Coding standard: Python

Python Coding Standard

1. Indentation and Formatting:
    - Use 4 spaces per indentation level.
    - Avoid tabs for indentation.
    - Limit all lines to a maximum of 79 characters for better readability.
    - Use blank lines to separate functions, classes, and blocks of code inside functions.
2. Naming Conventions:
    - Use **‘snake_case’** for variable and function names.
    - Use **‘CamelCase’** for class names.
    - Use **‘UPPER_CASE’** for constants.
    - Prefix private variables and functions with a single underscore (e.g., **‘_private_variable’**).
3. Comments and Documentation:
    - Use comments to explain complex code sections or indicate the code block's purpose.
    - Write clear and concise docstrings for functions, classes, and modules.
    - Follow the Google Python Style Guide for docstring conventions.
4. Imports:
    - Imports should be on separate lines.
    - Imports should usually be grouped in the following order:
        1. Standard library imports.
        2. Related third-party imports.
        3. Local application/library-specific imports.
    - Avoid using wildcard imports (**‘from module import *’**).
5. Exception Handling:
    - Only catch specific exceptions, not general ones.
    - Avoid using bare **‘except’** statements.
    - Provide informative error messages in exceptions.
6. Function and Method Definitions:
    - Keep function/method definitions short and focused (usually no more than 20 lines).
    - Functions should do one thing and do it well.
    - Use descriptive functions and variable names.
7. Whitespace in Expressions and Statements:
    - Avoid extraneous whitespace in the following situations:
        - Immediately inside parentheses, brackets, or braces.
        - Between a trailing comma and a following close parenthesis.
        - Between a trailing colon and a following comma or semicolon.
8. Testing:
    - Write unit tests for functions and classes.
    - Use a testing framework like **‘unittest’** or **‘pytest’**.
    - Ensure that all tests pass before merging code into the main branch.