cloud chaos and microservices mayhem

Holly Cummins
IBM **Garage**
@holly_cummins

things you need to do well in 2020:

things you need to do well in 2020:

handwashing

things you need to do well in 2020:

handwashing

apps

things you need to do well in 2020:

handwashing

apps

ops

things you need to do well in 2020:

handwashing

apps

ops

devops

things you need to do well in 2020:

handwashing

apps

ops

devops

devsecops

things you need to do well in 2020:

handwashing

apps

ops

devops

devsecops

finops

things that are different in the

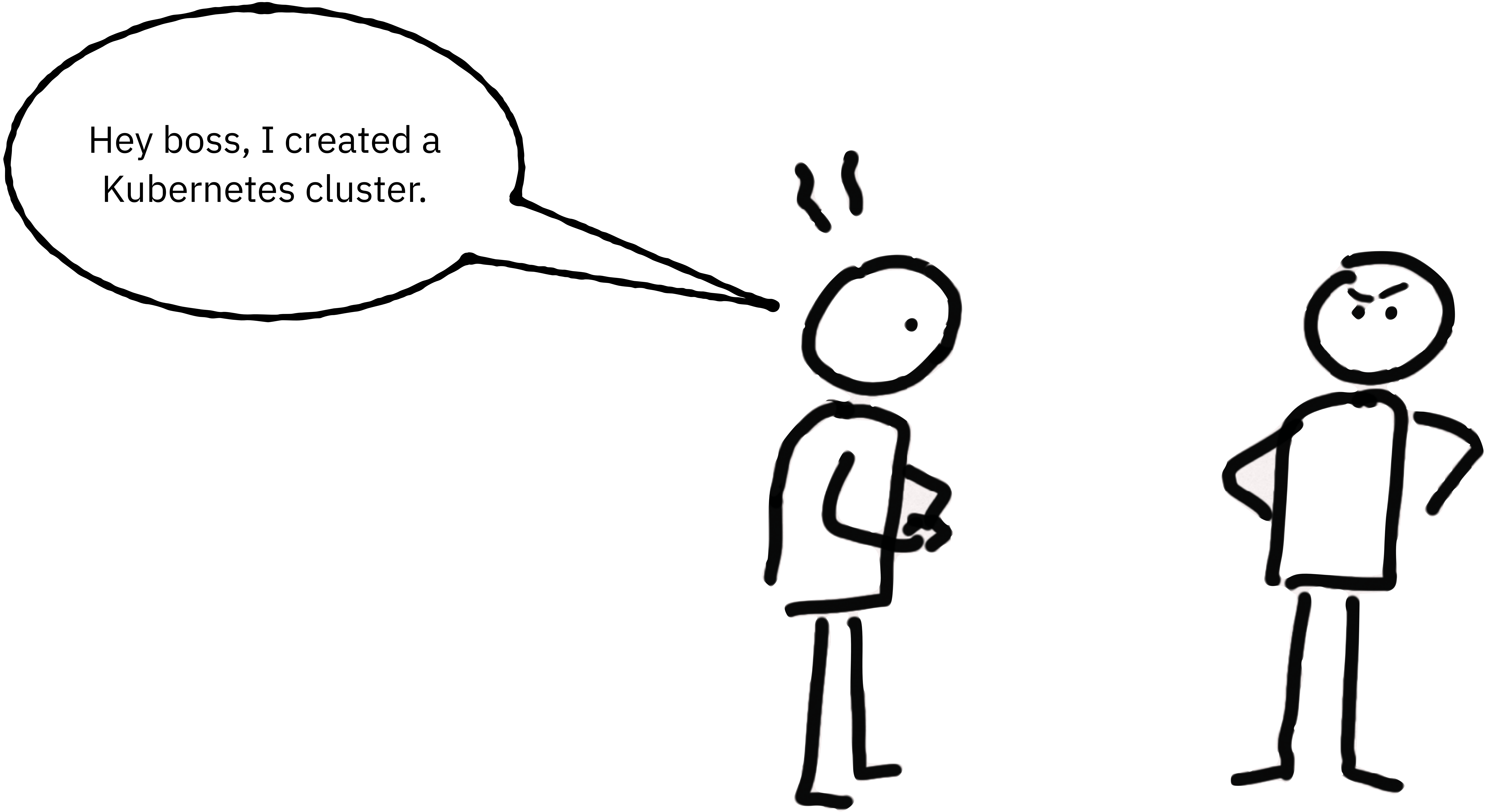
things that are different in the ☁

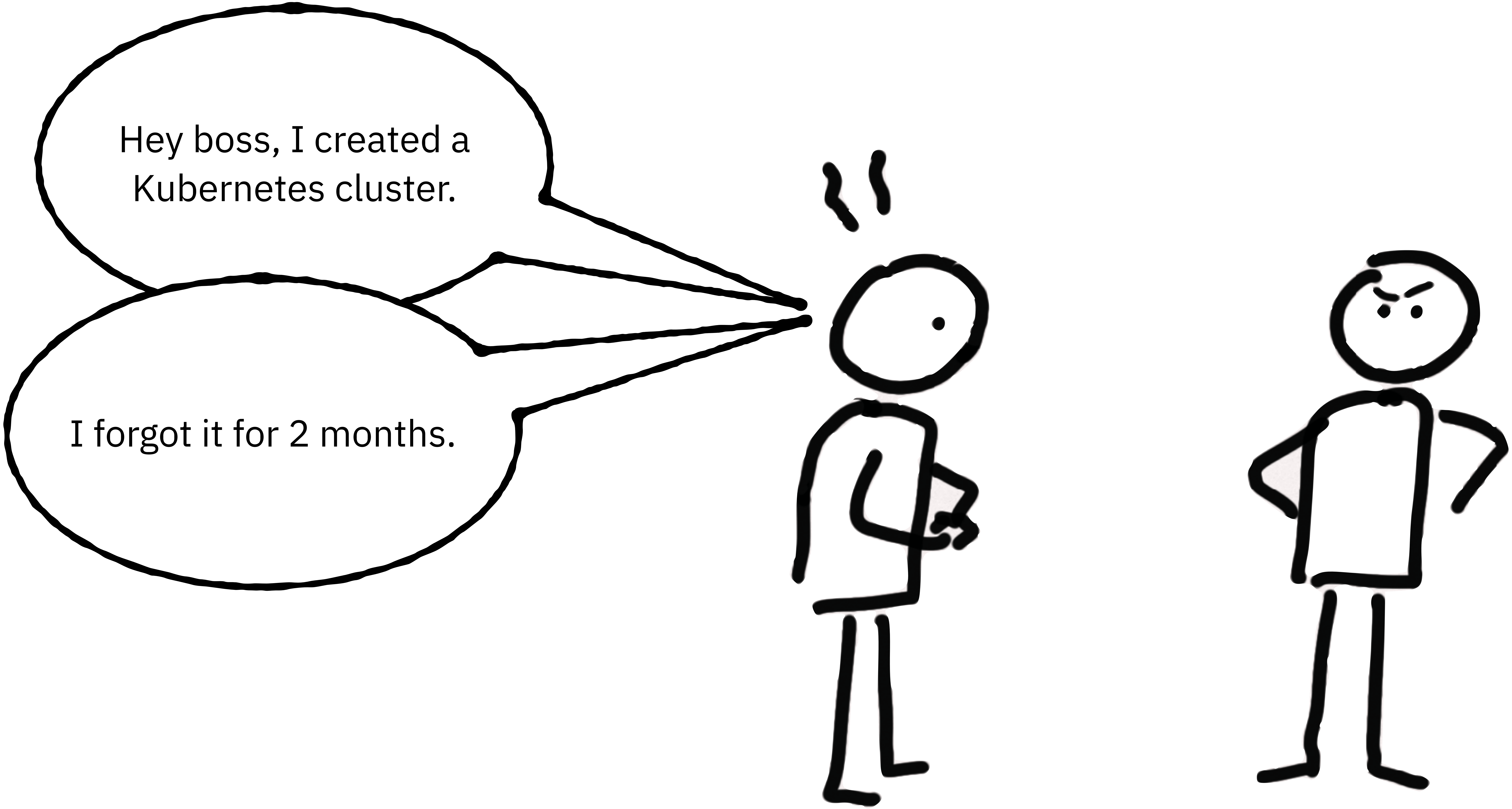
management

The cloud makes it **so** easy to provision hardware.

That doesn’t mean
the hardware is free.

Or useful.


Hey boss, I created a Kubernetes cluster.


Hey boss, I created a Kubernetes cluster.
I forgot it for 2 months.

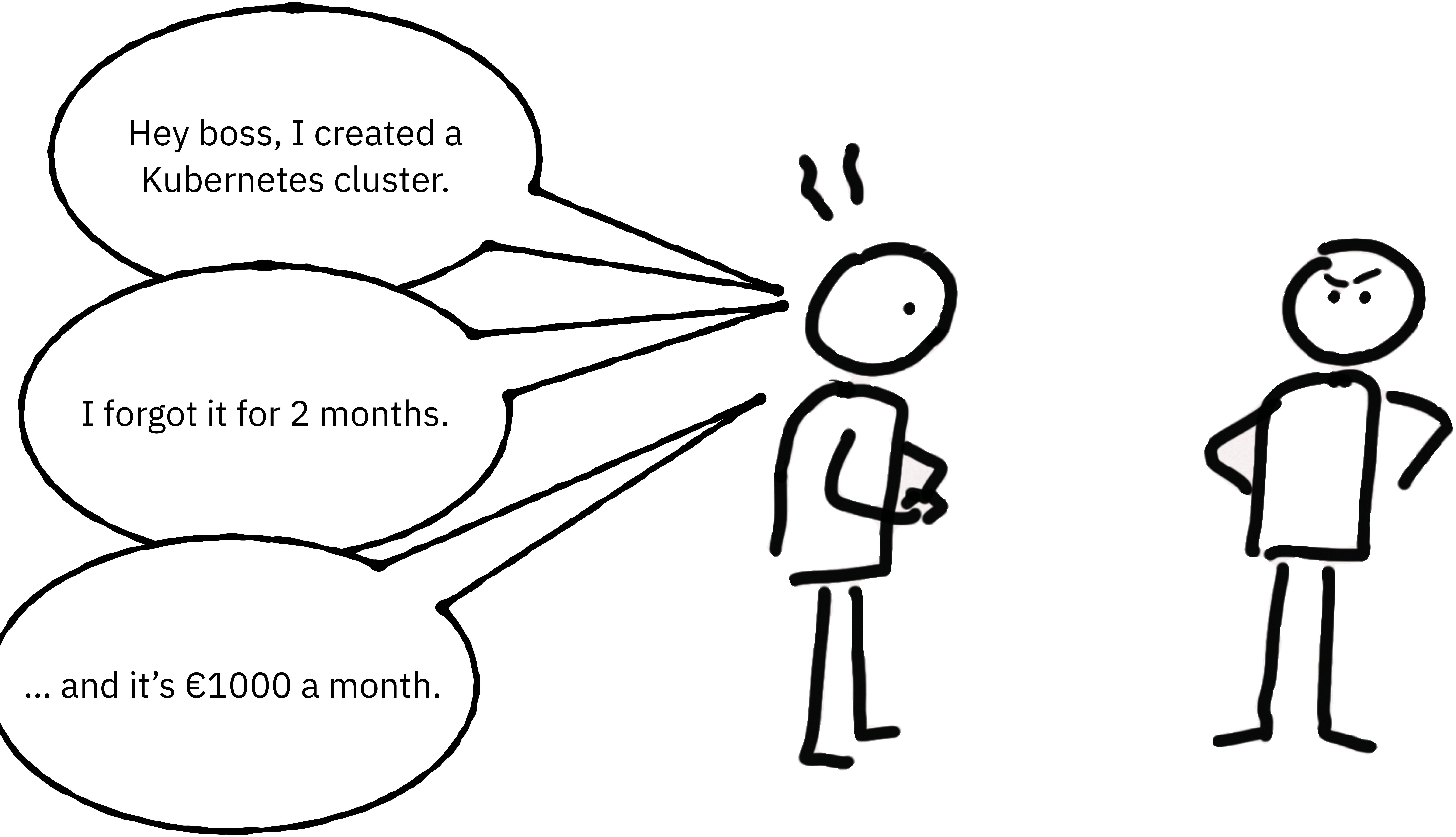

Hey boss, I created a Kubernetes cluster.
I forgot it for 2 months.
… and it’s €1000 a month.

Photo by daveynin, flickr

2017 survey

25%

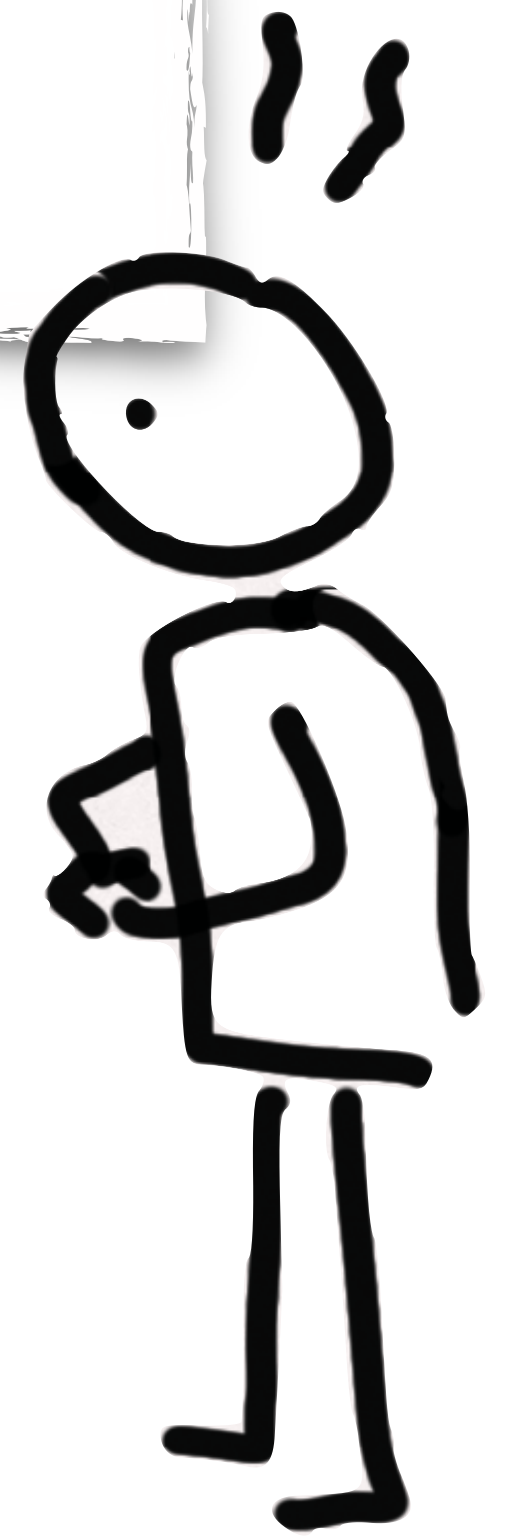
of 16,000 servers
doing **no** useful work

“perhaps someone forgot to turn them off”

2017 survey

25%

of 16,000 servers
doing **no** useful work



finops

figuring out who in your company forgot to turn off their cloud

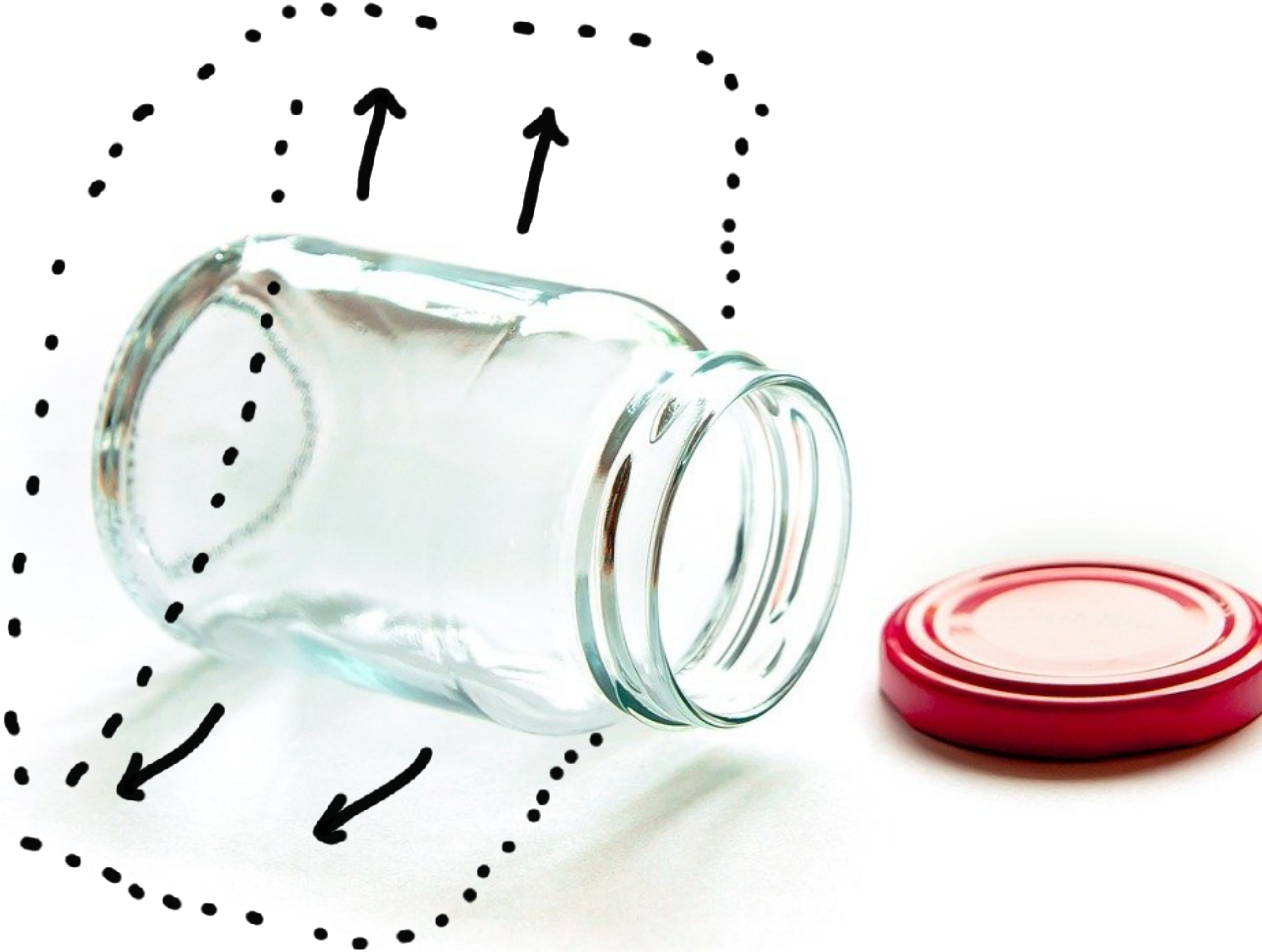
things that are different in the ☁

tracing

things that are different in the

packaging

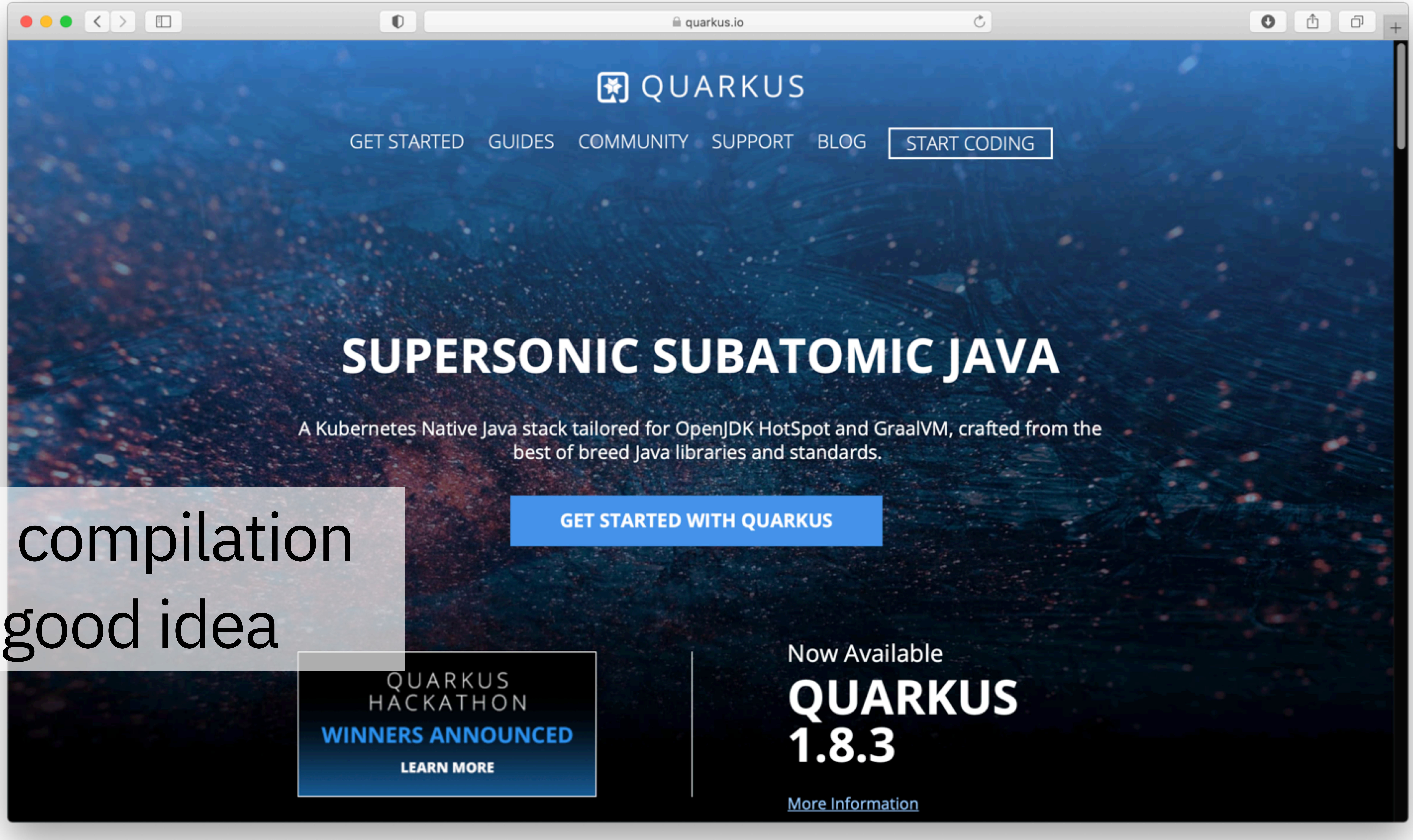
(and fat jars)



things that are different in the ☁

performance requirements

memory footprint is money
startup time is money



quarkus.io

QUARKUS

GET STARTED GUIDES COMMUNITY SUPPORT BLOG START CODING

SUPERSONIC SUBATOMIC JAVA

A Kubernetes Native Java stack tailored for OpenJDK HotSpot and GraalVM, crafted from the best of breed Java libraries and standards.

GET STARTED WITH QUARKUS

QUARKUS HACKATHON

WINNERS ANNOUNCED

LEARN MORE

Now Available

QUARKUS 1.8.3

More Information

ahead of time compilation
is (actually) a good idea

things that are
different in the
☁

releasing

things that are different in the ☁

releasing

“we’re moving too slowly.

“we’re moving too slowly.

we should modernise our COBOL application into microservices.

“we’re moving too slowly.

we should modernise our COBOL application into microservices.

… but our release board only meets twice a year.”

modularity

microservices are not the **goal**

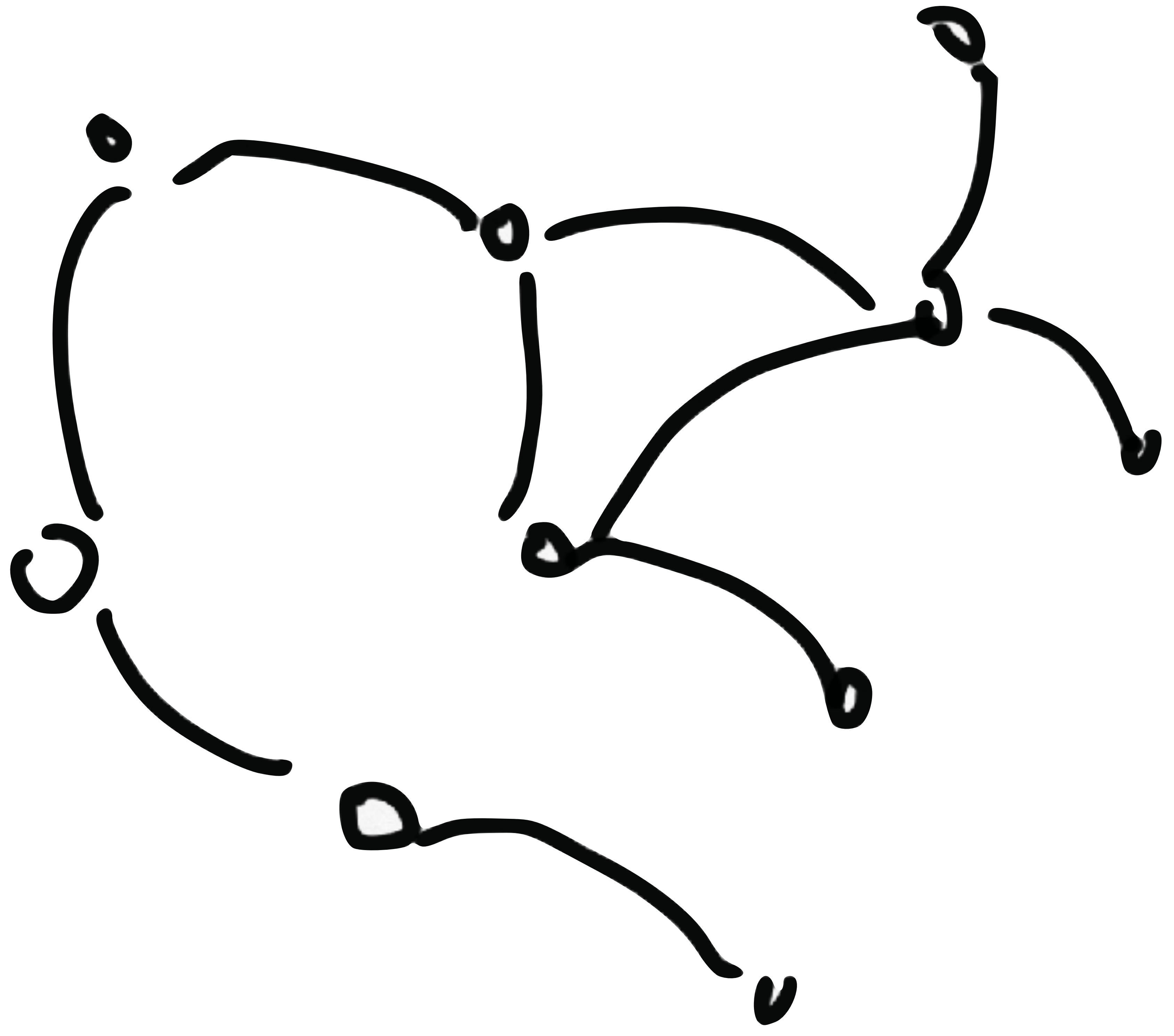
microservices are not the **goal**

they are the **means**

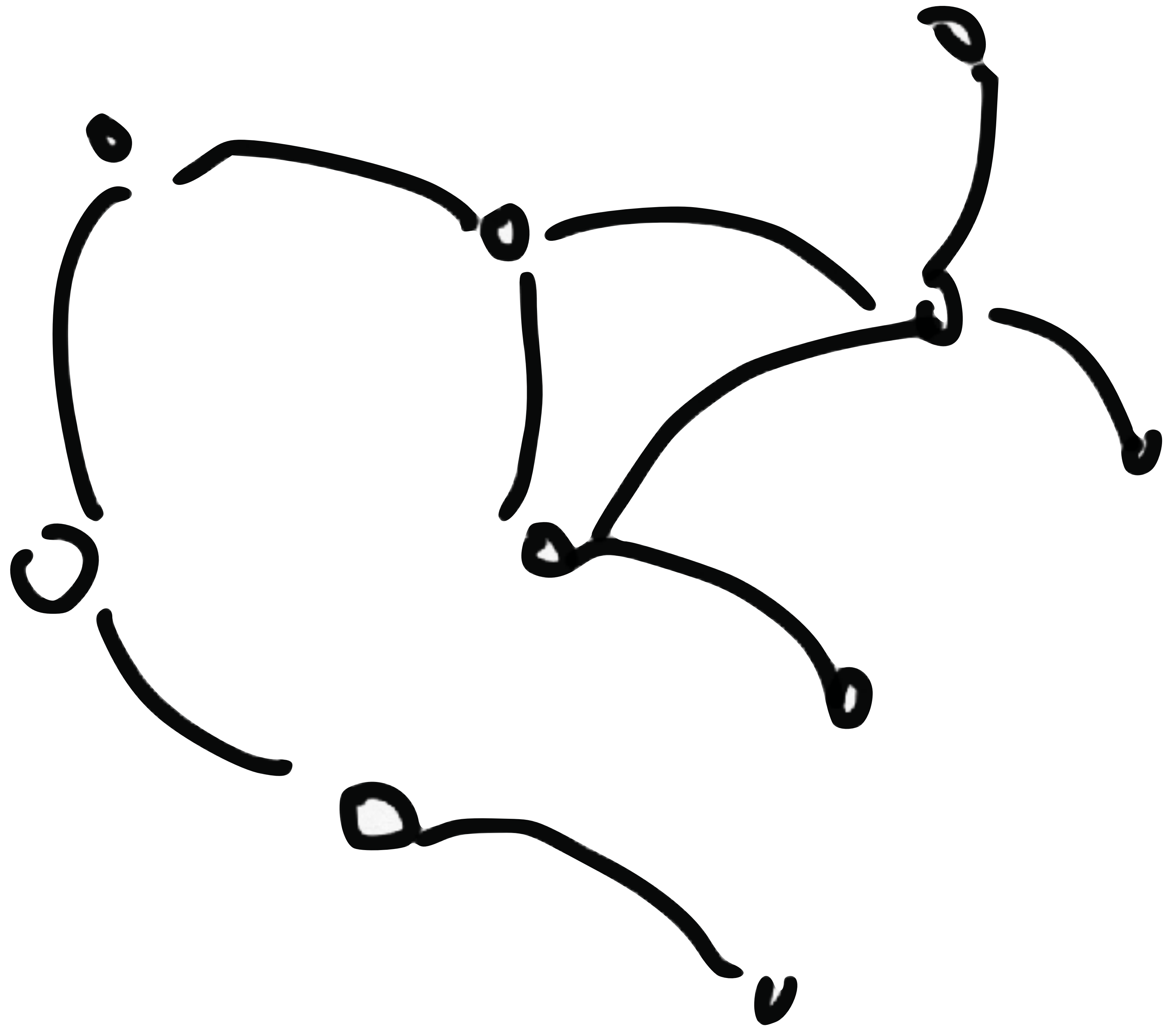
wishful mimicry

cloud != microservices

“every time we touch one microservice, all the others break.”



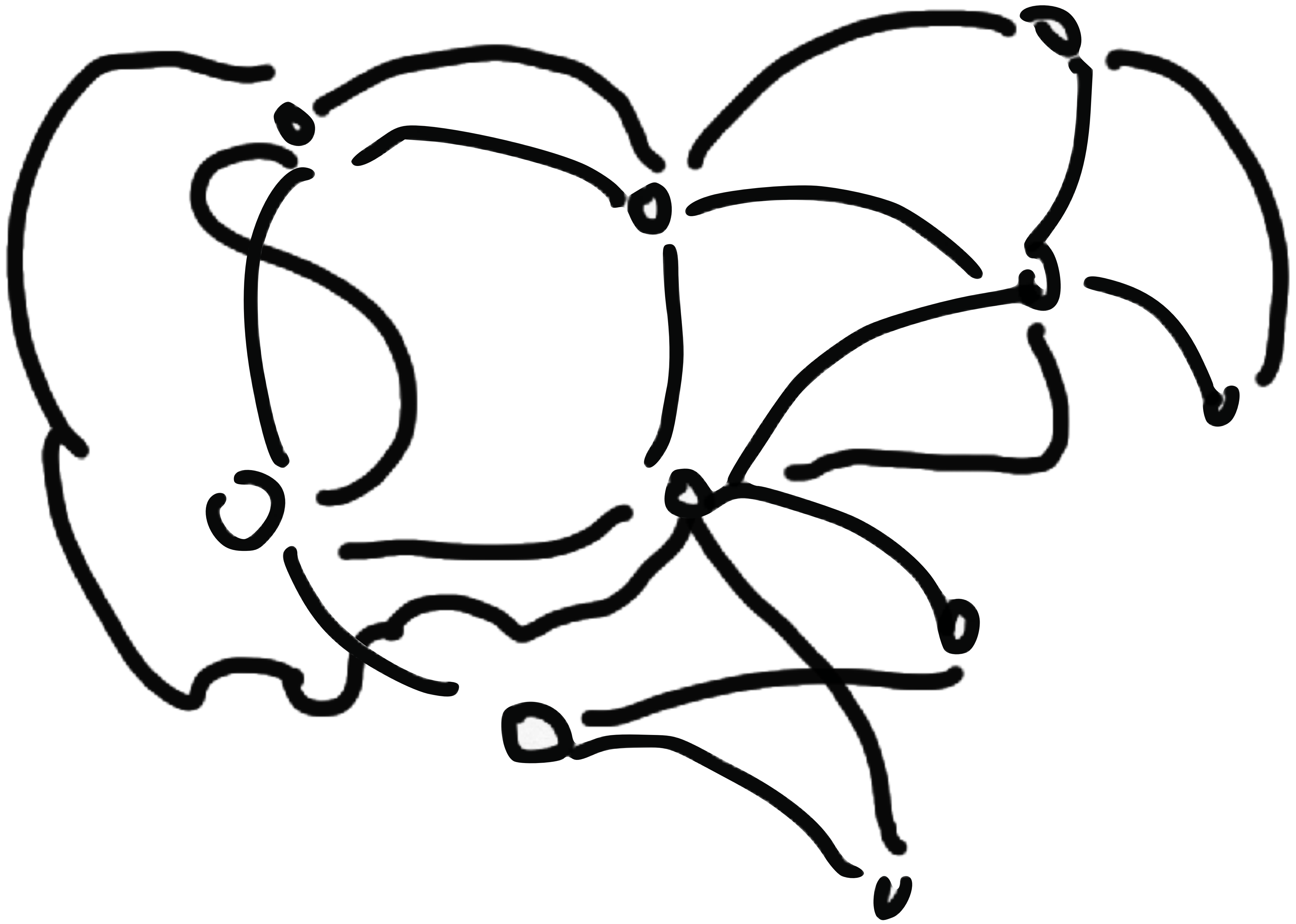
distributed monolith



distributed monolith

but without compile-time checking

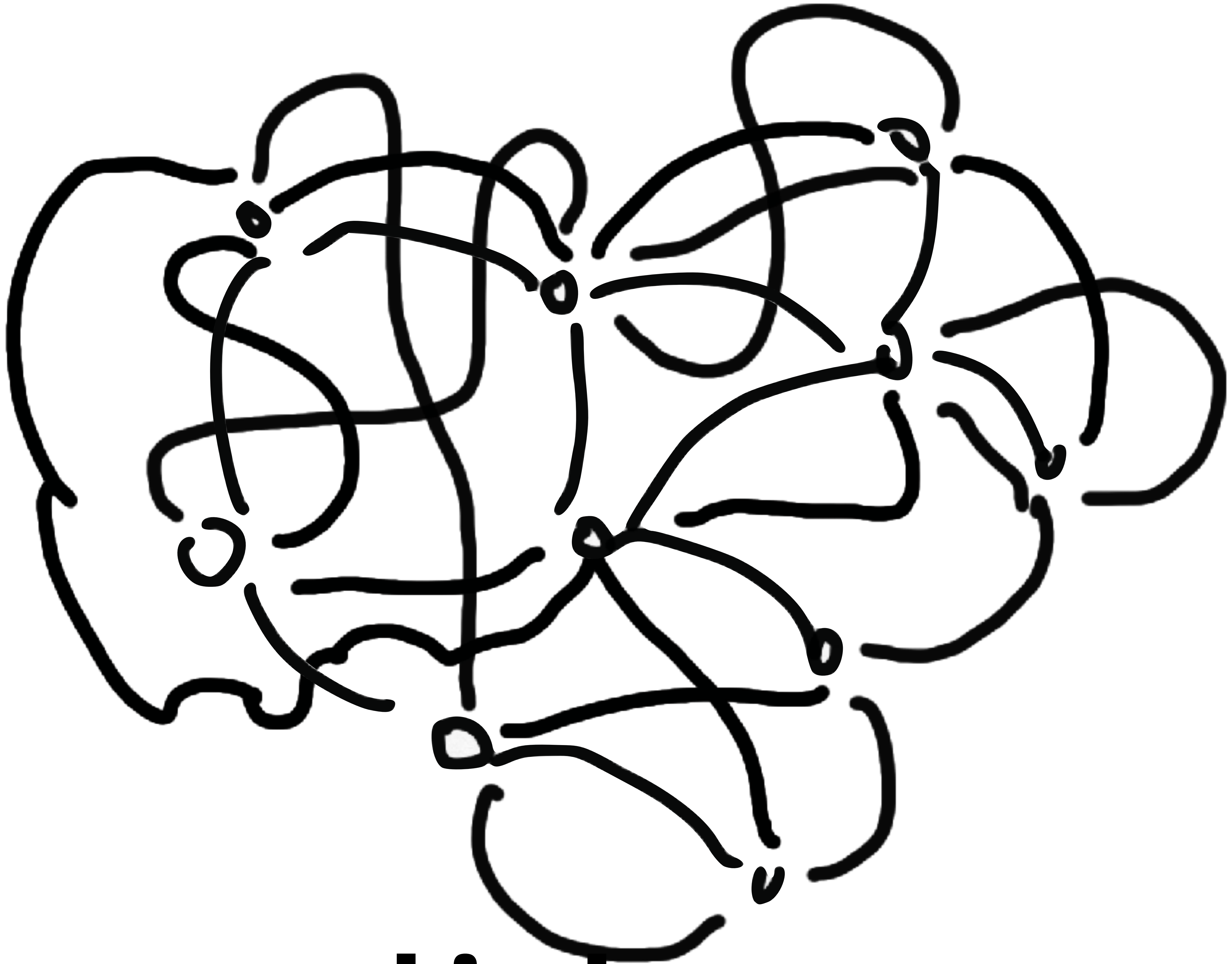
… or guaranteed function execution



distributed monolith

but without compile-time checking

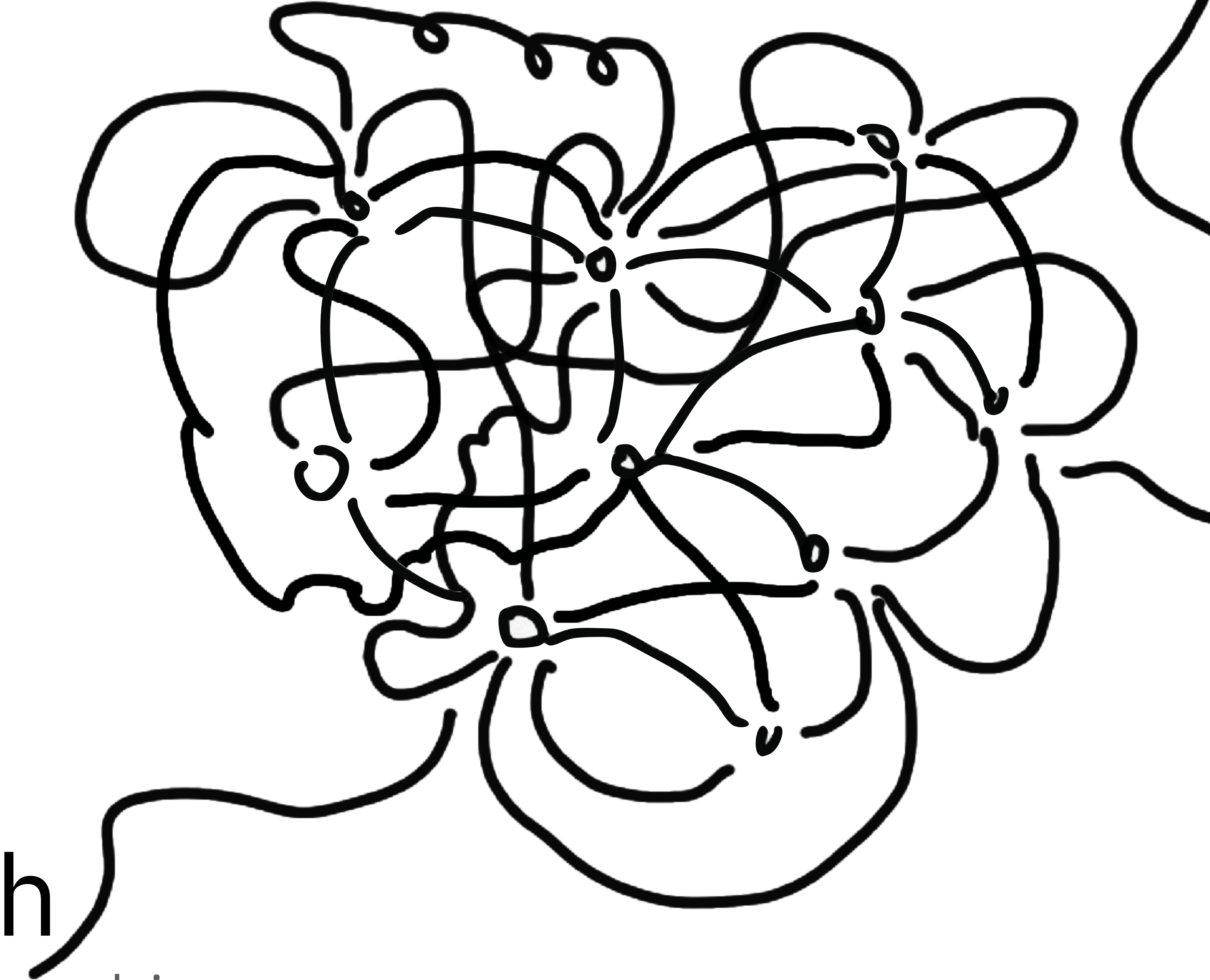
… or guaranteed function execution



distributed monolith

but without compile-time checking

… or guaranteed function execution

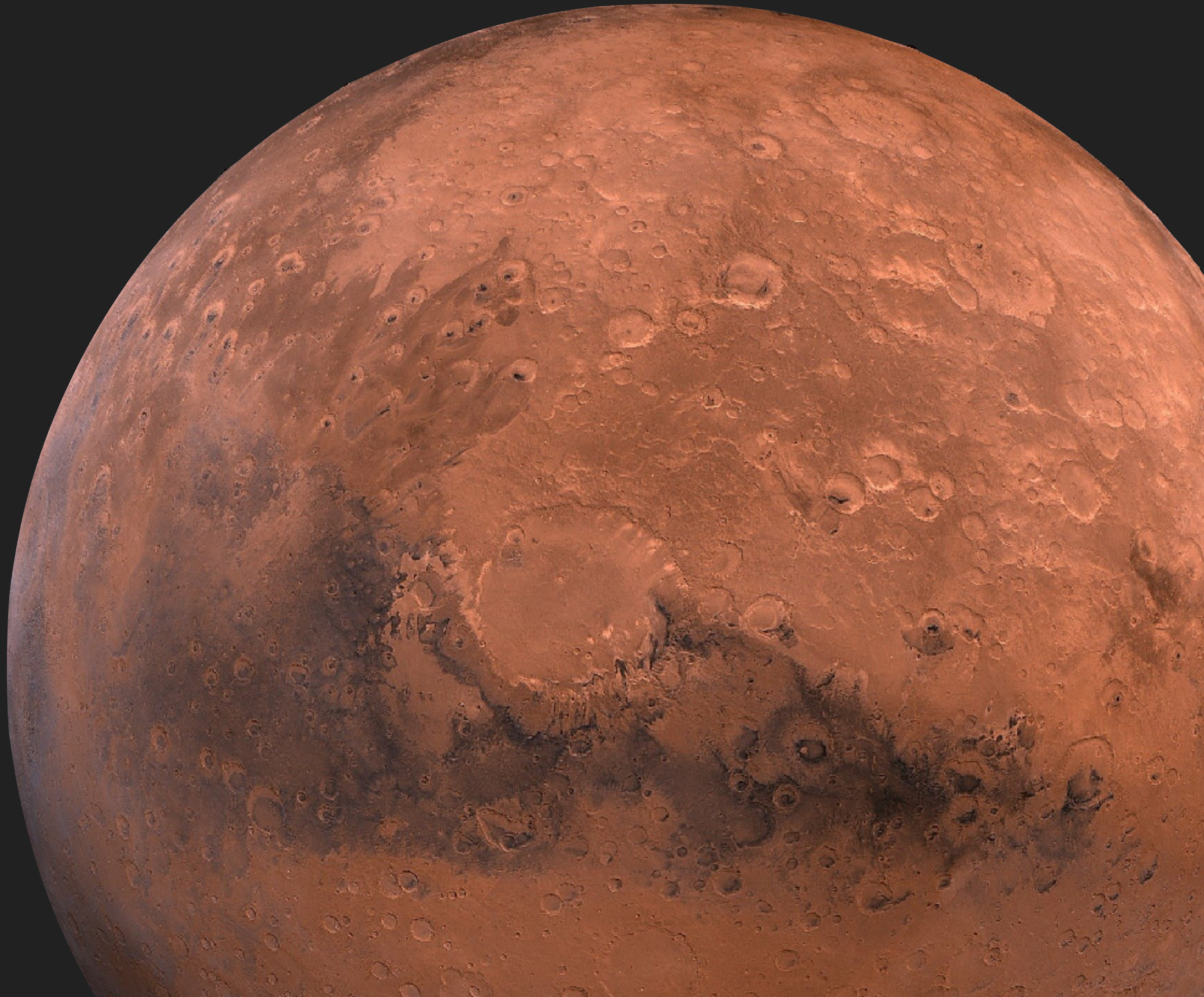


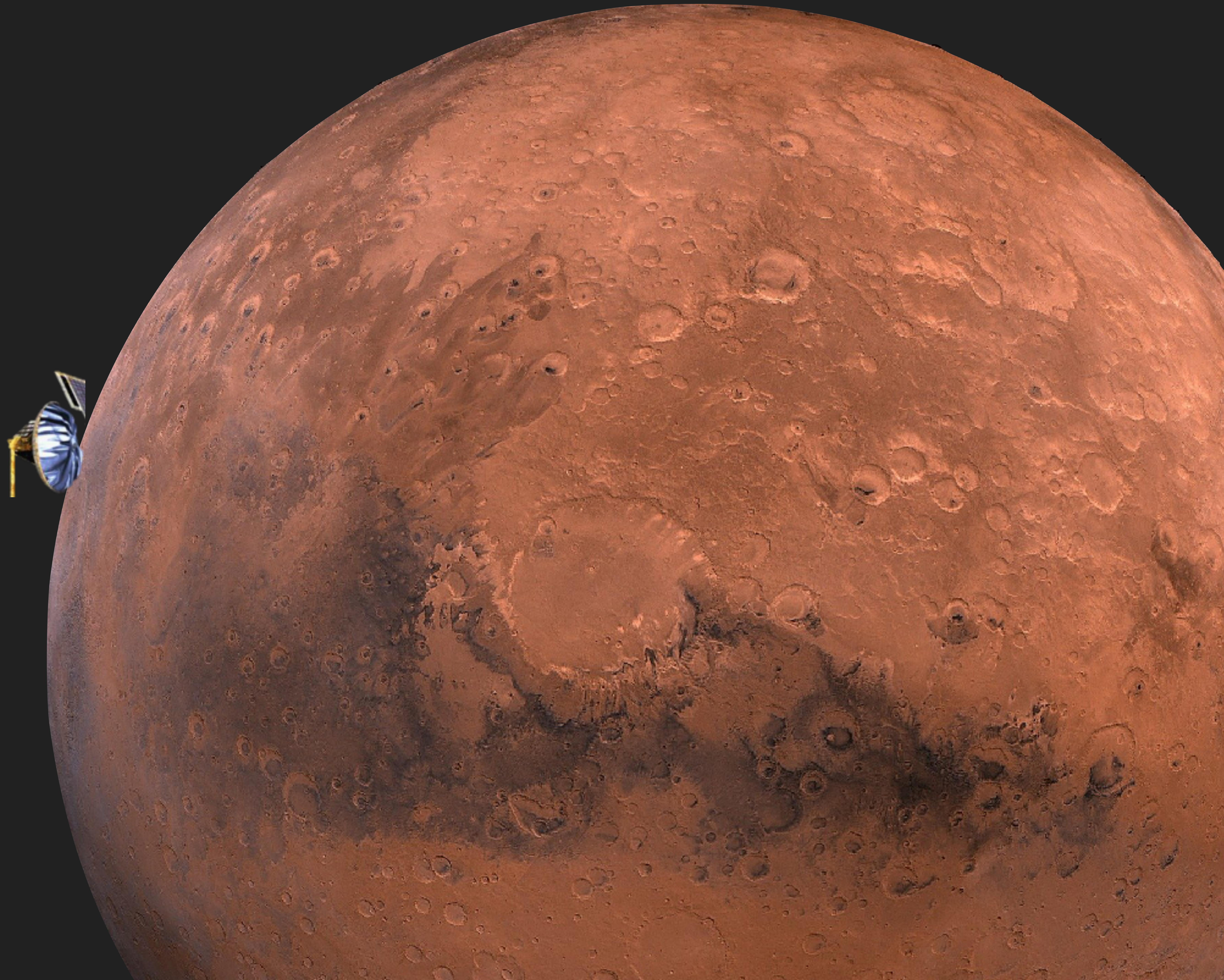
distributed monolith

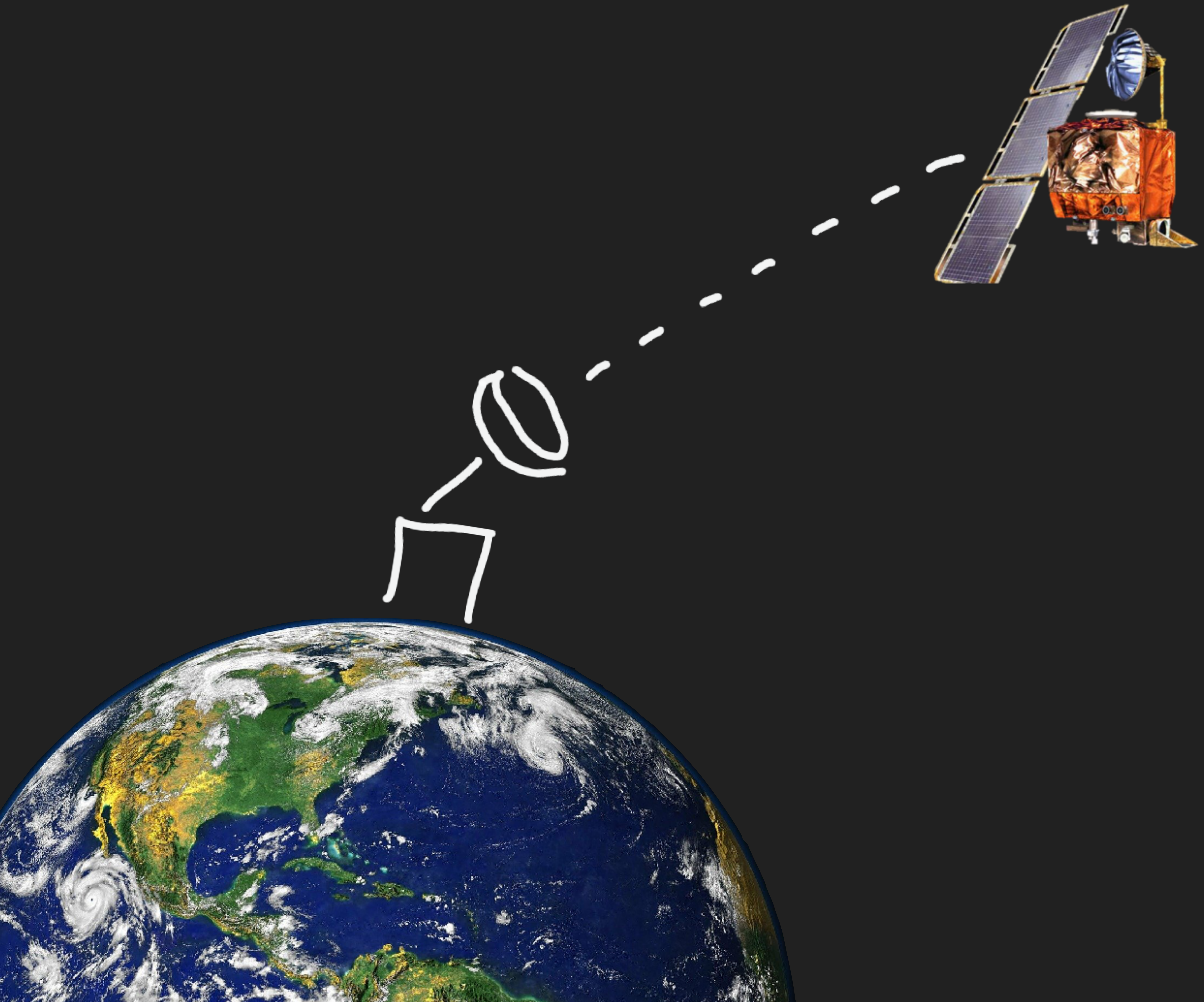
but without compile-time checking

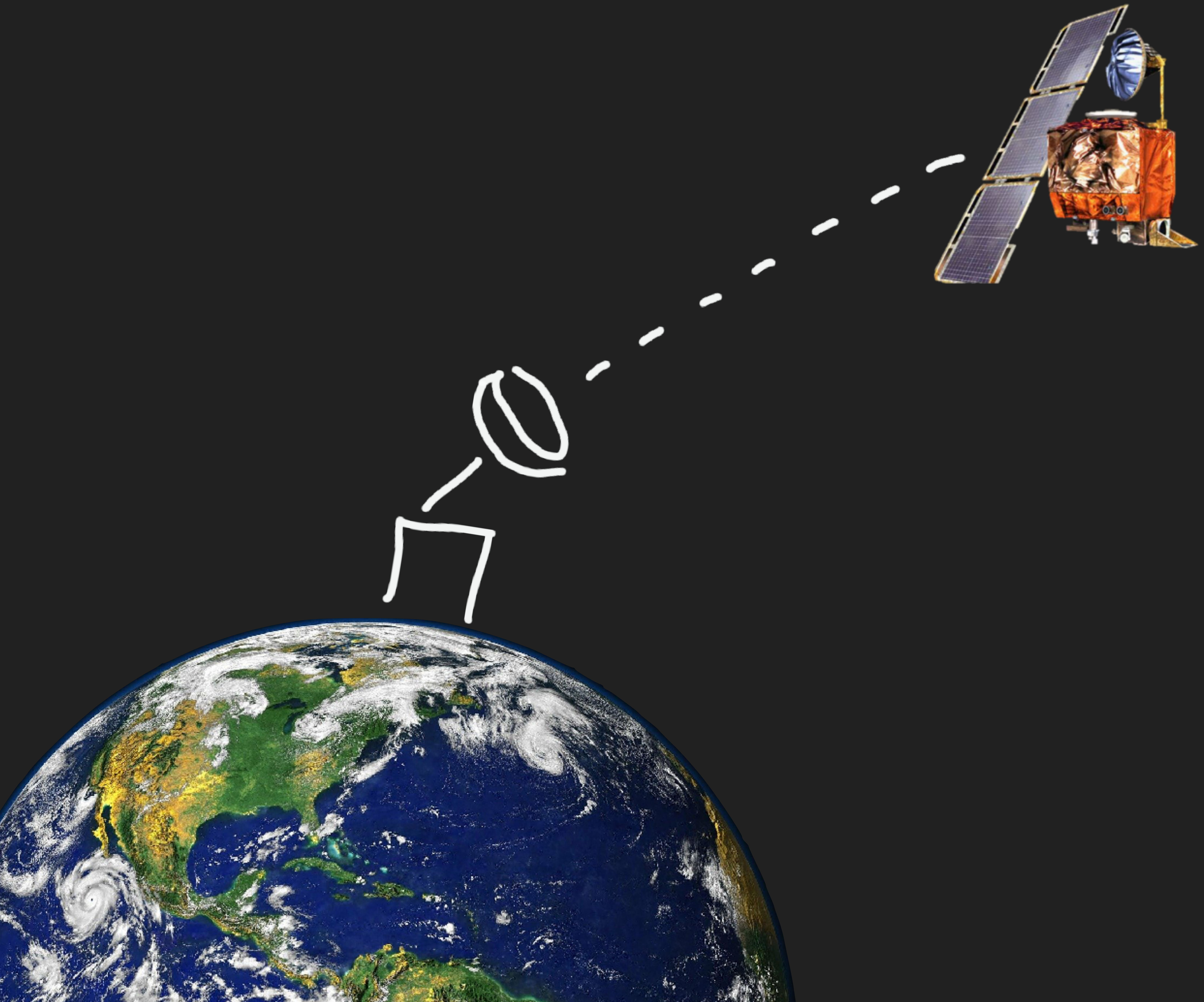
… or guaranteed function execution

Courtesy NASA/
JPL-Caltech

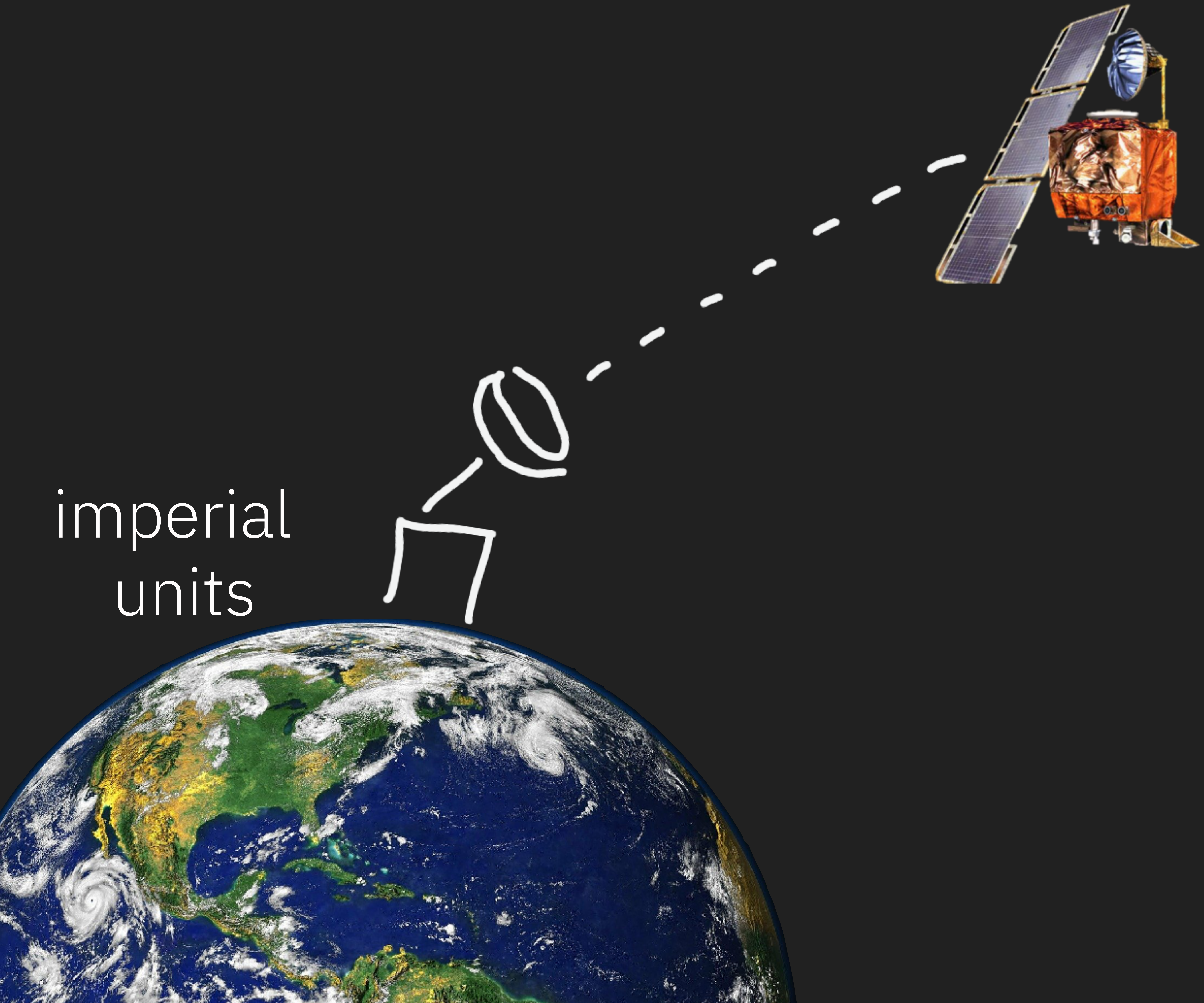






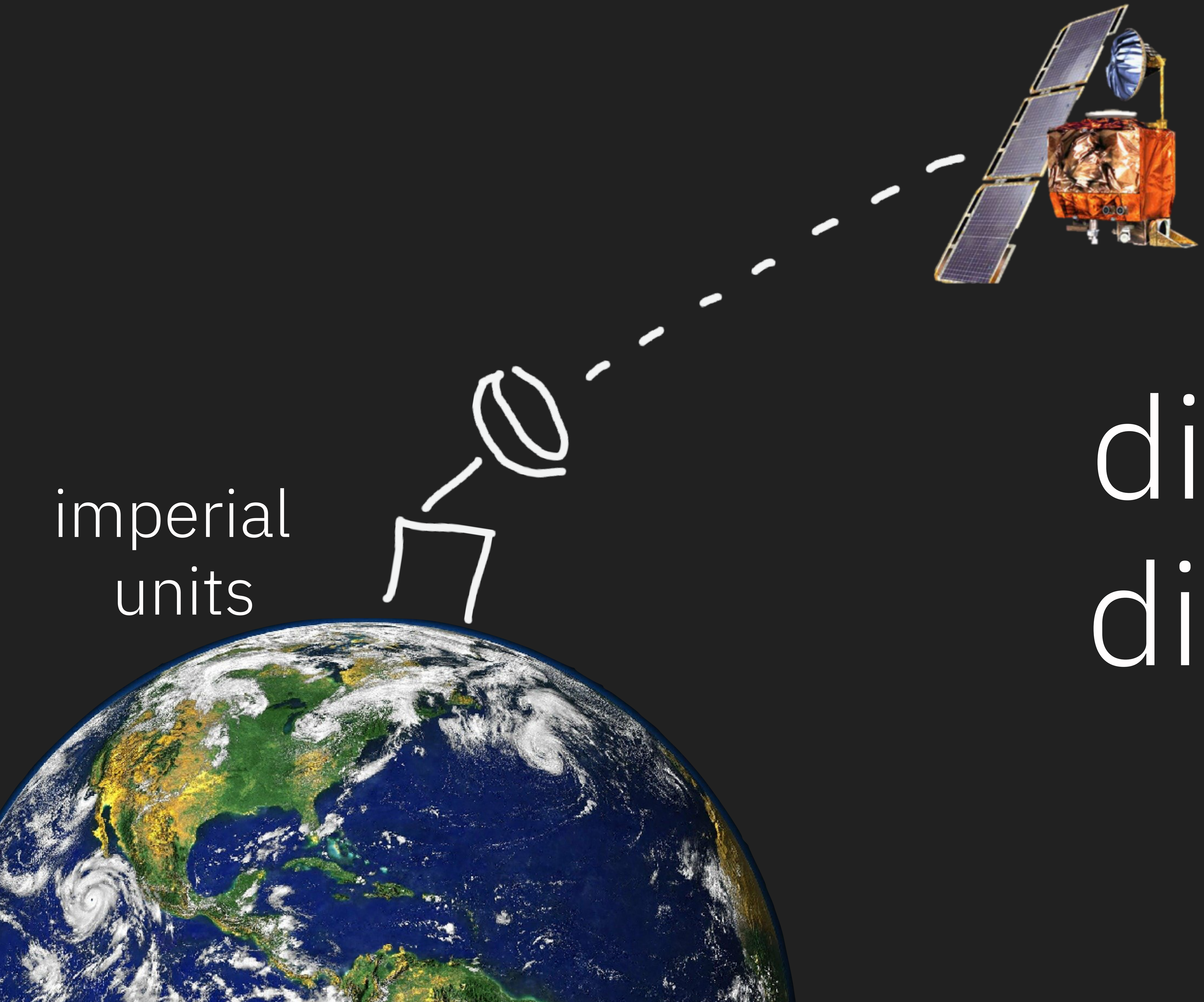


metric units



metric units

imperial units



distributing did not help

distributed != decoupled

reasons **not** to do microservices

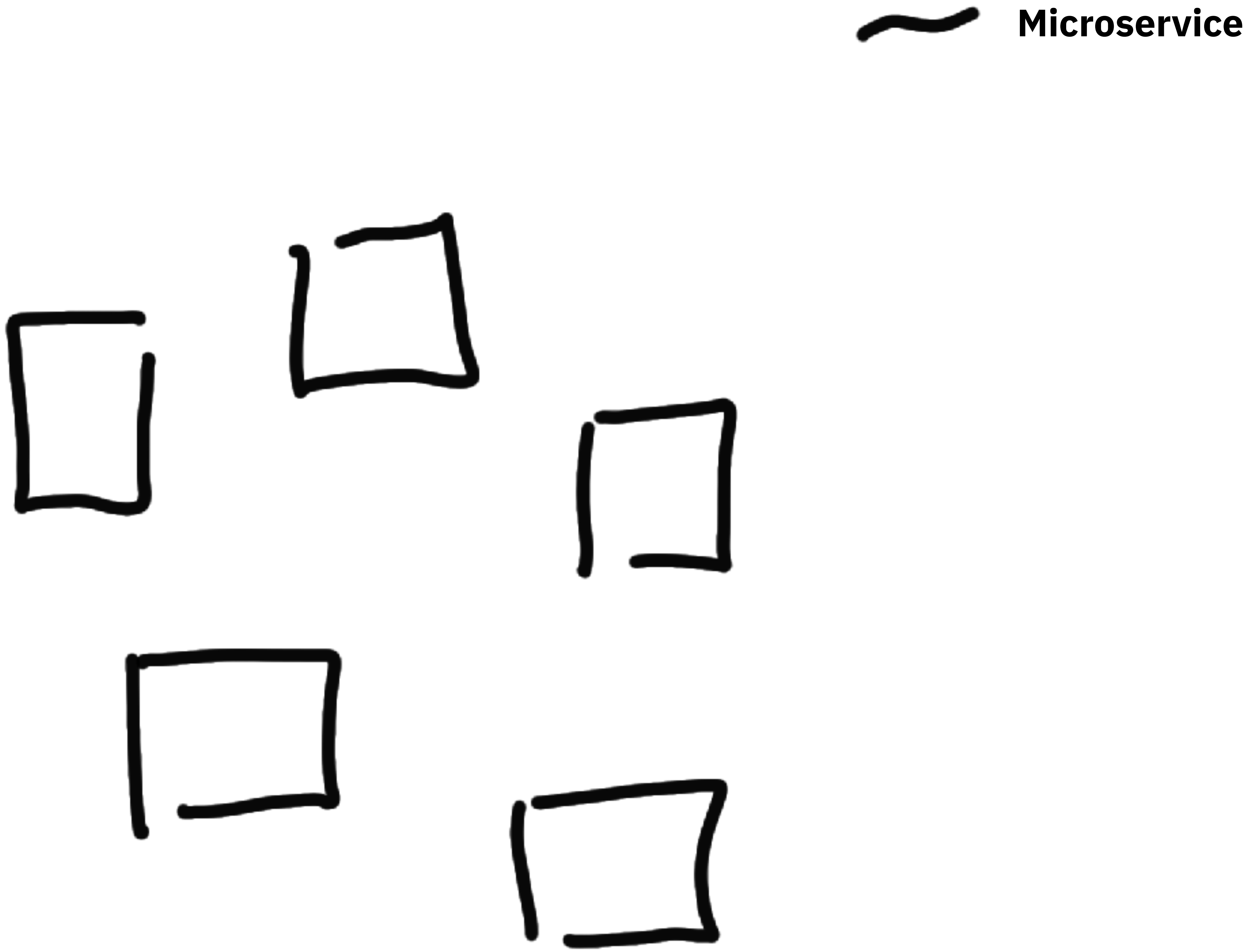
small team

not planning to release independently

don’t want complexity of a service mesh - or worse yet, rolling your own

domain model doesn’t split nicely

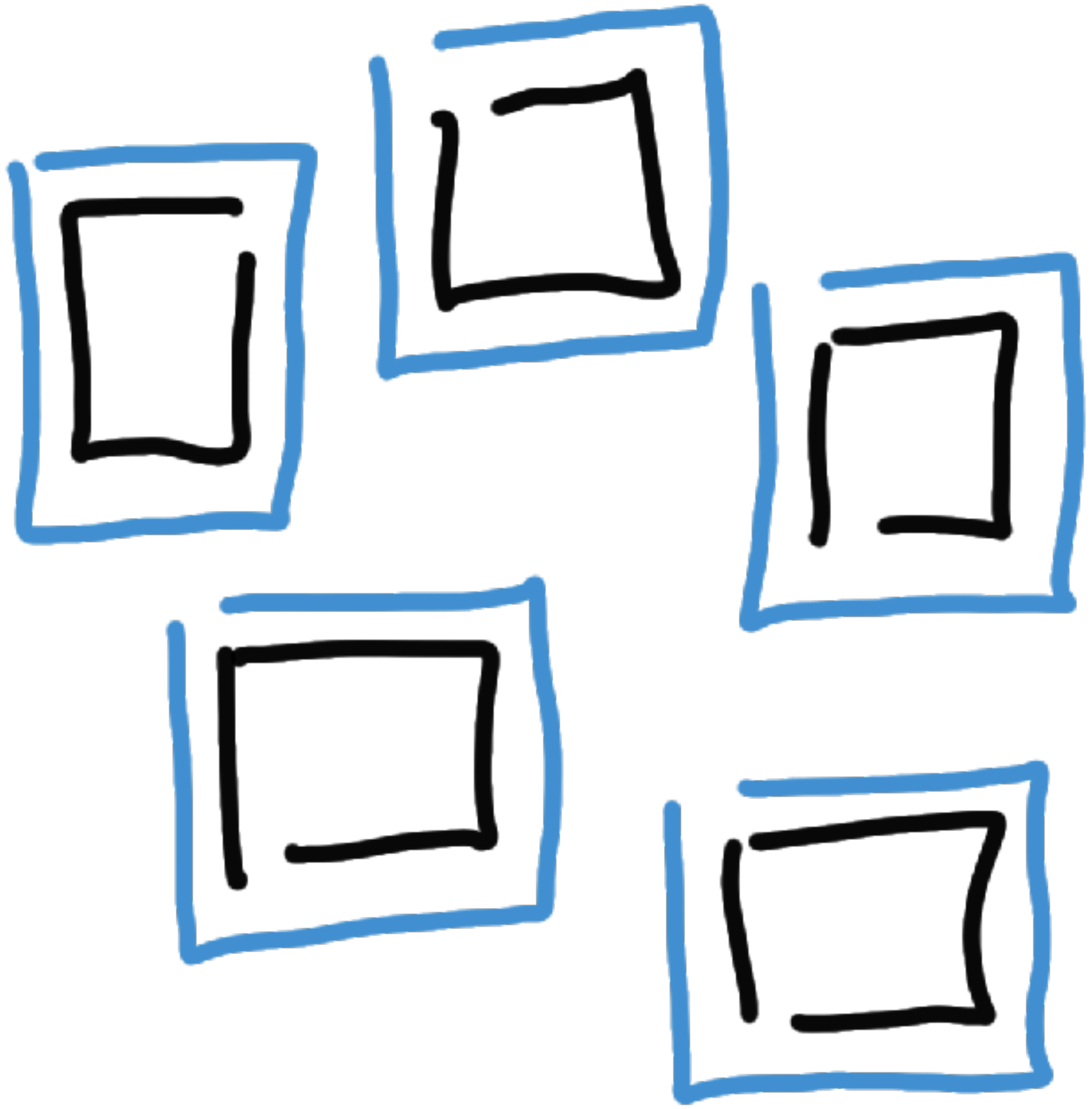
“each of our microservices has duplicated the same object model … with twenty classes and seventy fields”

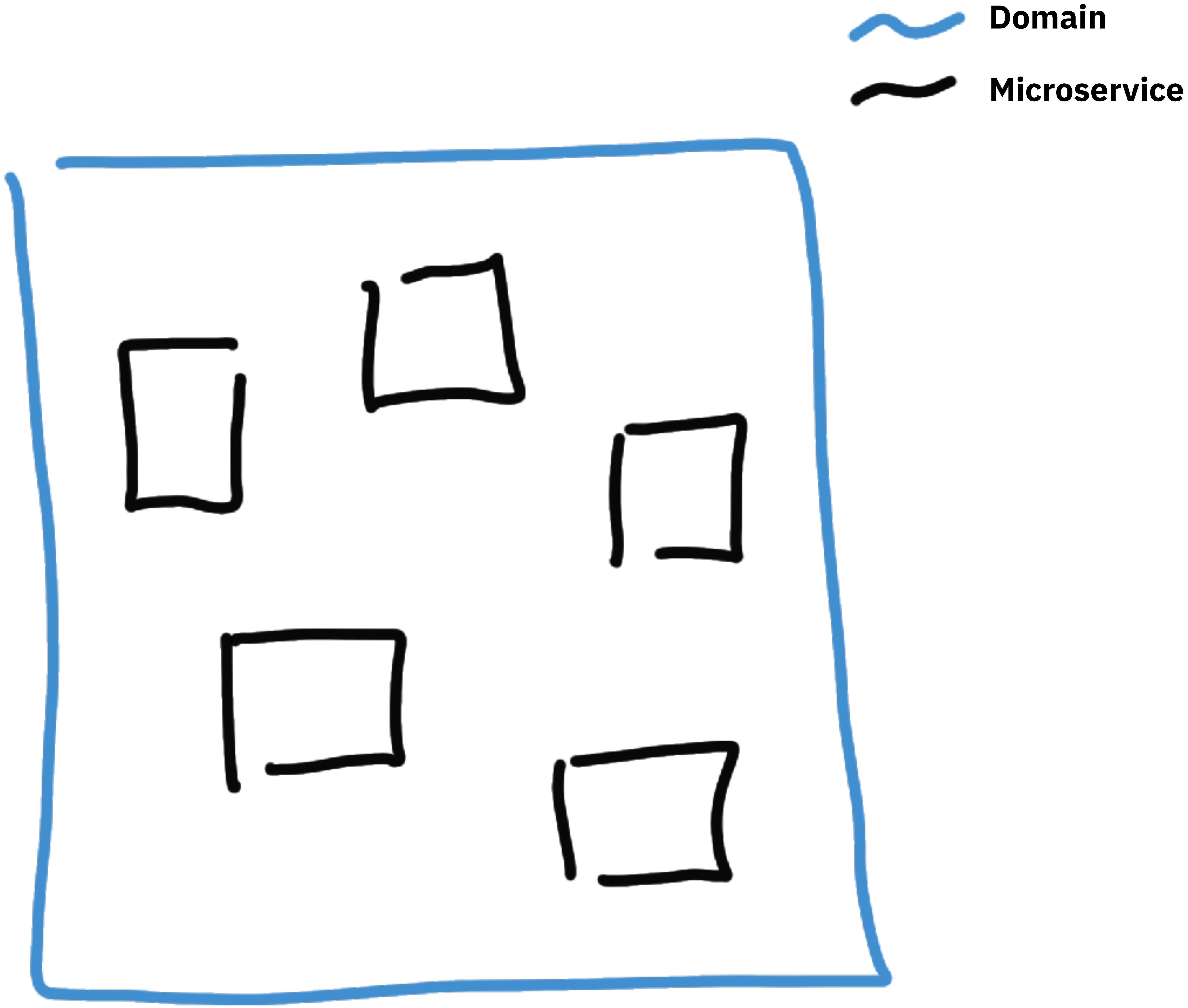


Microservice

~ Domain

~ Microservice





(this is bad)

If you’re going to do microservices, you need to get good at automation.

And testing.

the test pyramid

the test pyramid

the test pyramid

the test pyramid

How to test a fire alarm?

how **not** to test a fire alarm

how **not** to test a fire alarm

MAINS SMOKE ALARM
DO NOT PAINT
IONISATION
SMOKE ALARM
TEST
& HUSH
PUSH
UNCLIP & SLIDE
DISCONNECT MAINS BEFORE REMOVAL

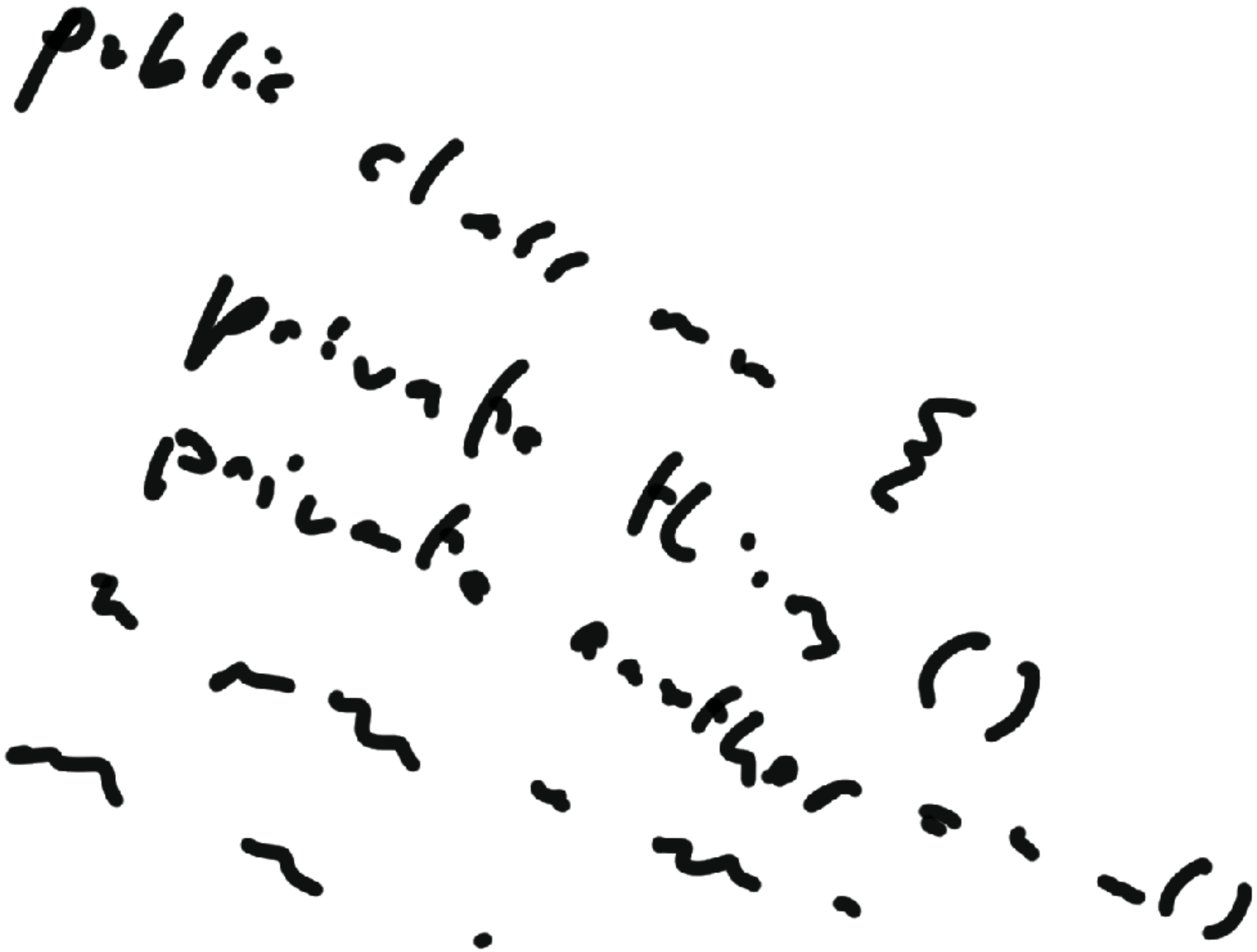
unit testing a fire alarm

uh … is that enough?

contract testing a fire alarm

contract testing a fire alarm

to the **code**!



microservices **need**
consumer-driven contract tests

thank you

@holly_cummins

get the code:
ibm.biz/holly-jfuture