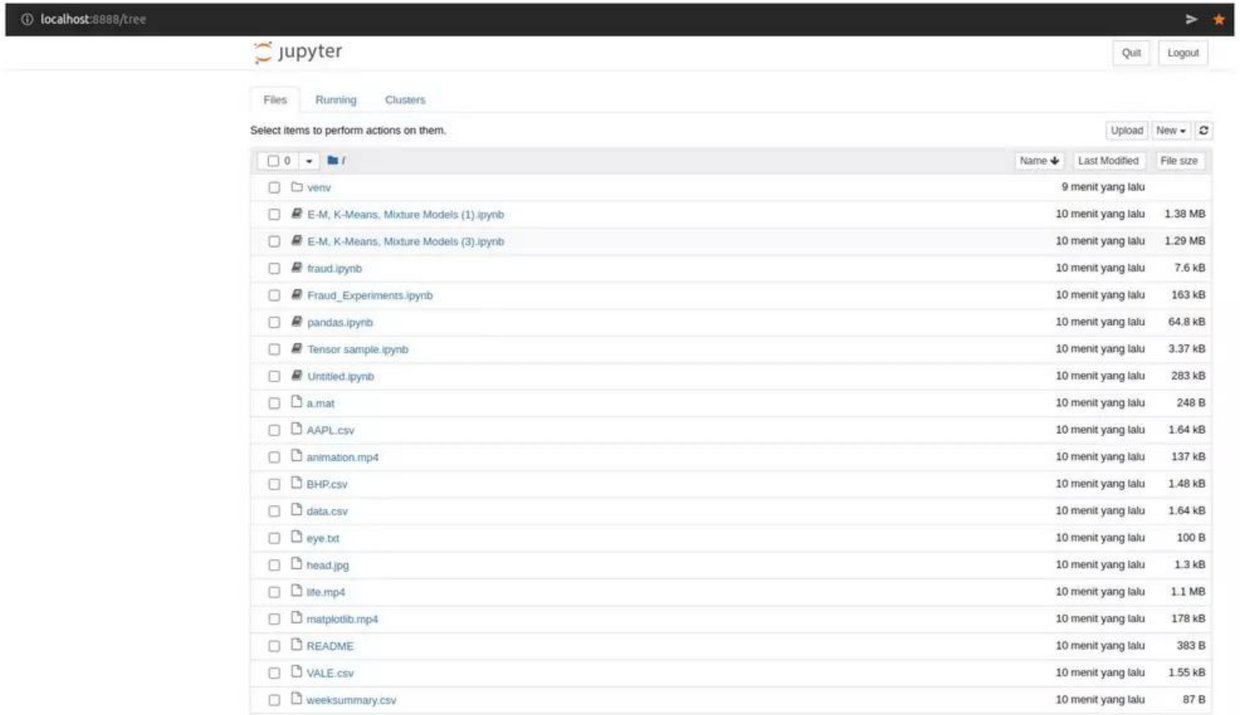
IDE (Integrated Development Environment) or editor

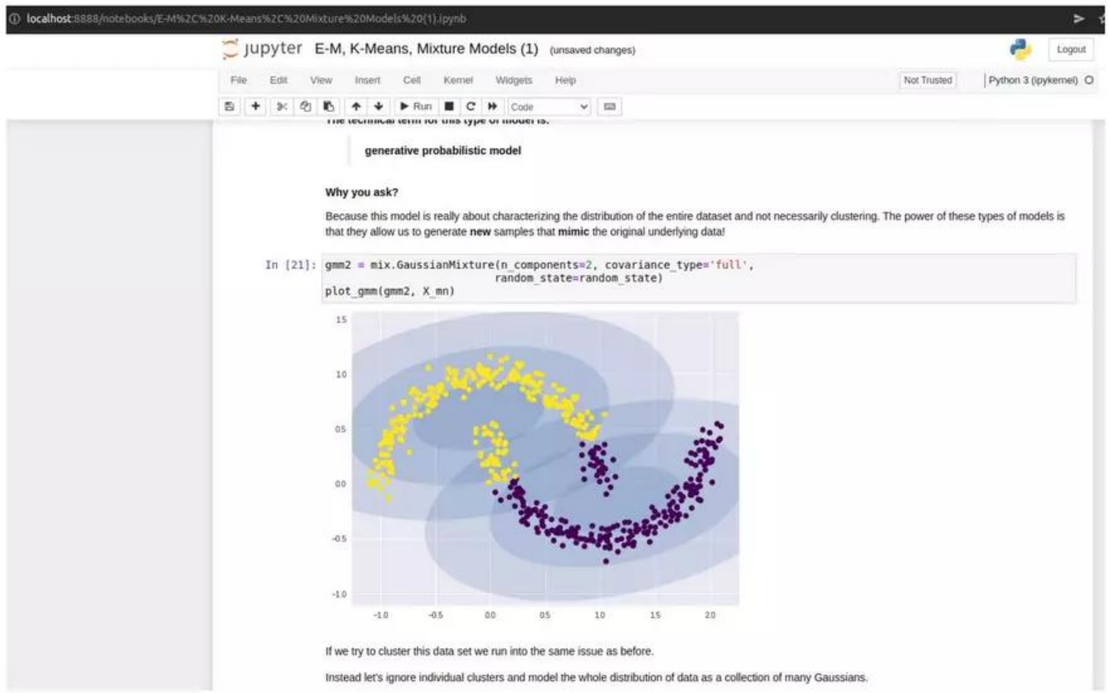
- VS code
- vim or nvim
- PyCharm
- jupyter notebook





Jupyter notebook





Term in Python

```
1  print('Hello World')
2
3  def power(x, y):
4      return x^y
5
6
7  if __name__=='__main__':
8      print(f'result of 3 power 2 is {power(3,2)}')
9
10     is_odd_or_even = 'it\'s even number' if power(3,2) % 2 == 0 else 'it\'s odd number'
11
12     print(is_odd_or_even)
13
```

Collection

DataCollection

- List
- Dict

Data Collection Operations

- String Slicing and joining
- Sub list
- Reverse String
- String replace
- List sort
- List Filter
- Matrix
- List of Dict
- String formatting

```
>>
first_list = [1, 2, 3, 4, 45, 56, 67, 7, 78, ]

second_list = ["hello", "gaes", "lets walking2"]

third_list = ["this is string", 50, True]

this_dict = {
    "Name": "Tono",
    "Age": 20,
    "Address": "Pinggir Jalan"
}


print(first_list)

print(second_list)

print(third_list)

print(this_dict)
```

Result :

```
(venv) hendri@nvd-a11:~/python_projects/keynote$ python main.py
[1, 2, 3, 4, 45, 56, 67, 7, 78]
['hello', 'gaes', 'lets walking2']
['this is string', 50, True]
{'Name': 'Tono', 'Age': 20, 'Address': 'Pinggir Jalan'}
(venv) hendri@nvd-a11:~/python_projects/keynote$
```

Python function and procedure

```
>> def hitung_luas_segitiga(alas: int, tinggi: int) -> float:
 3      return 0.5 * alas * tinggi
 4
 5
>> def hitung_luas_kotak(sisi):
 7      return sisi * sisi
 8
 9
>> def procedure_print(nilai):
11      print("nilainya adalah : ", nilai)
12
13
>> luas_segitiga = hitung_luas_segitiga(10, 5)
15
16 print(luas_segitiga)
17
18 print(hitung_luas_kotak(10))
19
20
21 procedure_print(10000)
```

Result :

```
(venv) hendri@nvd-a11:~/python_projects/keynote$ python function.py
25.0
100
nilainya adalah :  10000
(venv) hendri@nvd-a11:~/python_projects/keynote$
```

Dasar OOP

- Class
  - Encapsulation
  - Inheritance
  - Polymorphism
- SOLID :
  - Single Responsibility Principle
  - Open-Close Principle
  - Liskov Substitution Principle
  - Interface Segregation Principle
  - Dependency Inversion Principle

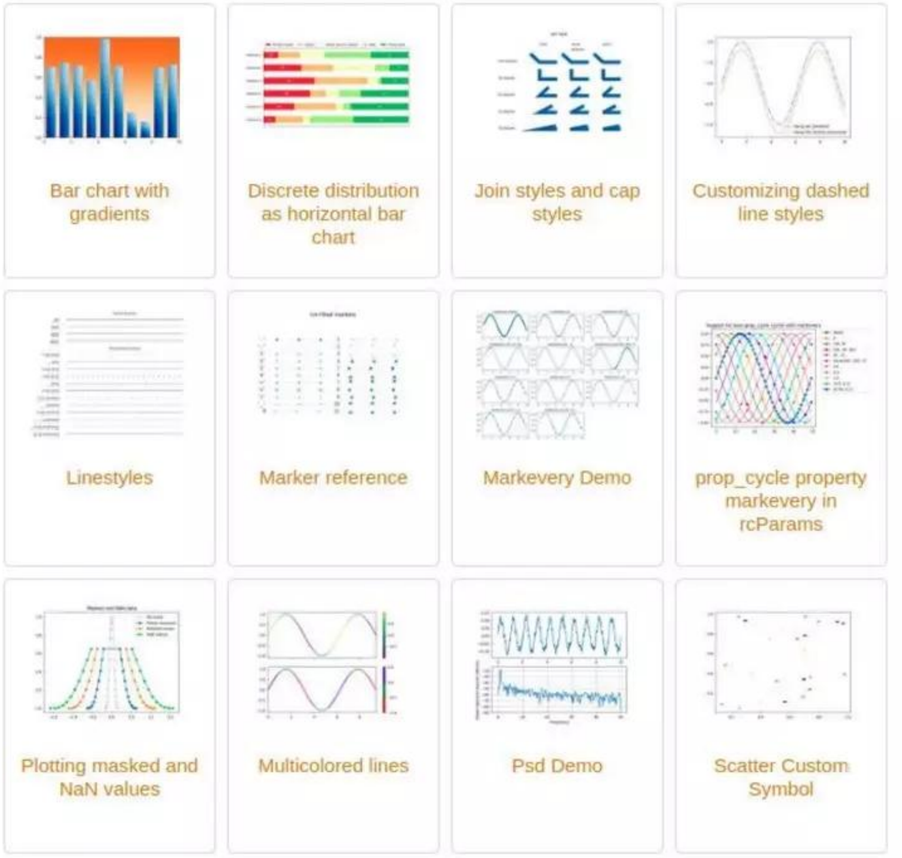
Numpy

- Ndarray and matrix
- Operations : manipulation, arithmatic, math and
- statistical function
- visualization
- I/O Numpy
- scipy

Basic Matplotlib

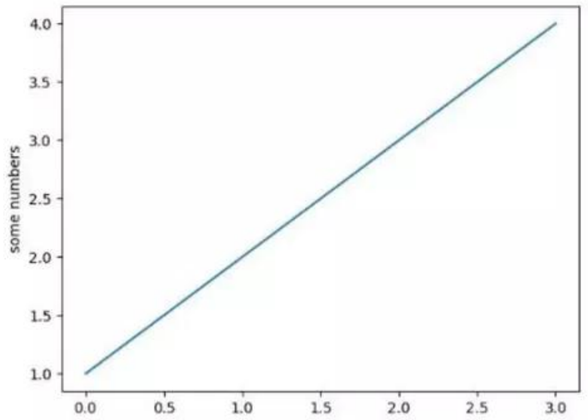
matplotlib.pyplot is a collection of functions that make matplotlib

work like MATLAB

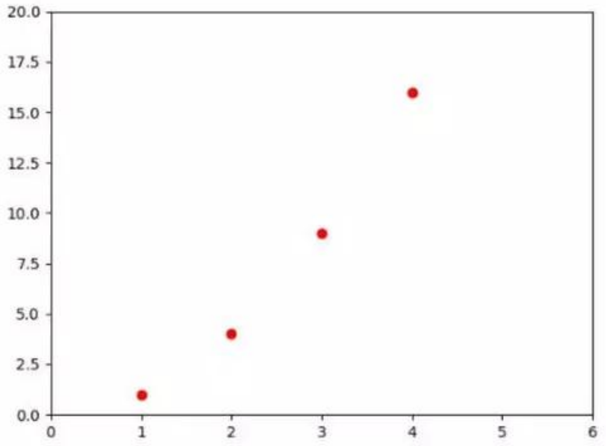


Basic Matplotlib #2

```
import matplotlib.pyplot as plt
plt.plot([1, 2, 3, 4])
plt.ylabel('some numbers')
plt.show()
```



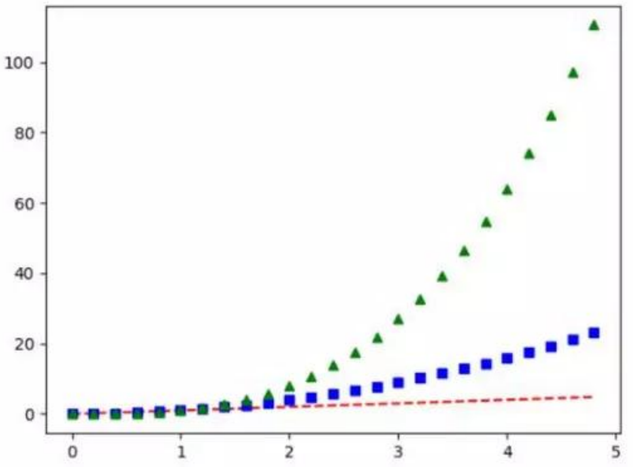

```
plt.plot([1, 2, 3, 4], [1, 4, 9, 16], 'ro')
plt.axis([0, 6, 0, 20])
plt.show()
```



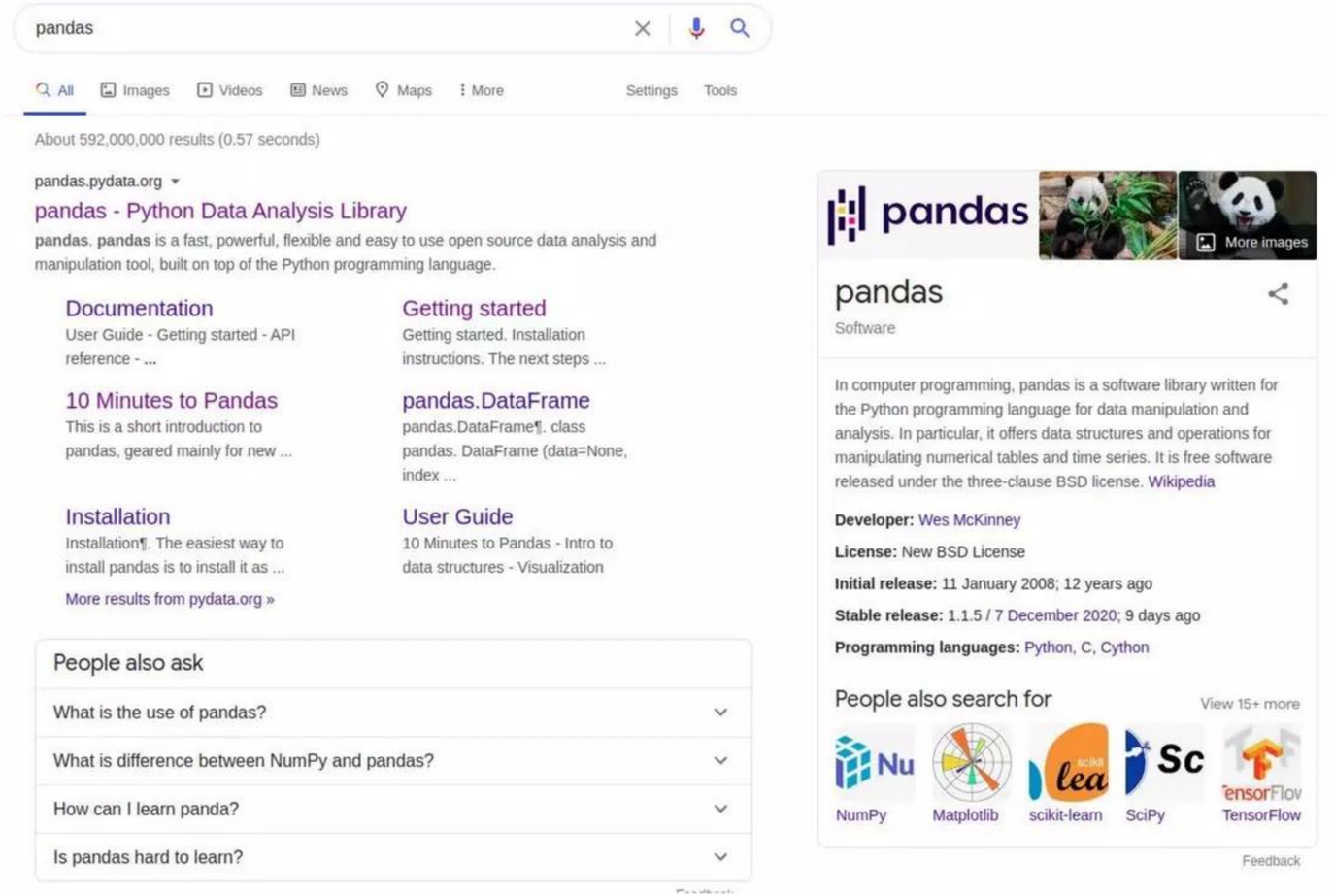

```
import numpy as np

# evenly sampled time at 200ms intervals
t = np.arange(0., 5., 0.2)

# red dashes, blue squares and green triangles
plt.plot(t, t, 'r--', t, t**2, 'bs', t, t**3, 'g^')
plt.show()
```



Pandas


pandas
All
Images
Videos
News
Maps
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Settings
Tools
About 592,000,000 results (0.57 seconds)
pandas.pydata.org
pandas - Python Data Analysis Library
pandas. pandas is a fast, powerful, flexible and easy to use open source data analysis and manipulation tool, built on top of the Python programming language.
Documentation
User Guide - Getting started - API reference - ...
Getting started
Getting started. Installation instructions. The next steps ...
10 Minutes to Pandas
This is a short introduction to pandas, geared mainly for new ...
pandas.DataFrame
pandas.DataFrame¶. class pandas. DataFrame (data=None, index ...
Installation
Installation¶. The easiest way to install pandas is to install it as ...
User Guide
10 Minutes to Pandas - Intro to data structures - Visualization
More results from pydata.org »
People also ask
What is the use of pandas?
What is difference between NumPy and pandas?
How can I learn panda?
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Software
In computer programming, pandas is a software library written for the Python programming language for data manipulation and analysis. In particular, it offers data structures and operations for manipulating numerical tables and time series. It is free software released under the three-clause BSD license. Wikipedia
Developer: Wes McKinney
License: New BSD License
Initial release: 11 January 2008; 12 years ago
Stable release: 1.1.5 / 7 December 2020; 9 days ago
Programming languages: Python, C, Cython
People also search for
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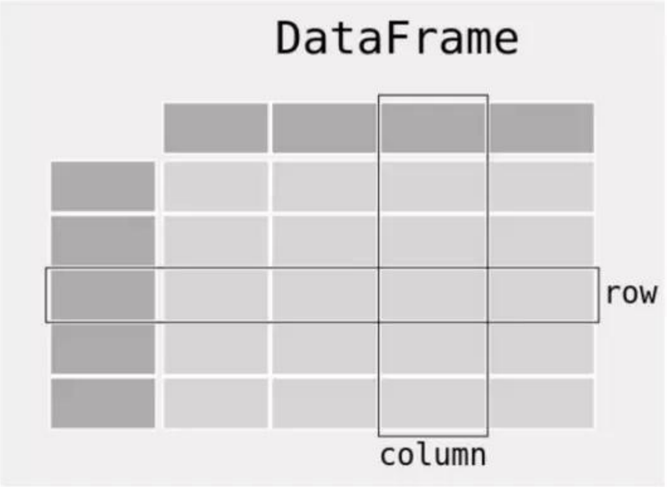
NumPy
Matplotlib
scikit-learn
SciPy
TensorFlow
Feedback

Basic Pandas

- Intro and setup pandas
- Dataframe and Data structure
- Basic Function
- Data Duplicate, Join, Merge, and Subset
- Grouping
- Time Series
- Method Chaining
- Visulization

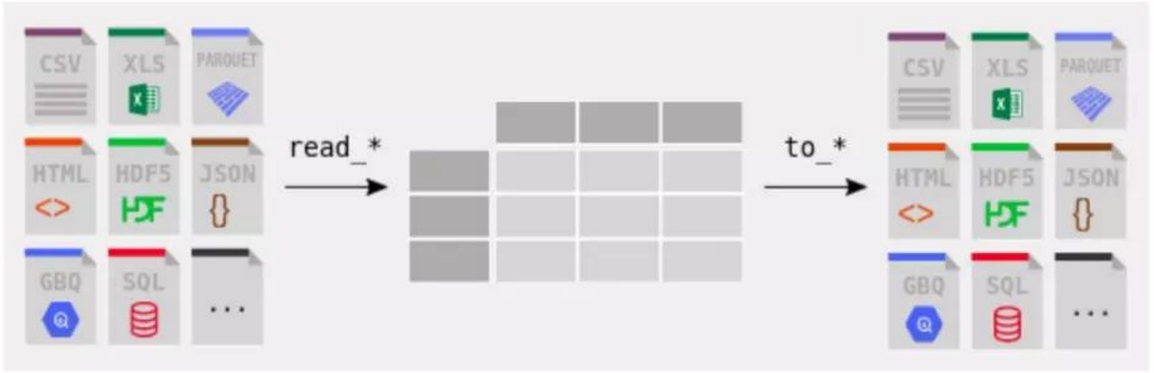
Basic Pandas

- 

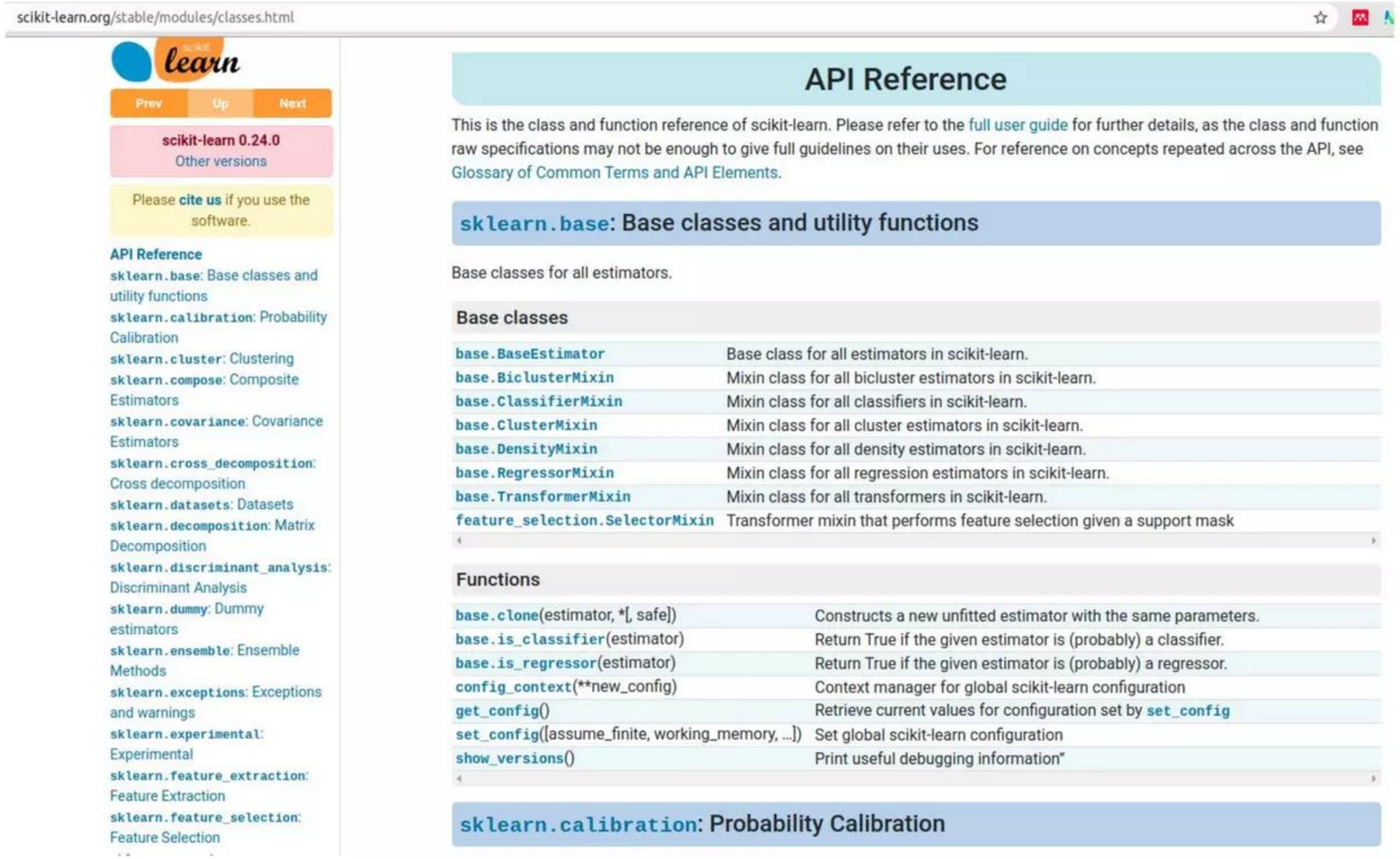
iris = pd.read_csv("data/iris.data")

Import pandas as pd

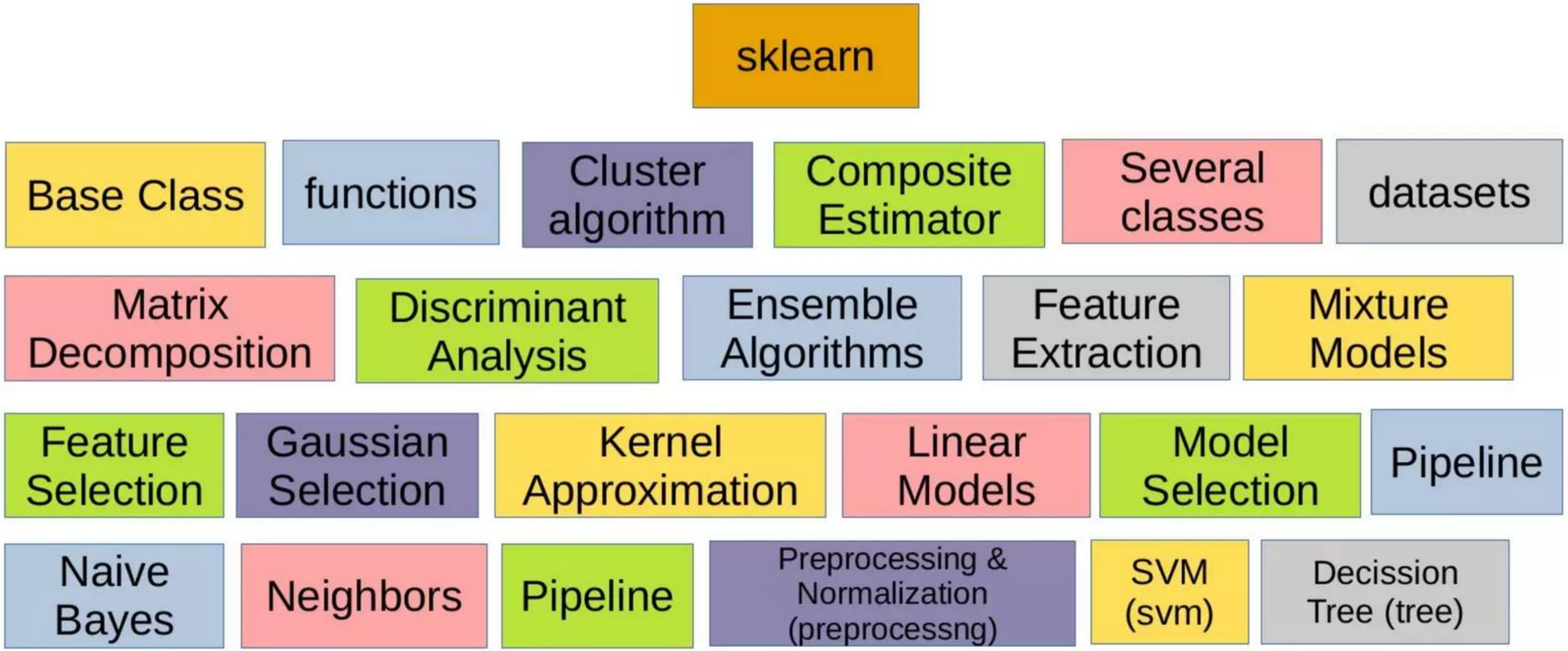
```
df = pd.Dataframe({
        “name” : [“a”,”b”,”c”],
        “age”:[20,21,22],
        “sex” : [“male”, “female”, “male”
    })
```



Scikit-Learn



Scikit-Learn

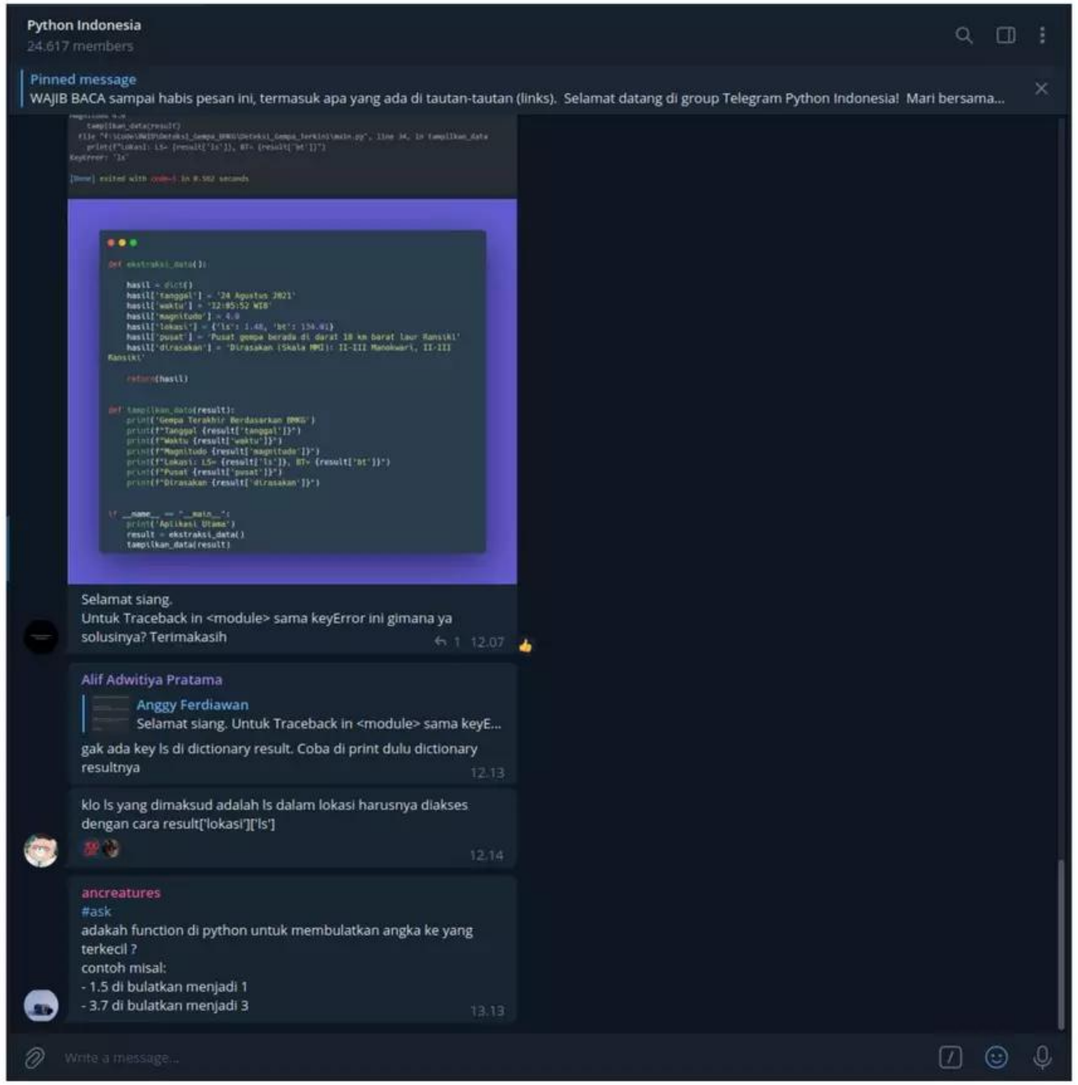


Sample Projects on my github

- Restful API : https://github.com/situkangsayur/staff_app
- Jupyter notebook https://github.com/situkangsayur/samples-notebook
- Jupyter notebook for presentation slide : https://github.com/situkangsayur/python-outfit-slide
- Rest API machine learning with sklearn : https://github.com/situkangsayur/baper-ips
- Opensource library for integrating with consul and vault : https://github.com/situkangsayur/python-outfit

Python Indonesia

https://t.me/pythonID/217588



Finantier

Open Finance. Di sini. Hari ini.

Finantier is regulated by BI and OJK in Indonesia and SEC in the Philippines

Presented by:

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Presenter Credential

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+62

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