Code_Standard

Greta Leege (100559009) and Nathan Hammond(100559120)

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1. Introduction

This section provides an overview of the coding standards document, explaining the purpose and scope of the standards within the project.

2. Naming Conventions

2.1 Class Naming Style

- **Rule**: Class names must follow the PascalCase convention.
- **Positive Example**: class MyClass
- **Negative Example**: class myClass

2.2 Module Naming Style

- **Rule**: Module names can follow any naming convention.
- **Positive Example**: my_module.py
- **Negative Example**: None, as any naming is allowed.

3. Code Layout and Formatting

3.1 Maximum Line Length

- **Rule**: Lines of code can be up to 130 characters long.
- **Positive Example**: var = "This is a long line of code that is less than the 130 characters limit"
- **Negative Example**: var = "This is a really really long line of code which is going to surpass the 130 character limit and should not be allowed because it makes it harder to read"

4. Documentation

4.1 Docstring Minimum Length

- **Rule**: Docstrings are required for all public interfaces, with a minimum length of 1 character.
- **Positive Example**: def my_function(): """A"""
- **Negative Example**: def my_function():

5. Function and Method Standards

5.1 Maximum Number of Arguments

- **Rule**: Functions or methods can have up to 7 arguments.
- **Positive Example**: def my_function(var1, var2, var3, var4, var5, var6, var7)
- **Negative Example**: def my_function(var1, var2, var3, var4, var5, var6, var7, var8)
- **Pylint Rule**: max-args=7

5.2 Maximum Number of Locals

- **Rule**: Functions or methods can have up to 13 local variables.
- **Positive Example**: Correct setup with 13 variables

```
var1= 1
var2= 2
var3= 3
…
Var4 =13
```

- **Negative Example**: Exceeds the limit with 14 variables

```
var1= 1
var2= 2
var3= 3
…
Var4 =14
```

5.3 Maximum Number of Statements

- **Rule**: A function or method can contain up to 45 statements.
- **Positive Example**: Correct setup with 45 statements

```
State1
State2
State3
…
State45
```

- **Negative Example**: Exceeds the limit with 46 statements

State1
State2
State3
…
State46

6. Classes and Modules

6.1 Minimum Number of Public Methods

- **Rule**: Classes must have at least one public method.
- **Positive Example**: class MyClass: def public_method(self): pass
- **Negative Example**: class MyClass:

6.2 Ignore Autogenerated Code

- **Rule**: Files in certain directories, especially those containing autogenerated code, will be ignored.
- **Positive Example**: Autogenerated code in the autogen folder will not trigger Pylint warnings.
- **Negative Example**: Without this rule, autogenerated code may cause unnecessary warnings.

6.3 Maximum Number of Parents

- **Rule**: Classes can inherit from up to 9 parent classes to allow for more interaction between classes.
- **Positive Example**: Correct setup with 9 parent classes
- **Negative Example**: Exceeds the limit with 10 parent classes

6.4 Maximum Module Lines

- **Rule**: Modules can have up to 1100 lines, providing greater flexibility in coding.
- **Positive Example**: A module with exactly 1100 lines
- **Negative Example**: A module that exceeds 1100 lines

7. Error Handling and Logging

7.1 Disallow Global Unused Variables

- **Rule**: Prohibit unused global variables to promote cleaner code.
- **Positive Example**: var = 10 print(var)
- **Negative Example**: var = 10

7.2 Fail Under Threshold

- **Rule**: The Pylint score threshold is set to 9. If the code scores below this, Pylint will exit with an error..
- **Positive Example**: Code with a Pylint score of 9 or higher will pass
- **Negative Example**: Code with a Pylint score of 8 or lower will fail

7.3 Enhanced Spelling Suggestions

- **Rule**: Increase the limit of emitted suggestions for spelling mistakes to 8 to better catch potential errors.
- **Positive Example**: Eight different spelling suggestions offered for a misspelled word
- **Negative Example**: Only four spelling suggestions provided, potentially missing some alternatives

7.4 Store Unknown Words

- **Rule**: Alert developers when typing an unknown word, even if it is added to the private dictionary, ensuring verification of all unknown words.
- **Positive Example**: Every new or unknown word triggers an alert
- **Negative Example**: Unknown words added to the dictionary do not trigger alerts

7.5 Missing Member Name Hint Distance

- **Rule**: Increase the minimum edit distance for a name to be considered a similar match for a missing member name to 2. This change is intended to prevent premature auto-corrections.
- **Positive Example**: Hints for missing member names are suggested only if the typed characters have a similarity of 2 or more characters.
- **Negative Example**: Hints are suggested for any single character mismatch.

7.6 Fail Under Threshold

- **Rule**: The Pylint score threshold is set to 9. If the code scores below this, Pylint will exit with an error.
- **Positive Example**: Code with a Pylint score of 9 or higher will pass.
- **Negative Example**: Code with a Pylint score of 8 or lower will fail.