Flake8 Python linter

START HERE

flake8
Lint the current directory

`flake8 --extend-ignore=<code>`
Skip a rule

`flake8 <file.py>`
Lint one file

`flake8 --max-line-length=100`
Allow longer lines

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

`flake8 --statistics -qq`
Count by code

`flake8 --select=E,F`
Only errors and pyflakes

`flake8 --version`
Version and plugins

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

CONCEPTS

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

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 --exit-zero`
Always exit 0 despite violations

`flake8 -j <n>`
Number of parallel jobs

`flake8 --color never`
Disable coloured output

OUTPUT

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

`flake8 --statistics`
Count violations per code

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

OUTPUT (cont.)

`flake8 --format='%(path)s: %(row)d %(code)s'`
Custom format string
Keys: path, row, col, code, text.

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

`flake8 --tee --output-file <file>`
Write to file and stdout

`flake8 --benchmark`
Print timing information

`flake8 --bug-report`
Dump versions and config as JSON

SELECT AND IGNORE

`flake8 --select=<codes>`
Report only these codes or prefixes
Replaces the default set; plugin codes you leave out are silenced.

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

`flake8 --ignore=<codes>`
Replace the default ignore list
Dropping the defaults (E121,E123,E126,E226,E24,E704,W503,W504) turns those checks on.

`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
Off by default; 10 is a common starting point.

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

`flake8 --max-doc-length=<n>`
Limit comments and docstrings (W505)

`flake8 --indent-size=<n>`
Indentation width, default 4

SELECT AND IGNORE (cont.)

`flake8 --hang-closing`
Expect hanging closing brackets

`flake8 --doctests`
Also check syntax in doctests

`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

`flake8 --filename=<patterns>`
Which file names to check (default *.py)

`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
Always name the code; a bare noqa hides real problems.

`# flake8: noqa`
Skip the whole file (own line)
With codes, as '# flake8: noqa: E123', it silences those codes file-wide.

CONFIG

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

`flake8 --append-config <file>`
Read an extra config file last

`flake8 --isolated`
Ignore all config files

`flake8 --require-plugins=<names>`
Fail if a plugin is missing

`flake8 --enable-extensions=<codes>`
Turn on off-by-default plugins

CONFIG (cont.)

`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
```

Pre-commit hook

```
# .pre-commit-config.yaml
repos:
  - repo: https://github.com/
PyCQA/flake8
    rev: 7.4.1
    hooks:
      - id: flake8
```