



使用VS Code进行Python开发的 最佳实践



杭州美登科技 杜逸先



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什么是VS Code

VS Code与Python

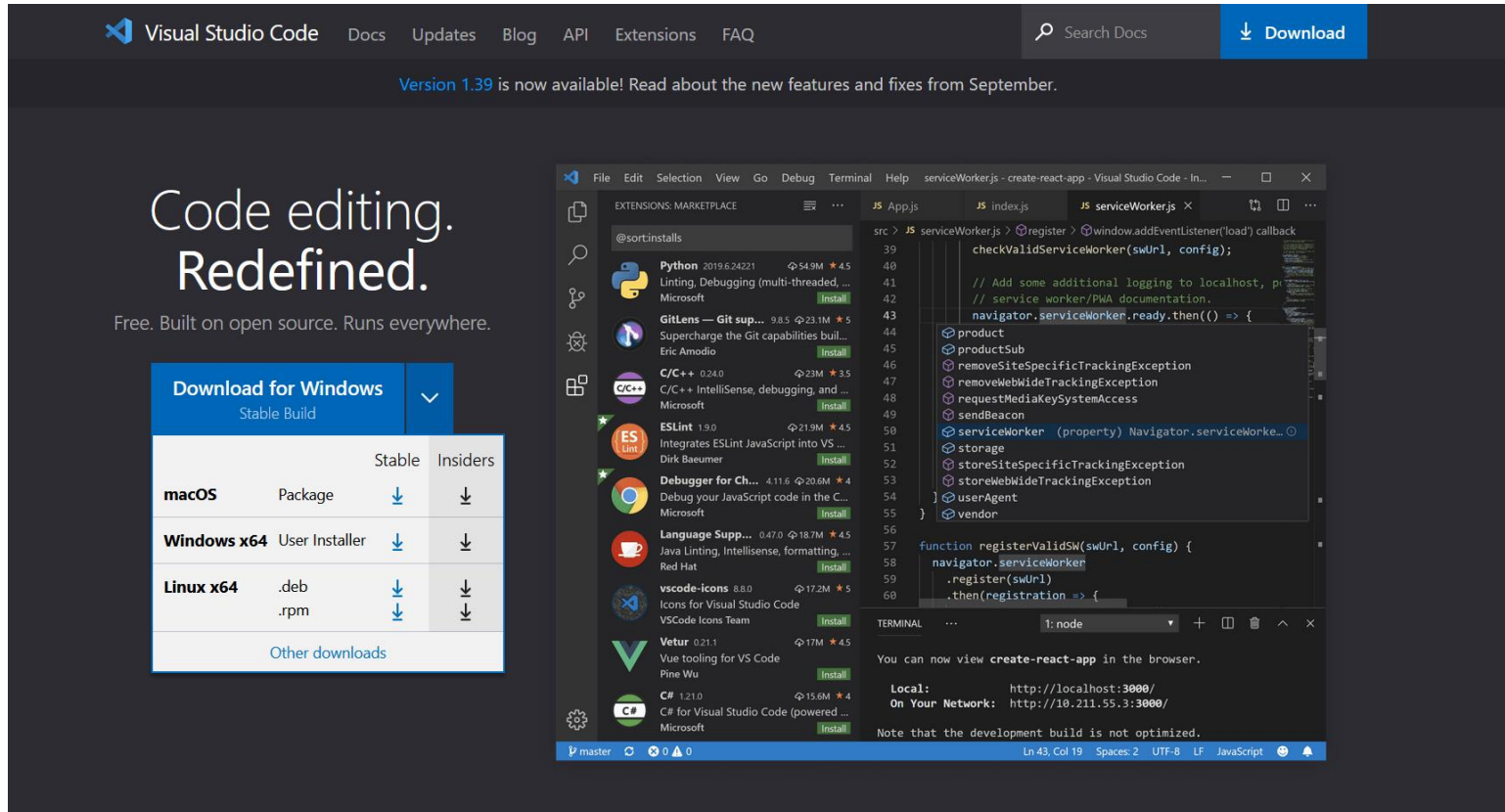
最佳实践

提问时间



什么是VS Code

什么是VS Code



Visual Studio Code Docs Updates Blog API Extensions FAQ

Search Docs Download

Version 1.39 is now available! Read about the new features and fixes from September.

Code editing. Redefined.

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Download for Windows		Stable Build		Insiders	
macOS	Package	↓	↓	↓	↓
Windows x64	User Installer	↓	↓	↓	↓
Linux x64	.deb .rpm	↓	↓	↓	↓
Other downloads					

The screenshot also shows the Visual Studio Code interface with the Extensions Marketplace on the left, a code editor in the center showing a JavaScript file, and a terminal at the bottom.



IntelliSense



Debugging



Built-in Git



Extensions



什么是VS Code

microsoft / vscode

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Code Issues 3,978 Pull requests 151 Actions Projects 2 Wiki Security Insights

Visual Studio Code <https://code.visualstudio.com>

editor electron visual-studio-code typescript microsoft

55,866 commits 360 branches 139 releases 995 contributors MIT

Branch: master New pull request Create new file Upload files Find file Clone or download

bpasero web - stay in standalone mode when opening new windows from standalone Latest commit 3bb34b2 33 minutes ago

.github	update bot message	14 hours ago
.vscode	fix electron task	22 hours ago
build	Re-enable building VS Code with TS 3.7 (#82289)	10 hours ago
extensions	Treat errors on `updateOpen` as non-recoverable	3 hours ago



什么是VS Code



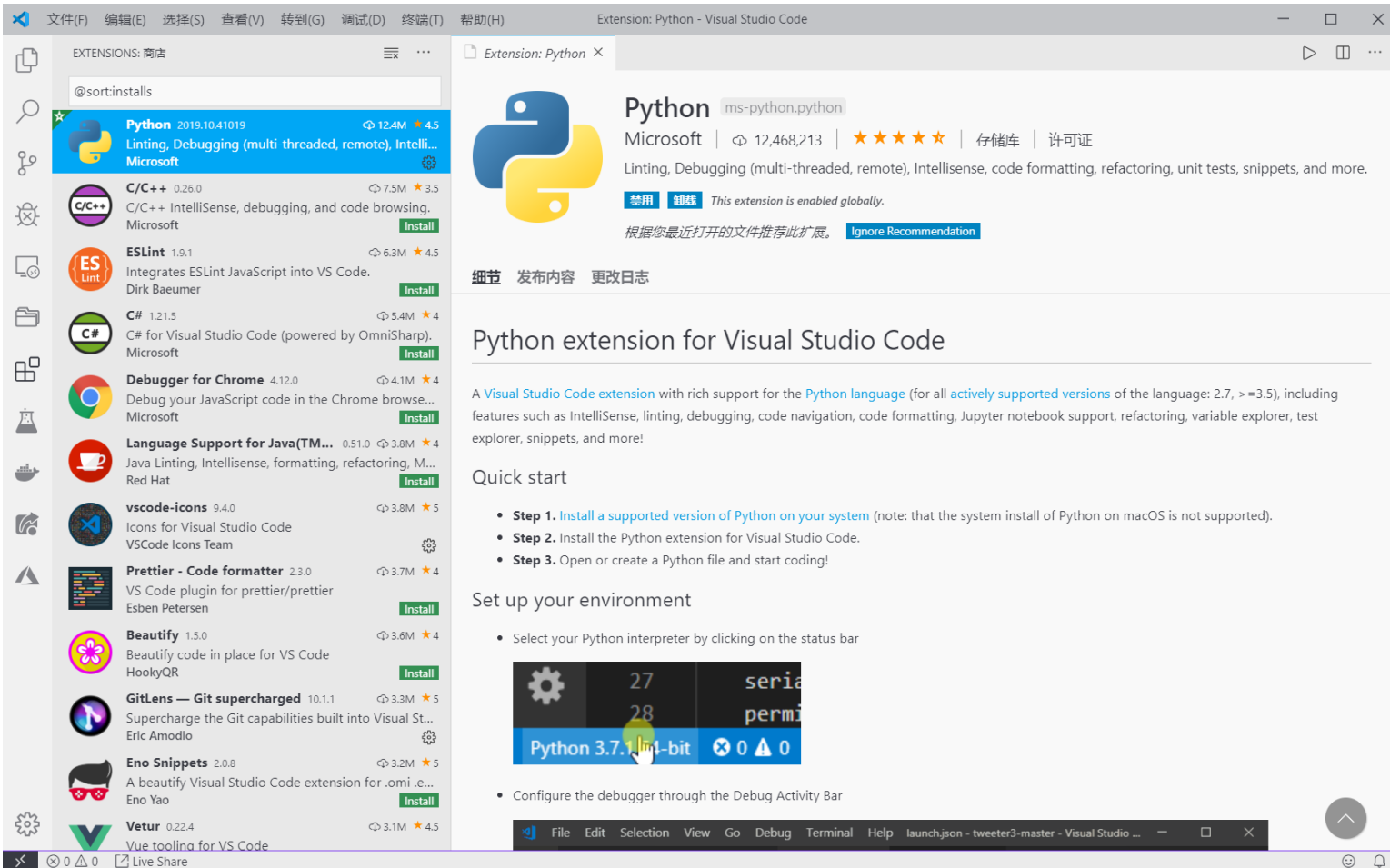
1. 开源+跨平台
2. 轻量级+丰富的插件生态
3. 开箱即用+高度自定义（颜色主题、按键绑定、版本控制工具等）





VS Code与Python

VS Code与Python



EXTENSIONS: 商店

@sortinstalls

Python 2019.10.41019 12.4M ★4.5
Linting, Debugging (multi-threaded, remote), IntelliSense, code formatting, refactoring, unit tests, snippets, and more.
Microsoft

C/C++ 0.26.0 7.5M ★3.5
C/C++ IntelliSense, debugging, and code browsing.
Microsoft

ESLint 1.9.1 6.3M ★4.5
Integrates ESLint JavaScript into VS Code.
Dirk Baeumer

C# 1.21.5 5.4M ★4
C# for Visual Studio Code (powered by OmniSharp).
Microsoft

Debugger for Chrome 4.12.0 4.1M ★4
Debug your JavaScript code in the Chrome browser.
Microsoft

Language Support for Java(TM) ... 0.51.0 3.8M ★4
Java Linting, IntelliSense, formatting, refactoring, M...
Red Hat

vscode-icons 9.4.0 3.8M ★5
Icons for Visual Studio Code
VSCode Icons Team

Prettier - Code formatter 2.3.0 3.7M ★4
VS Code plugin for prettier/prettier
Esen Petersen

Beautify 1.5.0 3.6M ★4
Beautify code in place for VS Code
HookyQR

GitLens — Git supercharged 10.1.1 3.3M ★5
Supercharge the Git capabilities built into Visual St...
Eric Amodio

Eno Snippets 2.0.8 3.2M ★5
A beautify Visual Studio Code extension for .omi .e...
Eno Yao

Vetur 0.22.4 3.1M ★4.5
Vue tooling for VS Code

Live Share

Python ms-python.python
Microsoft | 12,468,213 | ★★★★★ | 存储库 | 许可证
Linting, Debugging (multi-threaded, remote), IntelliSense, code formatting, refactoring, unit tests, snippets, and more.
禁用 卸载 This extension is enabled globally.
根据您的最近打开的文件推荐此扩展。 Ignore Recommendation

细节 发布内容 更改日志

Python extension for Visual Studio Code

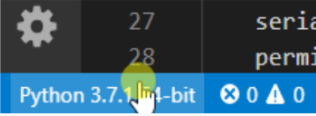
A [Visual Studio Code extension](#) with rich support for the [Python language](#) (for all [actively supported versions](#) of the language: 2.7, >=3.5), including features such as IntelliSense, linting, debugging, code navigation, code formatting, Jupyter notebook support, refactoring, variable explorer, test explorer, snippets, and more!

Quick start

- **Step 1.** [Install a supported version of Python on your system](#) (note: that the system install of Python on macOS is not supported).
- **Step 2.** Install the Python extension for Visual Studio Code.
- **Step 3.** Open or create a Python file and start coding!

Set up your environment

- Select your Python interpreter by clicking on the status bar

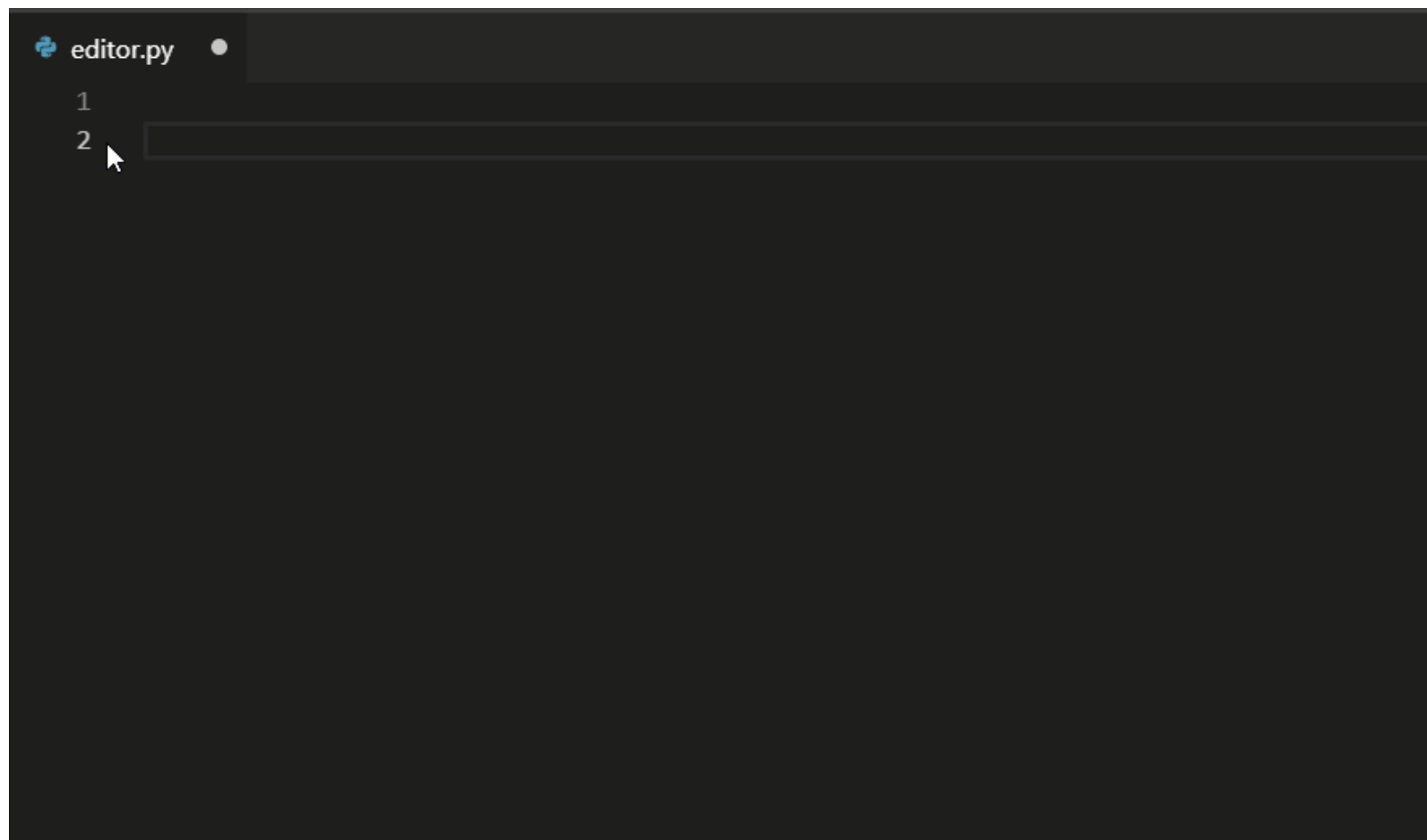


- Configure the debugger through the Debug Activity Bar

File Edit Selection View Go Debug Terminal Help launch.json - tweeter3-master - Visual Studio ...



VS Code与Python——Autocomplete and IntelliSense



VS Code与Python——Autocomplete and IntelliSense

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2019



Visual Studio IntelliCode

Microsoft | 2,793,518 installs | ★★★★★ (36) | Free

AI-assisted development

Install

[Trouble Installing?](#)

```
loss = tf.reduce_sum(tf.square(linear_model - y))  
optimizer = tf.train.GradientDescentOptimizer(0.01)
```

```
train = optimizer
```



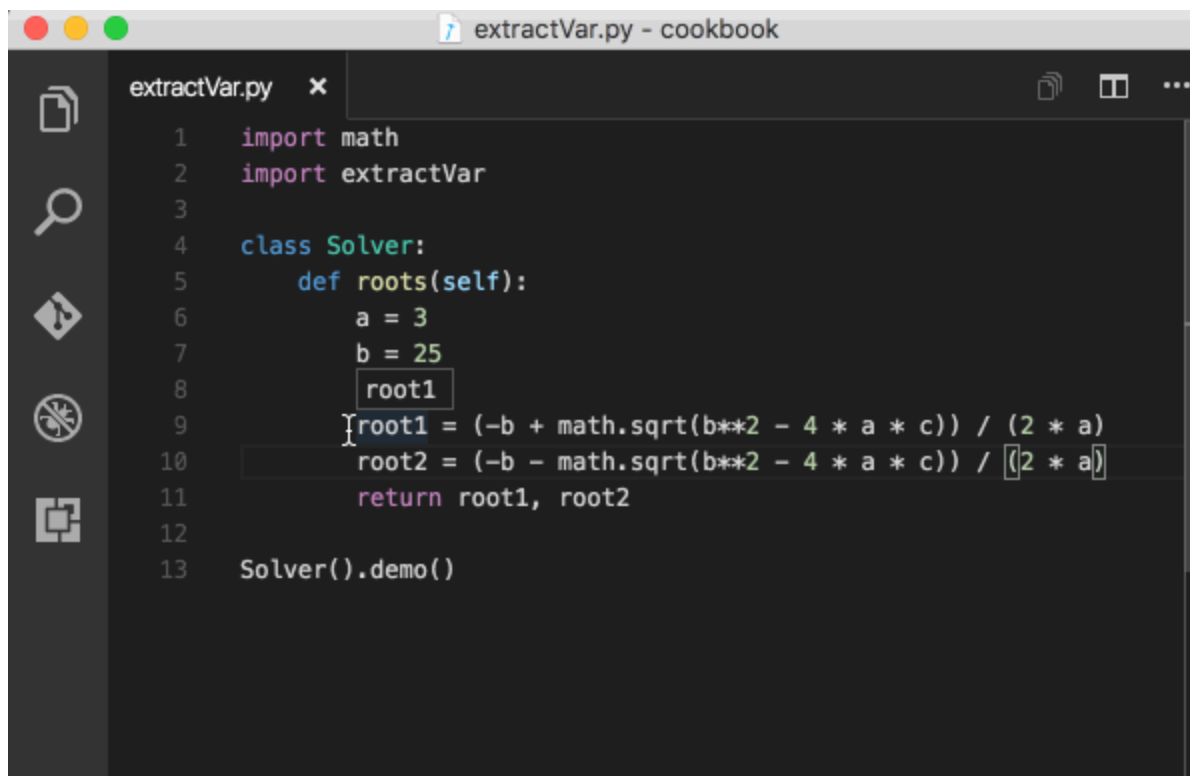
VS Code与Python——Refactoring(Extract Variable)



```
1  import math
2  import extractVar
3
4  class Solver:
5      def roots(self):
6          a = 3
7          b = 25
8          c = 46
9          root1 = (-b + math.sqrt(b**2 - 4 * a * c)) / (2 * a)
10         root2 = (-b - math.sqrt(b**2 - 4 * a * c)) / (2 * a)
11         return root1, root2
12
13     Solver().demo()
```



VS Code与Python——Refactoring(Extract Method)



```
extractVar.py x
1  import math
2  import extractVar
3
4  class Solver:
5      def roots(self):
6          a = 3
7          b = 25
8          root1
9          root1 = (-b + math.sqrt(b**2 - 4 * a * c)) / (2 * a)
10         root2 = (-b - math.sqrt(b**2 - 4 * a * c)) / (2 * a)
11         return root1, root2
12
13     Solver().demo()
```



VS Code与Python——Refactoring(Sort imports)



```
testSorts.py x
1  from my_lib import Object
2
3  print("Hey")
4
5  import os
6
7  from my_lib import Object3
8
9  from my_lib import Object2
10
11  import sys
12
13  from third_party import lib15, lib1, lib2, lib3, lib4, lib5, lib6,
14
15  import sys
16  Sort Imports
17  from __future__ import absolute_import
18
19  from third_party import lib3
20
21  print("yo")
22
```

Ln 15, Col 11 Spaces: 4 UTF-8 LF MagicPython



VS Code与Python——Linting



```
1 msg = "Hello, Python!"
2
3 print msg
4
```

[pylint] E0001:Missing parentheses in call to 'print'. Did you mean print(msg)? (<string>, line 3)

def print(value, ..., sep, end, file, flush)

Prints the values to a stream, or to sys.stdout by default. Optional keyword arguments: file: a file-like object (stream); defaults to the current sys.stdout. sep: string inserted between values, default a space. end: string appended after the last value, default a newline. flush: whether to forcibly flush the stream.

PROBLEMS 1 OUTPUT ... Filter by type or text

hello.py 1

✖ [pylint] E0001:Missing parentheses in call to 'print'. Did you mean print(msg)? (<string>, line 3) (3, 1)



VS Code与Python——Linting



Linters	Package name for <code>pip install</code> command	Default state	True/false enable setting (python.linting.)	Arguments setting (python.linting.)	Custom path setting (python.linting.)
Pylint (default)	<code>pylint</code>	Enabled	<code>pylintEnabled</code>	<code>pylintArgs</code>	<code>pylintPath</code>
Flake8	<code>flake8</code>	Disabled	<code>flake8Enabled</code>	<code>flake8Args</code>	<code>flake8Path</code>
mypy	<code>mypy</code>	Disabled	<code>mypyEnabled</code>	<code>mypyArgs</code>	<code>mypyPath</code>
pydocstyle	<code>pydocstyle</code>	Disabled	<code>pydocstyleEnabled</code>	<code>pydocstyleArgs</code>	<code>pydocstylePath</code>
Pep8 (pycodestyle)	<code>pep8</code>	Disabled	<code>pep8Enabled</code>	<code>pep8Args</code>	<code>pep8Path</code>
prospector	<code>prospector</code>	Disabled	<code>prospectorEnabled</code>	<code>prospectorArgs</code>	<code>prospectorPath</code>
pylama	<code>pylama</code>	Disabled	<code>pylamaEnabled</code>	<code>pylamaArgs</code>	<code>pylamaPath</code>
bandit	<code>bandit</code>	Disabled	<code>banditEnabled</code>	<code>banditArgs</code>	<code>banditPath</code>



VS Code与Python——Formatting



```
1 class Square:
2
3
4     def __init__(self, length: int):
5         self.length=length
6     def area(self):
7         return self.length*self.length
8
9
10 square = Square(length = 10)
11
12
13 print(
14     square.area()
15 )
16
17
18
```

问题 6

输出 调试控制台 终端

筛选器, 例如: text, **/*.ts, !**/node_modules/**

- too many blank lines (2) flake8(E303) [4, 5]
- missing whitespace around operator flake8(E225) [5, 20]
- expected 1 blank line, found 0 flake8(E301) [6, 5]
- unexpected spaces around keyword / parameter equals flake8(E251) [10, 23]
- unexpected spaces around keyword / parameter equals flake8(E251) [10, 25]
- blank line at end of file flake8(W391) [17, 1]

Python 3.7.4 64-bit ('test': pipenv) 5 1 Live Share 行 5, 列 27 空格: 4 UTF-8 CRLF Python



VS Code与Python——Formatting



Formatter	Install steps	Arguments setting (python.formatting.)	Custom path setting (python.formatting.)
autopep8	pip install pep8 pip install --upgrade autopep8	autopep8Args	autopep8Path
black (see note)	pip install black	blackArgs	blackPath
yapf	pip install yapf	yapfArgs	yapfPath



VS Code与Python——Debugging

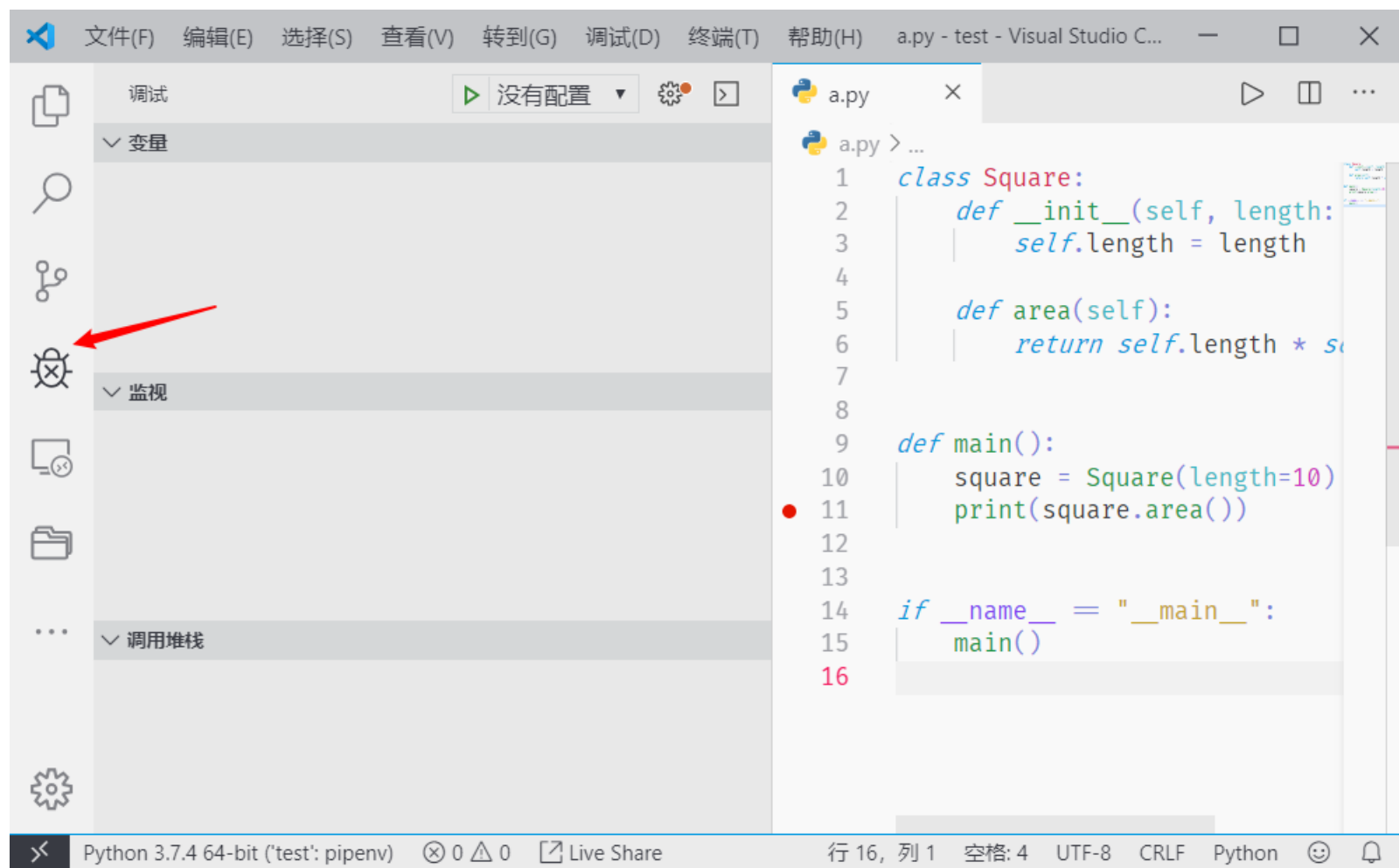


```
1 class Square:
2     def __init__(self, length: int):
3         self.length = length
4
5     def area(self):
6         return self.length * self.length
7
8
9 def main():
10     square = Square(length=10)
11     print(square.area())
12
13
14 if __name__ == "__main__":
15     main()
16
```



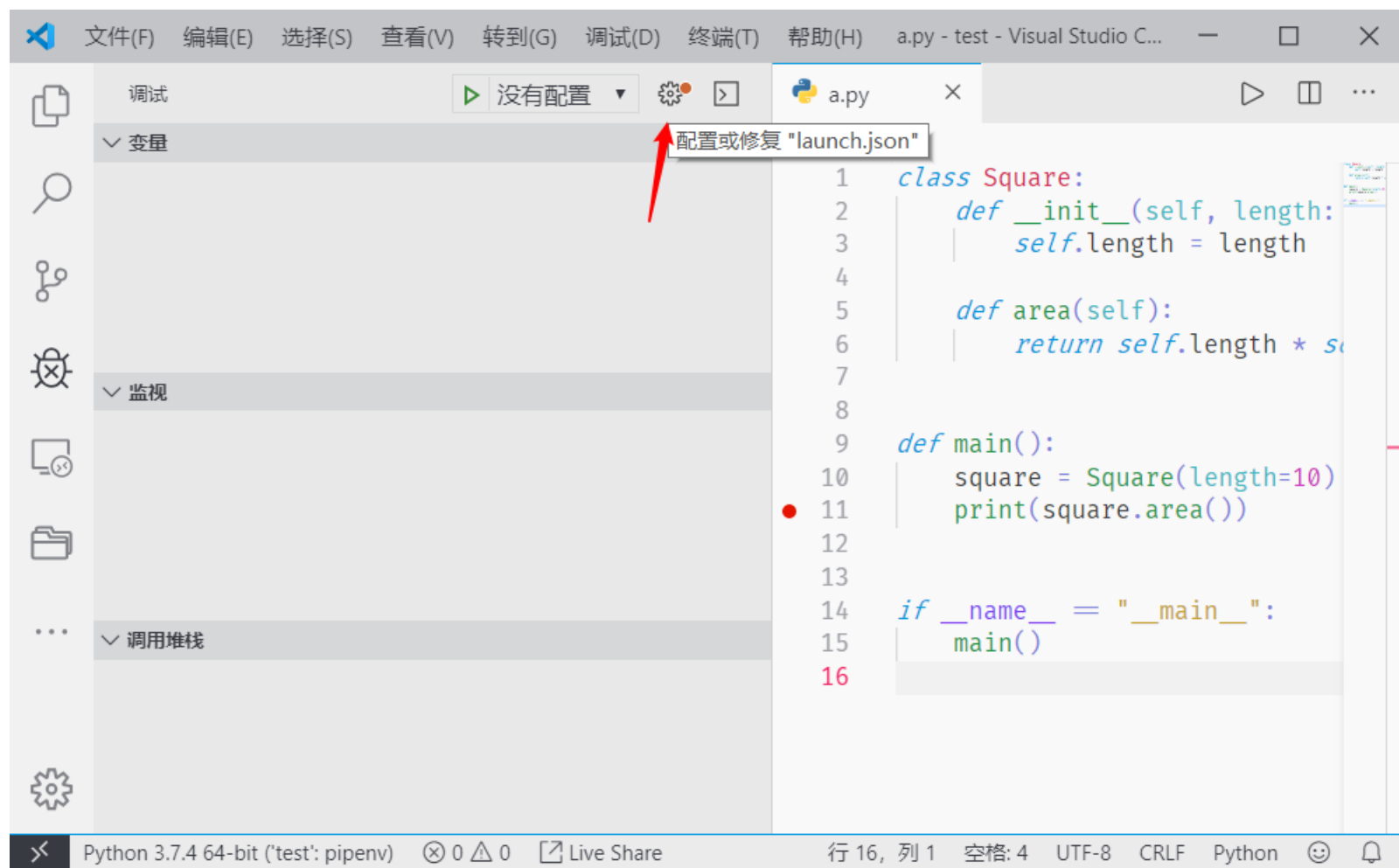
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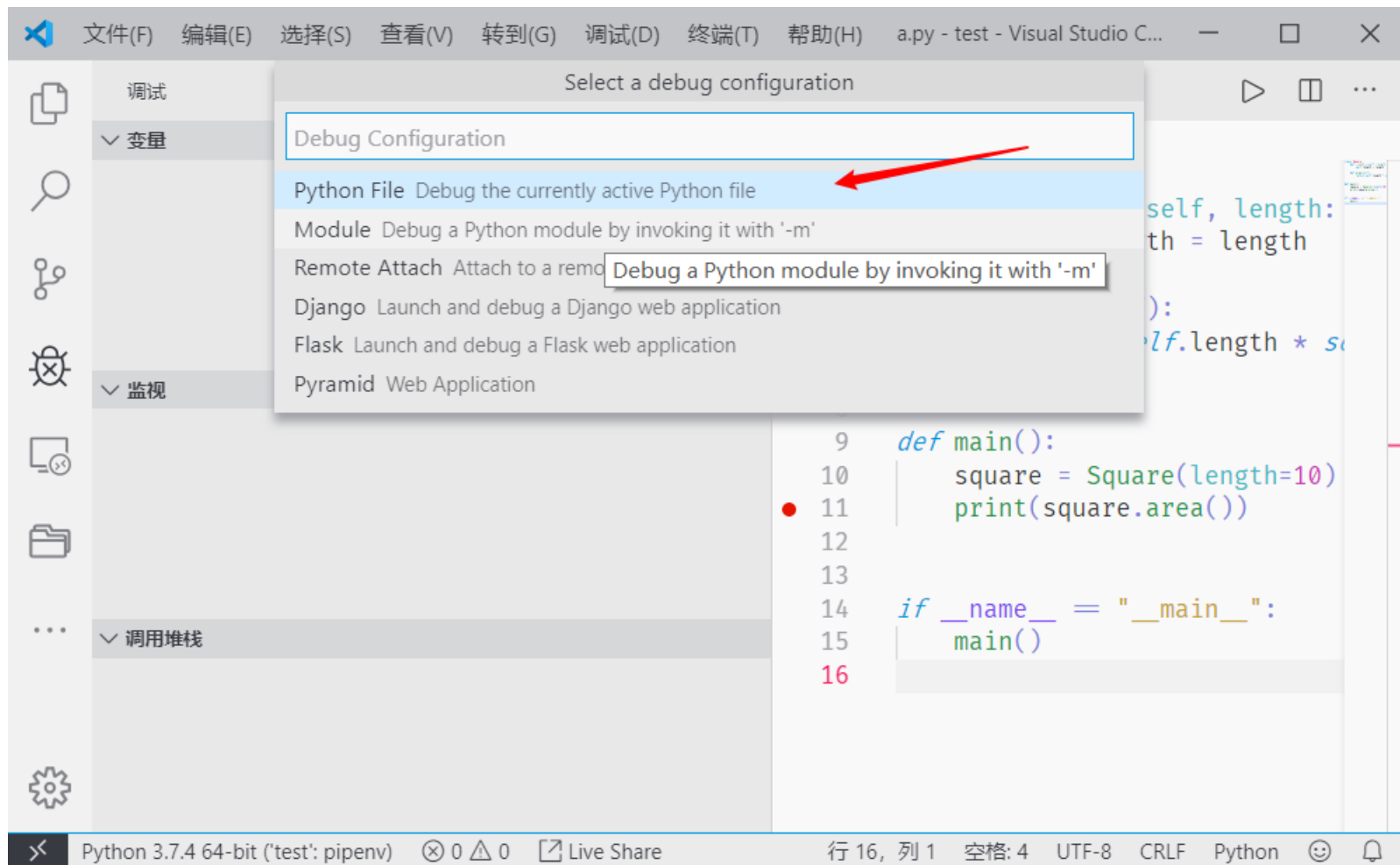
VS Code与Python——Debugging

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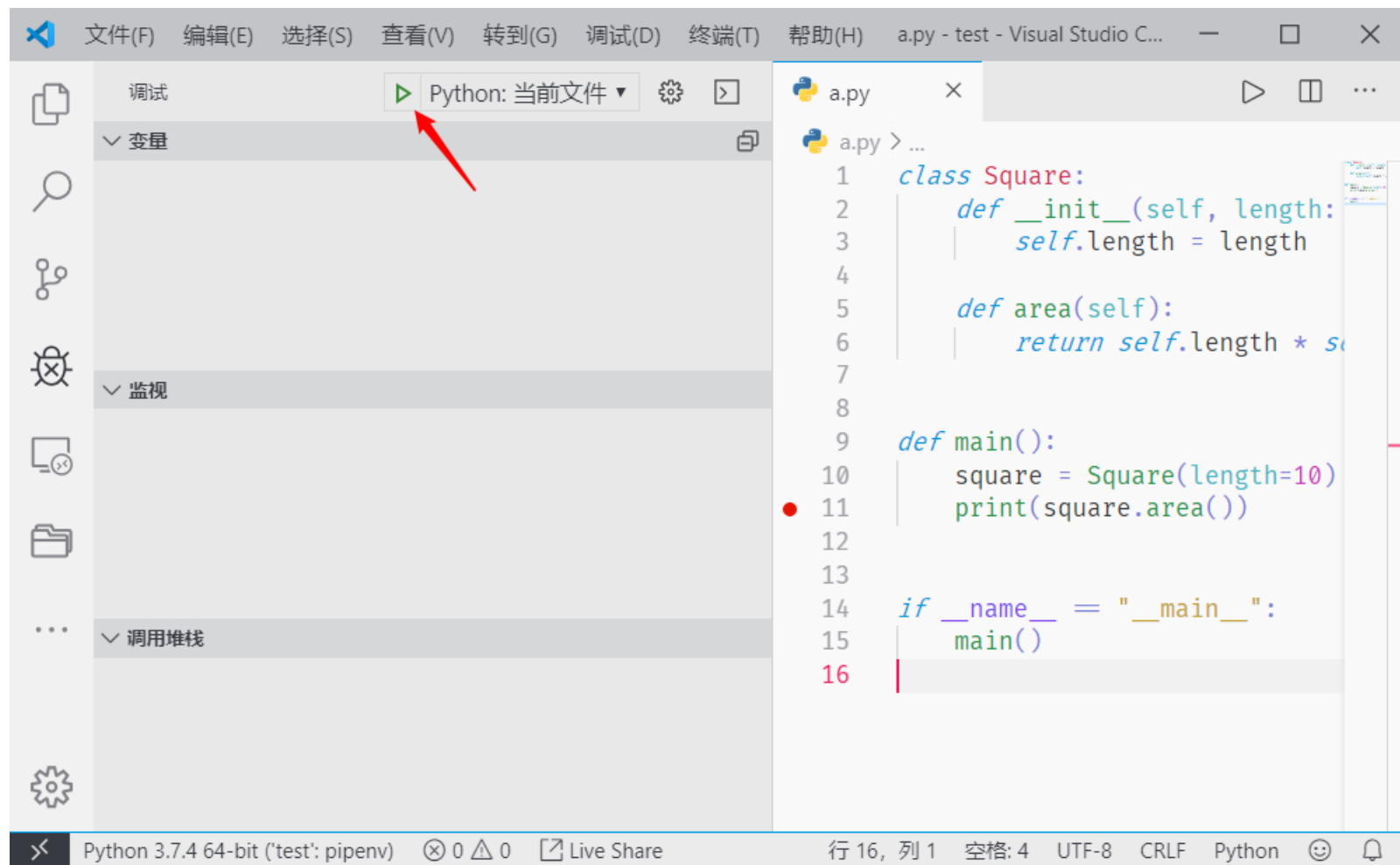
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VS Code与Python——Debugging



VS Code interface showing a Python debugging session. The top menu bar includes: 文件(F), 编辑(E), 选择(S), 查看(V), 转到(G), 调试(D), 终端(T), 帮助(H). The title bar shows: a.py - test - Visual Studio C...

The left sidebar contains icons for Explorer, Search, Source Control, Run and Debug, Explorer, and Settings. The main editor area displays the following Python code:

```
1 class Square:
2     def __init__(self, length:
3         self.length = length
4
5     def area(self):
6         return self.length * s
7
8
9 def main():
10     square = Square(length=10)
11     print(square.area())
12
13
14 if __name__ == "__main__":
15     main()
16
```

The Run and Debug sidebar on the left shows the following sections:

- 调试 (Debug)
- 变量 (Variables)
- Locals
 - > square: <__main__.Square object at 0x0000023194...
- 监视 (Watch)
- 调用堆栈 (Call Stack) - BREAKPOINT 已暂停
 - main a.py 11:1
 - <module> a.py 15:1

The bottom status bar shows: Python 3.7.4 64-bit ('test': pipenv) 0 0 Python: 当前文件 (test) 空格: 4 UTF-8 CRLF Python



VS Code与Python——Debugging

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调试 Python: [Debug] [Step Over] [Step Into] [Step Out] [Run and Debug] [Stop]

变量

- Locals
 - square: <__main__.Square object at 0x0000023194...

监视

- square.length

调用堆栈

函数名	文件	行号
main	a.py	11:1
<module>	a.py	15:1

```
1 class Square:
2     def __init__(self, length:
3         self.length = length
4
5     def area(self):
6         return self.length * s
7
8
9 def main():
10     square = Square(length=10)
11     print(square.area())
12
13
14 if __name__ == "__main__":
15     main()
16
```

Python 3.7.4 64-bit ('test': pipenv) 0 0 Python: 当前文件 (test) 空格: 4 UTF-8 CRLF Python



VS Code与Python——Debugging

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2019



文件(F) 编辑(E) 选择(S) 查看(V) 转到(G) 调试(D) 终端(T) 帮助(H) a.py - test - Visual Studio C...

调试

Python: [Debug Console]

变量

Locals

> square: <__main__.Square object at 0x0000023194...

监视

square.length: 10

调用堆栈

因 BREAKPOINT 已暂停

main a.py 11:1

<module> a.py 15:1

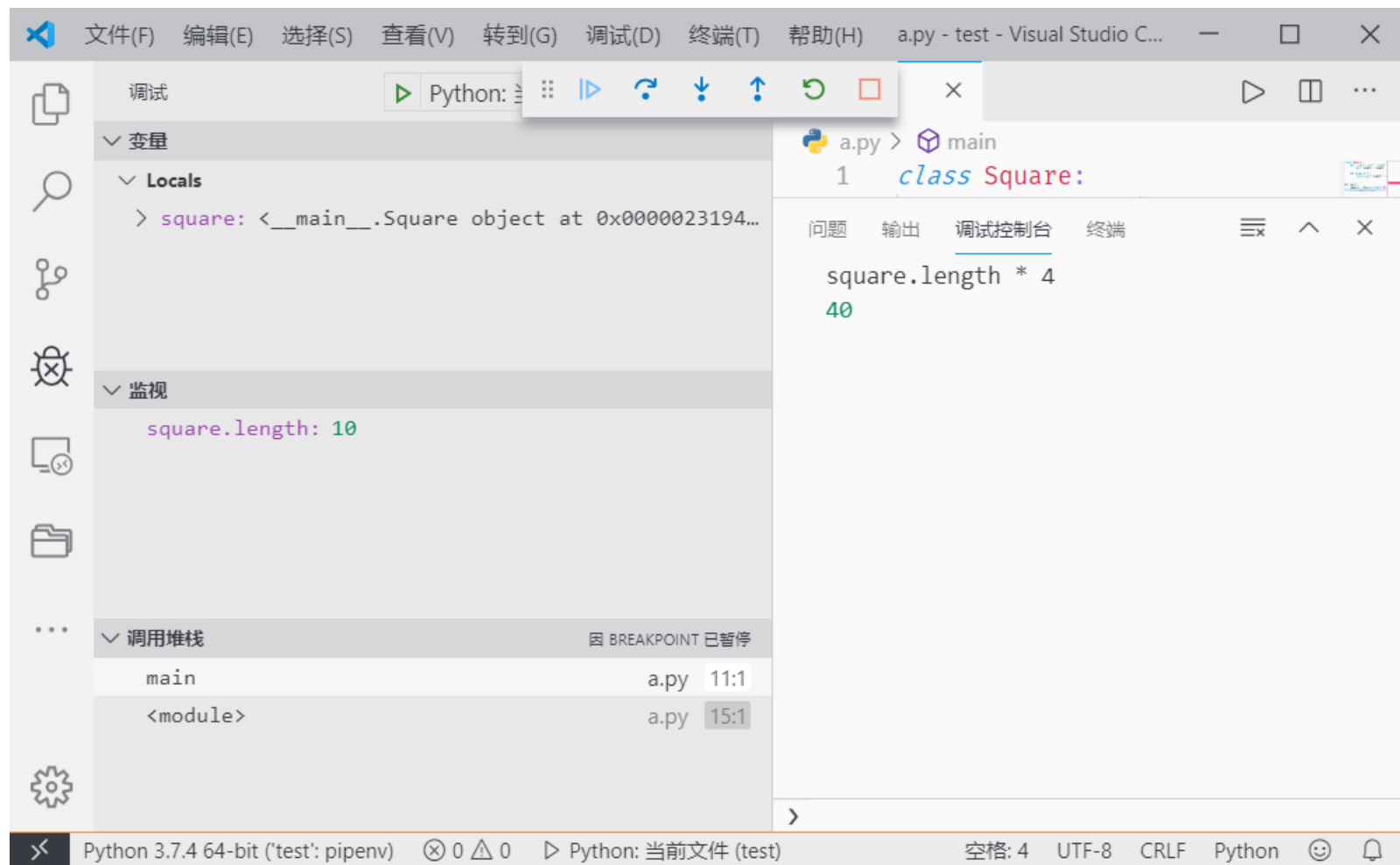
```
a.py > main
1 class Square:
2     def __init__(self, length:
3         self.length = length
4
5     def area(self):
6         return self.length * s
7
8
9 def main():
10     square = Square(length=10)
11     print(square.area())
12
13
14 if __name__ == "__main__":
15     main()
16
```

Python 3.7.4 64-bit ("test": pipenv) 0 0 Python: 当前文件 (test) 空格: 4 UTF-8 CRLF Python

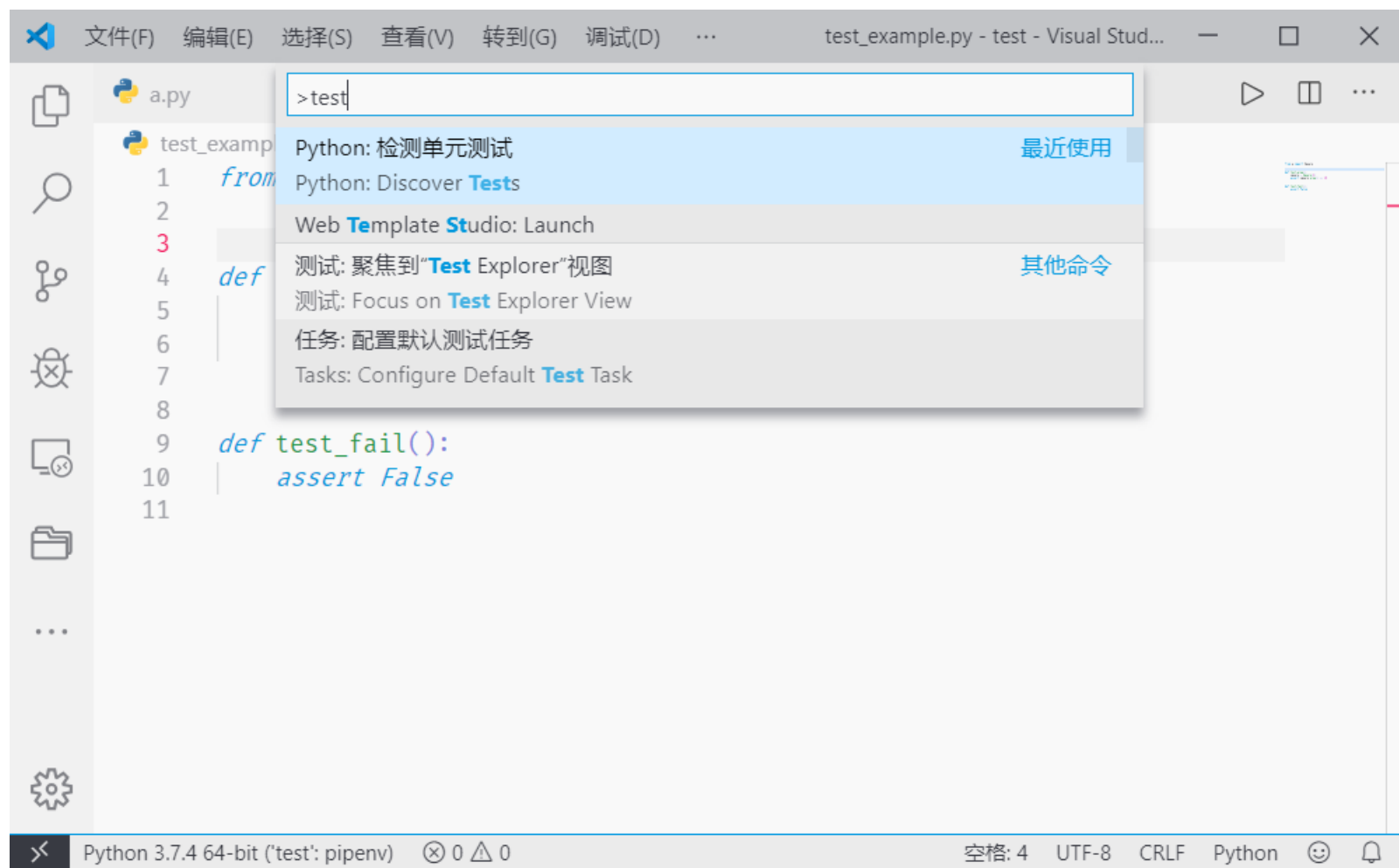


VS Code与Python——Debugging

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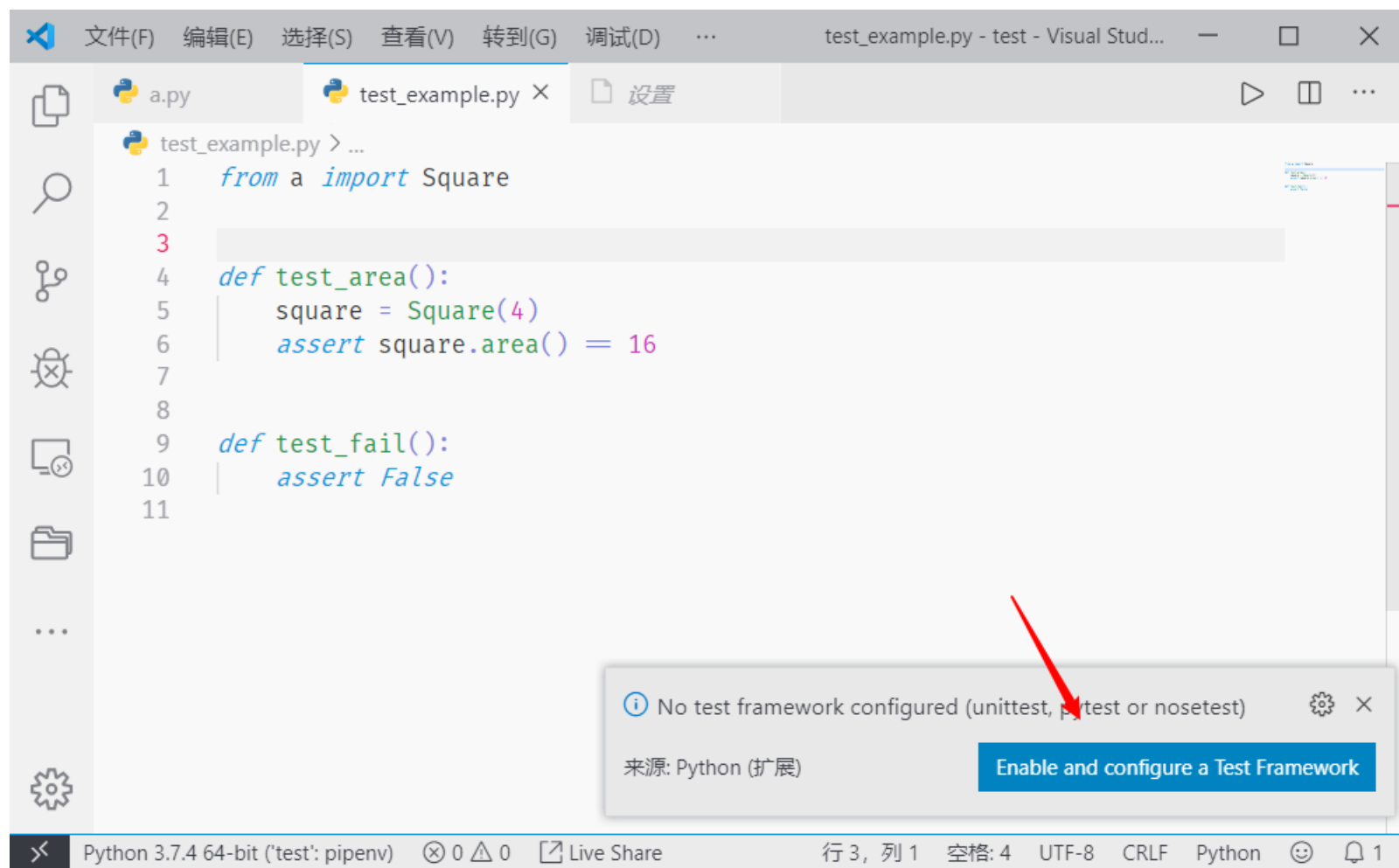


VS Code与Python——Testing

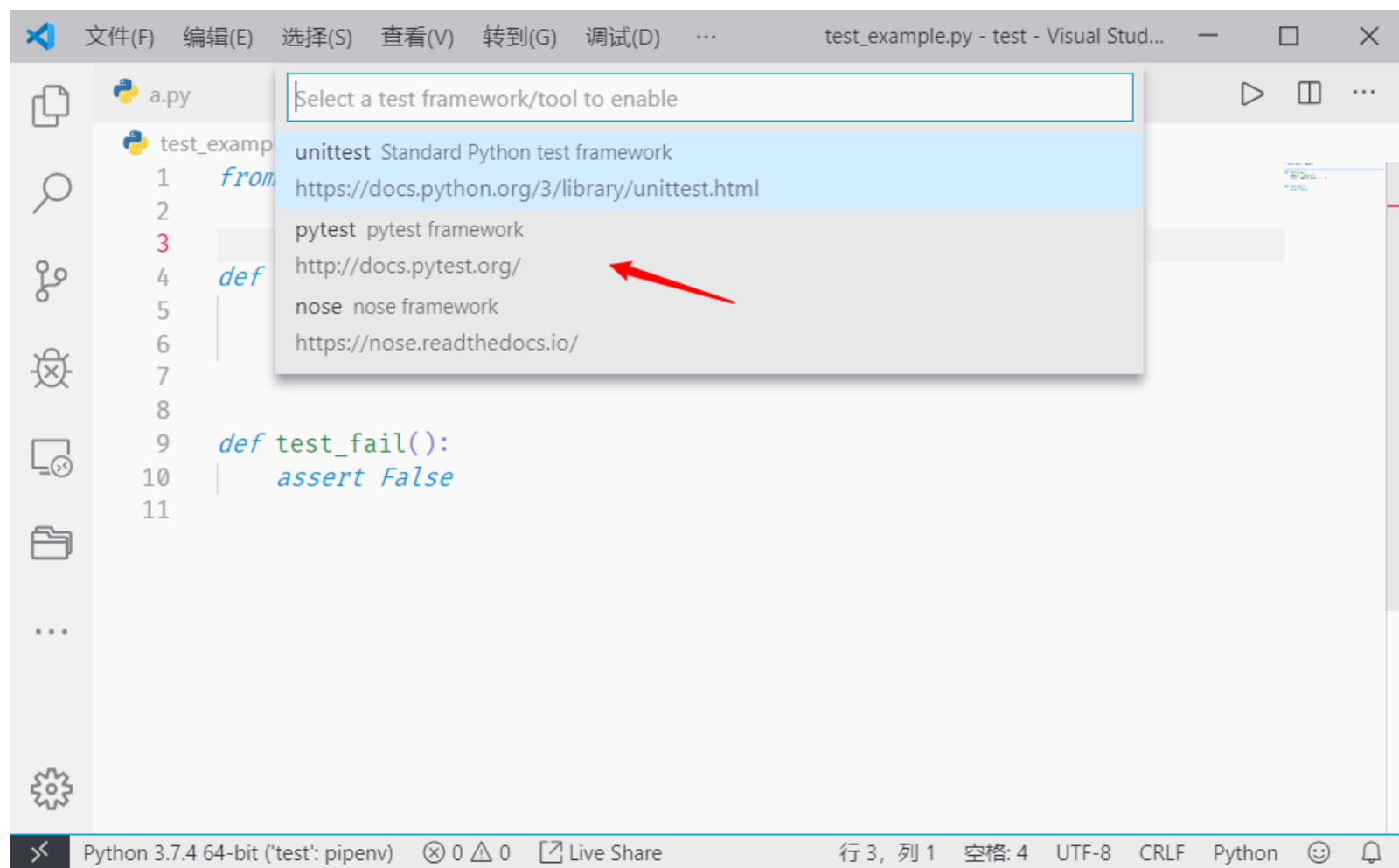


VS Code与Python——Testing

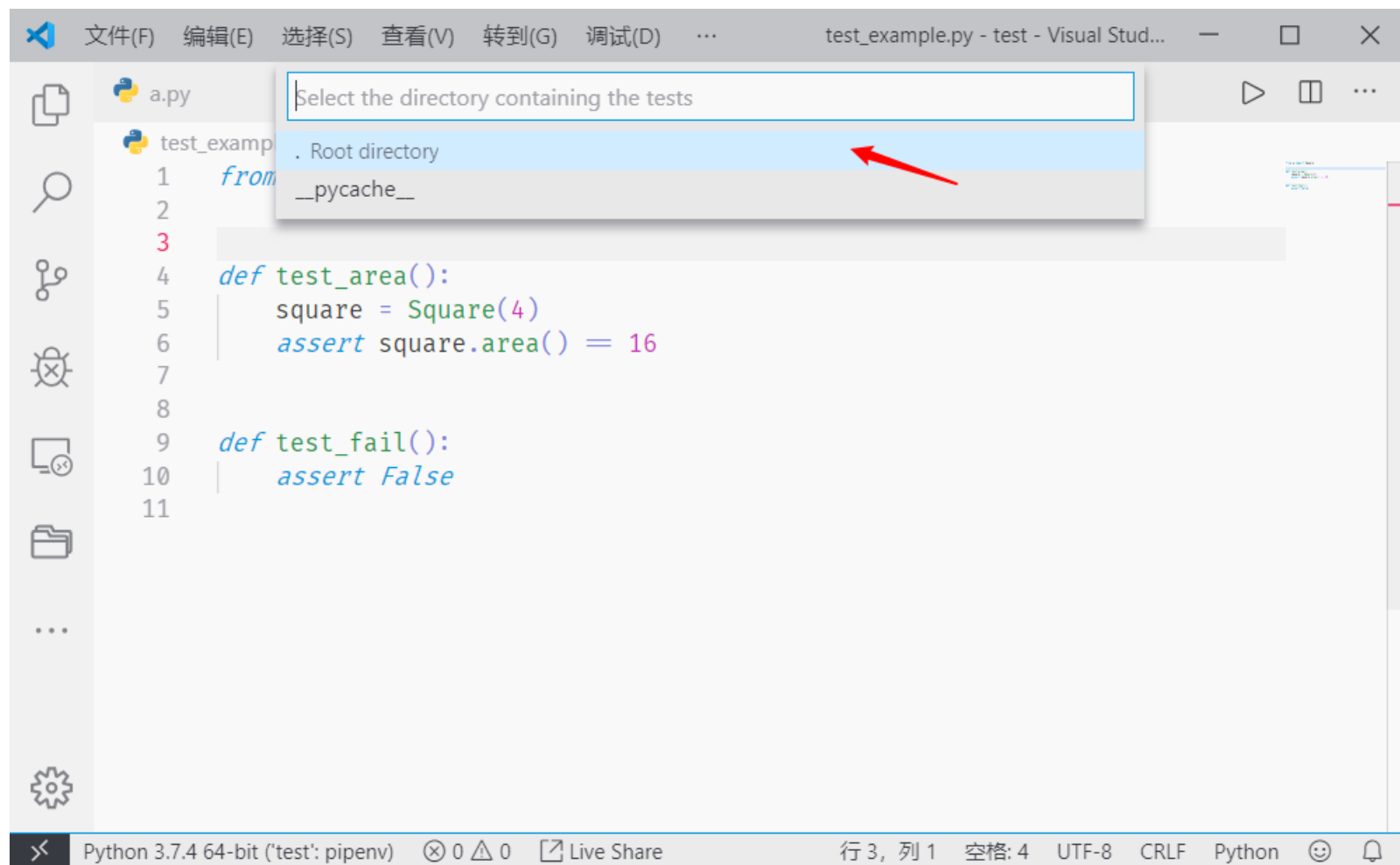
PyConChina
2019



VS Code与Python——Testing



VS Code与Python——Testing



VS Code与Python——Testing



The screenshot shows the Visual Studio Code interface with the file `test_example.py` open. The editor contains the following Python code:

```
1 from a import Square
2
3
4 def test_area():
5     square = Square(4)
6     assert square.area() == 16
7
```

Below the code, there is a button labeled "Run Test | Debug Test". The status bar at the bottom indicates the Python environment is "Python 3.7.4 64-bit ('test': pipenv)" and shows 0 errors and 0 warnings. The file encoding is UTF-8 and the line ending is CRLF.



VS Code与Python——Testing



The screenshot shows the Visual Studio Code interface with a Python test file named `test_example.py` open. The file contains the following code:

```
1 from a import Square
2
3
4 def test_area():
5     square = Square(4)
6     assert square.area() == 16
7
```

The interface includes a menu bar at the top with options: 文件(F), 编辑(E), 选择(S), 查看(V), 转到(G), 调试(D), and a search icon. The left sidebar shows the Explorer view with a file named `a.py` and the current file `test_example.py`. The bottom status bar indicates the Python version is 3.7.4 64-bit (test: pipenv), with 0 errors and 1 warning. It also shows the current cursor position as line 7, column 1, and the file encoding as UTF-8.



VS Code与Python——Testing



```
1  from a import Square
2
3
4  def test_area():
5      square = Square(4)
6      assert square.area() == 16
7
8
9  def test_fail():
10     assert False
11
```



VS Code与Python——Testing



The screenshot shows the Visual Studio Code editor with a file named `test_example.py` open. The editor displays the following code:

```
1 from a import Square
```

Below the code editor, the 'Python Test Log' output window is visible, showing the test results:

```
platform win32 -- Python 3.7.4, pytest-5.2.1, py-1.8.0, pluggy-0.13.0
rootdir: C:\Users\duyix\workspace\test
collected 1 item

test_example.py F [100%]

===== FAILURES =====
test_fail
-----

def test_fail():
>     assert False
E     assert False

test_example.py:10: AssertionError
- generated xml file: C:\Users\duyix\AppData\Local\Temp\tmp-218848zmGJWckng1Ie.xml -
===== 1 failed in 0.10s =====
```

The status bar at the bottom indicates the Python environment is 'Python 3.7.4 64-bit (test: pipenv)' and shows 1 error and 0 warnings.



VS Code与Python——Testing



文件(F) 编辑(E) 选择(S) 查看(V) 转到(G) 调试(D) ... test_example.py - test - Visual Stud...

测试

TEST EXPLORER

- test_example.py
 - test_area
 - test_fail

test_example.py > ...

```
1 from a import Square
```

输出 ... Python Test Lo

```
session starts
=====
platform win32 -- Python 3.7.4,
pytest-5.2.1, py-1.8.0, pluggy-0.13.0
rootdir: C:\Users\duyix\workspace\test
collected 1 item

test_example.py F

[100%]

=====
FAILURES
=====

test_fail
=====
```

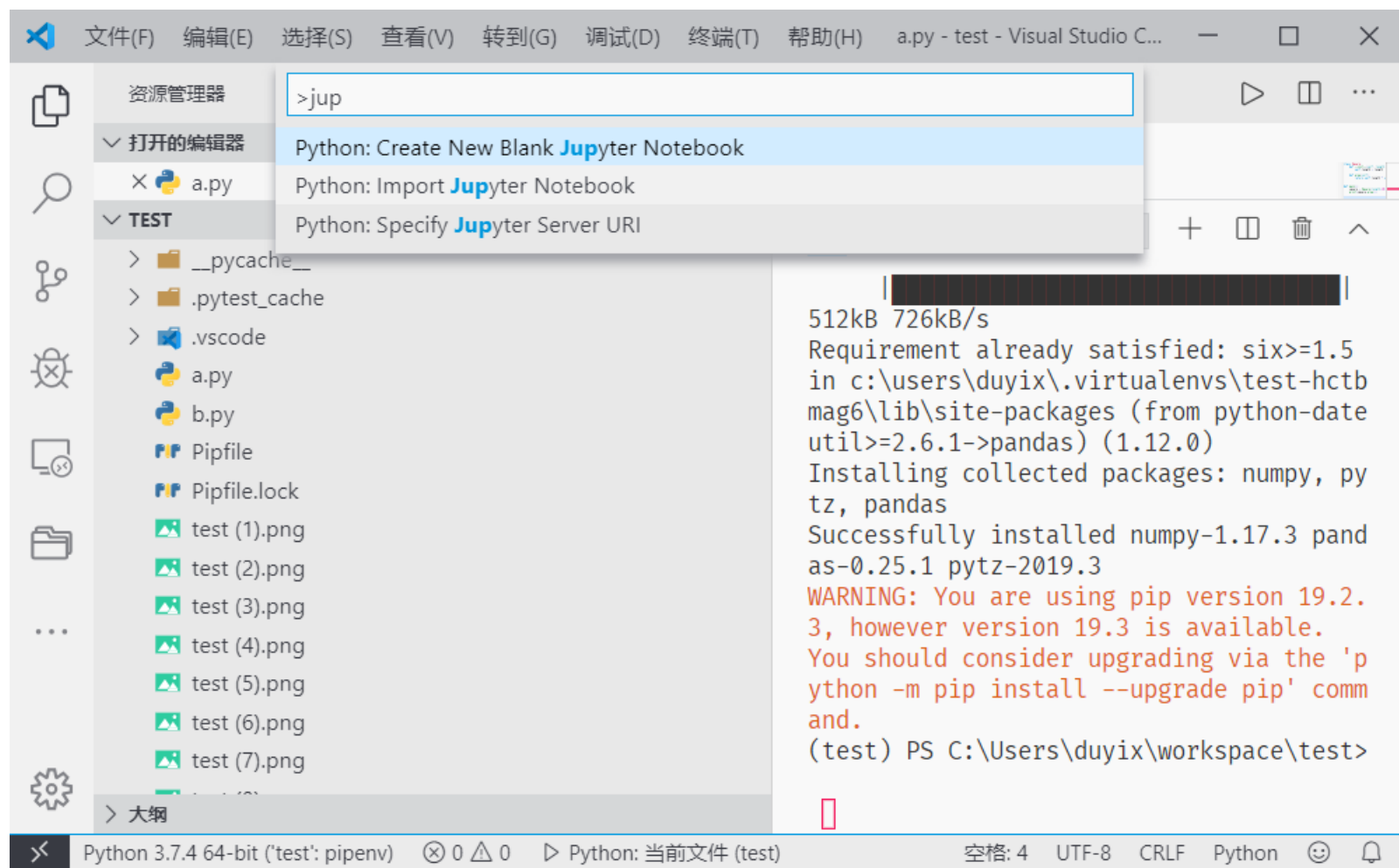
> PYTHON

Python 3.7.4 64-bit ("test": pipenv) 1 0 Live Share 1 行 11, 列 1 空格: 4 UTF-8 CRLF Python 1

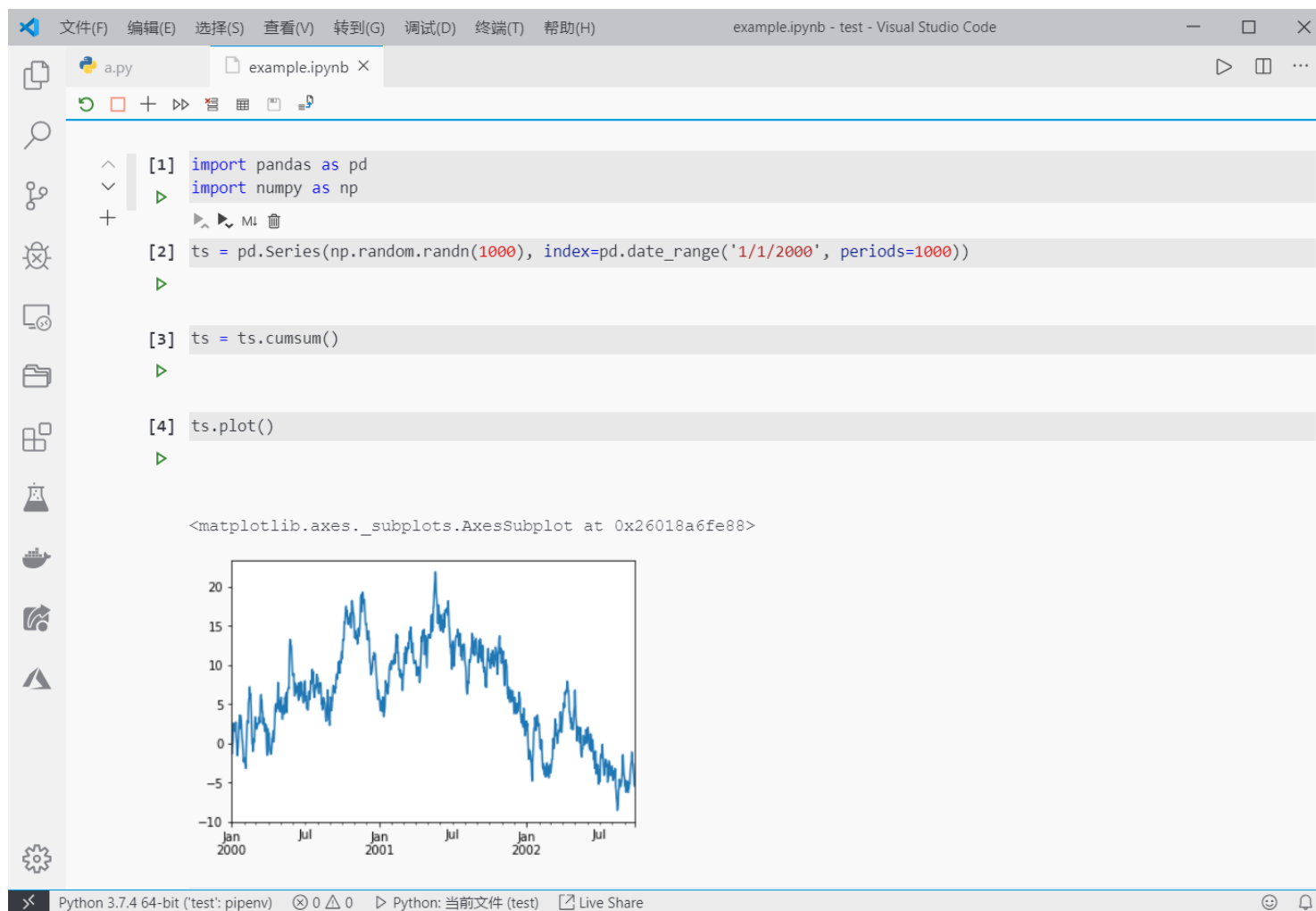




VS Code与Python——Jupyter Notebook



VS Code与Python——Jupyter Notebook






最佳实践



文件(F) 编辑(E) 选择(S) 查看(V) 转到(G) 调试(D) 终端(T) 帮助(H) Extension: Yet Another Python Extension Pack - test - Visual Studio Code

Extension: Yet Another Python Extension Pack X








 **Yet Another Python Extension Pack** yixian.yapep

yixian | 2,955 | ★★★★★ | 存储库 | 许可证

Polular Visual Studio Code extensions for Python developer

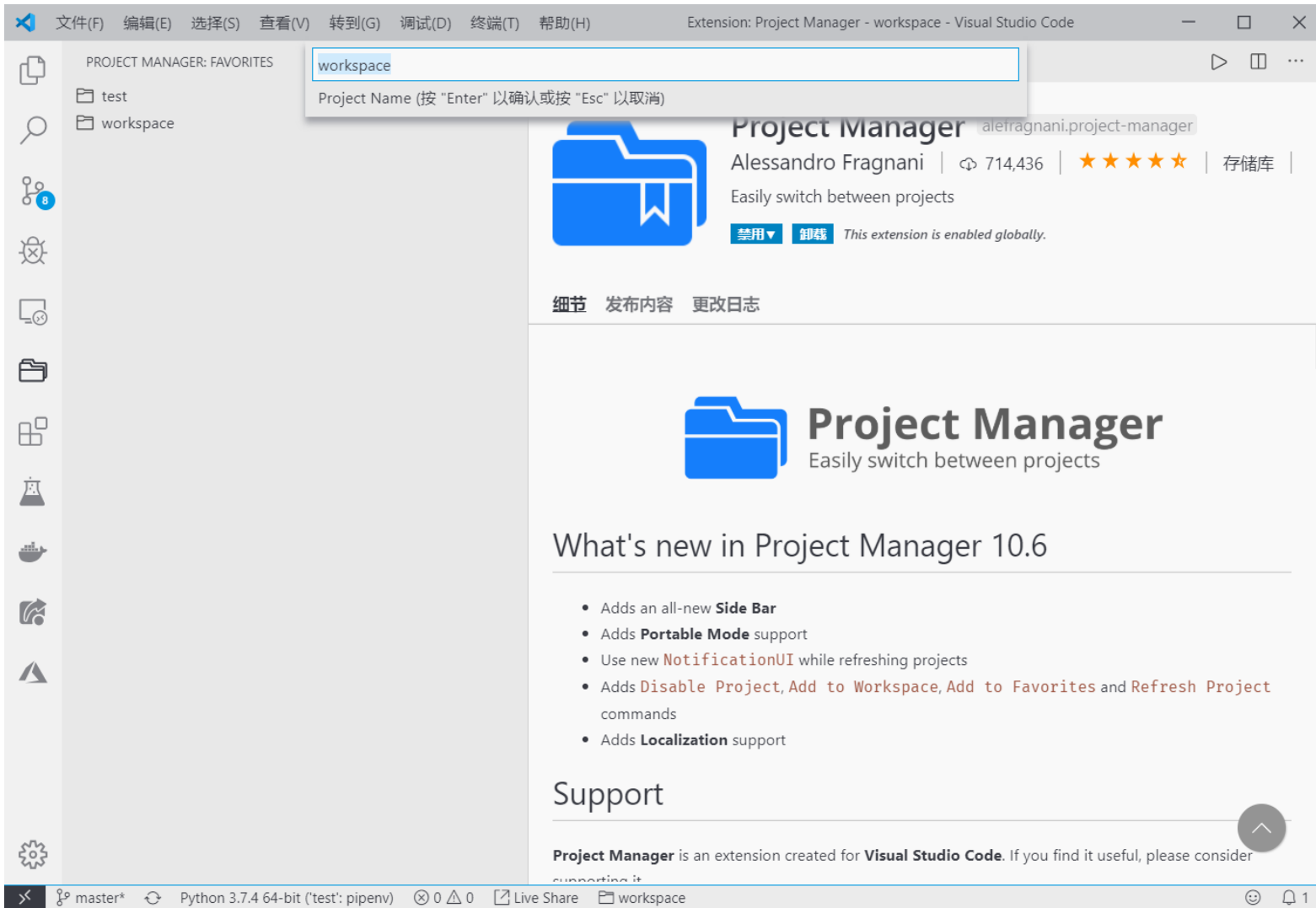
[禁用](#) [卸载](#) This extension is enabled globally.

细节 扩展包 更改日志

-  **Project Manager** alefragnani.project-manager
Alessandro Fragnani
-  **Docs Authoring Pack** docsmsft.docs-authoring-pack
Microsoft
-  **GitLens — Git supercharged** eamodio.gitlens
Eric Amodio
-  **Code Runner** formulahendry.code-runner
Jun Han
-  **Test Explorer UI** hbenl.vscode-test-explorer
Holger Benl
-  **Python Test Explorer for Visual Studio Code** littlefoxtteam.vscode-python-test-adapter
Little Fox Team
-  **Git Graph** mhutchie.git-graph
mhutchie

Python 3.7.4 64-bit ('test': pipenv) 0 0 Python: 当前文件 (test) Live Share





文件(F) 编辑(E) 选择(S) 查看(V) 转到(G) 调试(D) 终端(T) 帮助(H) Extension: Project Manager - workspace - Visual Studio Code

PROJECT MANAGER: FAVORITES

workspace

Project Name (按 "Enter" 以确认或按 "Esc" 以取消)


Project Manager alexfragnani.project-manager

Alessandro Fragnani | 714,436 | ★★★★★ | 存储库 |

Easily switch between projects

禁用 卸载 This extension is enabled globally.

细节 发布内容 更改日志

 **Project Manager**
Easily switch between projects

What's new in Project Manager 10.6

- Adds an all-new **Side Bar**
- Adds **Portable Mode** support
- Use new **NotificationUI** while refreshing projects
- Adds **Disable Project**, **Add to Workspace**, **Add to Favorites** and **Refresh Project** commands
- Adds **Localization** support

Support

Project Manager is an extension created for **Visual Studio Code**. If you find it useful, please consider supporting it

master* Python 3.7.4 64-bit ('test': pipenv) 0 0 Live Share workspace



最佳实践——Git 增强 (Git Graph)



Git Graph - html_dsl - Visual Studio Code

Branches: Show All ☒ Show Remote Branches

Graph	Description	Date	Author	Commit
master v0.3.2		2 Aug 2019 15:46	duyixian	0e40555d
origin/HEAD origin/master	MOD:generate test file	2 Aug 2019 15:37	duyixian	815846cf
<p>Commit: 815846cfdde4bb752eec5475182e0ea50e4e33fe Parents: c00dae106357ec4d89d71353fde704c977cd7545 Author: duyixian <duyixian1234@qq.com> Date: Fri Aug 02 2019 15:37:29 GMT+0800 (中国标准时间) Committer: duyixian</p> <p>MOD:generate test file</p> <p> Pipfile (+1 -1)</p>				
	MOD:publish test and coverage file	2 Aug 2019 15:35	duyixian	c00dae10
	MOD:use pypi.org	2 Aug 2019 15:27	duyixian	c8a09b1a
	FIX:lint	2 Aug 2019 15:24	duyixian	4a006da0
	Set up CI with Azure Pipelines	2 Aug 2019 15:22	Yixian Du	31f140d7
	MOD:use yapf	2 Aug 2019 15:19	duyixian	3deda39b
	MOD:use yapf	2 Aug 2019 15:14	duyixian	0c288974
0.3.1	set BR with no_content=True()	25 Jul 2019 13:23	duyixian	b0fca0d7
	MOD:support no content element	21 Feb 2019 19:18	duyixian	edf7354a
v0.2.1		20 Feb 2019 18:59	duyixian	2eb39142
	MOD:add HEAD, set META to single	20 Feb 2019 18:58	duyixian	24bb682a
v0.2.0		20 Feb 2019 18:55	duyixian	e1bba18c
	MOD:add support of attributes with hyphen	20 Feb 2019 18:54	duyixian	3bfeb478
	MOD:add support of single element	20 Feb 2019 18:49	duyixian	149e0837

master 01 11 Python 3.7.4 64-bit ('html_dsl-HFmg-4Jy': virtualenv) 0 0 Live Share Git Graph



最佳实践——Git 增强(Git Lens)

PyConChina
2019



源代码管理: GIT

> HTML_DSL GIT

> GITLENS: REPOSITORIES

- html_dsl master 01 11 • Last fetched Aug 2, 2019
 - master 01 11 ⇄ origin/master
 - 1 commit ahead
 - 1 file changed
 - Compare master (working) with <branch, tag, or ref>
- Branches
- Contributors
- Incoming Activity experimental
- Remotes
- Stashes
- Tags

> GITLENS: FILE HISTORY

- setup.py
 - Over a month ago
 - v0.3.2 +1 -1 • You, 3 months ago
 - MOD:use yapf +1 -2 • You, 3 months ago
 - set BR with no_content=True(
) +3 -2 • You, 3 ...

> GITLENS: LINE HISTORY

- setup.py #17
 - add setup.py duyixian, 9 months ago

> GITLENS: COMPARE

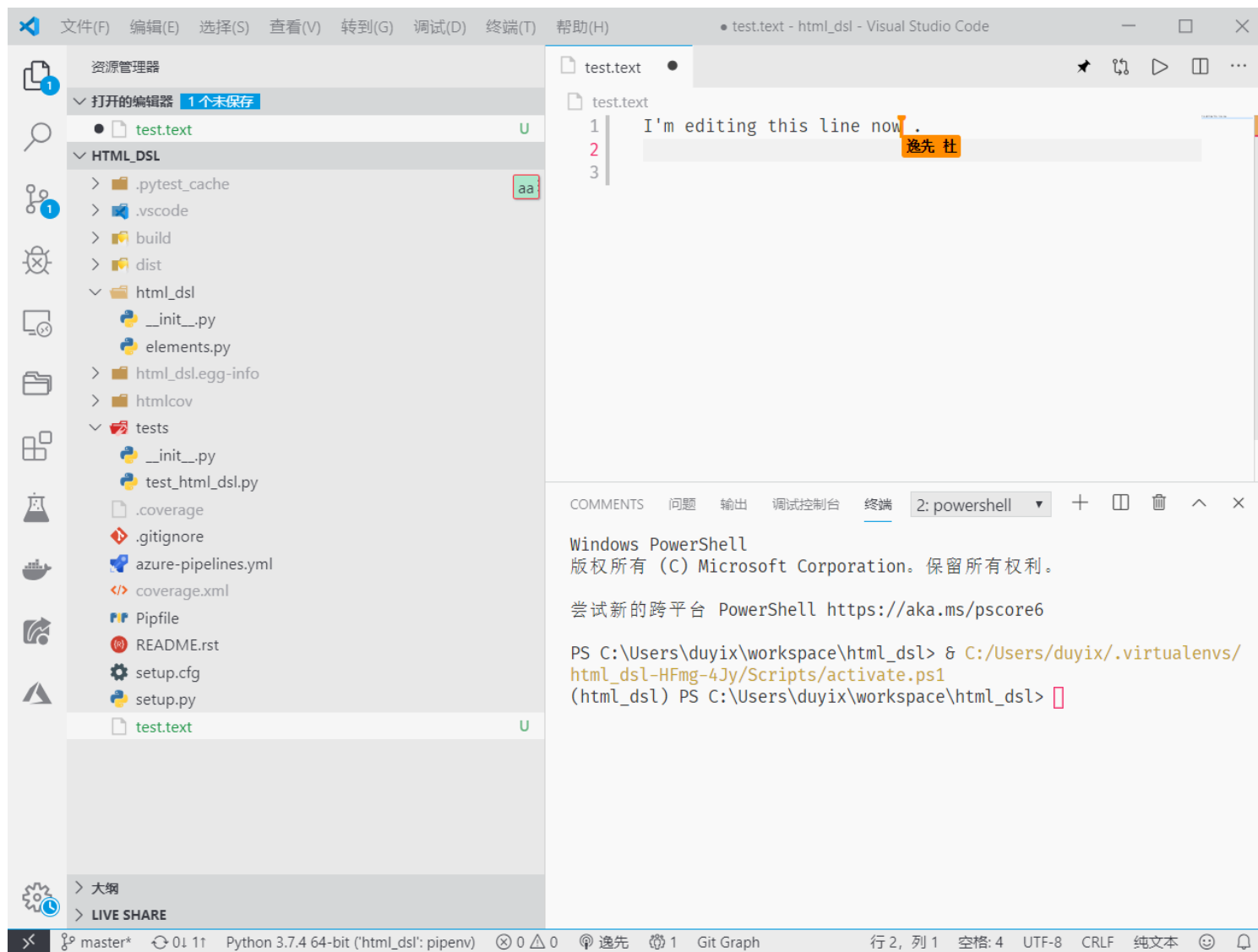
> GITLENS: SEARCH COMMITS

```
setup.py x
3 from pathlib import Path
4 from shutil import rmtree
5
6 from setuptools import Command, find_packages, setup
7
8 # Package meta-data.
9
10 NAME = "html-dsl"
11 DESCRIPTION = "A HTML-DSL for Python"
12 URL = "https://github.com/duyixian1234/html_dsl"
13 EMAIL = "duyixian1234@qq.com"
14 AUTHOR = "Yixian Du"
15
16 # What packages are required for this module to be executed
17 | duyixian, 9 months ago • add setup.py
18 here = Path(__file__).cwd()
19
20 with open(here / "README.rst", encoding="utf-8") as f:
21     long_description = "\n" + f.read()
22
23
24 You, 3 months ago | 2 authors (duyixian and others)
25 class UploadCommand(Command):
26     """Support setup.py upload."""
27
28     description = "Build and publish the package."
29     user_options: list = []
30
31     @staticmethod
32     def status(s):
33         """Prints things in bold."""
34         print("\033[1m\033[0m".format(s))
35
36     def initialize_options(self):
37         pass
```

行 17, 列 1 空格: 4 UTF-8 CRLF Python

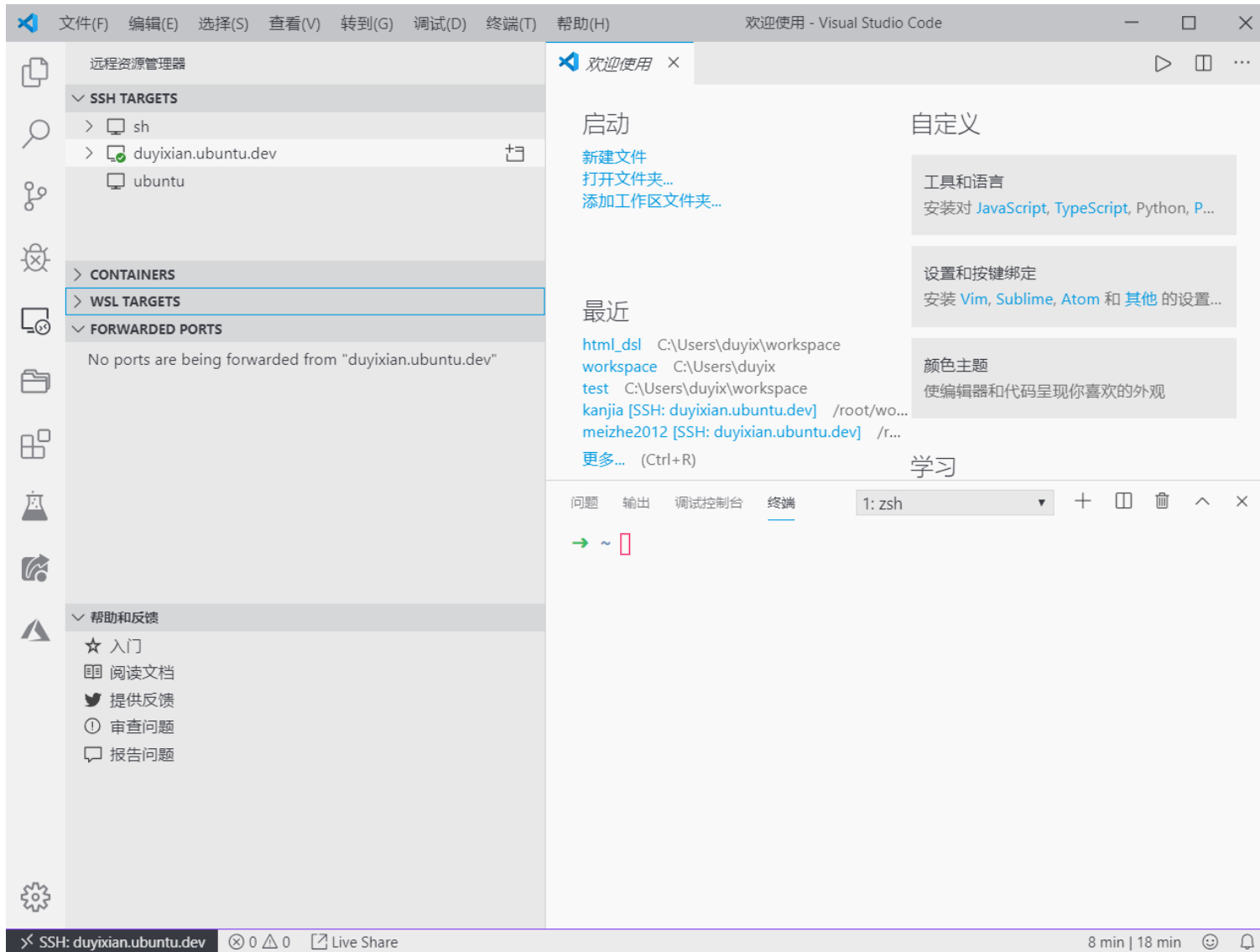


最佳实践——协作开发(VS Live Share)





最佳实践——远程开发(Remote Development)





提问时间



THANK YOU

