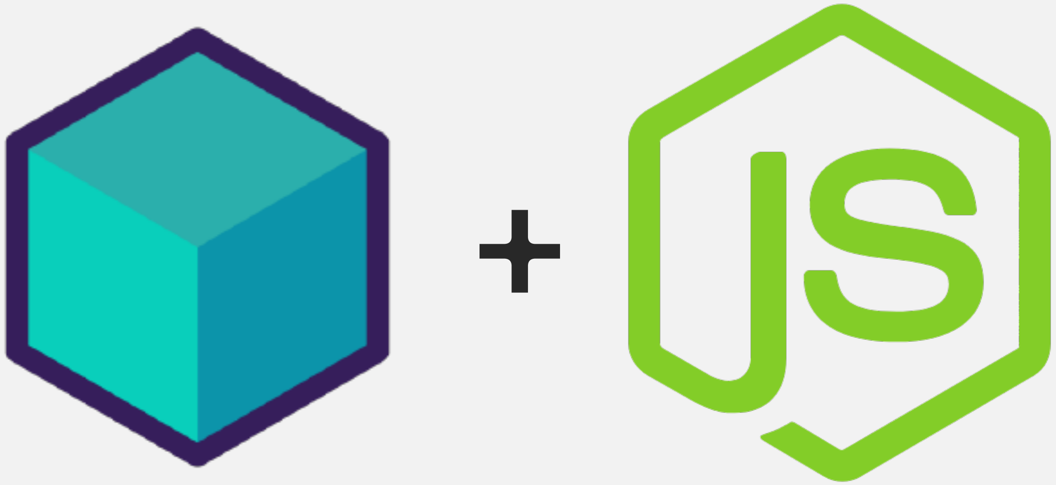


TestContainers in Node

TestContainers → What is it?

TestContainers is a library for management of Docker-containers from code.

TestContainers → What is it?

Test with real dependencies

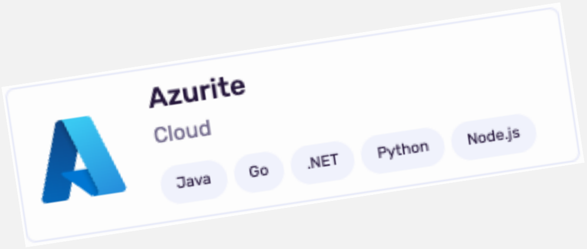
Provides throwaway, lightweight instances of databases, message brokers, and other services you typically use.

Runs locally and on CI/CD - all you need is Docker.

Supports many languages, Java, .NET, Go, Node.js and the list goes on.

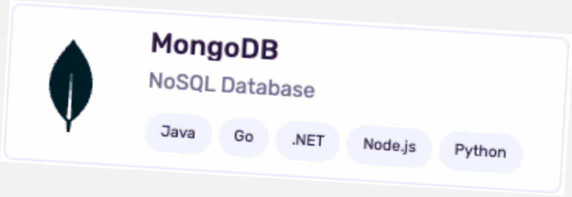
Can be used for more than just tests!

TestContainers → What is it?


Azurite

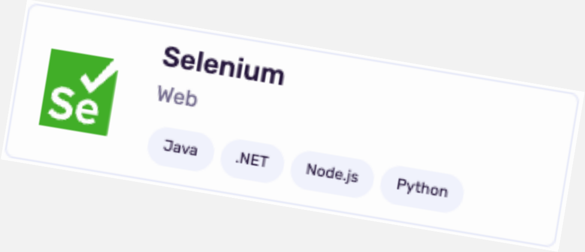
Cloud

Java Go .NET Python Node.js


MongoDB

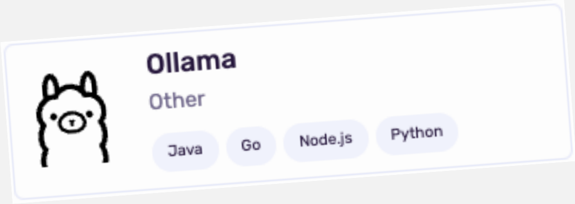
NoSQL Database

Java Go .NET Node.js Python


Selenium

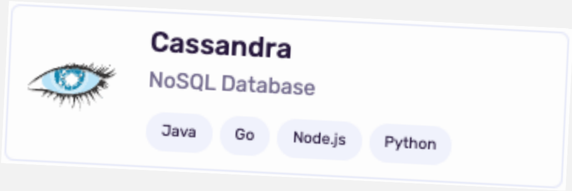
Web

Java .NET Node.js Python


Ollama

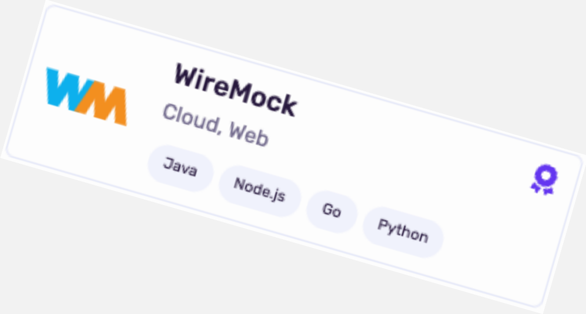
Other

Java Go Node.js Python


Cassandra

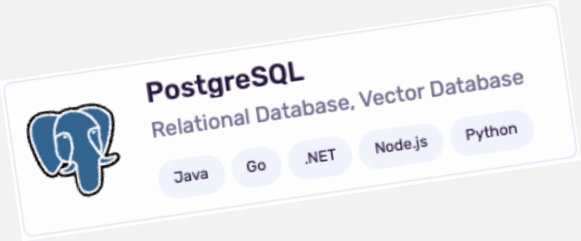
NoSQL Database

Java Go Node.js Python


WireMock

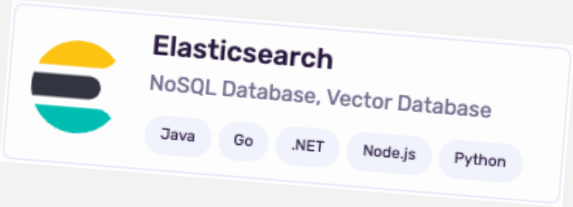
Cloud, Web

Java Node.js Go Python


PostgreSQL

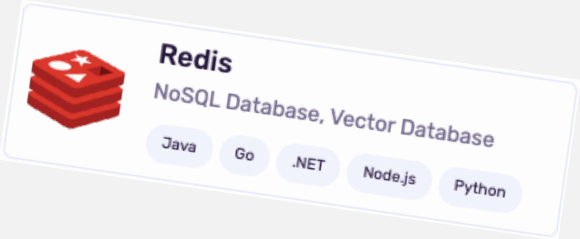
Relational Database, Vector Database

Java Go .NET Node.js Python


Elasticsearch

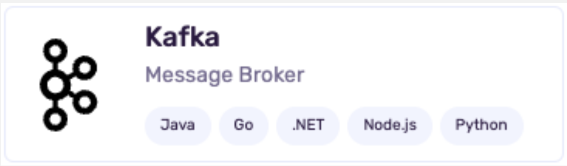
NoSQL Database, Vector Database

Java Go .NET Node.js Python


Redis

NoSQL Database, Vector Database

Java Go .NET Node.js Python

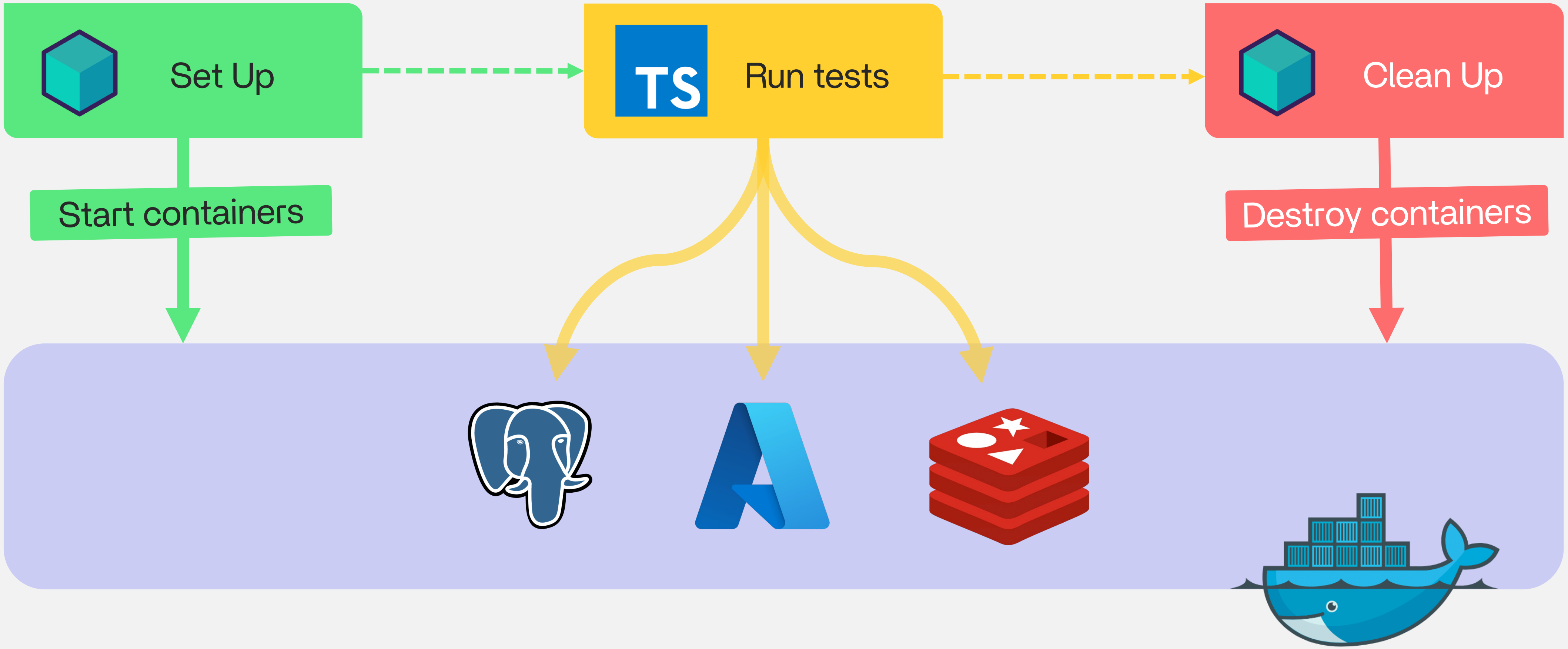

Kafka

Message Broker

Java Go .NET Node.js Python

And many more

TestContainers → How does it work?



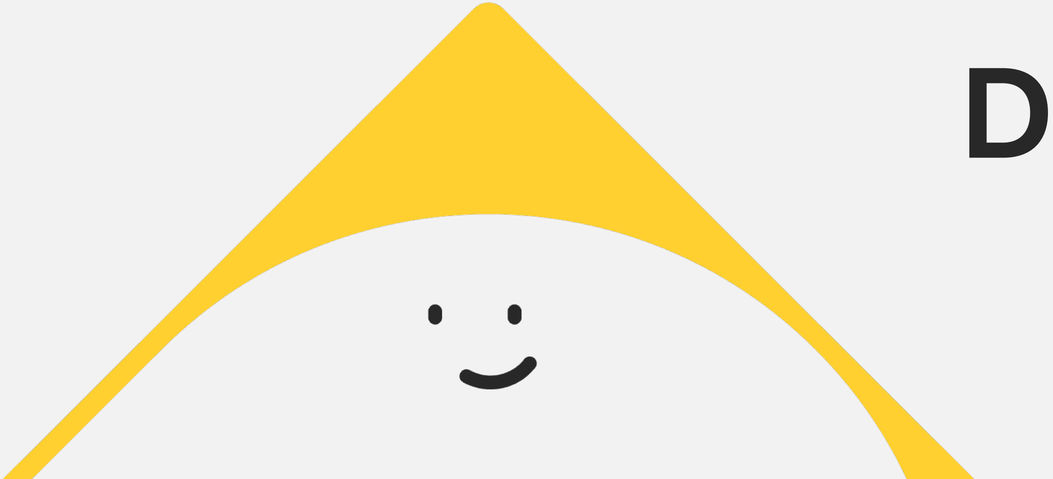
Set Up

Start containers

Run tests

Clean Up

Destroy containers



Demo-time

Why can’t I just start my Docker-containers manually?

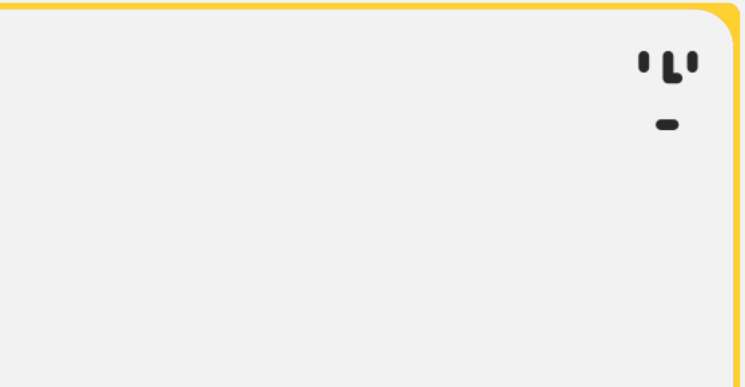
Because humans are bad at automation.

Automate your test infrastructure

Reproducible environments
Should be able to test equivalent infrastructure on all developer machines and CI/CD.

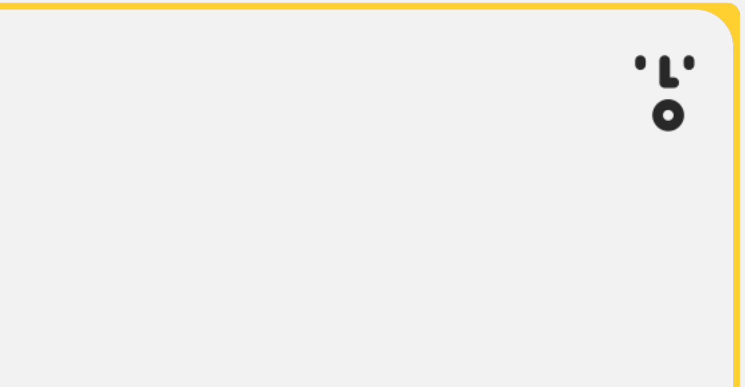
Isolated environments
Should not depend on shared infrastructure that makes parallell test runs flaky.

Deterministic tests
Aim for deterministic test runs, which means long-lived infrastructure or datasets should be avoided.



Why can’t I just mock the database?

TestContainers → Why should you use it?



Oh boy, here we go...

Mock

Used in a test to replace specific code or modules.

Fake

A relatively fully functional implementation which can be used across tests.

TestContainers → Test Doubles

Mock

Has no internal state

Used in a test to replace specific code or modules.

Makes tests specific and brittle

Fake

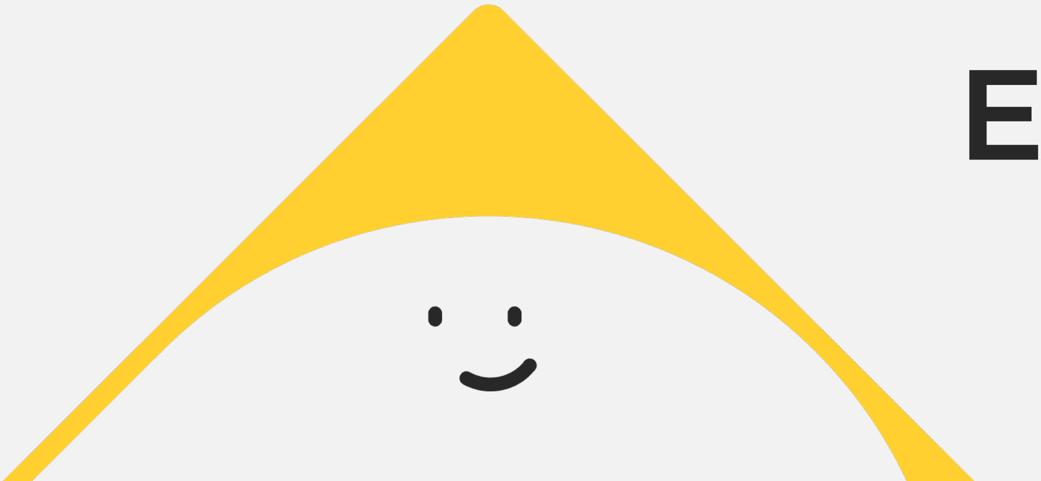
Usually has internal state

A relatively fully functional implementation which can be used across tests.

A lot of work to match the behaviour of real services

Test with production equivalent dependencies

TestContainers → More advanced use-case



Extended demo-time

Fin