Code Reviews and Quality

Module 1: Introduction to Code Reviews

This course will introduce you to the concept of code reviews and its importance in the software development process. We'll explore how code reviews improve code quality, and delve into the specific practices followed at Cloudoon, including both human and automated reviews.

1.1 What is Code Review?

A code review is a process where code written by one developer is examined by another or by an automated AI tool. This examination serves as a quality assurance check to identify and fix errors, enhance the code's overall quality, and foster knowledge sharing among developers (in the case of human reviews).

1.2 Why is Code Review Important?

- **Improved code quality:** By identifying and addressing potential issues early on, code reviews ensure a more robust and reliable codebase.
- **Knowledge sharing:** Senior developers can guide junior developers with best practices and efficient approaches, promoting continuous learning within the team.
- **Early bug and security vulnerabilities detection:** Code reviews help catch bugs and security weaknesses before they reach production, preventing critical issues.
- **Fostering collaboration:** The review process encourages communication and collaboration among team members, leading to a more unified codebase.

Module 2: Code Review Process

2.1 Overview of Our Code Review Process

Cloudoon employs a twotiered code review process:

Automated Code Review (AI based):

- We leverage Codium AI and DeepSource, which analyze your code upon submission to a branch.
- These tools identify potential issues like bugs, security vulnerabilities, and recommend solutions.
- You can address these suggestions, fix the issues, and resubmit the code for review.
- Additionally, Codiumate AI and DeepSource Autofix plugins can be installed on your IDE (e.g., JetBrains IDEs, VSCode) for realtime assistance during coding. Refer to the links below on how to install these on your IDE https://deepsource.com/ai and https://www.codium.ai/install/

Human Review by Senior Developer:

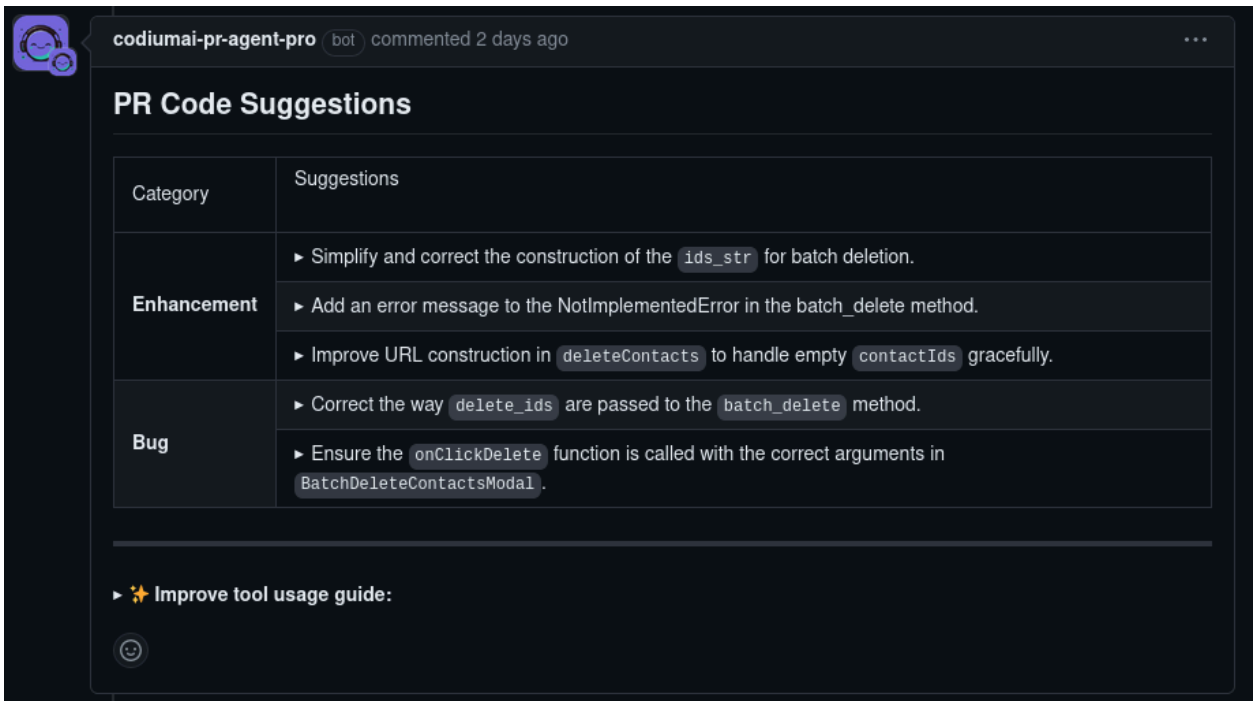
- Following the AI review, a senior developer will thoroughly review your code.

2.2 Tools We Use For Reviews

Codium AI:

- Use this link for the Codium Tutorial Playlist: https://www.youtube.com/playlist?list=PLRTpyDOSgbwHkOuE_1QKPxG_IMpNXPdQ
- **Use Cases:**
    - Code Analysis: Identifies errors, security vulnerabilities, and best practice violations.
    - Code Testing: Automates planning and creation of tests for your code components.
- **Basic Usage:**
    - After submitting your PR, use comments with specific commands to trigger different actions:
        - `/review`: Adjustable feedback on the PR, potential issues, security concerns, etc.
        - `/describe`: Automatic generation of PR description (title, type, summary, code walkthrough, labels).
        - `/improve`: Code suggestions for improvement.

        - Read more comments in the link: https://pragentdocs.codium.ai/tools/
    - Codium is already configured to automatically review pull requests.



DeepSource:

- Use this link for the DeepSource Tutorial Playlist: https://www.youtube.com/playlist?list=PLuq3kXMH5jzhtYaIcUxvehSS7cer_RBIF
- **Use Case:** Static code analysis
- **Basic Usage:**
    - Deepsource is already configured on our repo, once a PR is submitted, a report will be displayed as below.

