Flake8 Python linter

CONCEPTS

Flake8 wraps pycodestyle (E, W), pyflakes (F) and mccabe (C90). It only reports; it never rewrites your code.

Python files found by path
↓ parse
Plugins E W F C90 + extras
↓ filter
select / ignore config + CLI + noqa
↓ report
Output exit 1 if any

Codes are prefixes: E501 is one rule, E5 a group, E all style errors. Options take comma-separated prefixes.

Config is read from setup.cfg, tox.ini or .flake8 in the current directory; pyproject.toml is not supported without a plugin.

RUN

`flake8`
Check all Python files here

`flake8 <path> ...`
Check files or directories

`flake8 -`
Read source from stdin

`flake8 --stdin-display-name <name> -`
Name to show for stdin input

`flake8 --version`
Show versions of flake8 and plugins

`flake8 --count`
Print total number of violations

`flake8 -q`
Print only file names with errors

`flake8 -qq`
Print nothing, just set the exit code

`flake8 --color never`
Disable coloured output

OUTPUT

`flake8 --show-source`
Print the offending source line

`flake8 --statistics`
Count violations per code

OUTPUT (cont.)

`flake8 --format=pylint`
Pylint-style output

`flake8 --output-file <file>`
Write report to a file

SELECT AND IGNORE

`flake8 --select=<codes>`
Report only these codes or prefixes

`flake8 --extend-select=<codes>`
Add codes to the default selection

`flake8 --ignore=<codes>`
Replace the default ignore list

`flake8 --extend-ignore=<codes>`
Ignore more codes, keep the defaults

`flake8 --per-file-ignores='<glob>:<codes>'`
Ignore codes for matching files

`flake8 --disable-noqa`
Report even lines with # noqa

`flake8 --max-complexity=<n>`
Enable C901 above this complexity

`flake8 --max-line-length=<n>`
Line length limit for E501

`flake8 --builtins=<names>`
Extra names F821 should accept

FILES

`flake8 --exclude=<patterns>`
Replace the default exclude list

`flake8 --extend-exclude=<patterns>`
Skip more paths, keep defaults

`git diff --name-only --'*.py' | xargs flake8`
Lint only changed files

INLINE CONTROL

`# noqa`
Silence all codes on this line

`# noqa: <code>[, <code>]`
Silence only these codes on this line

`# flake8: noqa`
Skip the whole file (own line)

CONFIG

`flake8 --config <file>`
Use only this config file

`flake8 --isolated`
Ignore all config files

`flake8 -v`
Show which config and plugins load

A [flake8] section in setup.cfg, tox.ini or .flake8; option names use dashes or underscores, e.g. max-line-length.

COMMON CODES

Frequent codes

Code	Meaning
E501	line too long
E302	expected 2 blank lines
E231	missing whitespace after ','
E203	whitespace before ':'
W291	trailing whitespace
W605	invalid escape sequence
F401	imported but unused
F841	local variable assigned, never used
F821	undefined name
E722	bare except
E741	ambiguous variable name
C901	function too complex

Code prefixes

Prefix	Source
E1-E7	pycodestyle errors
W	pycodestyle warnings
F	pyflakes
C90	mccabe

RECIPES

setup.cfg / .flake8

```
[flake8]
max-line-length = 100
extend-ignore = E203
per-file-ignores =
    __init__.py: F401
    tests/*: S101
exclude = .git,build,.venv
```

With Black

```
# Black-compatible settings
[flake8]
max-line-length = 88
extend-ignore = E203,E701
```

CI: hard errors then advice

```
flake8 --count --
select=E9,F63,F7,F82 --show-
source --statistics
flake8 --count --exit-zero --max-
complexity=10 --statistics
```