

Legacy Code Explainer (COBOT)

Leveraging AI to decipher legacy code

01 THE CHALLENGE

Many financial institutions are encumbered with legacy systems. While these systems are reliable, they present a plethora of risks to business. From the lack of a work force skilled in operating the systems and operational bottlenecks, to the urgent need to modernise and remain compliant with new regulations, financial institutions have a strong incentive to find workarounds.

Chief among these is a solution that translates and understands legacy codebases, enabling modernisation whilst avoiding the need to rely on scarce legacy tech expertise. Existing COBOL-to-Java often generate unreadable 'Jobol' language, therefore necessitating tools that offer code explanation as opposed to direct conversion.

02 THE SOLUTION

Critical Software has developed a solution powered by an AI generative chatbot, designed specifically to analyse and explain legacy codebases. This will enable financial institutions to:

- Analyse legacy programmes and provide detailed explanations of functionality and business logic
- Generate pseudo-code to give dev teams a strong foundation for rewriting code in modern languages (e.g. Python or Java)
- Understand data models and architectures, offering insights into how legacy applications interact with databases

- Create code-flow diagrams to support modernisation processes
- Receive real-time feedback on questions regarding the legacy codebase

03 THE RESULTS

The AI-powered chatbot has so far delivered positive outcomes, including:

- Rapid conversion was achieved for Java developers, with over 400 lines of COBOL routines translated into Java within a one week period.
- Testing was completed with a success rate of 80%, with 300 test cases passing on the first attempt. The high accuracy level is pivotal for reducing the need for extensive debugging or reworking.
- Improved client satisfaction.

Technical benefits of the chatbot include:

- Faster time-to-market for updated platforms
- A deeper understanding of business rules, preserving and optimising critical business logic
- Notable cost savings

04 THE TECHNOLOGY

- Large language models (LLMs)
- Retrieval-augmented generation (RAG)
- Interactive AI interfaces
- Cloud-first architecture
- Private LLM support

ABOUT CRITICAL SOFTWARE

Critical Software provides systems and software services for safety, mission and business-critical applications. We work closely with our clients, helping them to meet the most demanding standards for performance and reliability.

We were founded in 1998, with NASA our very first client. Today, we work across many international industries and have offices across the globe.

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