Circuit Breaking and Fault Tolerance with Resilience4j

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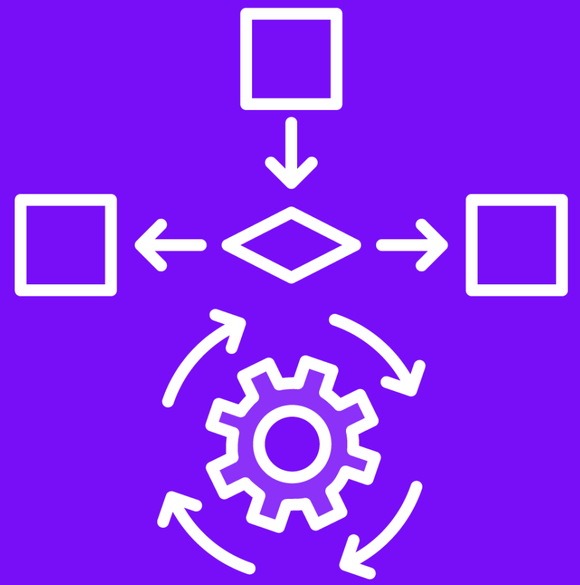
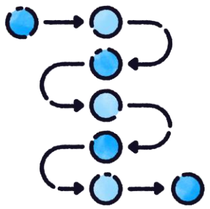
Introduction to Resilience4j



Resilience in Microservices

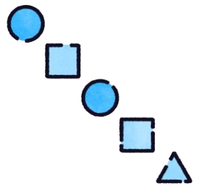
Handle problems gracefully, recover quickly,
and keep the overall system running.

The Challenge of Failure in Distributed Systems



Services talk to each other constantly across the network

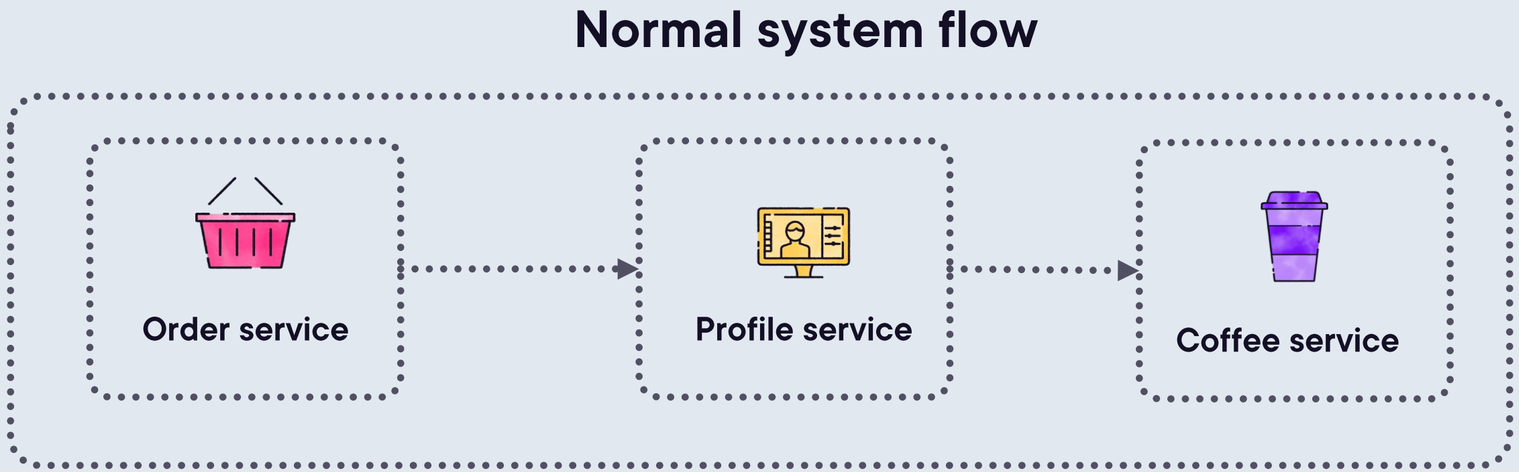
Any call between services can fail due to many issues

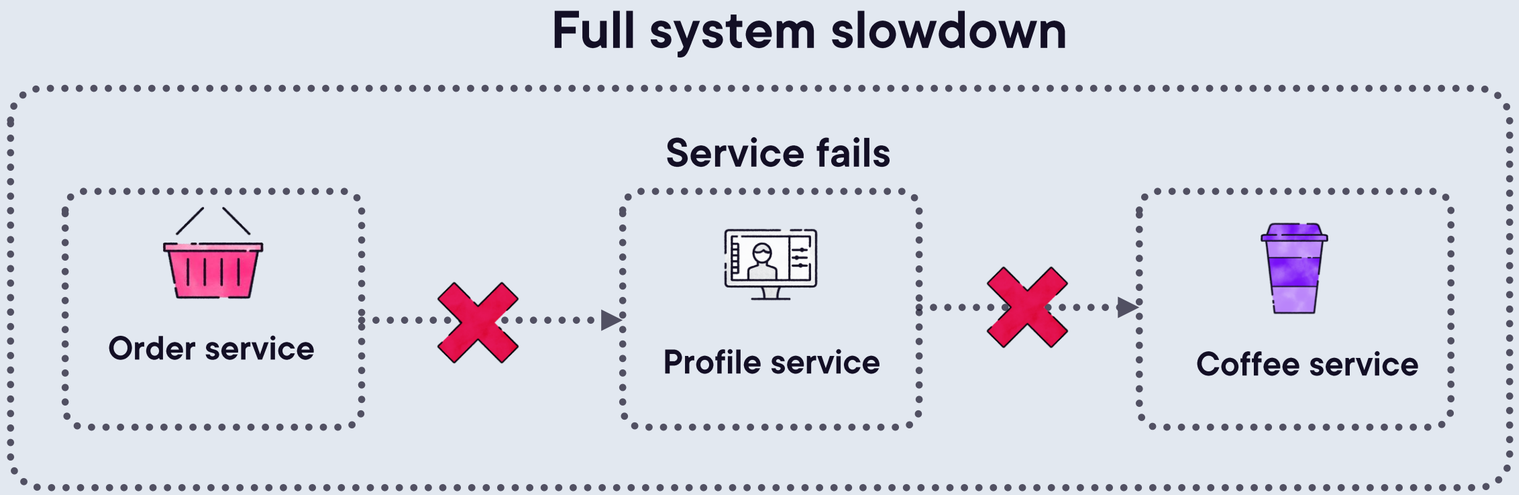


Failures can chain together, causing a cascade effect

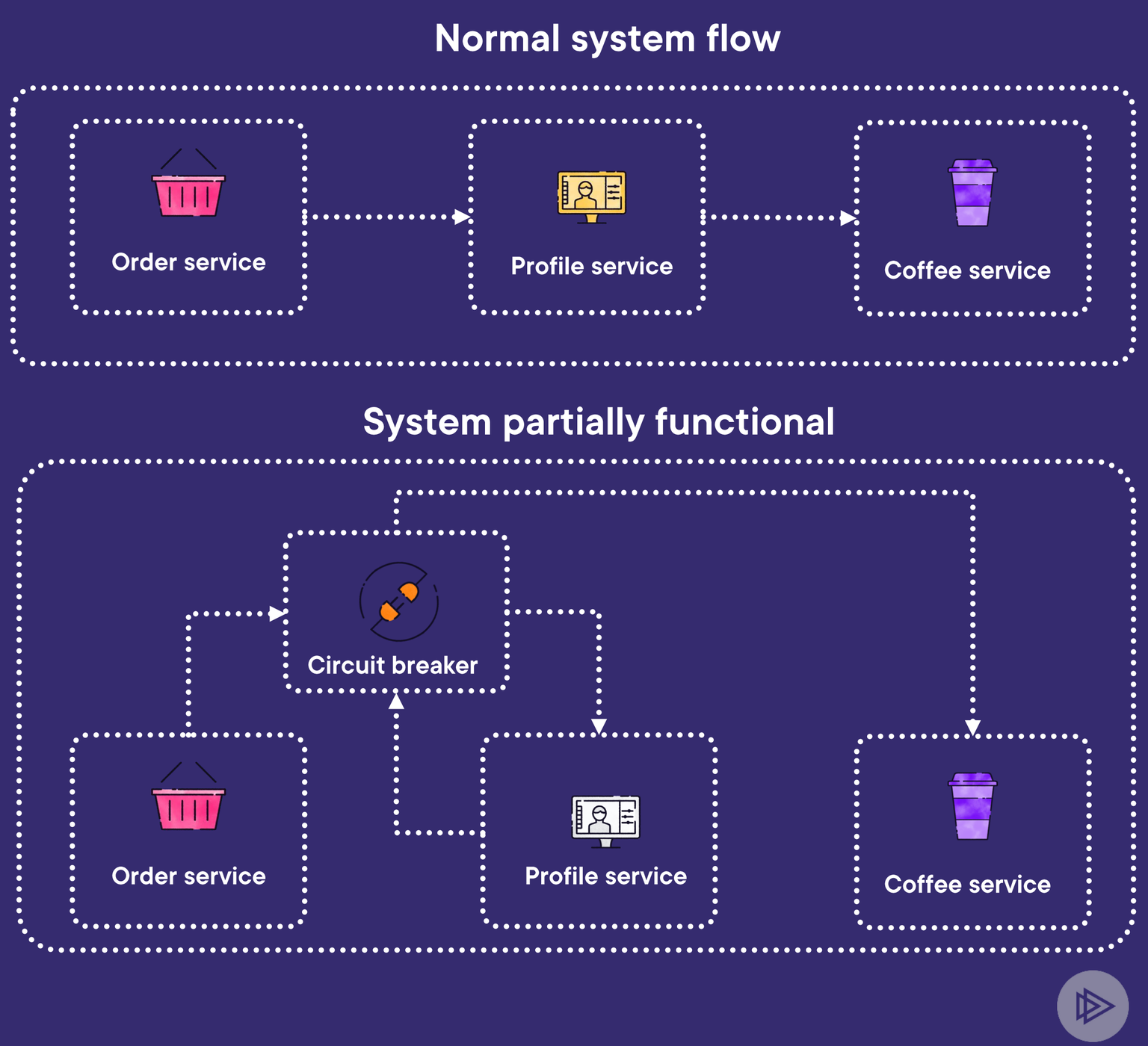
Without protection, small issues can turn into major outages

Without Circuit Breaker

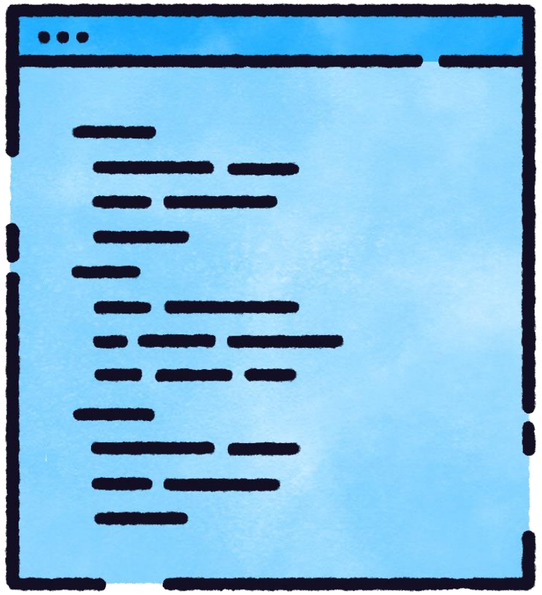




With Circuit Breaker



Introducing Resilience4j



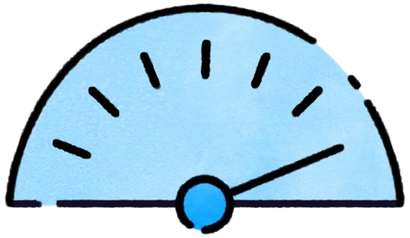
Java library for building resilient microservices

Minimal dependencies, super easy to integrate

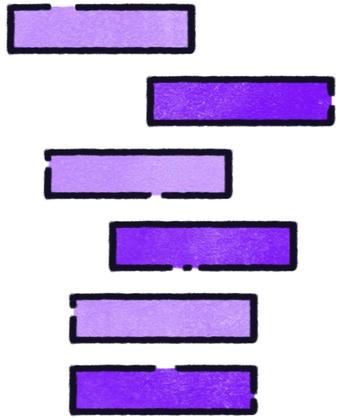
Provides out-of-the-box solutions for

- Circuit breaker
- Retry
- Rate limiter
- Time limiter
- Bulkhead

Triggers for Circuit Breaker to Open



Failure rate threshold



Sliding window size

Wait duration before retrying

Demo: Implementing Circuit Breakers

Demo: Resilience4j Circuit Breaking in Action