

# Bonus Task Proposal: AI Documentation Generator

## Proposal: AI-Powered Documentation Generator

### Title:

AutoDoc: Intelligent Documentation from Code, Commits, and Architecture

### Purpose:

Software documentation is often outdated, incomplete, or missing entirely. AutoDoc solves this by using AI to generate clean, up-to-date technical documentation directly from source code, commit history, and architecture diagrams.

### Workflow:

- 1. Code Parsing:**  
AutoDoc scans source files to extract function signatures, class hierarchies, and inline comments.
- 2. Commit Analysis:**  
It uses natural language processing to summarize commit messages and identify major changes, refactors, and feature additions.
- 3. Diagram Interpretation:**  
AutoDoc reads architecture diagrams (e.g., UML, flowcharts) to infer system structure and component relationships.
- 4. Documentation Generation:**  
The AI compiles all inputs into markdown or HTML documentation, organized by module, feature, and change history.

### Impact:

AutoDoc reduces manual effort, improves onboarding, and ensures that documentation evolves with the codebase. It empowers teams to maintain clarity and consistency across fast-moving projects.

### Future Extensions:

- Integration with GitHub Actions for auto-updates
- Support for multilingual documentation
- Custom tone/style settings for different audiences (e.g., devs vs clients)