

Python for Mac Admins

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[https://github.com/timsutton/
python-macadmins-2015](https://github.com/timsutton/python-macadmins-2015)

Common script tasks

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```
xpath /tmp/  
Date.xml //  
LastSeen/text | \  
sed -e 's/  
<text>//g' | \  
sed -e '$'s/<\  
text>/\\n/g'
```

Common script tasks

defaults
launchctl
installer
pkgutil
lsbom
pkgbuild
productbuild
dscl
scutil
PlistBuddy
plutil
diskutil
hdiutil
ditto
fdsetup
system_profiler

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- Parse structured formats (plist, XML, JSON)
- Execute commands, do things based on results and output
- Wish there was a command-line tool for X
(example: github.com/timsutton/customdisplayprofiles)

Bashisms

- Quoting and escaping for file names, command arguments
- Looping over separated fields (OLDIFS=\$IFS)
- Primitive types/structures - strings, numbers, arrays
- Portability of command options (BSD vs. GNU versions of e.g. `find`, `sed`)
- Handling the unexpected
- Hard to maintain (sharing code, state, options)

Why Python?

- Large standard library (“batteries included”) for sysadmin-type tasks
- Safer and more readable
- PyObjC: lightweight use of OS X APIs
- Exists on every OS X, works the same on other OSes
- Proven, popular language

Further study

Munki

<https://github.com/munki/munki>

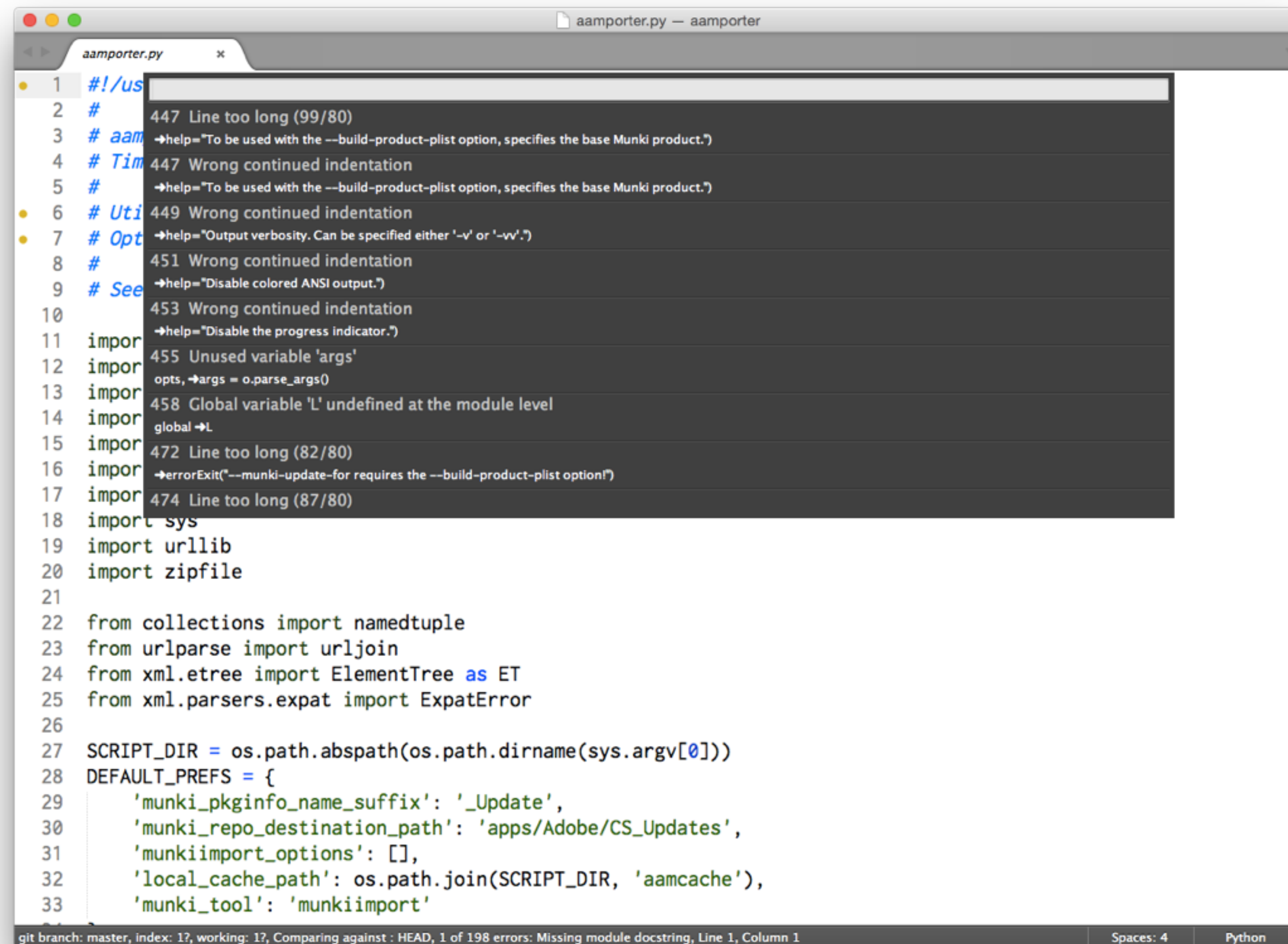
Google Mac Python module

<https://github.com/google/macops/tree/master/gmacpyutil>

And (60!) more projects

<https://github.com/timsutton/python-macadmin-tools>

Use a linter and editor plugin (e.g. pylint/flake8, SublimeLinter)



The screenshot shows a code editor window titled 'aamporter.py - aamporter'. The editor displays a Python script with several linting errors highlighted in a dark overlay. The errors are:

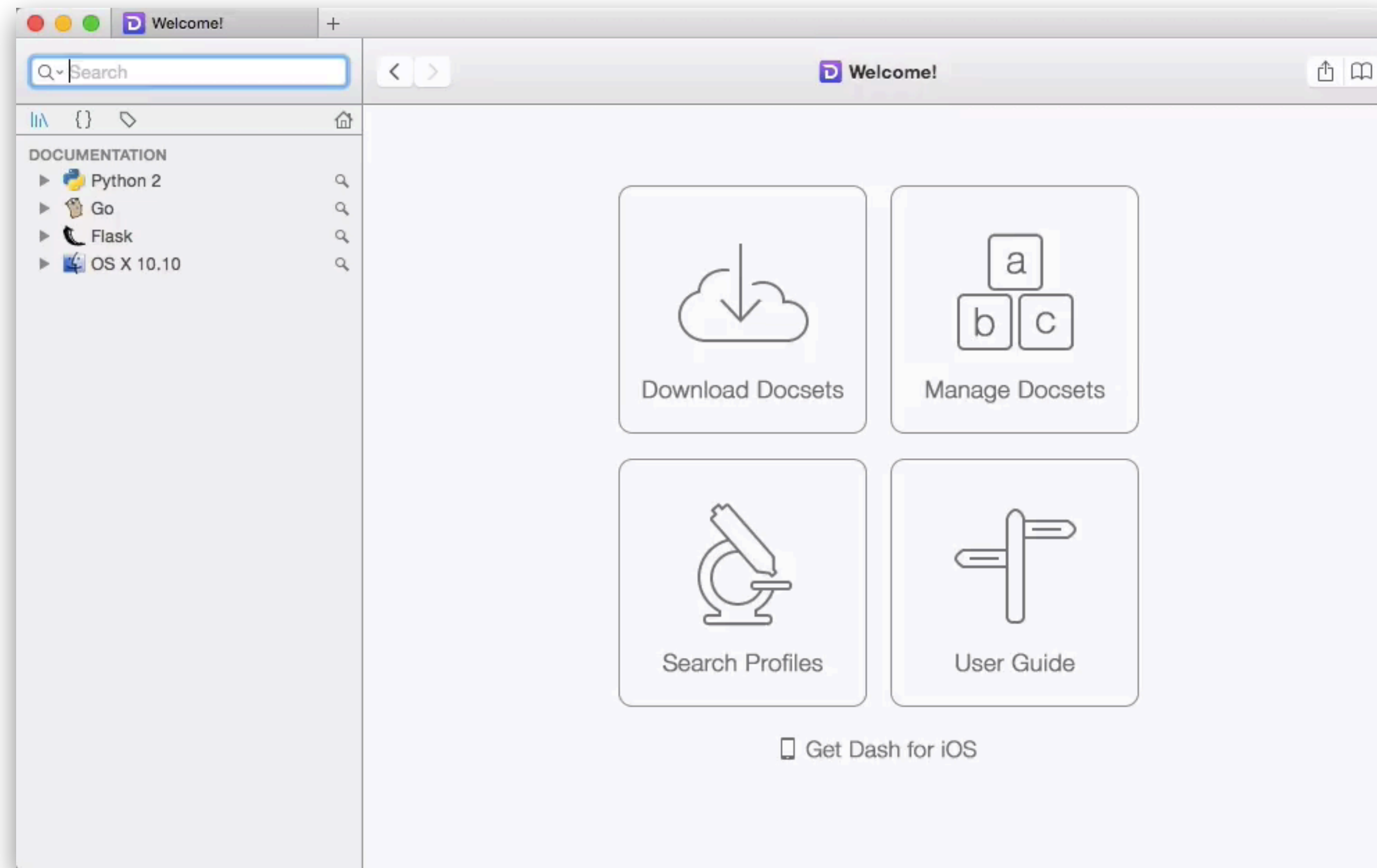
- 447 Line too long (99/80)
- 447 Wrong continued indentation
- 449 Wrong continued indentation
- 451 Wrong continued indentation
- 453 Wrong continued indentation
- 455 Unused variable 'args'
- 458 Global variable 'L' undefined at the module level
- 472 Line too long (82/80)
- 474 Line too long (87/80)

The code in the editor includes:

```
1 #!/usr
2 #
3 # aam
4 # Tim
5 #
6 # Uti
7 # Opt
8 #
9 # See
10
11 import
12 import
13 import
14 import
15 import
16 import
17 import
18 import sys
19 import urllib
20 import zipfile
21
22 from collections import namedtuple
23 from urlparse import urljoin
24 from xml.etree import ElementTree as ET
25 from xml.parsers.expat import ExpatError
26
27 SCRIPT_DIR = os.path.abspath(os.path.dirname(sys.argv[0]))
28 DEFAULT_PREFS = {
29     'munki_pkginfo_name_suffix': '_Update',
30     'munki_repo_destination_path': 'apps/Adobe/CS_Updates',
31     'munkiimport_options': [],
32     'local_cache_path': os.path.join(SCRIPT_DIR, 'aamcache'),
33     'munki_tool': 'munkiimport'
```

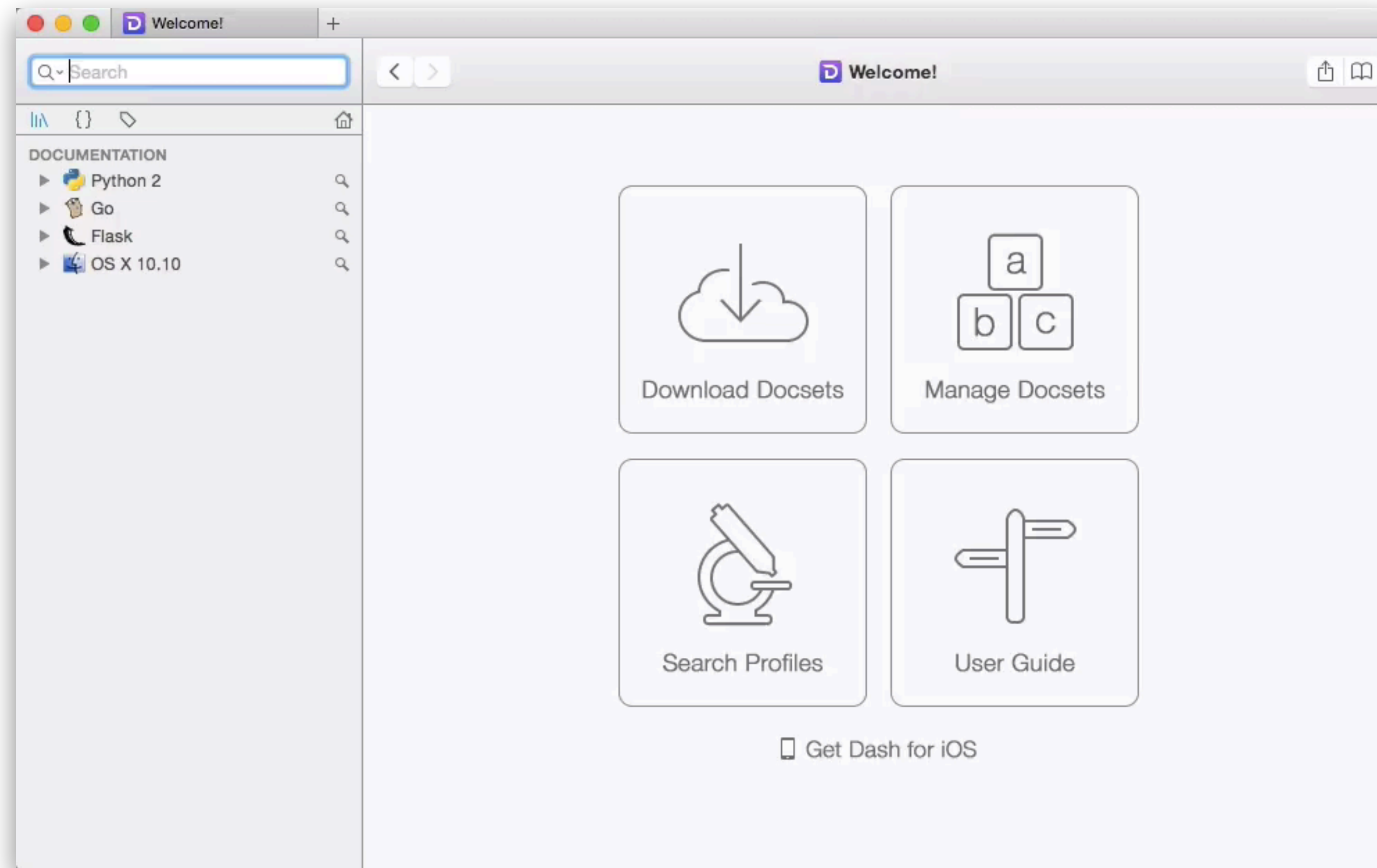
At the bottom of the editor, a status bar shows: 'git branch: master, index: 1?, working: 1?, Comparing against: HEAD, 1 of 198 errors: Missing module docstring, Line 1, Column 1'. On the right side of the status bar, it says 'Spaces: 4' and 'Python'.

Dash doc browser



<https://kapeli.com/dash> (\$20)

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Learning resources

- <http://stackoverflow.com/questions/tagged/python>
- <http://www.diveintopython.net>
- <http://learnpythonthehardway.org>
- #python channel on Freenode IRC

Thank you!