



Amazon Q Developer

The most capable generative AI-powered
assistant for software development

Sadia Ahmed (she/her)

March 4th, 2025

Today's agenda

Generative AI and AWS

Introduction to Amazon Q Developer

Key features

Operating on AWS

Getting started



Generative AI stack



APPLICATIONS TO BOOST PRODUCTIVITY



Amazon Q Business
INSIGHTS AND AUTOMATION



Amazon Q Developer
SOFTWARE DEVELOPMENT LIFE CYCLE

MODELS AND TOOLS TO BUILD GENERATIVE AI APPS

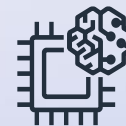


Amazon Bedrock
AMAZON MODELS | PARTNER MODELS

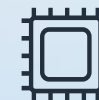
INFRASTRUCTURE TO BUILD AND TRAIN AI MODELS



Amazon SageMaker
MANAGED INFRASTRUCTURE



AWS Trainium
AWS Inferentia



GPUs

HIGH PERFORMANCE COMPUTE

< one hour coding time

The median developer spends less than one hour a day writing code¹

Developer time spent
on running and
maintaining applications

73%

Developer time
on innovation and
transformation

27%



Amazon Q Developer



Helps developers and IT professionals build faster across the entire software development lifecycle (SDLC)

Most accurate coding recommendations

Agents can autonomously help you implement features, refactor code, perform software upgrades and more

Amazon Q is an expert on AWS and optimizing AWS environment

Best-in-class security vulnerability scanning and remediation

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



Build faster across the SDLC



Explore and plan

- Onboard to new projects faster
- Plan new features
- Understand how to use AWS APIs
- Ask questions about your internal code bases



Create

- Inline coding companion in IDE and CLI
- Software development
- Conversational coding



Test and Secure

- Improve test coverage with unit test generation
- Scan and remediate security vulnerabilities



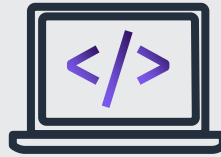
Review and Deploy

- Automate code reviews
- Assess deployment risk
- Generate documentation

Available where you work



AWS consoles



IDEs



AWS documentation



**AWS Console
Mobile Application**



**Slack and Teams
(through AWS Chatbot)**



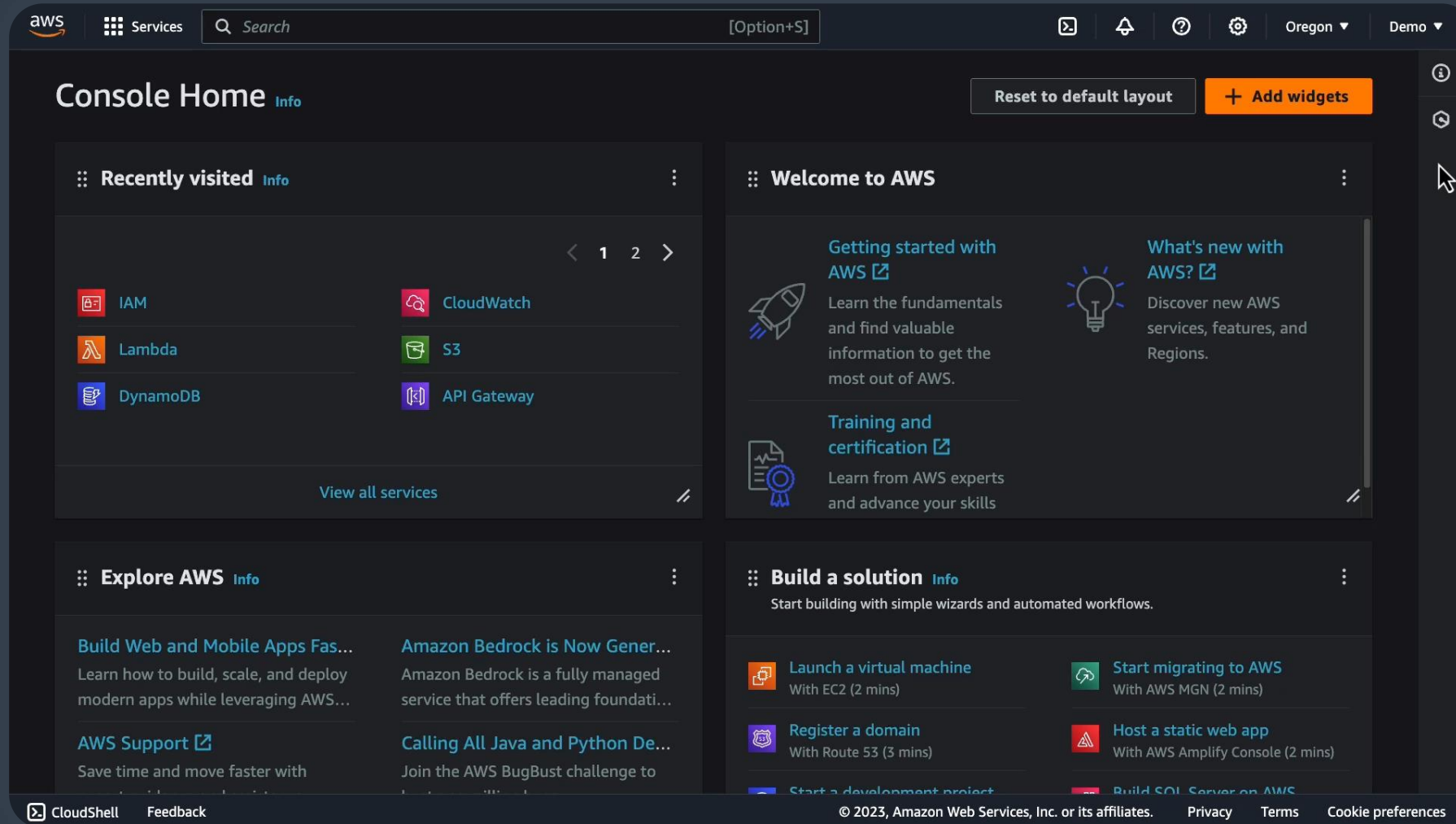
**Gitlab Duo with
Amazon Q**

Key features of Amazon Q Developer



Explore and plan

DEMO



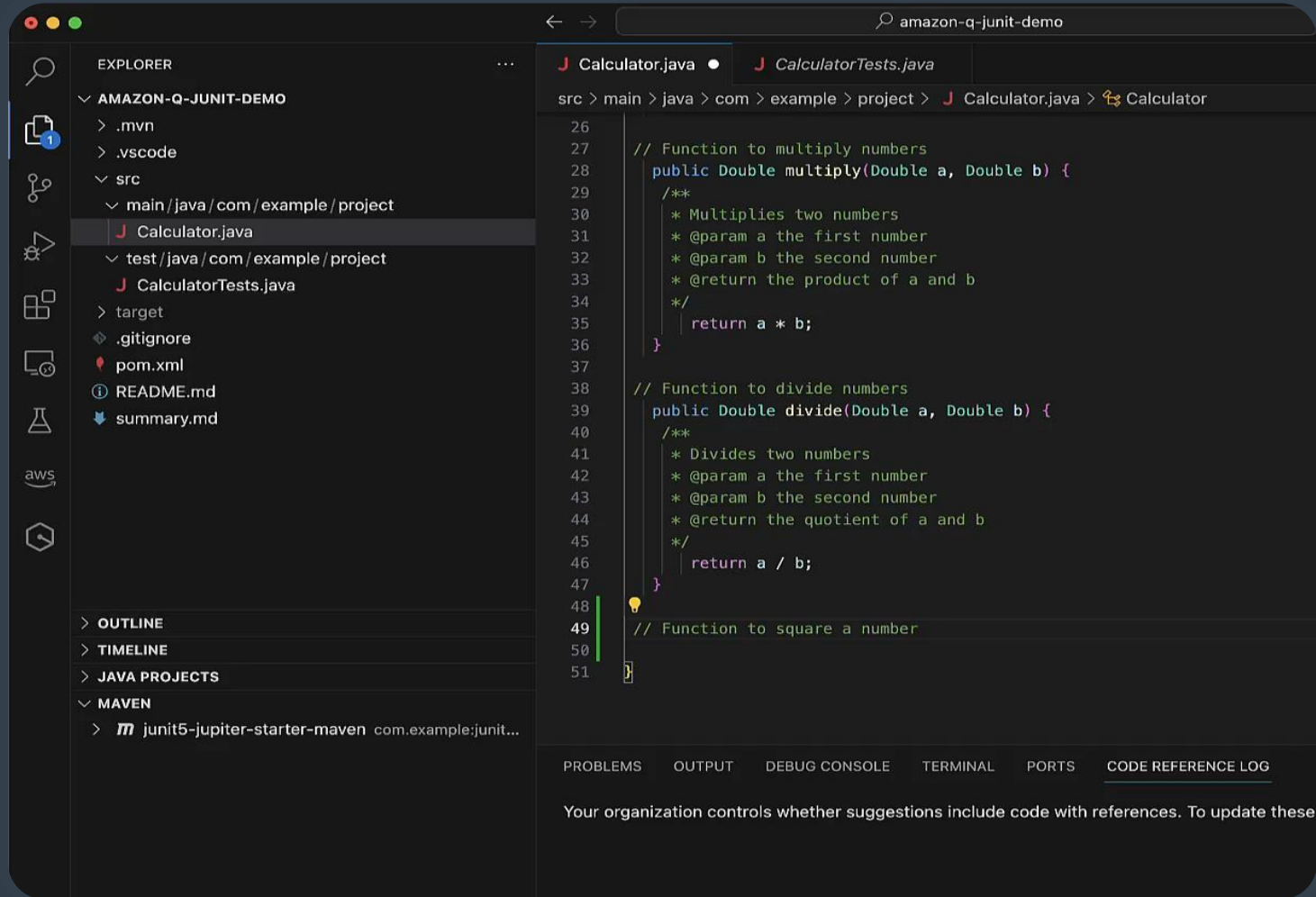
Ask questions and get guidance from 17 years of AWS knowledge, best practices, and well-architected advice

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



Create

DEMO



Generate code

Explain code

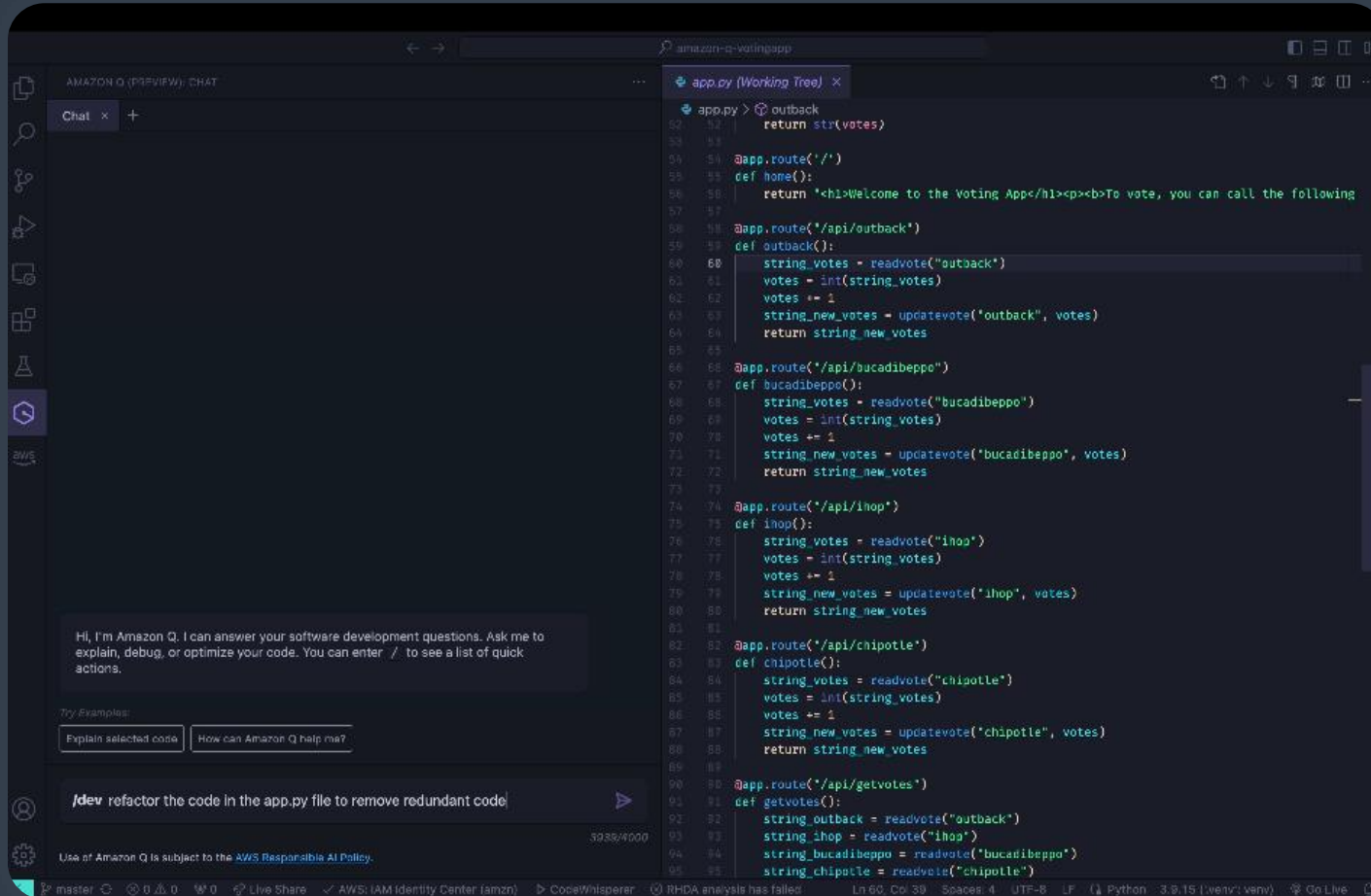
Engage with
Inline chat

Help understand
your code base

Customizable
to your code



Create – Advanced Feature Development: Q Developer agent for software development



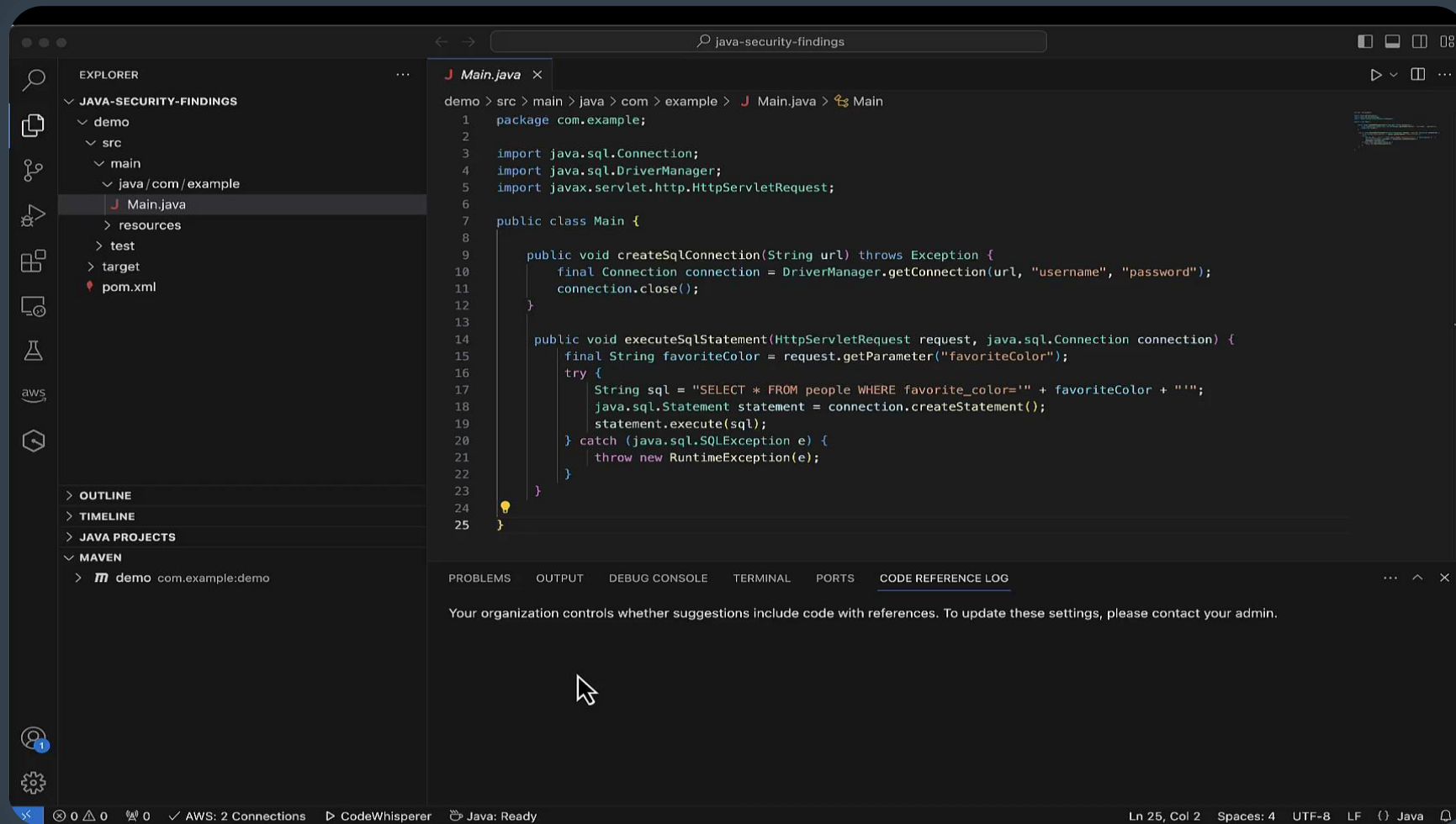
Q Developer Agent writes and implements entire application features in minutes right from a simple natural language prompt in your IDE

Interactive step-by-step instructions, code, tests, and best practices



Test and secure

DEMO



Generative AI unit tests

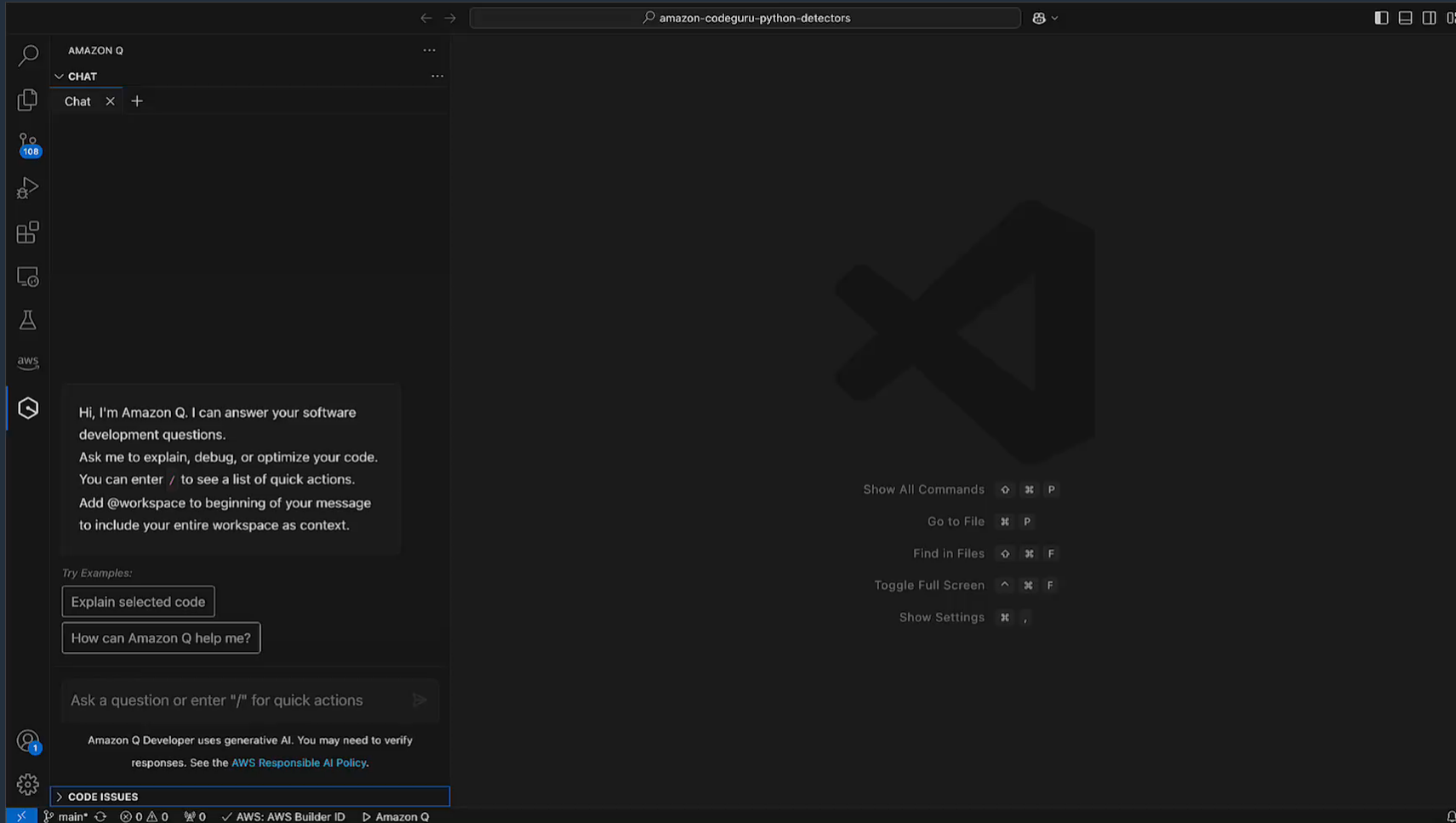
Scan entire project for security vulnerabilities

Generate remediations to improve security and code quality



Review and deploy

DEMO



Agent (/review)
automates code
reviews

Automatically
detect and resolve
common code
quality issues in
minutes vs hours

Ensure code
review consistency



Maintain, Modernize, and Transform

AMAZON Q CODE TRANSFORMATION



.NET Framework applications on Windows

Analysis Planning
Refactoring
Compatibility tests



Cross-platform .NET applications on Linux



COBOL applications on mainframes

Documentation Wave planning
Decomposition
Refactoring



Java applications on AWS



VMware workloads on-premises

Discovery Wave planning
Network automation
Workload migration



VMware workloads on Amazon EC2



Java applications in v8, v11

Build/test v8/v11 Apply knowledge base
Build/test v17
Error fixing using genAI



Java applications in v17 and v21

Up to
4 x faster

Up to
40% savings

Access to
a range of LLMs



Operate on AWS



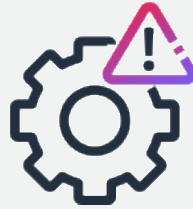
© 2025, Amazon Web Services, Inc. or its affiliates. All rights reserved. Amazon Confidential and Trademark.

Your AWS expert



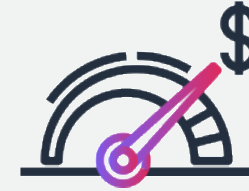
Expert guidance for building on AWS

Ask Amazon Q about AWS services, capabilities and architecture solutions — our AWS expert in best practices, documentation, and implementations.



Diagnose and troubleshoot errors

When something is wrong in your operations, minutes matter. Investigate, troubleshoot, and remediate operational issues quickly.



Manage and optimize AWS cloud resources

List and take action on your AWS account resources, configurations, analyze billing information and usage trends through intuitive visualizations and guided actions.

Accelerate time to insights

- > **Increase productivity:** Empowers you to integrate and query data using natural language without deep knowledge in coding, AWS data services, or your organization's database metadata
- > **Generative AI in every place:** Assists you everywhere you work with AWS: in the console, studio, notebooks, and SQL Editor
- > **Reduce time to insights:** Answers your questions on data and AWS services, troubleshoots issues, and proposes solutions

Q in Redshift

Which state has the most venues?

```
1 SELECT
2   venuestate,
3   COUNT(*) AS num_venues
4 FROM
5   tickit.venue
6 GROUP BY
7   venuestate
8 ORDER BY
9   num_venues DESC
10 LIMIT
11  1
```

Regenerate SQL

Add to notebook

Ask me a question to generate a SQL suggestion for your connected database. ➔

Q in Glue

Amazon Q Preview

write a Glue ETL job that reads from Redshift, drops null fields, and writes to S3 as parquet files

```
import sys
from awsglue.transforms import *
from awsglue.utils import getResolvedOptions
from pyspark.context import SparkContext
from awsglue.context import GlueContext
from awsglue.job import Job

args = getResolvedOptions(sys.argv, ["JOB_NAME"])

sc = SparkContext()
glueContext = GlueContext(sc)
spark = glueContext.spark_session
job = Job(glueContext)
job.init(args["JOB_NAME"], args)

direct_redshiftnode1 = glueContext.create_dynamic_frame.from_options(
    connection_type="redshift",
    connection_options={
        "url": "jdbc:redshift://<cluster-name>:<region>/<database-name>",
        "dbtable": "<example-table>",
        "secretId": "<secret-id>",
```

Ask me anything about AWS ➔

Max 1000 characters

Use of Amazon Q is subject to the [AWS Responsible AI Policy](#)

Summary



Summary of top use cases



Retire technical debt at scale

Modernize projects and upgrade language version and dependencies with Amazon Q Developer Agent for code transformation



Drive development productivity

Get inline coding recommendations, summarize and document code, scan for security issues, diagnose and troubleshoot bugs, and write unit tests



Improve security and code quality

Ship more secure code with less effort with code scanning and automated code remediation



FINANCIAL SERVICES

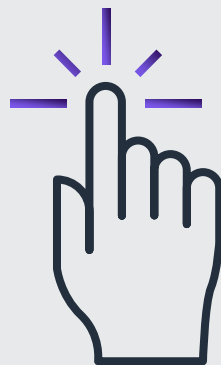
National Australia Bank is one of the largest financial institutions in Australia.

"At NAB, teams across the bank are excited about how generative AI can transform our work, and we've found a great solution in Amazon Q Developer, a powerful generative AI-powered tool for our engineers and developers. The tool has seamlessly integrated advanced generative algorithms and tools into our development process, delivering unparalleled benefits like completing tasks faster, increasing productivity, and minimizing repetitive actions. So far, our developers **have accepted 50% of the code suggestions** made by Amazon Q Developer, and that number continues to increase as we scale. We look forward to seeing how Amazon Q Developer will continue to empower and inspire our engineers to upskill their technical expertise, delivering better service for customers."

Andrew Brydon,
Executive Chief Engineer, National Australia Bank



Get started with Amazon Q Developer



**Try Q Developer
for free**



**Plan your
POC**

Thank you!