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Python style guide google

Google's style guide for open-source projects aims to improve code readability by establishing a set of conventions for writing code that is consistent across the project. This includes guidelines on coding practices such as using camelCase for variable names and avoiding global variables. The project also provides an Emacs settings file, google-c-style.el, to help implement these standards. For Google-owned and originated open-source projects, this style guide serves as a reference to ensure consistency in code quality. It is essential to write good commit messages to maintain the health of the project over time. However, contributing changes or proposing new style guides is not accepted. Instead, external pull requests are regularly closed without comment, and issues can be filed using the GitHub tracker. Unifying diverse coding styles within a team is crucial for effective collaboration and maintaining code quality. While individual developers may have their unique approaches to writing code, it's essential to standardize these practices to ensure that all code is easy to understand, extend, and maintain. This style guide is licensed under the CC-BY 3.0 License, encouraging users to share and adapt these documents to suit their needs. Google's Python Code Style Guide: A Structured Approach to Best Practices and Consistency At Google, they have developed an explicit approach to creating consistent Python code for their open-source projects, outlined in their Python Style Guide. The guide consists of over 40 sets of "do's and don'ts" for use within Python, divided into two key sections: Python Language Rules and Python Style Rules. ### Key Components of the Google Style Guide **Python Language Rules** Define how Google approaches using (and not using) different elements of the Python language within their code. This section provides guidance on structuring code to ensure consistency and maintainability. * **Python Style Rules** Focus on formatting, stylistic practices, and best practices for coding. Examples include guidelines for line length, naming conventions, and the use of advanced language features like lambda functions. ### Three Main Reasons for Recommendations The Google Style Guide is structured around three main reasons or classes of recommendations: 1. **Recommendations to Avoid Danger** Focus on cutting down on severe bugs, technical debt, regulatory/security risks. 2. **Recommendations to Enforce Best Practices** Ensure everyone uses the same best practices for maintainability and consistency. 3. **Recommendations to Ensure Consistency** Make sure code is readable, extendable, and structured similarly. ### Rules vs Guidelines The Google Style Guide blends rules and guidelines to ensure flexibility and avoid frustration. Rules are explicit mandates with minimal exceptions, while guidelines are strong suggestions that may have specific situations. A balanced approach allows teams to adapt to unique circumstances while maintaining overall consistency. ### Key Recommendations to Avoid Danger Some notable recommendations in the "Avoiding Danger" category include: * Avoiding global variables due to their risk of changing module behavior during import * Using lambda functions sparingly, especially for longer code blocks 1. Style Guides and Coding Practices [Guideline] Google's style guide emphasizes reducing bug risk in projects by discouraging specific coding styles. The guide recommends using default argument values, avoiding mutable objects, and handling exceptions consistently. 2. Threading and Atomicity Google advises against assuming the atomicity of built-in types due to edge case risks. 3. Modern Python: Runtime Version Transitions Using `from \_\_future\_\_ import` statements helps make runtime version transitions smoother for cross-version compatibility. 4. Modules and License Boilerplate Critical modules must include a license boilerplate to manage security and reputational risk. 5. Code Performance and Resource Management Explicitly close files, sockets, and other resources to avoid resource consumption. 6. Main Functionality and Testing All executable file functionality should live within `main()` and always check if `\_\_name\_\_` equals `\_\_main\_\_`. 7. Linting and Tool Recommendations Google outlines recommendations for using Pylint, emphasizing the importance of consistent tool usage. 8. Import Structure Consistency Google provides explicit requirements for importing modules, packages, and limited situations for alias imports. 9. Package Import Clarification Import each module by full package name to eliminate confusion. 10. Exception Handling Guidelines Define how to handle exceptions, errors, and logging to maintain code consistency and understandability. 1. Conditions for exceptions follow, but with limitations. 2.6 Nested/Local/Inner Classes and Functions - Guidelines Nested functions can be useful, but readability is a concern. Developers should use them judiciously, except in cases where they are discouraged. 2.7 Comprehensions & Generator Expressions - Guidelines Comprehensions are okay for simple, one-line cases; otherwise, avoid using them. 2.8 Default Iterators and Operators - Guidelines Default iterators and operators are recommended due to their simplicity and efficiency. 2.9 Generators - Guidelines Generators provide simpler code; use them instead of traditional loops. 2.10 Lambda Functions - Guidelines Lambdas are acceptable in specific situations, but not for lines longer than one; avoid complex uses. 2.11 Conditional Expressions - Guidelines Conditional expressions should be used for simple, one-line cases; avoid complex situations. 2.13 Properties - Guidelines Properties should not make things too complex and don't implement custom descriptors; use them otherwise. 2.14 True/False Evaluations - Guidelines Implicit false in Python is recommended; consider background of contributors when structuring style guides. 2.16 Lexical Scoping - Guidelines Lexical scoping is okay to use. 2.17 Function & Method Decorators - Guidelines Handle decorators judiciously, with a focus on their usage and application. You're being asked to adapt your writing style according to specific guidelines within a Style Guide, particularly when working with Power Features in Python. This involves considering the varying levels of expertise and comfort among team members and choosing features that align with your team's needs. 1. Structural Formatting [Guideline] The style guide emphasizes import formatting, setting definitions on separate lines for imports to be clearly defined. 2. Single Statement per Line [Guideline] This section focuses on structuring code to have only one statement per line, following the same principle as previous recommendations. 3. Naming Conventions [Guideline] The Google Style Guide outlines guidelines for naming conventions, including avoiding single character names and offensive terms, ensuring consistency, and providing guidelines for naming different aspects of your code. 4. Function Length Limitation [Guideline] The style guide suggests a limit of 40 characters for function length but acknowledges exceptions where this rule may need to be violated. 5. Type Annotations Guidelines This section outlines guidelines for annotating code, including when and how to use type annotations, without confusing it with the recommendation for type annotated code mentioned in another guideline. Given article text here # Maximum Line Length Maximum line length should be 79 characters for code and 72 characters for docstrings and comments. The importance of writing readable code is highlighted through the use of meaningful variable and function names, breaking down complex expressions into simpler parts, and prioritizing high test coverage. This approach ensures that most code is thoroughly tested and maintainable, making it easier to collaborate with others. Python developers can benefit from adhering to the Google Python Style Guide, which offers valuable insights on fundamental concepts, usage methods, common practices, and best practices for writing more readable and maintainable code. Whether you're a beginner or an experienced developer, following this guide will enhance your coding skills and bring your work in line with industry standards. By embracing these principles, you can write better code, improve debugging and testing processes, and share your work seamlessly with other developers. Make it a habit to follow the Google Python Style Guide in your Python projects for enhanced productivity and collaboration.

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