**Bonus Task Proposal – AI-Powered Documentation Assistant (DocuBot AI)**

**Purpose**  
Manual documentation is time-consuming and often neglected by developers, leading to incomplete or outdated project records. DocuBot AI is an intelligent assistant designed to automate code documentation, making it easier for developers to maintain high-quality, up-to-date documentation with minimal effort.

**Workflow**

1. **Code Parsing**: DocuBot scans the source codebase to identify functions, classes, modules, and their structure.
2. **Intent Detection**: It uses NLP models (like BERT or GPT) to understand the purpose of each code block.
3. **Documentation Generation**: It auto-generates clear docstrings and markdown-based API references.
4. **Integration**: It integrates with IDEs (e.g., VS Code) or CI/CD pipelines to suggest updates when the code changes.
5. **Customization**: Developers can define tone, depth, and formatting (e.g., NumPy, Google style).

**Impact**

* Boosts team productivity by reducing time spent writing docs.
* Ensures consistent, readable documentation.
* Enhances onboarding for new developers.
* Improves software quality by increasing maintainability and transparency.

DocuBot AI empowers developers to focus on building while keeping documentation clean, complete, and reliable.