Google Cloud

Next '24

Cloud-powered, API-first testing with Testcontainers and Kotlin

Proprietary

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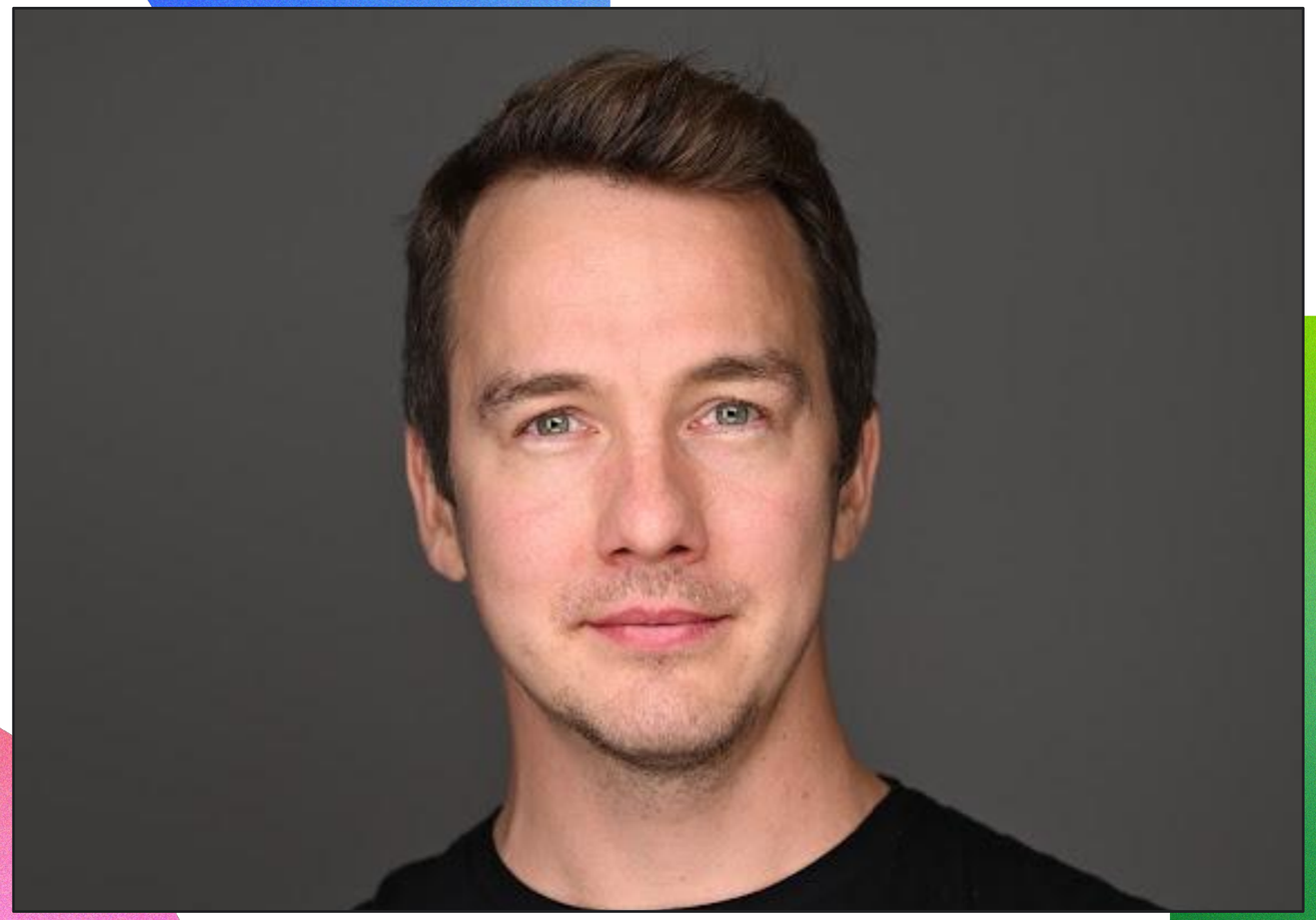
Developer advocate
Docker



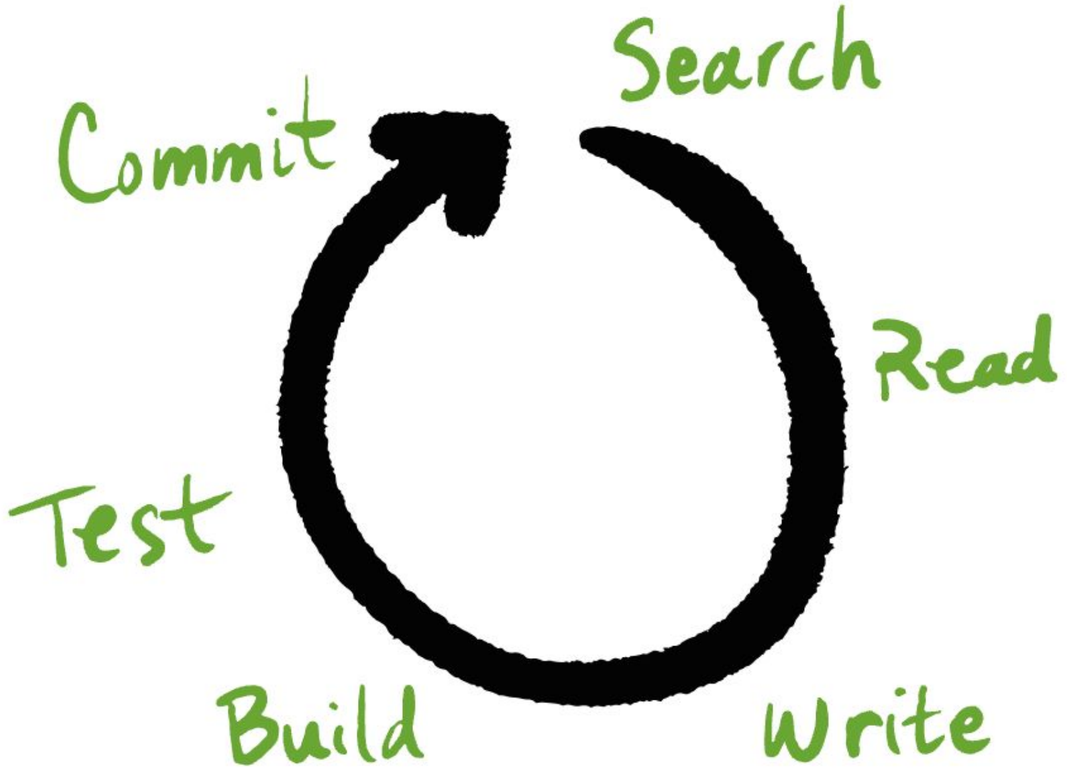
What drives productivity?

Feedback loops

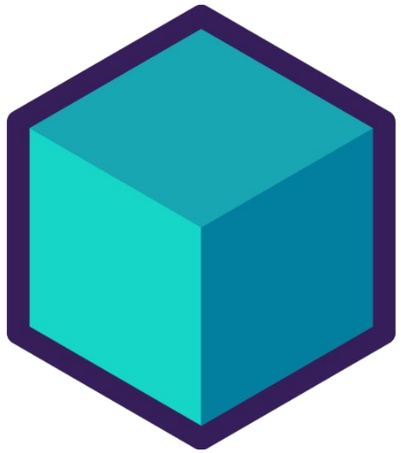
Cognitive load

Flow state

Developer inner loop



Images from https://about.sourcegraph.com/blog/developer-productivity-thoughts



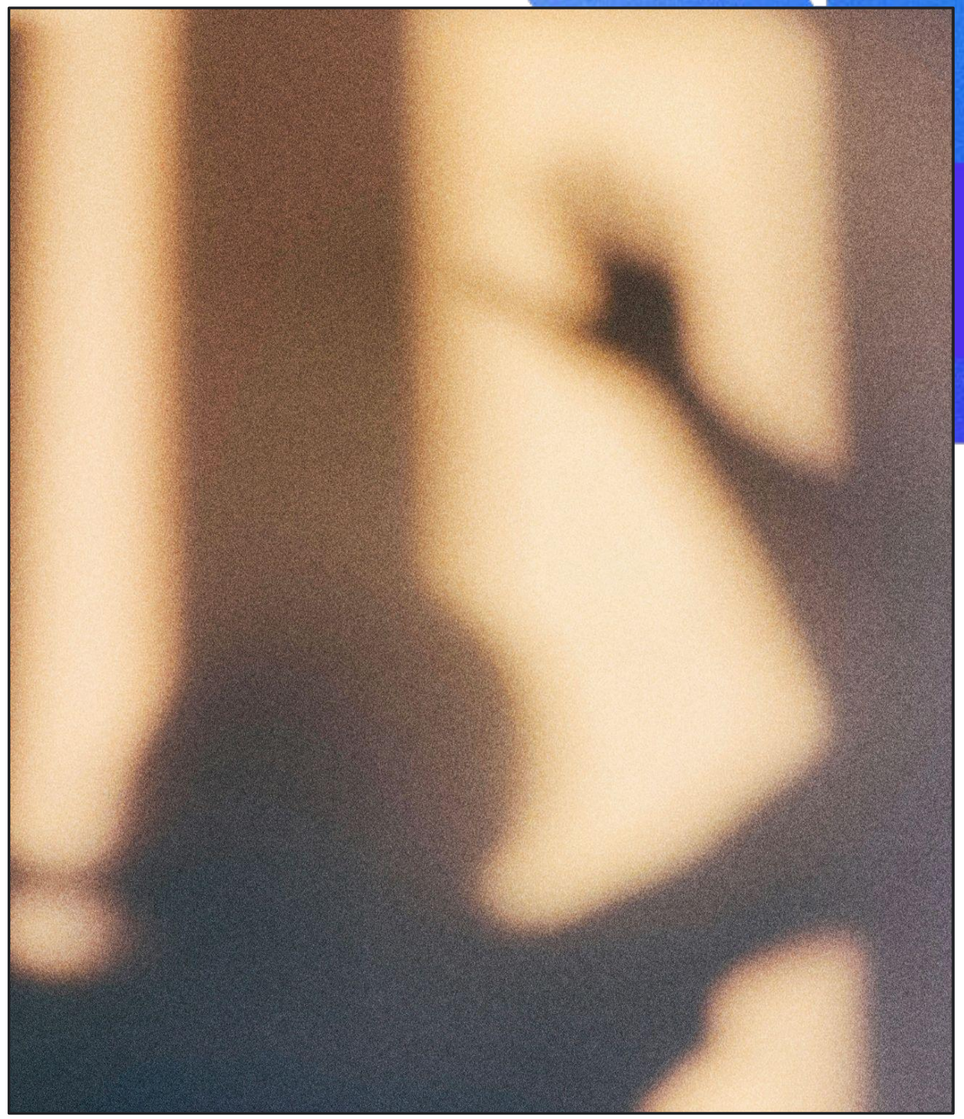
Testcontainers

Functionality

Container lifecycle & cleanup

Service configuration

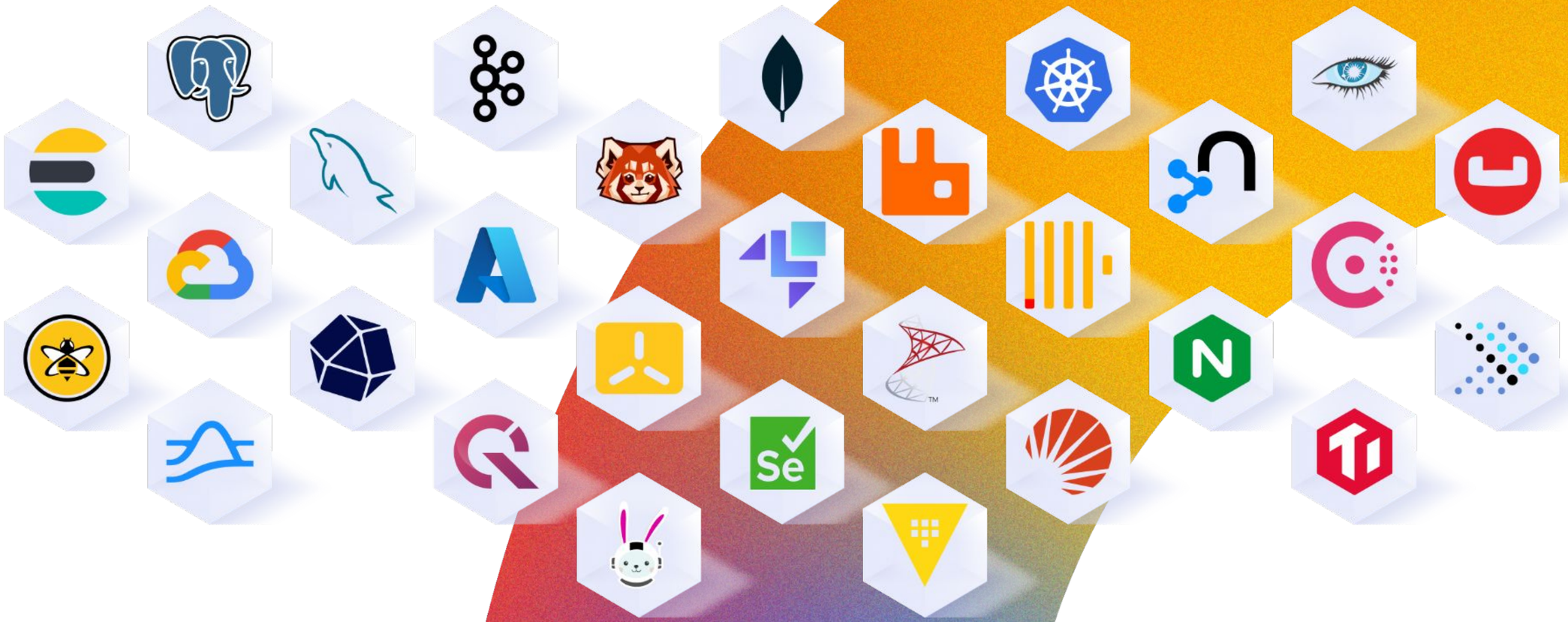
Integrations with libraries

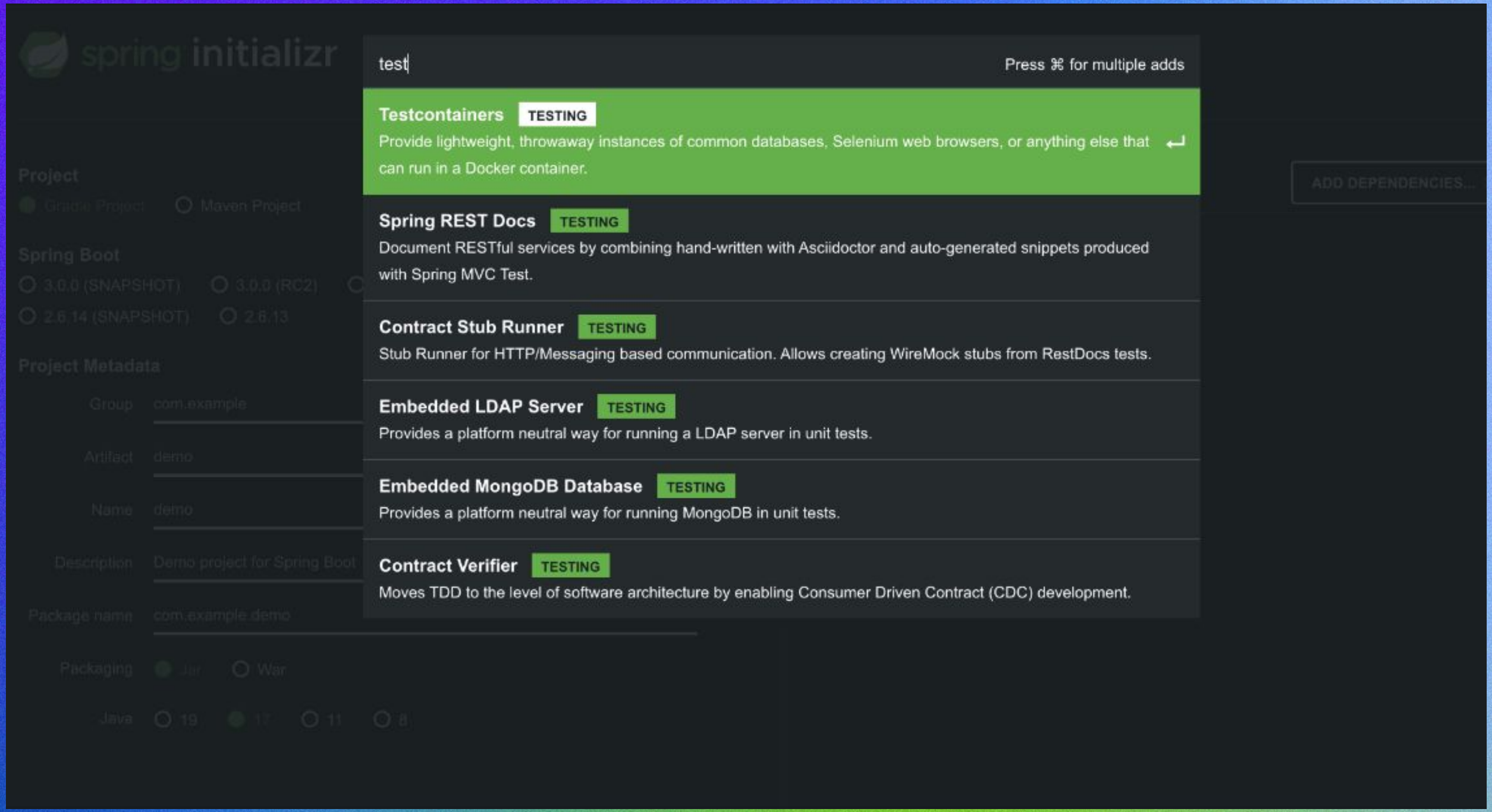


```
var postgres =
    new PostgreSQLContainer( dockerImageName: "postgres:16-alpine")
    .withCopyFileToContainer(
        MountableFile.
            forClasspathResource(
                resourceName: "/schema.sql"),
                containerPath: "/docker-entrypoint-initdb.d/schema.sql")
    .withDatabaseName("test");

postgres.start();
postgres.getJdbcUrl();
```

```go
c, err := postgres.RunContainer(ctx,
    testcontainers.WithImage("postgres:15.3-alpine"),
    postgres.WithInitScripts(filepath.Join(".", "testdata", "dev-db.sql")),
    postgres.WithDatabase("users-db"),
    postgres.WithUsername("postgres"),
    postgres.WithPassword("postgres"),
    testcontainers.WithWaitStrategy(
        wait.ForLog("database system is ready to accept connections").
            WithOccurrence(2).WithStartupTimeout(5*time.Second)),
)
if err != nil {
    panic(err)
}

connStr, err := c.ConnectionString(ctx, "sslmode=disable")
```

Testcontainers modules




spring initializr
test
Press ⌘ for multiple adds
Testcontainers TESTING
Provide lightweight, throwaway instances of common databases, Selenium web browsers, or anything else that can run in a Docker container.
Spring REST Docs TESTING
Document RESTful services by combining hand-written with Asciidoctor and auto-generated snippets produced with Spring MVC Test.
Contract Stub Runner TESTING
Stub Runner for HTTP/Messaging based communication. Allows creating WireMock stubs from RestDocs tests.
Embedded LDAP Server TESTING
Provides a platform neutral way for running a LDAP server in unit tests.
Embedded MongoDB Database TESTING
Provides a platform neutral way for running MongoDB in unit tests.
Contract Verifier TESTING
Moves TDD to the level of software architecture by enabling Consumer Driven Contract (CDC) development.
Project
Spring Boot
Project Metadata
ADD DEPENDENCIES...

Testcontainers experience

Testcontainers

Testcontainers Desktop by docker

Testcontainers Cloud by docker

DEMO
WARNING
Security
Cameras In Use
ARROW
Sanitary Service
503-257-3993
CAUTION
CAUTION

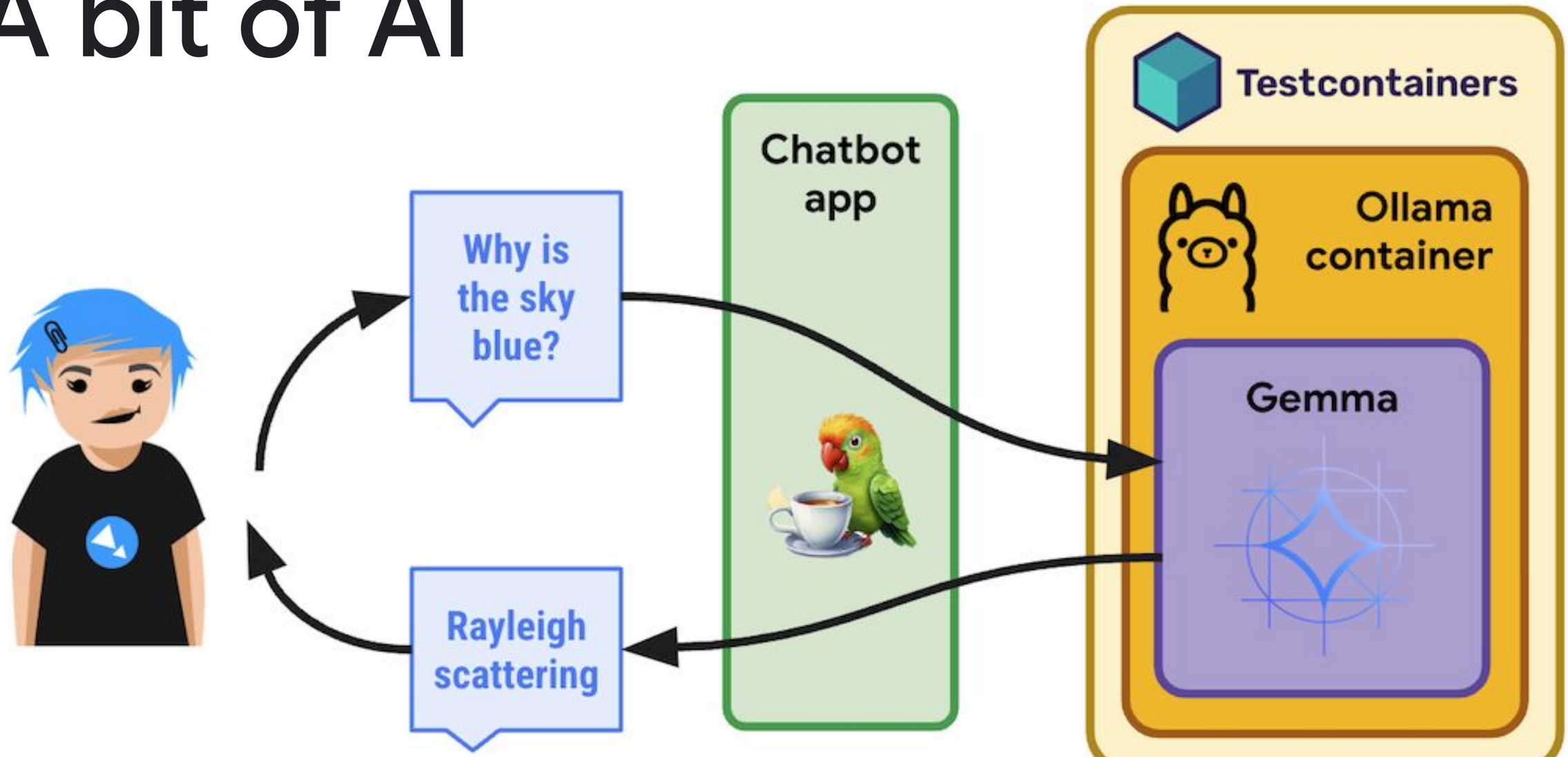
Testcontainers in Cloud Build

Ensure Docker environment is available

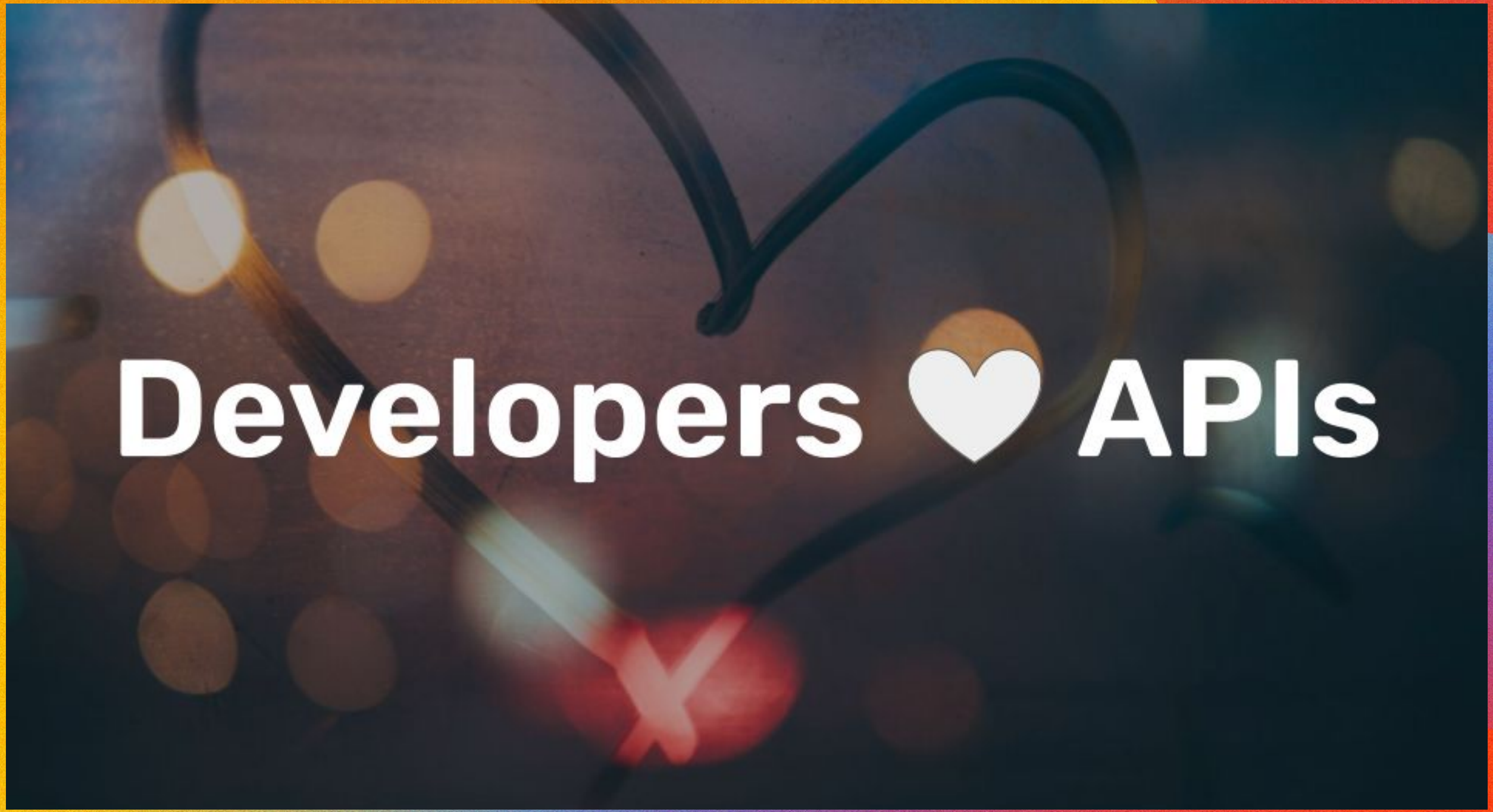
Run tests as usual

```
steps:
  - name: 'maven:3-openjdk-18-slim'
    args:
      - '-c'
      - |
        mvn test
    dir: '${_APP_NAME}'
    entrypoint: bash
```

A bit of AI



https://glaforge.dev/posts/2024/04/04/calling-gemma-with-ollama-and-testcontainers/


Developers ♥ APIs

Resources

slack.testcontainers.com

testcontainers.com

github.com/testcontainers

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Ready to build what's next?

Tap into **special offers** designed to help you **implement what you learned** at Google Cloud Next.

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Thank you