



# Amazon Q Developer

## A new generative AI assistant

**PREVIEW**



ACCORDING TO GARTNER, INC.®

of enterprises will have used generative AI APIs or deployed generative AI-enabled apps by 2026

Gartner Press Release, [Gartner says more than 80% of Enterprises Will Have Used Generative AI APIs or Deployed Generative AI-Enabled Applications by 2026](#), October 11, 2023. 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. All rights reserved

# Generative AI Stack

## APPLICATIONS THAT LEVERAGE LLMs AND OTHER FMs



Amazon Q  
Business



Amazon Q  
Developer



Amazon Q in  
QuickSight



Amazon Q in  
Connect

## TOOLS TO BUILD WITH LLMs AND OTHER FMs



Amazon Bedrock

Guardrails | Agents | Customization Capabilities

## INFRASTRUCTURE FOR FM TRAINING AND INFERENCE



GPUs



Trainium



Inferentia



SageMaker



UltraClusters



EFA



EC2 Capacity Blocks



Nitro



Neuron

# Amazon Q, a generative AI powered assistant from AWS

AMAZON Q DEVELOPER



AMAZON Q BUSINESS

Amazon Q  
In Connect

Embedded

Amazon Q  
In QuickSight

Amazon Q in  
AWS Supply Chain

In-built privacy and security

Benefits

Customizable to your business

# <1 hour coding time

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The median developer spends <1 hour/day writing code

Source: Software.com

73%

of time is spent  
on running and  
maintaining applications

27%

of time is spent  
on innovation and  
transformation

# Where are developers spending time in the SDLC?

## Plan

- Find accurate and specific technical guidance from relevant documentation, code examples, resources, etc.
- Design changes based on business and technical requirements

## Create

- Generate code
- Manage infrastructure

## Test & secure

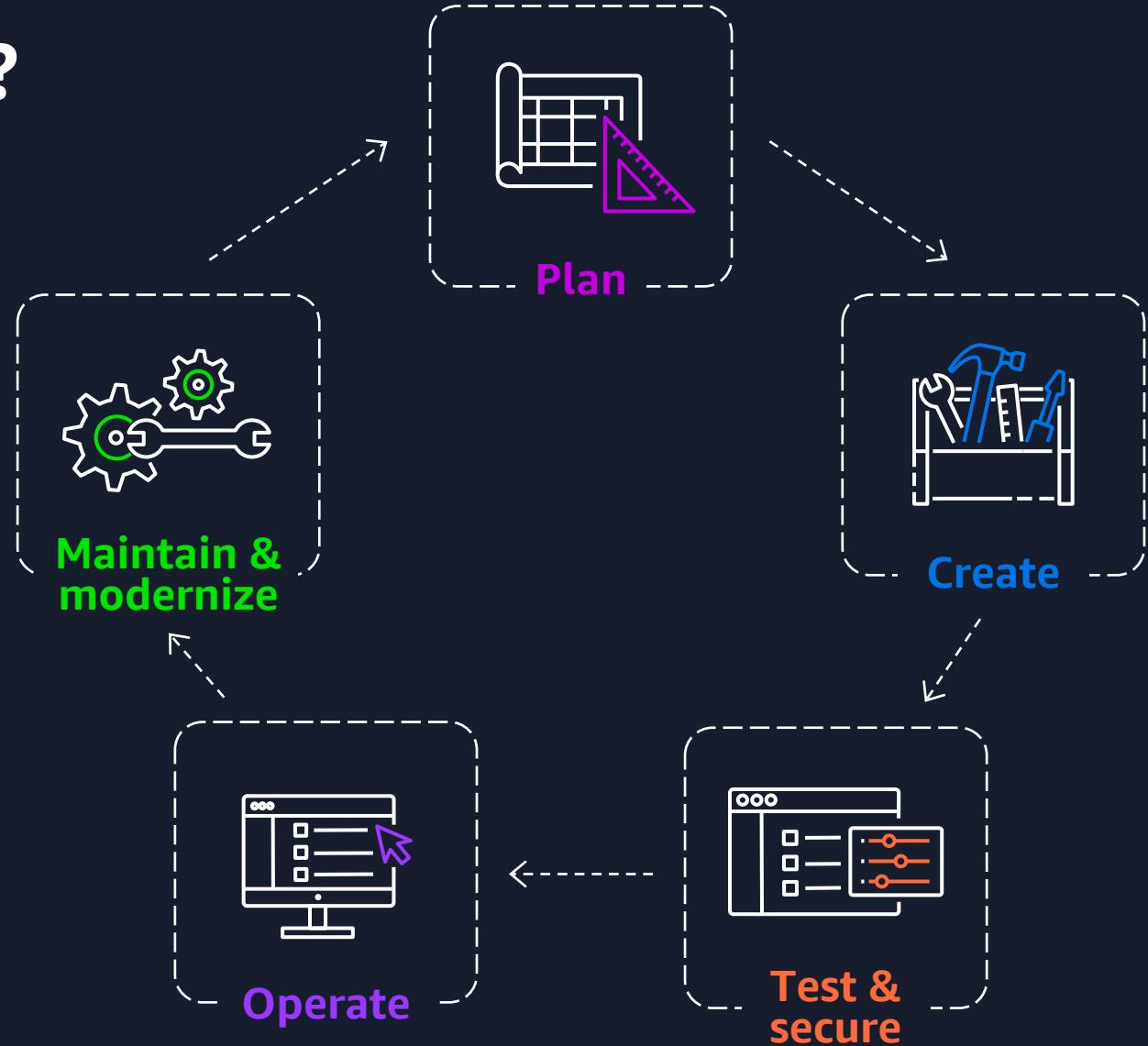
- Apply proper test cases for code changes
- Scan for security vulnerabilities in code

## Operate

- Identify & mitigate code issues
- Monitor performance & efficiency

## Maintain & modernize

- Modernize & update old code languages and dependencies



# Amazon Q Developer



Reimagines the experience across the entire software delivery lifecycle

Helps developers and IT professionals build and manage secure, scalable, and highly available applications

Helps you write, debug, test, optimize, and upgrade your code faster

Converses with you to explore new AWS capabilities, learn unfamiliar technologies, and architect solutions

**Amazon Q is built with security and privacy in mind from the start, making it easier for organizations to use generative AI safely.**

# Amazon Q supports developers across the SDLC

## Plan

- Amazon Q in Console (best practices, WAF, EC2 instance optimization, etc.)
- Business-specific application

## Create

- In-line coding companion in IDE and CLI
- Feature development
- Chat in IDE

## Test & secure

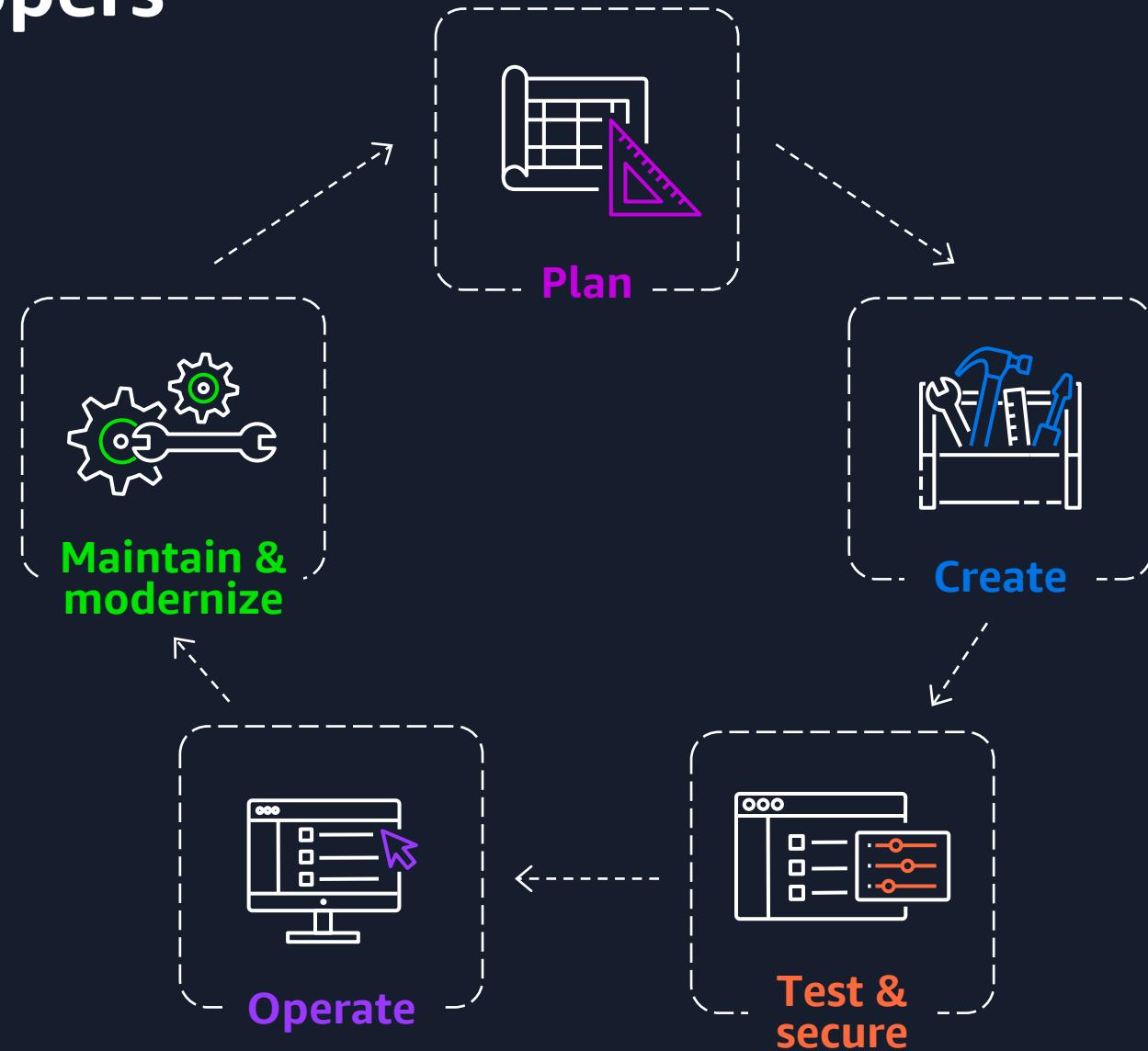
- Unit test generation
- Security scanning & remediation

## Operate

- Troubleshoot errors (S3, Lambda, EC2, EKS)
- VPC Reachability Analyzer

## Maintain & modernize

- Modernize code with Q Code Transformation



# Amazon Q is available where you do your work



AWS Consoles



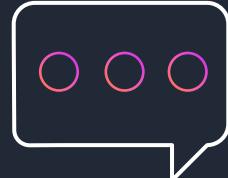
IDEs



AWS Documentation



AWS Console  
Mobile App



Slack and Teams  
(via AWS Chatbot)



Amazon  
CodeCatalyst

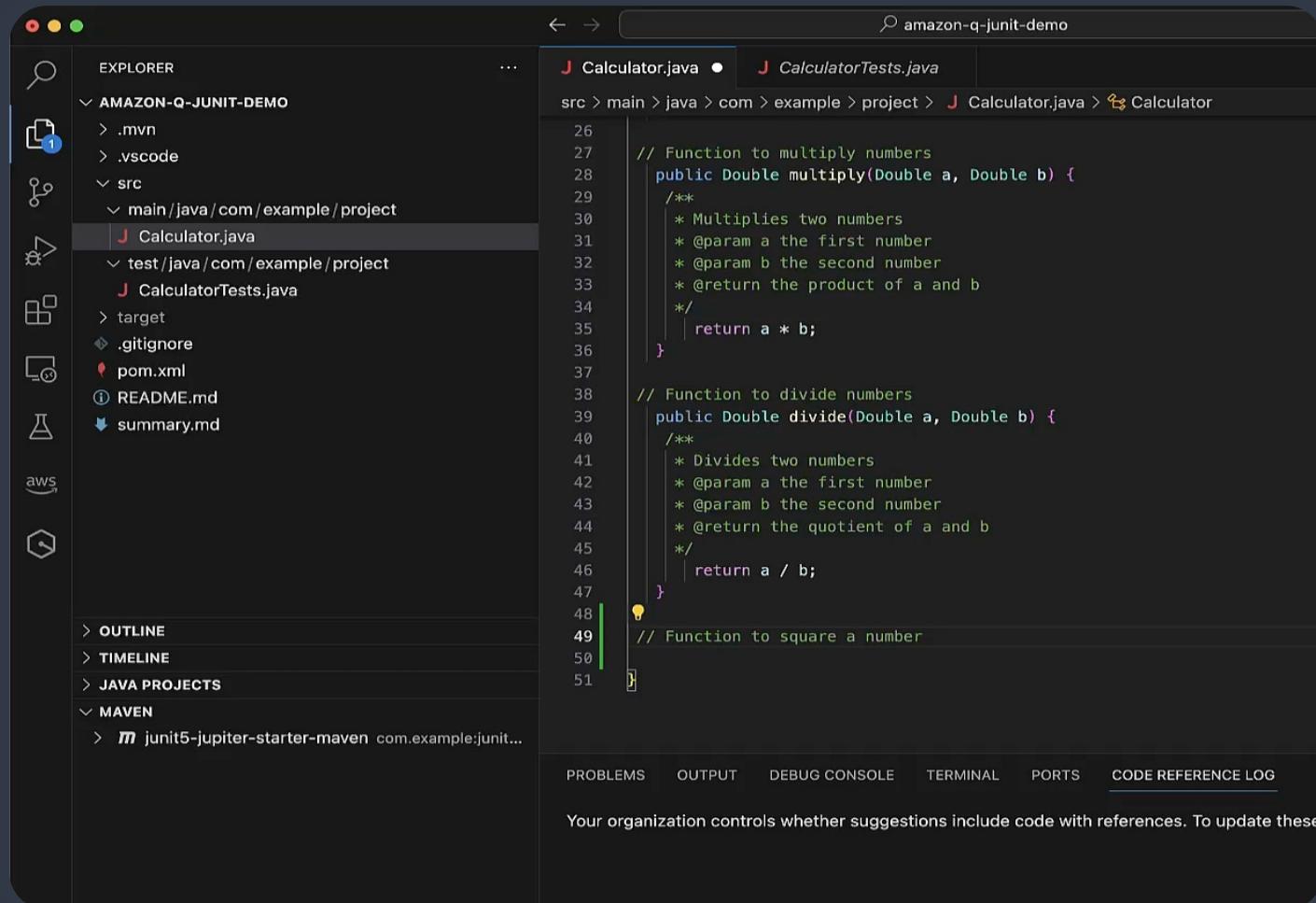
# Explore and plan

The screenshot shows the AWS Console Home page. At the top, there's a navigation bar with the AWS logo, 'Services' dropdown, a search bar, and a demo mode switch. Below the navigation is a 'Recently visited' section with links to IAM, Lambda, and DynamoDB. To the right is the 'Welcome to AWS' section, which includes links to 'Getting started with AWS' (with a rocket icon), 'What's new with AWS?' (with a lightbulb icon), 'Training and certification' (with a diploma icon), and 'Build a solution' (with a gear icon). The 'Build a solution' section lists tasks like 'Launch a virtual machine', 'Start migrating to AWS', 'Register a domain', 'Host a static web app', and 'Start a development project'. At the bottom of the page are links for 'CloudShell', 'Feedback', and copyright information.

Ask questions and get guidance from 17 years of AWS knowledge, best practices, well-architected advice

Create a business-expert application using your data, systems, etc.

# Create



The screenshot shows the AWS Toolkit for VS Code interface. The Explorer sidebar on the left lists project files including .mvn, .vscode, src, target, .gitignore, pom.xml, README.md, and summary.md. The main editor area displays two files: Calculator.java and CalculatorTests.java. The code in Calculator.java includes three methods: multiply, divide, and square. The multiply method multiplies two numbers, divide divides them, and square squares a number. Each method has a detailed Javadoc-style comment describing its purpose, parameters, and return value. The bottom of the editor shows tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, PORTS, and CODE REFERENCE LOG, with CODE REFERENCE LOG being the active tab. A status bar at the bottom indicates: "Your organization controls whether suggestions include code with references. To update these".

Code generation

Explain code

Help understand  
your codebase

Customizable  
to your code

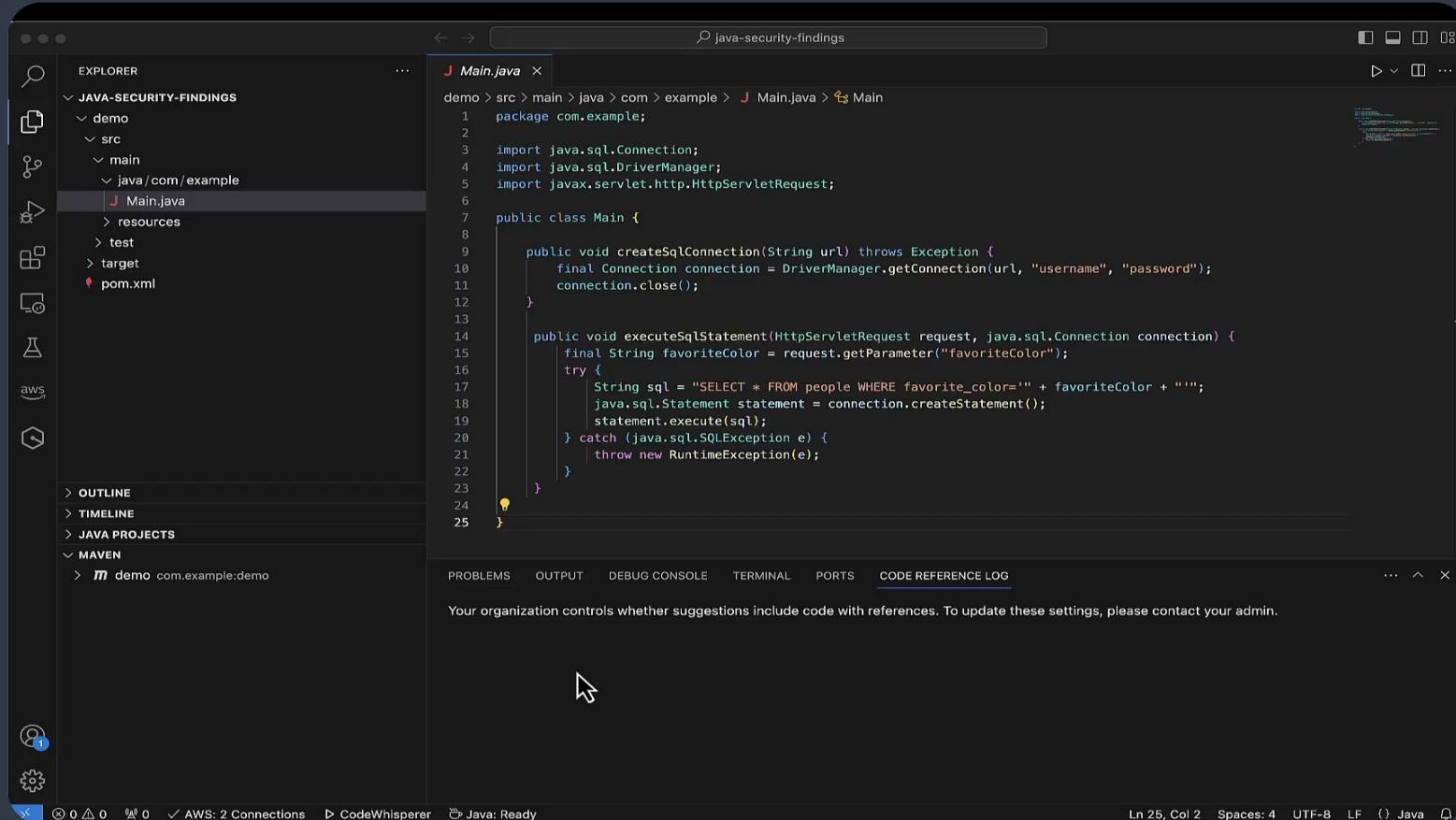
# Advanced capability: Feature development

The screenshot shows a dark-themed IDE interface with a central code editor window titled "app.py (Working Tree) X". The code is a Python script for a voting application, defining routes for "outback", "bucadibepo", "ihop", and "chipotle" with their respective vote updating logic. Below the code editor is a message from "Amazon Q (PREVIEW) - Chat" stating: "Hi, I'm Amazon Q. I can answer your software development questions. Ask me to explain, debug, or optimize your code. You can enter / to see a list of quick actions." At the bottom of the message box are buttons for "Try Examples!", "Explain selected code", and "How can Amazon Q help me?". A red callout box highlights the message from Amazon Q. The status bar at the bottom of the IDE shows "master" branch, file statistics (3038/4000), and various tool icons.

```
52     return str(votes)
53
54 @app.route('/')
55 def home():
56     return <h1>Welcome to the Voting App</h1><p><b>To vote, you can call the following
57
58 @app.route('/api/outback')
59 def outback():
60     string_votes = readvote("outback")
61     votes = int(string_votes)
62     votes += 1
63     string_new_votes = updatevote("outback", votes)
64     return string_new_votes
65
66 @app.route('/api/bucadibepo')
67 def bucadibepo():
68     string_votes = readvote("bucadibepo")
69     votes = int(string_votes)
70     votes += 1
71     string_new_votes = updatevote("bucadibepo", votes)
72     return string_new_votes
73
74 @app.route('/api/ihop')
75 def ihop():
76     string_votes = readvote("ihop")
77     votes = int(string_votes)
78     votes += 1
79     string_new_votes = updatevote("ihop", votes)
80     return string_new_votes
81
82 @app.route('/api/chipotle')
83 def chipotle():
84     string_votes = readvote("chipotle")
85     votes = int(string_votes)
86     votes += 1
87     string_new_votes = updatevote("chipotle", votes)
88     return string_new_votes
89
90 @app.route('/api/getvotes')
91 def getvotes():
92     string_outback = readvote("outback")
93     string_ihop = readvote("ihop")
94     string_bucadibepo = readvote("bucadibepo")
95     string_chipotle = readvote("chipotle")
```

Amazon Q feature development can help you write and implement entire application features in minutes from a simple natural language prompt, with interactive step-by-step instructions, code, tests, and best practices, right from your IDE

# Test and secure



The screenshot shows the AWS Toolkit for IntelliJ IDEA interface. The left sidebar displays the project structure under 'JAVA-SECURITY-FINDINGS' with a file named 'Main.java' selected. The main editor window shows Java code for a 'Main' class. A red box highlights the line 'final Connection connection = DriverManager.getConnection(url, "username", "password");'. Below the editor, the status bar indicates 'AWS: 2 Connections' and 'Java: Ready'. The bottom right corner of the status bar shows 'Ln 25, Col 2 Spaces: 4 UTF-8 LF () Java'.

```
demo > src > main > java > com > example > Main.java > Main
1 package com.example;
2
3 import java.sql.Connection;
4 import java.sql.DriverManager;
5 import javax.servlet.http.HttpServletRequest;
6
7 public class Main {
8
9     public void createSqlConnection(String url) throws Exception {
10         final Connection connection = DriverManager.getConnection(url, "username", "password");
11         connection.close();
12     }
13
14     public void executeSqlStatement(HttpServletRequest request, java.sql.Connection connection) {
15         final String favoriteColor = request.getParameter("favoriteColor");
16         try {
17             String sql = "SELECT * FROM people WHERE favorite_color=" + favoriteColor + "";
18             java.sql.Statement statement = connection.createStatement();
19             statement.execute(sql);
20         } catch (java.sql.SQLException e) {
21             throw new RuntimeException(e);
22         }
23     }
24 }
25 }
```

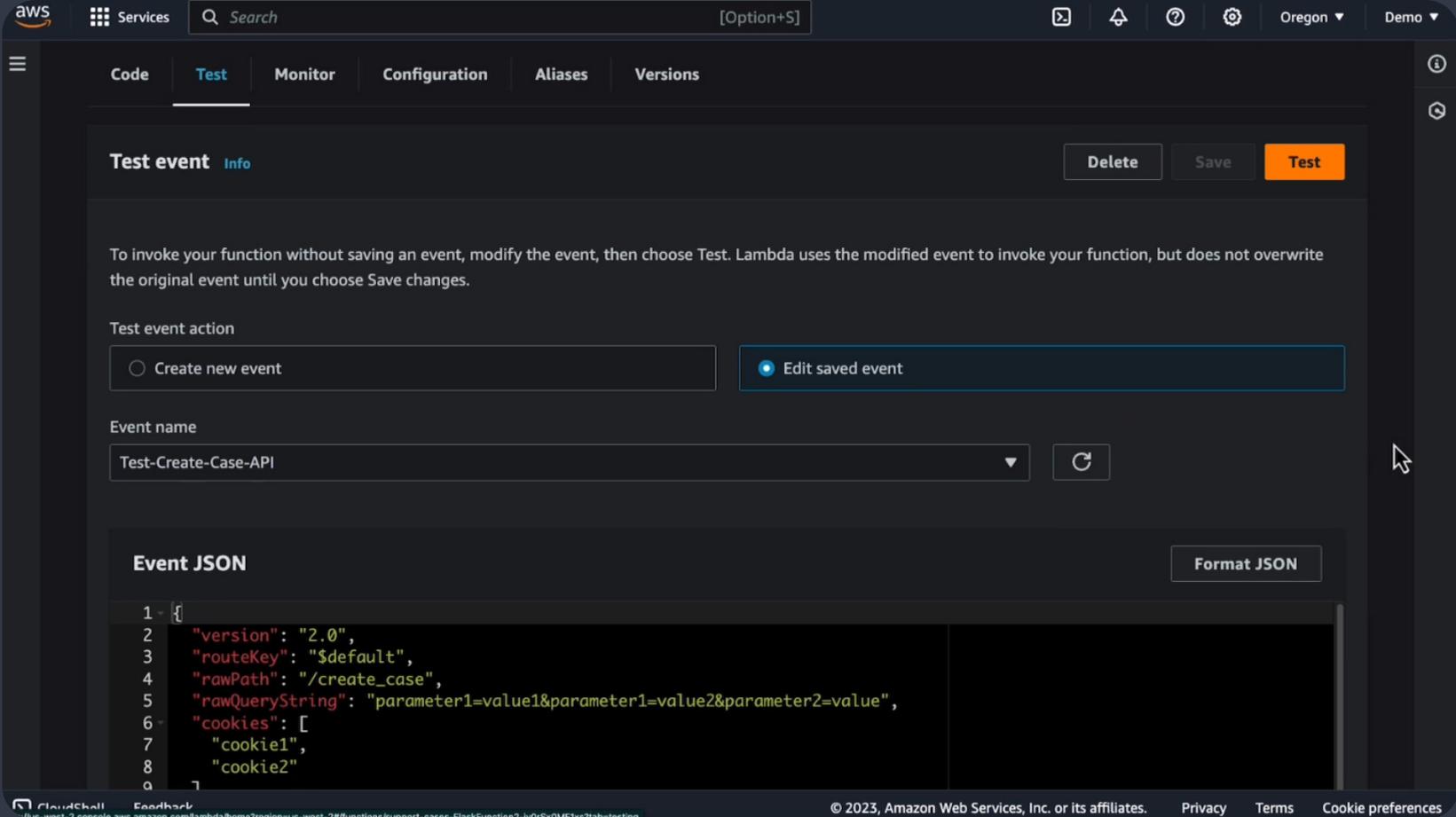
Generate unit tests

Scan entire project  
for security  
vulnerabilities

Generate  
remediations to  
improve security  
and code quality



# Operate

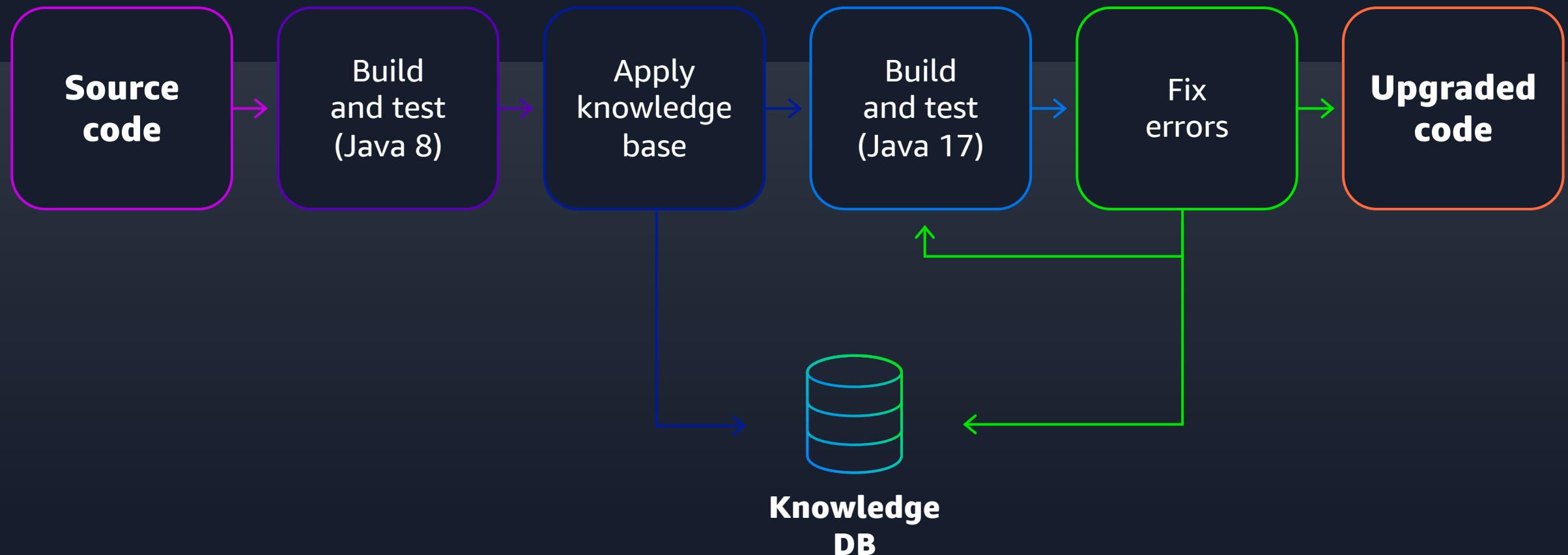


Diagnose and troubleshoot errors in the AWS console

Analyze network connectivity and VPC Reachability

# Maintain and modernize: Amazon Q code transformation

MODERNIZE LANGUAGE VERSIONS IN A FRACTION OF THE TIME



# Amazon Q Code Transformation

Automates the end-to-end process of upgrading and transforming code

The screenshot shows the Amazon Q Code Transformation interface integrated into a code editor. The main window displays a comparison between two versions of a pom.xml file. The left pane shows the original code with several dependency blocks highlighted in red, indicating they are being analyzed or transformed. The right pane shows the transformed code, where the highlighted dependencies have been updated. A sidebar on the left provides status information, including a message about analyzing and transforming compatible application code. A progress bar at the bottom indicates the transformation process is completed.



Amazon Q Code  
Transformation

**1,000**

Java applications

**2**

Days

**10**

Minutes each,  
on average

# Summary of core use cases

## Retire tech debt at scale

Modernize projects, upgrade language version and dependencies with Amazon Q Code Transformation capabilities

## Drive developer productivity

In-line coding recommendations, summarize and document code, security scanning, diagnose and troubleshoot bugs, write unit tests

## Improve Security and Code Quality

With code scanning and automated code remediation, you can ship more secure code with less effort

# All-in-one Amazon Q Builder Plan

NO CHARGE FOR MANY  
CAPABILITIES DURING PREVIEW

## Amazon Q Builder

\$25/mo. per-user

The Amazon Q Builder plan gives your all your IT employees the expert assistance of the Amazon Q Business plan plus Amazon Q's expert assistance building, operating, and transforming applications on AWS

## Includes:

**Amazon Q Business** (can help your employees solve problems, generate content, find insights in data, and take actions based on your company's data)

**Amazon Q Builder** capabilities such as:

- Provides crisp guidance on AWS capabilities, services, and solutions
- Assists with debugging, testing, and optimizing your code
- Helps you optimize and troubleshoot applications
- Helps developers get up to speed on unfamiliar code
- Accelerates feature development and upgrades your code
- And many more! See full list [here](#)



# What customers are saying about Amazon Q Developer



**BT Group**

BT Group, one of the world's leading communications services companies, is using Amazon Q Developer's coding assistant **to improve developer productivity at BT**. Their developers are receiving an **average of 15-20 code suggestions per day, with an acceptance rate of 37 percent**, which is higher than most other published reports of similar statistics. In its first four months, **BT says Amazon Q Developer has generated over 100,000 lines of code and automated approximately 12 percent of repetitive work for an initial group of volunteers**.

Source - <https://www.telecomstechnews.com/news/2024/feb/20/bt-developer-productivity-amazon-generative-ai-coding-assistant/>

# What customers are saying about Amazon Q Developer



“ With Amazon Q Developer we successfully mapped out relevant use cases and accelerated the roadmap for adoption. In some of our projects, we are already seeing developer productivity increase between 20%-40% for Cloud Native Application Development, and approximately 20% increase in delivery velocity. Amazon Q Developer has helped us increase productivity among the development teams, improve overall code quality, and incorporate security early in the project lifecycle ”

**Michael Liebow**

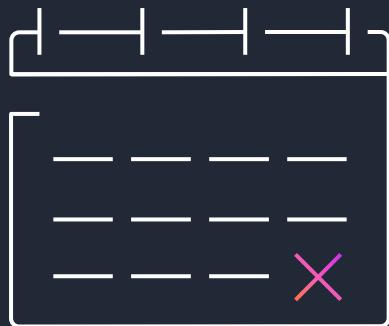
Head of Eviden cloud business at Atos Group

You can find the list of publicly available Amazon Q quotes here -  
<https://aws.amazon.com/q/customers/>

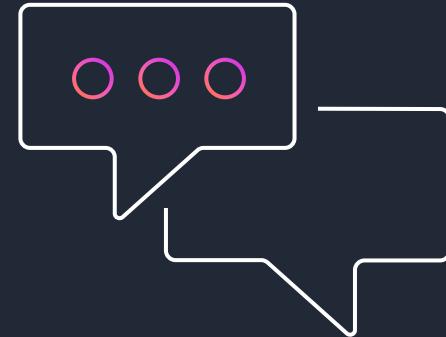
# Get started with Amazon Q



Try Amazon Q  
today



Plan your  
POC



Open a SpecReq to  
engage a specialist

# Thank you!