



# Automated Project Documentation

# Background and problem solving

- C-language projects require detailed documentation to ensure their sustainability and facilitate collaboration.
- The lack of clear comments, README, and well-structured documentation is a common problem in open-source and commercial projects.
- This objective is to create an automated solution to generate consistent and workable documentation without repetitive manual effort.

# Suggested solution



Use of Google Generative AI (Gemini API) to:

- Generate code comments in projects C.
- Automatically create a structured README.md file.



Doxygen to:

- Generate a detailed and interactive documentation website.

# Technologies used



Google Generative AI:

Generation of textual content, such as comments and code descriptions



Doxygen:

Generation of interactive web documentation for code.



Google Cloud Functions:

Serverless application.



Python:

Scripts to automate the generation workflow.

# Key functionalities



## Comment generator:

- Analysis of .c files to extract functions, structures and types.
- Automatic generation of comments using Google AI.



## Automated creation of README.md:

- Generation of a complete and structured README.md file from the source code.



## Web documentation with Doxygen:

- Generation of a website that documents the code and explains each functions in a more playful than comments.

# Demonstration



# Benefits key



- Time savings: No need to manually comment each part of the code.
- Quality consistent: Comments and documentation follow a standard format.
- Better collaboration: Clear documentation facilitates input from external developers.
- Portability: Use of Google Cloud Functions to ensure a flexible and reproducible generation environment, allowing the solution to be deployed without worrying about local infrastructure.

# Solution Architecture



Extracting the source code:

- Browse the project's .c files.



Calls to the Google Generative AI API:

- Analysis and generation of comments.
- Creation of README.md



Doxygen:

- Generation of web documentation from comments and doxygen tags.



# Road Map



Step 1: Continuous integration for automatic documentation generation at each commit.



Step 2: Integration with cloud platforms for easier access (e.g. Google Drive, GitHub Pages).



Step 3: Support for other programming languages (C++, Python...)

# Contact us



Github:



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