



happiest minds

The Mindful IT Company

Born **Digital** . Born **Agile**

CASE STUDY

Accelerating Software Delivery for a Manufacturing Leader Using Qodo – An AI-Driven Code Automation Tool

```
from scipy.stats import norm
import numpy as np

def test_discreteuniform():
    # Test discrete uniform distribution
    n = 1000
    x = np.random.randint(0, 10, n)
    assert P(A, B) == P(B, A) == 100 - 1000
    assert E(X) == (a + b + c) / 3
    assert variance(X) == 5 * (33/4)
    assert median(X) == FiniteSet(-1, 0)

    # Test normal distribution
    n = 1000
    x = np.random.randn(n)
    assert density(x, X > 5) == {5(5): 5.0e-12}
    assert where(x > 2, X > 5).as_boolean() == True
    scipy = import_module('scipy')
    if not scipy:
        skip("Scipy is not installed. Abort tests")
    with ignore_warnings(UserWarning):
        assert norm(sample(x, X > 5)) == 6
```

Client Background

A well-known global company in the manufacturing space, specializing in precision engineering and industrial automation, was looking to improve how it delivered software. As part of their journey to go digital, they wanted to make their software development faster, more reliable, and higher in quality, especially for their embedded systems and control units.



The Problem

Even though they had a skilled development team, a few major issues were slowing things down:

Too Much Manual Testing

Developers spent a lot of time repeating the same unit and integration tests, which consumed valuable time.

Quality Issues

As their software became more complex, sticking to coding standards and avoiding technical debt became harder.

Delayed Product Updates

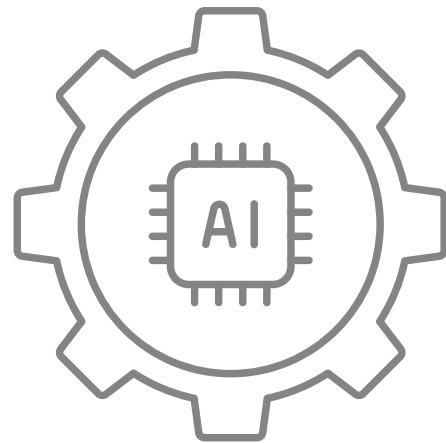
Because testing and code checks took too long, it was difficult to roll out updates as quickly as the business needed.

To deal with the problems they were facing, the company asked Happiest Minds to help them build a tool called the Software Update Manager (SUM). This system makes sending software updates to their machines much easier by cutting out a lot of manual work.



Solution Delivered

Happiest Minds suggested a development strategy using AI-powered tool, Qodo, which automates several steps in the software development lifecycle, like unit test generation, code creation, and version control.



Important Aspects of the Solution

Enhanced Code Generation

Qodo's intelligent code segments were integrated to increase the pace of initial application scaffolding and module conception through core building, allowing the development team to execute advanced builds in a shorter time frame.

Code Quality Optimization

The tool with AI-assisted refactoring ensured compliance with more stringent coding standards and vulnerability reductions.

Automated Unit Testing

Qodo created context-sensitive unit tests derived from application logic and workflows which greatly minimized the workload for developers.

Easy Updates and Rollbacks

Happiest Minds worked alongside the customer's DevOps team to make releasing updates smoother. They even set things up so that if something went wrong, it was easy to undo or redo changes—everything worked right in sync with their system.

Outcome and Impact

With the adoption of Qodo and Happiest Minds' Agile delivery model, the Software Update Manager, which was undergoing manual construction, was functionally complete within 3 months, easily surpassing the estimated timeline.

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```

Tangible Results

Impact Area	Improvement Achieved
Code Quality	Boosted by 15% of total efforts through AI-powered refactoring
Developer Productivity	Increased via automated test generation
Time-to-Market	2x faster release cycles
Testing Time	Achieved through automated test generation
Improvement Indicated	~2x increase in acceleration of release cycles
Detection Reduction	Improved detection reduction

Key Learnings

AI can serve as a productivity multiplier

The demonstration of Qodo proved that task automation AI tools enable human-augmented learning intelligence and allow console designers to concentrate on the complex work of formulating algorithms.

Accelerated Dev Velocity

The integration of AI tools within an organization can automate and improve the quality of new feature rollouts in record time.

Adoption Readiness

The Qodo AI tool requires an organization to already have a baseline of cleanliness in its development and supporting services to maximize its features.

Conclusion

This story shows how using AI in software development can really make a difference. With the right mix of industry know-how, flexible ways of working, and helpful tools, the client was able to get things done faster, write better code, and work more efficiently.

Tools like Qodo help teams get the most out of their skills, making their work more reliable and giving them more room to try new ideas.

About Happiest Minds

Happiest Minds Technologies Limited (NSE: HAPPSTMNDS), a Mindful IT Company, enables digital transformation for enterprises and technology providers by delivering seamless customer experiences, business efficiency and actionable insights. We do this by leveraging a spectrum of disruptive technologies such as: artificial intelligence, blockchain, cloud, digital process automation, internet of things, robotics/drones, security, virtual/ augmented reality, etc. Positioned as 'Born Digital. Born Agile', our capabilities span Product & Digital Engineering Services (PDES), Generative AI Business Services (GBS) and Infrastructure Management & Security Services (IMSS). We deliver these services across industry groups: Banking, Financial Services & Insurance (BFSI), EdTech, Healthcare & Life Sciences, Hi-Tech and Media & Entertainment, Industrial, Manufacturing, Energy & Utilities, and Retail, CPG & Logistics. The company has been recognized for its excellence in Corporate Governance practices by Golden Peacock and ICSI. A Great Place to Work Certified™ company, Happiest Minds is headquartered in Bengaluru, India with operations in the U.S., UK, Canada, Australia, and the Middle East.

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