Ruff Python lint and format

CONCEPTS

Two tools in one binary: check lints (and fixes), format rewrites layout. Run both; they do not overlap.

Since 0.17 the default is a broad curated set (F, E4/E7/E9, B, UP, SIM, RUF, PL and more). See it with ruff check --show-settings --isolated; select replaces it, extend-select adds.

CHECK

`ruff check`
Lint current directory

`ruff check <path>...`
Lint given files or dirs

`ruff check --fix`
Apply safe fixes

`ruff check --diff`
Preview fixes as a diff

`ruff check --unsafe-fixes --fix`
Also apply unsafe fixes

`ruff check --watch`
Re-run on file changes

FORMAT

`ruff format`
Format current directory

`ruff format <path>...`
Format given files or dirs

`ruff format --check`
Fail if anything would change

`ruff format --diff`
Show changes, write nothing

RULE SELECTION

`--select <codes>`
Enable only these rules

`--extend-select <codes>`
Add rules to the current set

`--ignore <codes>`
Disable rules

`--statistics`
Count violations per rule

`ruff check --select I --fix`
Sort imports (isort rules)

RULE SELECTION (cont.)

Popular rule prefixes

Prefix	From
`E / W`	pycodestyle
`F`	Pyflakes
`I`	isort
`B`	bugbear
`UP`	pyupgrade
`SIM`	simplify
`N`	pep8-naming
`C4`	comprehensions

SUPPRESSING

`# noqa: <code>`
Ignore a rule on this line

`# ruff: noqa: <code>`
Ignore a rule for the file

`ruff check --add-noqa`
Insert noqa for all hits

EXPLORE

`ruff rule <code>`
Explain one rule

OUTPUT AND FILES

`--output-format <fmt>`
Choose report format

`--extend-exclude <pattern>`
Exclude more paths

`--config <file|key=value>`
Use a file or override a setting

CONFIG

pyproject.toml basics

```
[tool.ruff]
line-length = 100
target-version = "py312"
extend-exclude = ["migrations"]

[tool.ruff.lint]
select = ["E4", "E7", "E9", "F", "I",
"B"]
ignore = ["B008"]
```

Per-file ignores

```
[tool.ruff.lint.per-file-ignores]
"tests/**" = ["S101"]
"__init__.py" = ["F401"]
```