*STATIC CODE ANALYSIS*

Project: mkdocs-with-confluence

Repository: https://github.com/pawelsikora/mkdocs-with-confluence

Language: Python

Tools Used: pylint, flake8, bandit

1.Overview

This report presents the results of static code analysis conducted on the `mkdocs-with-confluence` project using three different tools: `pylint` for code quality and structure, `flake8` for PEP8 compliance, and `bandit` for security vulnerabilities.

2.Tool Summary

|  |  |  |  |
| --- | --- | --- | --- |
| Tool | Purpose | Total Issues | Severity |
| pylint | Code quality | 60+ | Medium |
| flake8 | Style guide (PEP8) | 70+ | Low–Medium |
| bandit | Security analysis | 1 | High |

3.Detailed

- Missing docstrings in module, classes, and many functions.  
- Line too long: Several lines exceed 100 characters (e.g., line 42, 106, etc.)  
- Unused arguments and variables in multiple functions.  
- Complexity issues: Too many local variables, branches, and statements in some functions.  
- Bad practices:  
 - Use of \_\_repr\_\_ directly instead of repr()  
 - Files opened without with statement

Example:  
plugin.py:148:4: R0914: Too many local variables (26/15)  
plugin.py:405:20: Using open without with

### B. flake8 Findings

- Most common issue: E501 – line too long (79 characters limit exceeded)  
- One occurrence of E261 – missing space before inline comment

Example:  
plugin.py:42:80: E501 line too long (135 > 79 characters)  
plugin.py:42:100: E261 at least two spaces before inline comment

### C. bandit Findings

- High Severity Issue:  
 - Usage of hashlib.sha1() at line 405 in plugin.py  
 - This is considered a weak hash algorithm for security purposes  
 - CWE Reference: https://cwe.mitre.org/data/definitions/327.html

Bandit Message:  
Use of weak SHA1 hash for security. Consider usedforsecurity=False  
Location: plugin.py:405

Recommendation:  
Use SHA-256 or a stronger algorithm if the hash is for security purposes.

4.Recommendations

- PEP8 Compliance: Fix all E501 long lines and E261 spacing issues  
- Documentation: Add proper docstrings to all public classes and methods  
- Code Structure:  
 - Break down functions that are too long or complex  
 - Use with statement for file operations  
 - Avoid unused parameters and variables  
- Security:  
 - Replace SHA1 with SHA256 or use usedforsecurity=False if appropriate

5.Optional Contribitions

If these issues are fixed, a pull request can be created to contribute back to the open-source project. This would demonstrate good coding practices and community involvement.

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