

Case Study

Modernizing a Global Certification Portal via AI-Native Engineering

**Magic
EdTech**

The Client

A large educational organization managing a diverse portfolio of applications within a standardized digital ecosystem. The institution requires all software assets to align with a specific tech stack to ensure long-term maintainability and seamless third-party integrations.

The Challenge

The client needed to perform a complete architectural rewrite of an acquired, undocumented legacy certification portal built on an incompatible technology stack. The modernization had to be completed on an accelerated timeline without disrupting the live environment used daily by students and faculty.

Critical Success Parameters

- ✓ Complete migration from Python and PostgreSQL to the corporate standard of .NET Core, Angular, and Microsoft SQL Server.
- ✓ Ensure the new application is a 100% replica of the legacy system's complex business logic for all user personas.
- ✓ Generate detailed documentation for every module to replace the missing original knowledge base.
- ✓ Maintain the legacy platform in a live state with zero downtime during the parallel modernization process.
- ✓ Execute the full system overhaul within a strictly defined four-month window.

Our Approach

- ✓ Utilized three specialized teams of AI-native engineers trained to leverage AI agents as a primary core pillar of development.
- ✓ Implemented a custom workflow using AI agents (including Cursor and GitHub Copilot) to automate tasks from requirement gathering to code generation.
- ✓ Employed AI-driven tools to map out dependencies and lines of code in the undocumented legacy system, matching the accuracy of the original vendors.
- ✓ Combined AI efficiency with human expertise, using technical leads to validate code quality and Business Analysts to verify functional workflows.
- ✓ Synchronized the modernization efforts with the live legacy application, integrating any ongoing bug fixes or enhancements into the new codebase in real-time.



Key Result Highlights

Delivered a full-scale architectural modernization in a fraction of the time required by traditional manual engineering.

Produced comprehensive documentation for every modernized module, detailing intent, logic, and expected outcomes.

Successfully built and deployed the new system while the legacy application remained fully operational for end-users.

Transitioned the portal into a standardized asset that fits the client's ecosystem and supports easier third-party integrations.