Modular Architecture con .NET

Saturday ChNova community

Sabato 30 settembre 2023

<Alberto Acerbis>

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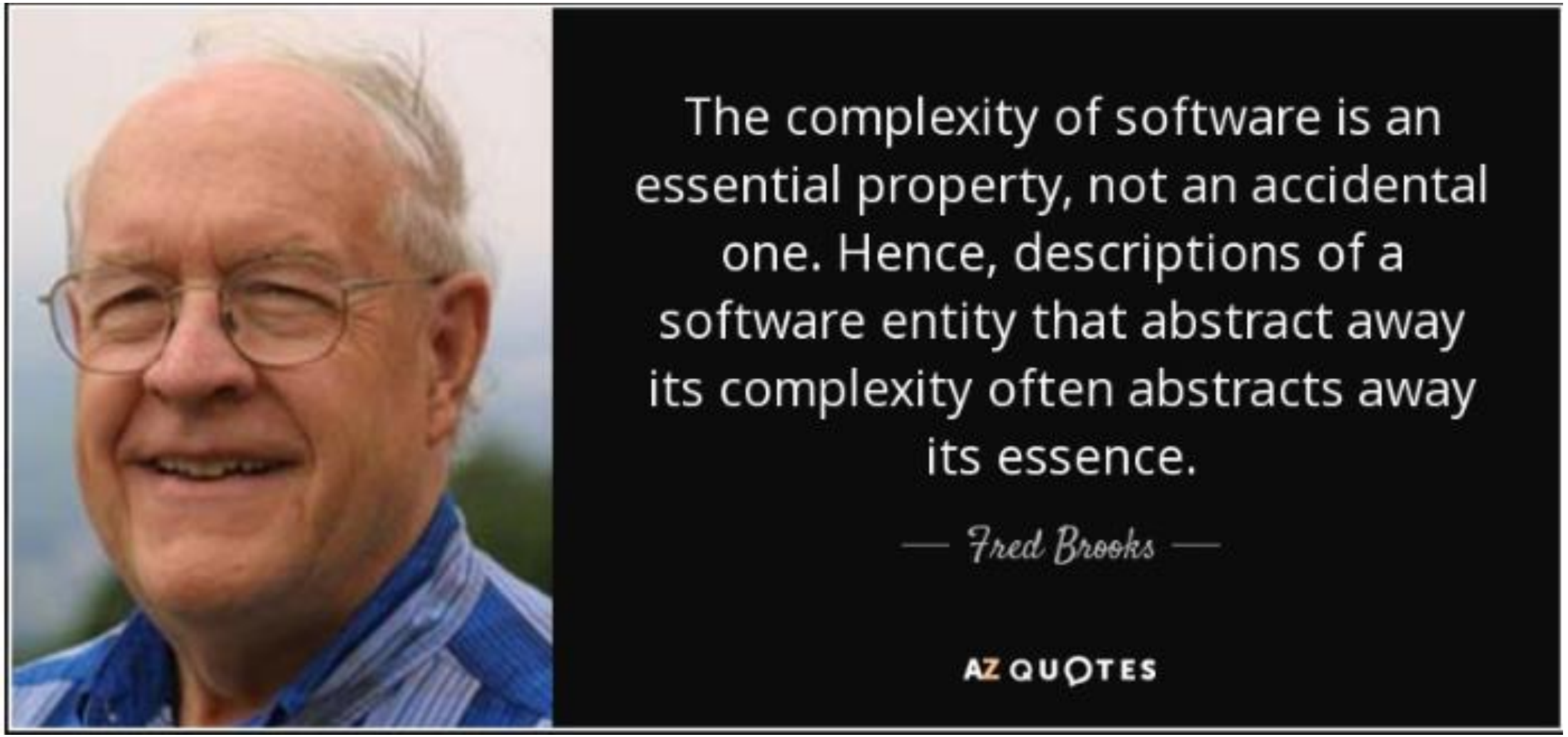
Powered by Innovation

No Silver Bullets



Monolithics

A monolithic architecture is a traditional model of a software program, which is built as a unfied unit that is self-contained and independent from other applications.

Microservices

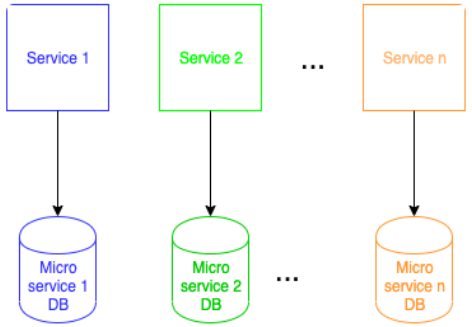
Microservices are self-contained small services that handle specific budiness functions within clearly defined boundaries known as Bounded Context.

No Best Practice

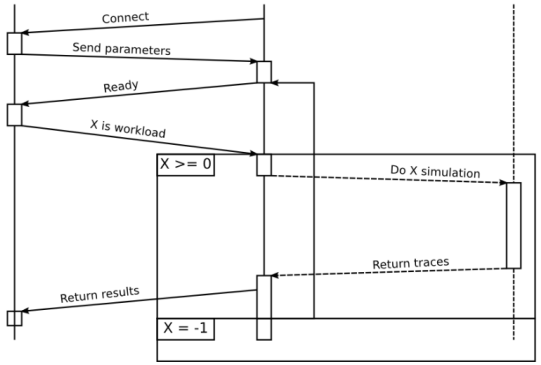
Why have architects struggled with decisions in distributed architectures?

Why has the complexity ramped up so much with microservices?

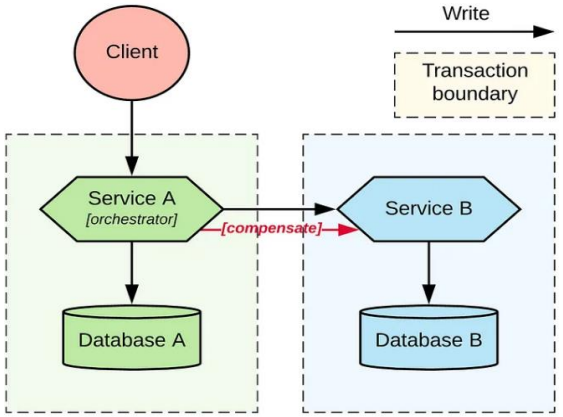
Microservices Traps



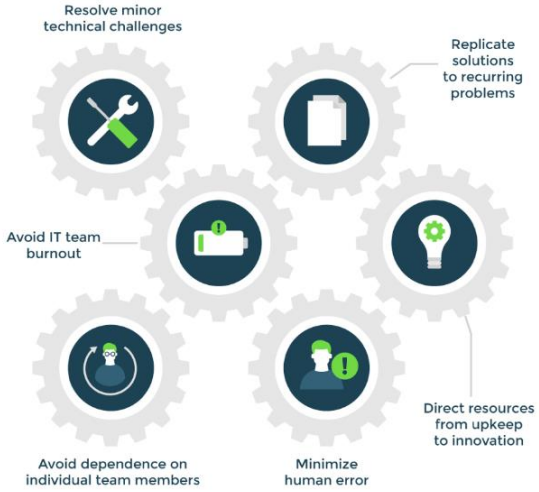
Data Decomposition



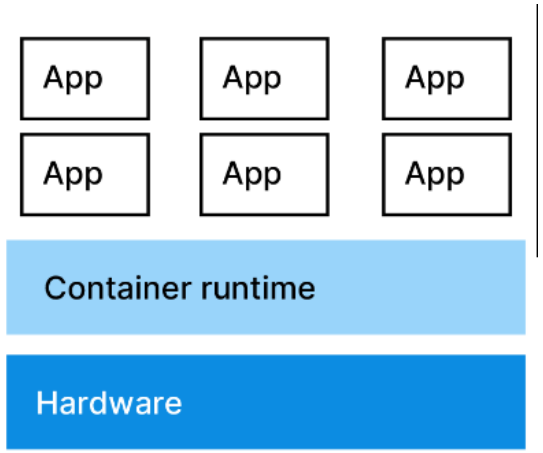
Distributed Workflow



Distributed Transaction

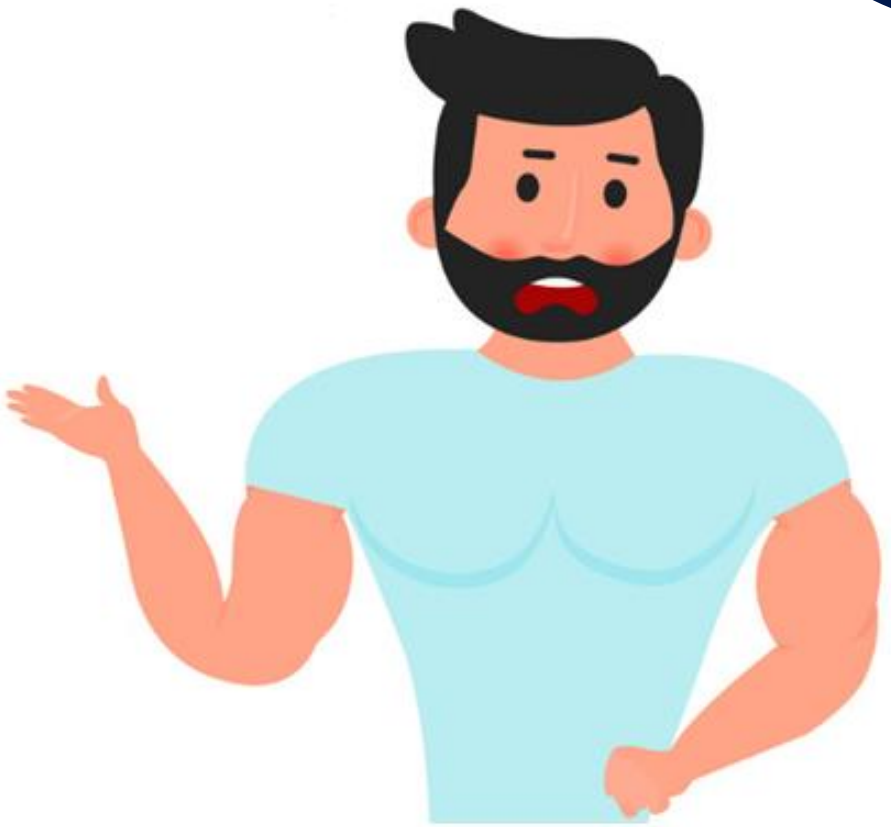


Operational automation



Containerization

A Matter of Dimensions?



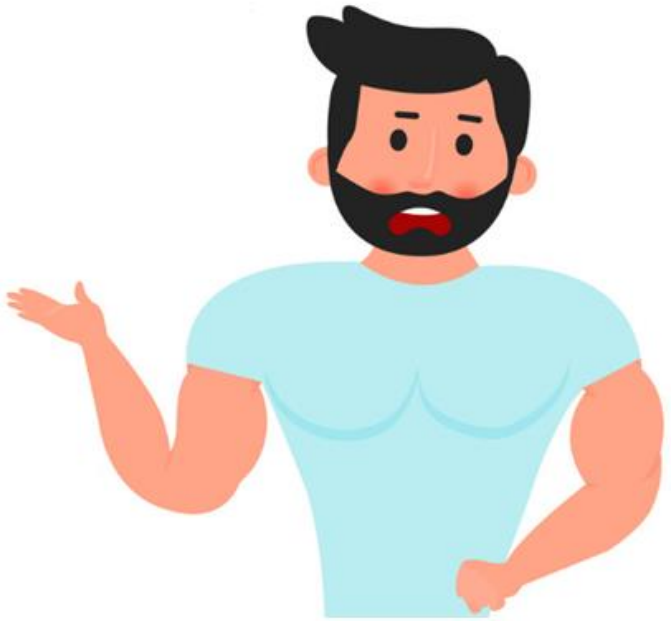
Modularity

Granularity

Granularity Disintegrators

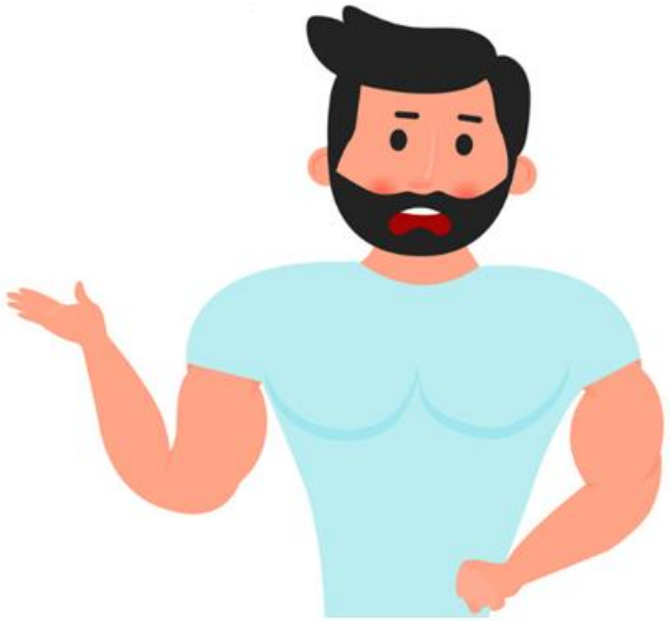
Granularity Integrators

Granularity Disintegrators



- Service Scope and function
- Code Volatility
- Scalability and throughput
- Fault Tolerance
- Security
- Extensibility

Granularity Integrators

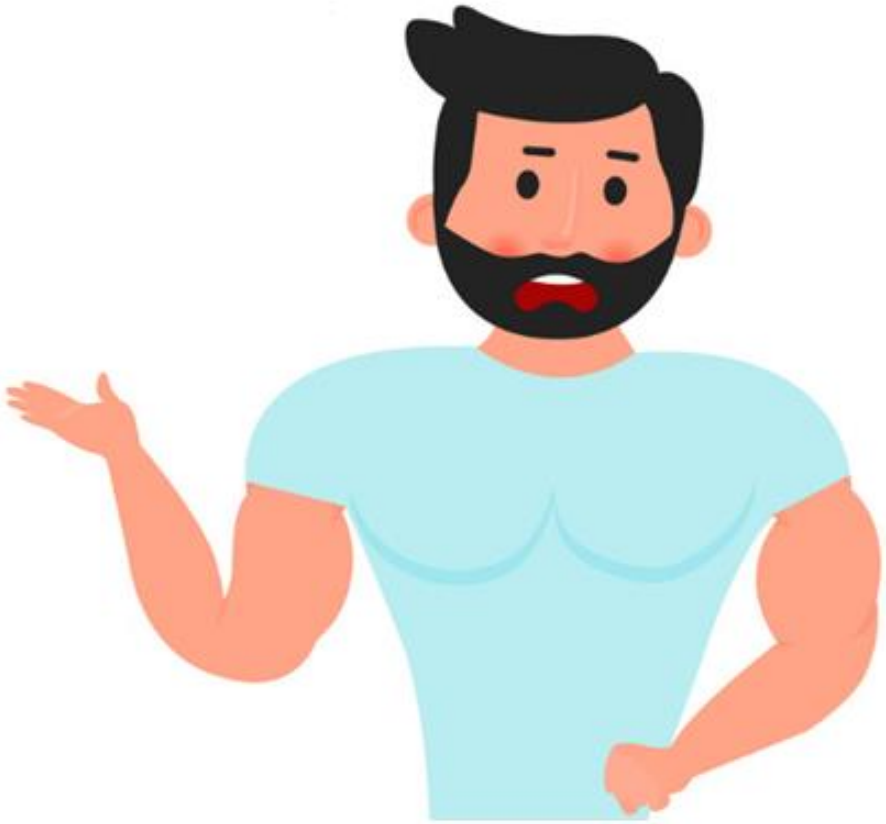


- Database Transactions
- Workflow and Choreography
- Shared Code
- Database Relationships

Software Architecture

Software Architecture is
the stuff you can’t
~~Google~~ Bing answers for.

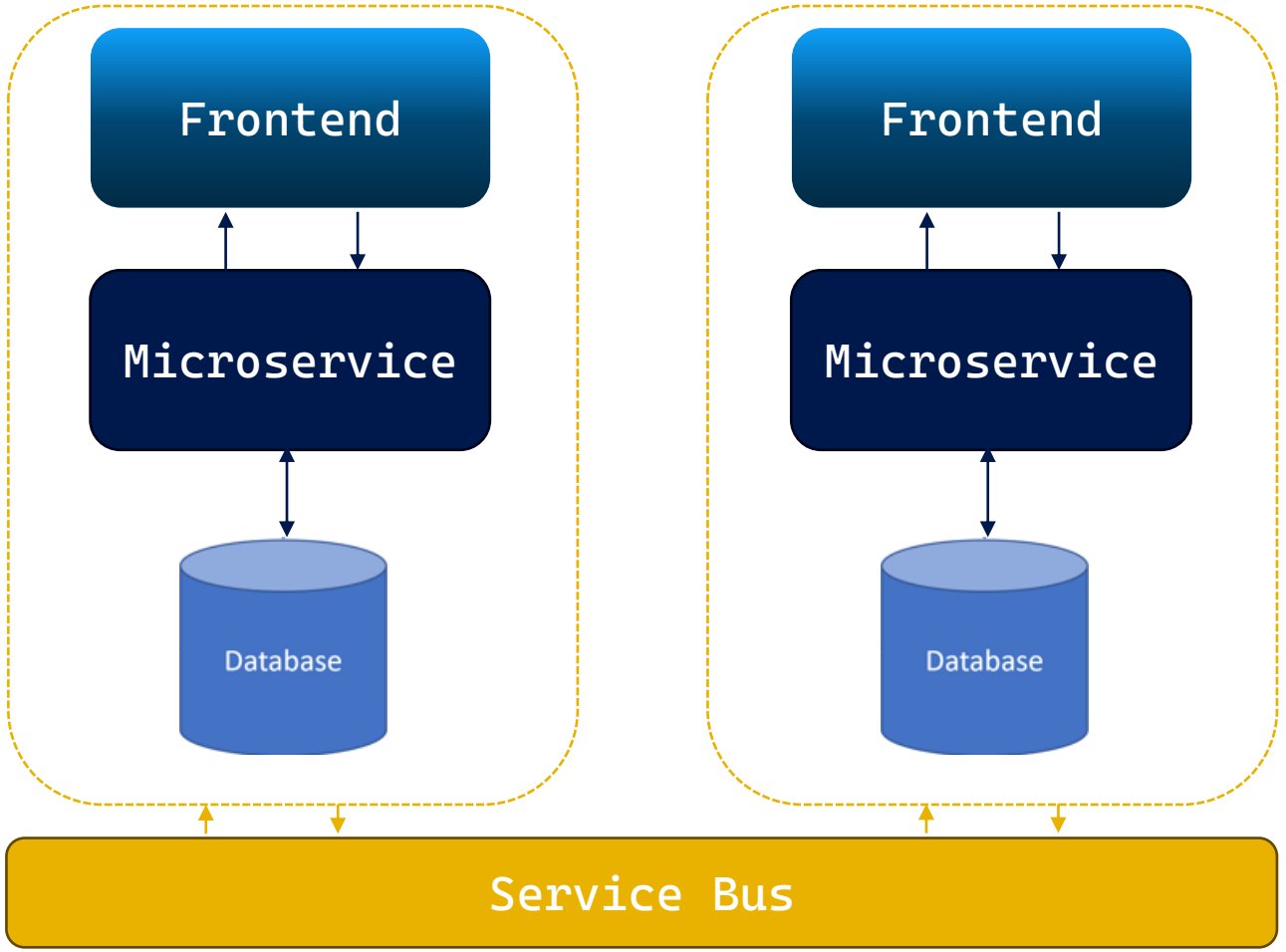
Hamletic doubt



What is Essential?

What is Accidental?

Quantum Architecture



Laws of Software Architecture

First Law

Everything in software architecture is a trade-off

Corollary 1

If an architect thinks they have discovered something that isn't a trade-off, more likely they just haven't yet identified the trade-off

Second Law

Why is more important than how

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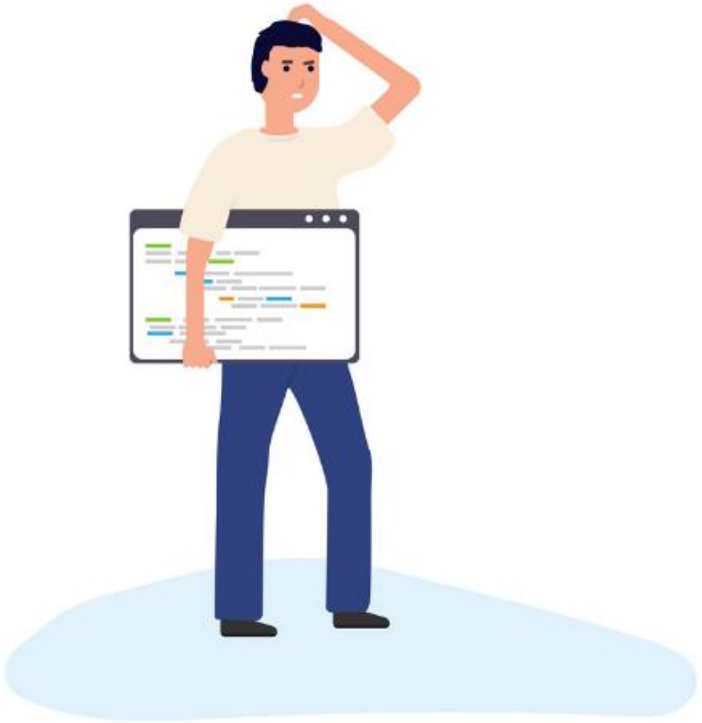
Where do I start from?

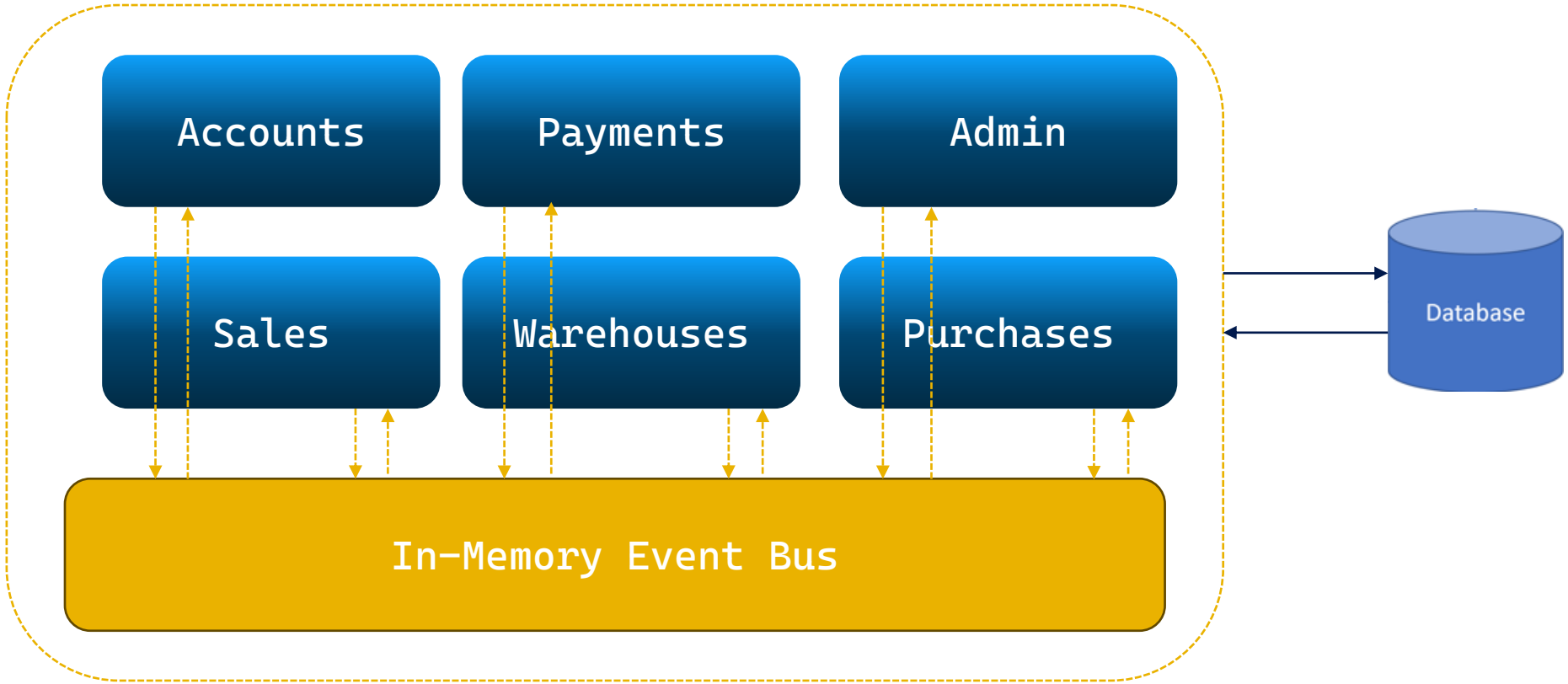


Risk comes from not knowing what you are doing

(Warren Buffet)

If you think good architecture is expensive, try bad architecture

Modular Architecture



What is a Module?

Low Coupling

Each module should be independent of other modules in the system

High Cohesion

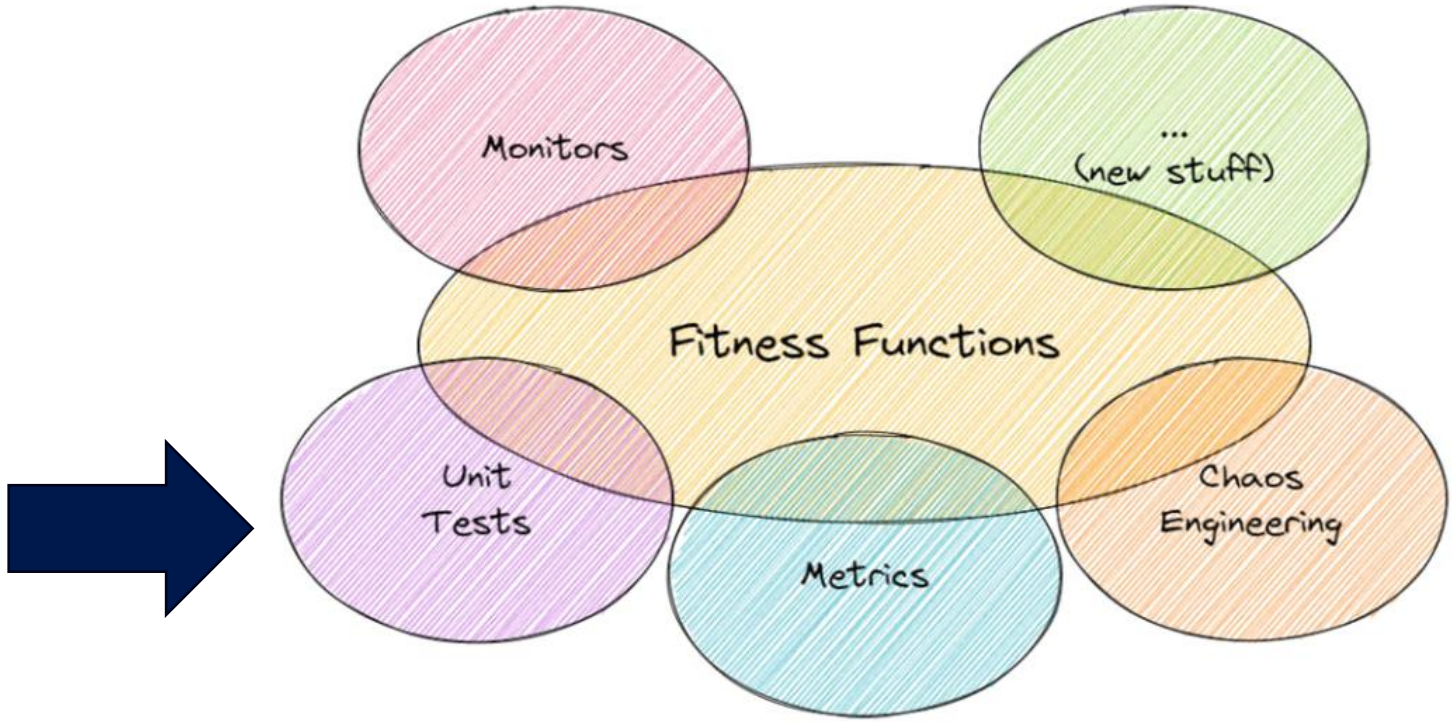
Components of the module are all related thus making it easier to understand what module does as a self-contained subsystem

Attempting to divide a cohesive module would only result in increased coupling and decreased readability

Demo

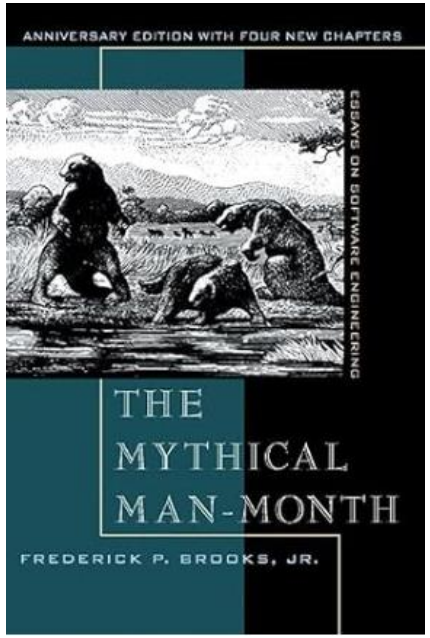
Fitness Functions

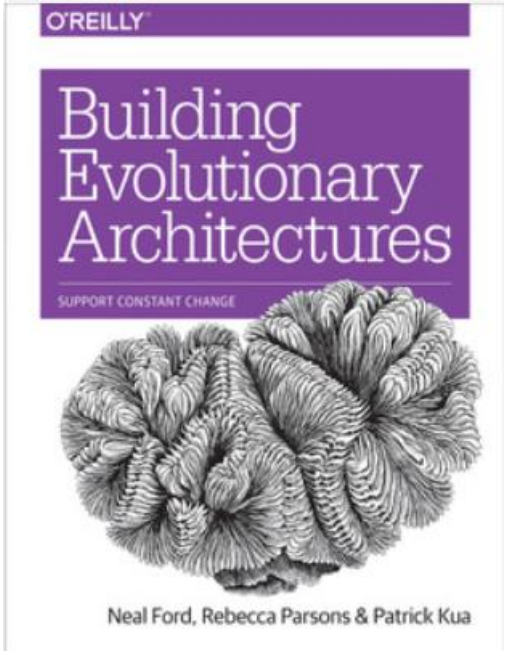
- An architectural fitness function provides an objective integrity assessment of some architectural characteristic(s).

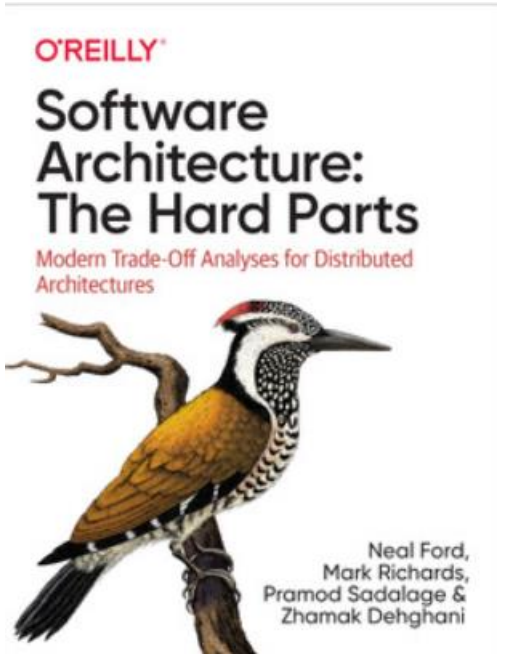


Demo

Books


ANNIVERSARY EDITION WITH FOUR NEW CHAPTERS
ESSAYS ON SOFTWARE ENGINEERING
THE MYTHICAL MAN-MONTH
FREDERICK P. BROOKS, JR.


O'REILLY
Building Evolutionary Architectures
SUPPORT CONSTANT CHANGE
Neal Ford, Rebecca Parsons & Patrick Kua


O'REILLY
Software Architecture: The Hard Parts
Modern Trade-Off Analyses for Distributed Architectures
Neal Ford, Mark Richards, Pramod Sadalage & Zhamak Dehghani

Thanks!

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IL CORSO

Introduzione a DDD, CQRS ed i loro pattern

Costruire un'applicazione completa (a microservizi) applicando DDD.

Prenota il tuo posto

alberto.acerbis@intre.it

https://github.com/brewup

https://github.com/cqrs-muflone

https://github.com/ace68

INTRE CLOUD

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Sabato 30 settembre 2023

Alberto Acerbis