

Case study

Major Financial Institution Accelerates Onboarding and Cuts Risks with AI Code Intelligence



Overview

A major financial institution managing complex, mission-critical applications struggled with a growing knowledge gap as its software evolved. Frequent code changes were made with little documentation, creating a heavy reliance on senior developers and slowing the onboarding of new team members. This lack of visibility into historical changes also increased maintenance risks. Tech Mahindra partnered with the organization to implement an AI-powered code intelligence solution that automatically analyzes every code commit and generates contextual summaries. The solution improved traceability, accelerated onboarding, and reduced the risk associated with application maintenance and enhancement activities.





Client Background and Challenges

This major financial institution is one of the largest and most trusted names in banking and financial services, serving millions of customers across retail, commercial, and institutional segments. With a technology footprint spanning thousands of applications and decades of system evolution, the organization's software engineering teams manage one of the most complex IT environments in the financial sector. As regulatory requirements intensified and customer expectations for digital services grew, the bank needed to accelerate development while maintaining rigorous quality and compliance standards. However, the rapid pace of code changes was creating a significant knowledge management problem.

Limited Change Documentation

Frequent code modifications were implemented without sufficient documentation of the underlying intent, making it difficult for teams to understand the rationale behind historical changes.

Dependency on Senior Developers

New team members relied heavily on experienced engineers to understand prior code changes and business context, creating knowledge bottlenecks and slowing onboarding.

Poor Traceability of Historical Changes

The lack of structured visibility into previous code updates made it difficult to assess impacts, troubleshoot issues, and evaluate enhancement requests effectively.

Increased Maintenance Risk

Application maintenance and enhancement activities became increasingly complex and risky because historical decisions and their consequences were not readily accessible.

Our Approach and Solution

Tech Mahindra partnered with the financial institution to design and implement an AI-powered code intelligence and documentation framework that would automatically capture, analyze, and summarize code changes throughout the software development lifecycle.

The solution leveraged GitHub Actions to automatically trigger analysis whenever code commits were made to the organization's repositories. Using large language model-based scripts, the platform analyzed code modifications and generated contextual summaries that explained the intent, impact, and significance of each change. This meant that every commit, no matter how small, would be accompanied by a clear, AI-generated explanation of what had changed and why.

An automated documentation pipeline was established to continuously record code changes, associated impacts, and relevant recommendations. This approach ensured that valuable development knowledge was preserved and made available across engineering teams without requiring manual documentation efforts that developers often neglected or rushed.

By creating a living repository of contextual code intelligence, the solution enabled developers to quickly understand the evolution of applications, improve collaboration, and reduce reliance on tribal knowledge. Teams could now access clear, consistent documentation for every code change, making it easier to maintain and enhance applications with confidence.



Business and Community Impact

The implementation significantly improved software engineering efficiency by replacing time-consuming manual documentation practices with automated, AI-generated code summaries.

Developers gained improved visibility into historical code changes, allowing them to understand application evolution more quickly and accurately. This enhanced transparency accelerated onboarding for new team members, reducing the time it took for them to become productive contributors. It also reduced dependency on senior developers for contextual knowledge, freeing up experienced engineers to focus on higher-value work.

The automated analysis and documentation framework also lowered operational risks by providing clear insights into the purpose and impact of every code commit. Teams could make more informed maintenance and enhancement decisions, reducing the likelihood of unintended consequences and production incidents. This was particularly valuable in the highly regulated financial services environment.

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Key Results

- Automated code summaries replaced manual documentation efforts
- Accelerated onboarding through improved visibility of historical code changes
- Reduced dependency on senior team members for contextual knowledge
- Improved traceability and understanding of application evolution
- Lowered maintenance and enhancement risks through impact visibility for every commit

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