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| BNumMet  Version 1  Code analysis |

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| **By: default**  **2023-03-05** |

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# Introduction

This document contains results of the code analysis of BNumMet.

# Configuration

* Quality Profiles
  + Names: Sonar way [Python]; Sonar way [XML];
  + Files: AYZE7i3U2dITZFwgEli2.json; AYZE7jaV2dITZFwgEmPx.json;
* Quality Gate
  + Name: Sonar way
  + File: Sonar way.xml

# Synthesis

## Analysis Status

|  |  |  |  |
| --- | --- | --- | --- |
| Reliability | Security | Security Review | Maintainability |
| C.png | **A.png** | **A.png** | **A.png** |

## Quality gate status

|  |  |
| --- | --- |
| Quality Gate Status | **ERROR.png** |

|  |  |
| --- | --- |
| Metric | Value |
| Reliability Rating on New Code | OK |
| Security Rating on New Code | OK |
| Maintainability Rating on New Code | OK |
| Coverage on New Code | OK |
| Duplicated Lines (%) on New Code | OK |

## Metrics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Coverage | Duplication | Comment  density | Median number of lines of code per file | Adherence to coding standard |
| 97.6 % | **0.0 %** | **44.6 %** | **212.0** | **99.6 %** |

## Tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Total | Success Rate | Skipped | Errors | Failures |
| 90 | **100.0 %** | **0** | **0** | **0** |

## Detailed technical debt

|  |  |  |  |
| --- | --- | --- | --- |
| Reliability | Security | Maintainability | Total |
| 0d 0h 2min | - | 0d 3h 43min | 0d 3h 45min |

## Metrics Range

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Cyclomatic  Complexity | Cognitive  Complexity | Lines of code per file | Comment  density (%) | Coverage | Duplication (%) |
| Min | 0.0 | 0.0 | 0.0 | 22.2 | 95.5 | 0.0 |
| Max | 287.0 | 264.0 | 1869.0 | 74.1 | 100.0 | 0.0 |

## Volume

|  |  |
| --- | --- |
| Language | Number |
| Python | 1869 |
| Total | 1869 |

# Issues

## Charts

## Issues count by severity and type

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type / Severity | INFO | MINOR | MAJOR | CRITICAL | BLOCKER |
| BUG | 0 | 0 | 1 | 0 | 0 |
| VULNERABILITY | 0 | 0 | 0 | 0 | 0 |
| CODE\_SMELL | 0 | 47 | 9 | 4 | 0 |

## Issues List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Description | Type | Severity | Number |
| Exceptions should not be created without being raised | Creating a new Exception without actually raising it has no effect and is probably due to a mistake. Noncompliant Code Example def func(x): if not isinstance(x, int): TypeError("Wrong type for parameter 'x'. func expects an integer") # Noncompliant if x &lt; 0: ValueError # Noncompliant return x + 42 Compliant Solution def func(x): if not isinstance(x, int): raise TypeError("Wrong type for parameter 'x'. func expects an integer") if x &lt; 0: raise ValueError return x + 42 See Python documentation - Raising Exceptions | BUG | MAJOR | 1 |
| String literals should not be duplicated | Duplicated string literals make the process of refactoring error-prone, since you must be sure to update all occurrences. On the other hand, constants can be referenced from many places, but only need to be updated in a single place. Noncompliant Code Example With the default threshold of 3: def run(): prepare("this is a duplicate") # Noncompliant - "this is a duplicate" is duplicated 3 times execute("this is a duplicate") release("this is a duplicate") Compliant Solution ACTION\_1 = "action1" def run(): prepare(ACTION\_1) execute(ACTION\_1) release(ACTION\_1) Exceptions No issue will be raised on: duplicated string in decorators strings with less than 5 characters strings with only letters, numbers and underscores @app.route("/api/users/", methods=['GET', 'POST', 'PUT']) def users(): pass @app.route("/api/projects/", methods=['GET', 'POST', 'PUT']) # Compliant def projects(): pass | CODE\_SMELL | CRITICAL | 1 |
| Cognitive Complexity of functions should not be too high | Cognitive Complexity is a measure of how hard the control flow of a function is to understand. Functions with high Cognitive Complexity will be difficult to maintain. See Cognitive Complexity | CODE\_SMELL | CRITICAL | 3 |
| Sections of code should not be commented out | Programmers should not comment out code as it bloats programs and reduces readability. Unused code should be deleted and can be retrieved from source control history if required. | CODE\_SMELL | MAJOR | 7 |
| Function names should comply with a naming convention | Shared coding conventions allow teams to collaborate efficiently. This rule checks that all function names match a provided regular expression. Noncompliant Code Example With the default provided regular expression: ^[a-z\_][a-z0-9\_]\*$ def MyFunction(a,b): ... Compliant Solution def my\_function(a,b): ... | CODE\_SMELL | MAJOR | 2 |
| Method names should comply with a naming convention | Sharing some naming conventions is a key point to make it possible for a team to efficiently collaborate. This rule allows to check that all method names match a provided regular expression. Noncompliant Code Example With default provided regular expression: ^[a-z\_][a-z0-9\_]\*$ class MyClass: def MyMethod(a,b): ... Compliant Solution class MyClass: def my\_method(a,b): ... | CODE\_SMELL | MINOR | 6 |
| Field names should comply with a naming convention | Sharing some naming conventions is a key point to make it possible for a team to efficiently collaborate. This rule allows to check that field names match a provided regular expression. Noncompliant Code Example With the default regular expression ^[\_a-z][\_a-z0-9]\*$: class MyClass: myField = 1 Compliant Solution class MyClass: my\_field = 1 | CODE\_SMELL | MINOR | 20 |
| Local variable and function parameter names should comply with a naming convention | Shared naming conventions allow teams to collaborate effectively. This rule raises an issue when a local variable or function parameter name does not match the provided regular expression. Exceptions Loop counters are ignored by this rule. for i in range(limit): # Compliant print(i) | CODE\_SMELL | MINOR | 21 |

# Security Hotspots

## Security hotspots count by category and priority

|  |  |  |  |
| --- | --- | --- | --- |
| Category / Priority | LOW | MEDIUM | HIGH |
| LDAP Injection | 0 | 0 | 0 |
| Object Injection | 0 | 0 | 0 |
| Server-Side Request Forgery (SSRF) | 0 | 0 | 0 |
| XML External Entity (XXE) | 0 | 0 | 0 |
| Insecure Configuration | 0 | 0 | 0 |
| XPath Injection | 0 | 0 | 0 |
| Authentication | 0 | 0 | 0 |
| Weak Cryptography | 0 | 0 | 0 |
| Denial of Service (DoS) | 0 | 0 | 0 |
| Log Injection | 0 | 0 | 0 |
| Cross-Site Request Forgery (CSRF) | 0 | 0 | 0 |
| Open Redirect | 0 | 0 | 0 |
| Permission | 0 | 0 | 0 |
| SQL Injection | 0 | 0 | 0 |
| Encryption of Sensitive Data | 0 | 0 | 0 |
| Traceability | 0 | 0 | 0 |
| Buffer Overflow | 0 | 0 | 0 |
| File Manipulation | 0 | 0 | 0 |
| Code Injection (RCE) | 0 | 0 | 0 |
| Cross-Site Scripting (XSS) | 0 | 0 | 0 |
| Command Injection | 0 | 0 | 0 |
| Path Traversal Injection | 0 | 0 | 0 |
| HTTP Response Splitting | 0 | 0 | 0 |
| Others | 0 | 0 | 0 |

## Security hotspots List