Fix the Docs: Smarter, Faster, Maintainable Documentation for the Real World by iFAST

Context
In real-world tech environments, documentation is a critical but broken part of the software development lifecycle.
- Writing it is slow, repetitive, and often skipped.
- Reading it is painful and time-consuming, especially for new joiners.
- Maintaining it is impractical in fast-changing systems — documentation quickly becomes outdated, misleading, or irrelevant.

This leads to onboarding delays, wasted engineering time, and avoidable bugs — all due to poor or outdated docs.

Your Challenge
Design and build a smart documentation assistant/tool that improves how technical documentation is created, consumed, and maintained in evolving software environments.

You don't have to solve everything. Focus on at least two of the following dimensions:

Focus Areas (Pick 2+)
1. Simplify Writing
- Auto-generate starter docs from code, git commits, or comments
- Templates or AI suggestions to make writing faster
- Real-time writing assistants or markdown validators

2. Speed Up Reading
- Summarization tools (e.g., TL;DR for long docs)
- Q&A search: Ask a question, get an answer (like ChatGPT for docs)
- Visualizations (flow diagrams, API call graphs, changelogs)

3. Make Maintenance Easy
- Detect stale documentation (doc drift vs. code)
- Notify users when dependent components change
- Auto-suggest doc updates from diffs or pull requests

Deliverables (for 3-month scope)
- Functional prototype (web app, CLI tool, plugin, or bot)
- Demo of real-world use (sample repo, API, or documentation system)
- GitHub repo with code + brief README
- Presentation/pitch (with a problem-solution-product flow)

Suggested Tech Stack

Area	Tools
AI/NLP	OpenAI API, Hugging Face, LangChain
Parsing	JavaParser, Python AST, Swagger/OpenAPI
Frontend	React, Vue, or even VS Code Extensions
Backend	Flask, Node.js, Spring Boot
DevOps	GitHub Actions, Git Hooks, Webhooks

Bonus Points
- Integration with real GitHub/GitLab projects
- Live AI-assisted documentation flows
- Internal usage demo with your Java Springboot tech stack (if possible)