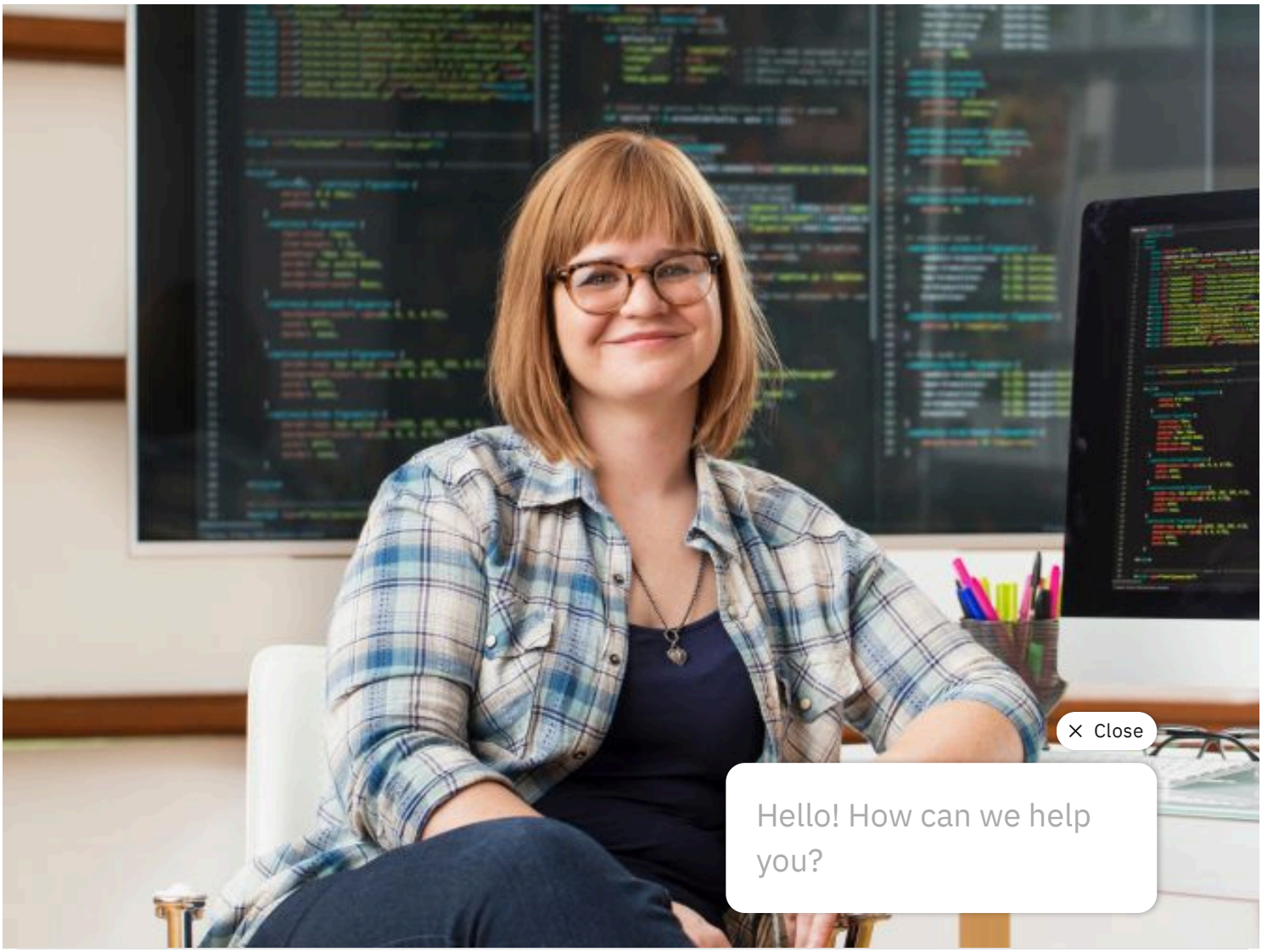
Accelerating software development with ger

IBM developers gain significant efficienc using IBM watsonx Code Assistant



How gen AI is shaping the future of software development

Artificial intelligence (AI) is changing the world of software development. According to Gartner® Magic Quadrant™ for AI Code Assistants (link resides outside of ibm.com), by 2028, 90% of enterprise software engineers will use AI code assistants, up from less than 14% in early 2024.* By using these solutions, developers can boost efficiency and overcome common challenges, such as managing complex legacy codebases, incorporating new programming languages and onboarding developers.

In 2024, as part of the annual IBM watsonx™ Challenge, IBM invited its own employees to demonstrate how they could overcome these challenges using IBM watsonx Code Assistant™.

Thousands of IBM employees, spanning hundreds of project teams, experimented with the many watsonx Code Assistant capabilities, including code explanation, code documentation, code generation, and test case generation. The time savings that the teams achieved not only unlocked new possibilities in their work, but they also represented potential benefits for development teams everywhere.

** Gartner, Magic Quadrant for AI Code Assistants, August 19 2024. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. Magic Quadrant is a registered trademark of Gartner, Inc. and/or its affiliates and is used herein with permission. All rights reserved.*

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90%

59%

time savings on code explanation for one team

average time savings on code documentation

> “It’s a coding accelerant. It is designed to make everything faster. My main advice would be: just try it.”

Asher Scott
Cloud Pak Engineering
IBM Software

A winning team’s example: amplifying developer skills with AI

One of the watsonx Challenge winning teams applied watsonx Code Assistant to an urgent work dilemma and achieved significant efficiency gains. This small team, a mix of veteran and recently hired product developers, inherited more than 50 undocumented code repositories containing about 750 JavaScript files. The team faced the prospect of weeks of manual analysis to understand and properly document the code base.

For the challenge, the team fed 9 files containing more than 1000 lines of code into the gen AI assistant and prompted the solution to produce one-sentence summaries of each file.

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One of the team’s newer developers, Asher Scott, was alrea
Assistant to explain small pieces of code successfully, but v
perform with larger files. “We had no grand expectations, but we were pleasantly surprised by how good it was,” says Scott, adding that the solution was even effective at

explaining advanced syntax written using shorthand coding techniques. “It helped me take my skills to the next level.”

When the team reviewed the summaries to check for accuracy, “We found it really accurate, and particularly accurate for documenting APIs,” says Scott.

Scott’s veteran teammate Greg Gasper also experimented with the code generation capability of watsonx Code Assistant. Gasper’s primary role is not programming, but he was able to enter a natural language prompt into the solution’s integrated AI chat and generate a script to identify files that needed documentation. “I turned it around in minutes,” says Gasper, “and that code exposed the 750 JavaScript files that we needed to document.”

Based on the analysis of similar files, the team projects that the 9 files used in the challenge would take at least 3 minutes each, on average, to manually review and summarize. By using watsonx Code Assistant, they summarized each file in approximately 12 seconds*. That’s a time savings of more than 90%.

As the team applies watsonx Code Assistant to the rest of their code base, Scott explains that “we’re talking about work that would take weeks and getting it done in minutes.”

**Internal testing with optimal bandwidth and response time for watsonx Code Assistant.*

Scaling gen AI productivity to hundreds of development teams

The success wasn’t limited to one team. Many other teams
challenge reported promising results using watsonx Code A

– 107 teams reported reducing time spent on code explanation by an average of 56%

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– 153 teams reported reducing code documentation time by an average of 59%**

– 112 teams reported reducing code generation time by an average of 38%**

– 34 teams reported reducing test case generation time by an average of 38%**

The time saved, of course, is time that the teams can shift to strategic work, including the improvement of overall code quality and security, and planning new innovations.

“It’s a coding accelerant. It is designed to make everything faster,” says Scott. “My main advice would be: just try it.”

***The IBM watsonx Challenge is an IBM-internal, corporate sponsored event. Listed results are based on self-reported data from participating teams.*

About the IBM Software Team

The IBM Software Team is a multidisciplinary team of experts. They are responsible for conceptualizing, designing, developing, testing, delivering and maintaining a diverse portfolio of software solutions. Their portfolio includes enterprise software, cloud computing, artificial intelligence, blockchain and other emerging technologies. The IBM Software Team addresses the complex business needs of various industries and clients, such as financial services, healthcare, retail and government, and drives business growth, innovation, and transformation through software-driven sol

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Solution components

IBM watsonx™ Code Assistant™

IBM watsonx

Accelerate Your Software Development with IBM watsonx Code Assistant

Leverage enterprise-grade AI code generation to boost developer productivity

Learn more about IBM watsonx Code Assistant →

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