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Python static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your PYTHON code

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All rules (216) 🔒 Vulnerability (29) 🐛 Bug (55) 🛡 Security Hotspot (31) ☢ Code Smell (101)

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object
🐛 Bug

Variables, classes and functions should be defined before being used
🐛 Bug

Identity operators should not be used with dissimilar types
🐛 Bug

Only strings should be listed in "__all__"
🐛 Bug

"__init__" should not return a value
🐛 Bug

"yield" and "return" should not be used outside functions
🐛 Bug

String formatting should not lead to runtime errors
🐛 Bug

Recursion should not be infinite
🐛 Bug

Silly equality checks should not be made
🐛 Bug

Granting access to S3 buckets to all or authenticated users is security-sensitive
🛡 Security Hotspot

Hard-coded credentials are security-sensitive
🛡 Security Hotspot

Functions returns should not be invariant

The "open" builtin function should be called with a valid mode

Analyze your code

🐛 Bug   ❗ Blocker ❓

The open builtin can open files in different modes, which are provided as a combination of characters. Using an invalid sequence of characters will at best make open fail, or worse, it will have an undefined behavior (ex: it might ignore some characters).

A valid mode:

- should contain one and only one of the following characters: "r" (read), "w" (write), "a" (append), "x" (create).
- should contain zero or one of the following characters: "t" (text), "b" (binary).
- should contain zero or one "+" character (open for updating)
- cannot contain "a", "w", "+", or "x" if "U" (universal newlines) is used. Note that "U" has no effect in python 3, it is deprecated and shouldn't be used anymore.

This rule raises an issue when an invalid "mode" is provided to the open builtin.

Noncompliant Code Example

```
# In python 3 the following fails
# In python 2.7.16 on MacOs, "open" will just ignore th
with open("test.txt", "aw") as f:  # Noncompliant
    pass
```

Compliant Solution

```
with open("test.txt", "a") as f:
    pass
```

See

- Python documentation - the open builtin

Available In:

sonarlint | sonarcloud | sonarqube

⊛ Code Smell

The "exec" statement should not be used

⊛ Code Smell

Backticks should not be used

⊛ Code Smell

Methods and field names should not differ only by capitalization

⊛ Code Smell

JWT should be signed and verified

🔓 Vulnerability