Bandit Python security linter

Python files parsed to AST → *plugins* → **Tests B1xx-B7xx** selected by -t / -s → *filters* → **Issues** severity + confidence → *-f* → **Report** screen, json, html...

CONCEPTS

Every finding has a severity (impact) and a confidence (how sure Bandit is). Triage high/high first.

Bandit exits 1 when it reports issues, so it works as a CI gate; --exit-zero overrides that.

SCANNING

bandit -r *<dir>*
Scan a directory recursively

bandit *<file.py>* **...**
Scan specific files

bandit --version
Show Bandit and Python version

bandit -r *<dir>* **-x** *<paths>*
Exclude comma-separated paths

bandit -r *<dir>* **-v**
Verbose: list files scanned and excluded

bandit -r *<dir>* **-q**
Quiet: only print on errors

bandit -r *<dir>* **--exit-zero**
Always exit 0

FILTERING

bandit -r *<dir>* **-l / -ll / -lll**
Severity low / medium / high and up

bandit -r *<dir>* **-i / -ii / -iii**
Confidence low / medium / high and up

bandit -r *<dir>* **--severity-level** *<level>*
Severity as a word: all, low, medium, high

bandit -r *<dir>* **-t** *<ids>*
Run only these test IDs

bandit -r *<dir>* **-s** *<ids>*
Skip these test IDs

OUTPUT

bandit -r *<dir>* **-f json**
Machine-readable report

bandit -r *<dir>* **-f** *<format>*
csv, html, json, screen, txt, xml, yaml, custom

bandit -r *<dir>* **-o** *<file>*
Write the report to a file

bandit -r *<dir>* **-f custom --msg-template "{relpath}:{line}: {test_id} {msg}"**
One line per issue

CONFIGURATION

bandit -r *<dir>* **-c** *<file>*
Use a config file

bandit -r *<dir>* **--ini** *<path>*
Read CLI arguments from a .bandit file

bandit-config-generator -o *<file>*
Generate a YAML config to edit

pyproject.toml

```
[tool.bandit]
exclude_dirs = ["tests",
".venv"]
skips = ["B101"]
```

SUPPRESSING

 # nosec
Ignore all findings on this line

 # nosec B602
Ignore only the named test(s)

bandit -r *<dir>* **--ignore-nosec**
Report lines marked nosec anyway

bandit -r *<dir>* **-b** *<baseline.json>*
Show only issues not in the baseline

SUPPRESSING (cont.)

Put the nosec comment on the line the issue is reported at; for multi-line calls that is the first line.

COMMON FINDINGS

Tests you will meet most

ID	Flags
B101	assert (stripped under -O)
B105-B107	hardcoded password
B108	hardcoded /tmp path
B113	request without timeout
B301	pickle load
B311	random for security use
B324	weak hash (MD5, SHA1)
B506	yaml.load unsafe
B602	subprocess with shell=True
B608	SQL built from strings

Fix directions

Finding	Use instead
shell=True	argument list, no shell
yaml.load	yaml.safe_load
random	secrets module
MD5/SHA1	SHA-256 or usedforsecurity=False

RECIPES

CI gate on meaningful issues

```
bandit -r src -ll -ii -q
# exit 1 fails the job
```

Adopt on a legacy codebase

```
bandit -r src -f json -o
baseline.json --exit-zero
bandit -r src -b
baseline.json
```

Pre-commit hook

```
# .pre-commit-config.yaml
- repo: https://github.com/
PyCQA/bandit
  rev: <tag>
  hooks:
    - id: bandit
      args: ["-c",
"pyproject.toml"]
additional_dependencies:
["bandit[toml]"]
```

Targeted review

```
bandit -r src -t
B602,B605,B608 -f custom \
  --msg-template "{relpath}:
{line} {test_id}"
```