

Reviving the art of software design

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 thoughtworks

Is  **stackoverflow**
the **single biggest contributor**
to your organisation's
codebases?



**"the quick brown fox
jumps over the lazy
dog"**

```
export function  
isPangram(sentence) {  
  return new Set(sentence  
    .toLowerCase()  
    .replace(/[\^a-z]/g, '' )  
  ).size === 26  
}
```

**Pangram.isPangram("the quick brown fox
jumps over the lazy
dog") // => true**

we're bad at design

design is still important

there are reasons

we are responsible

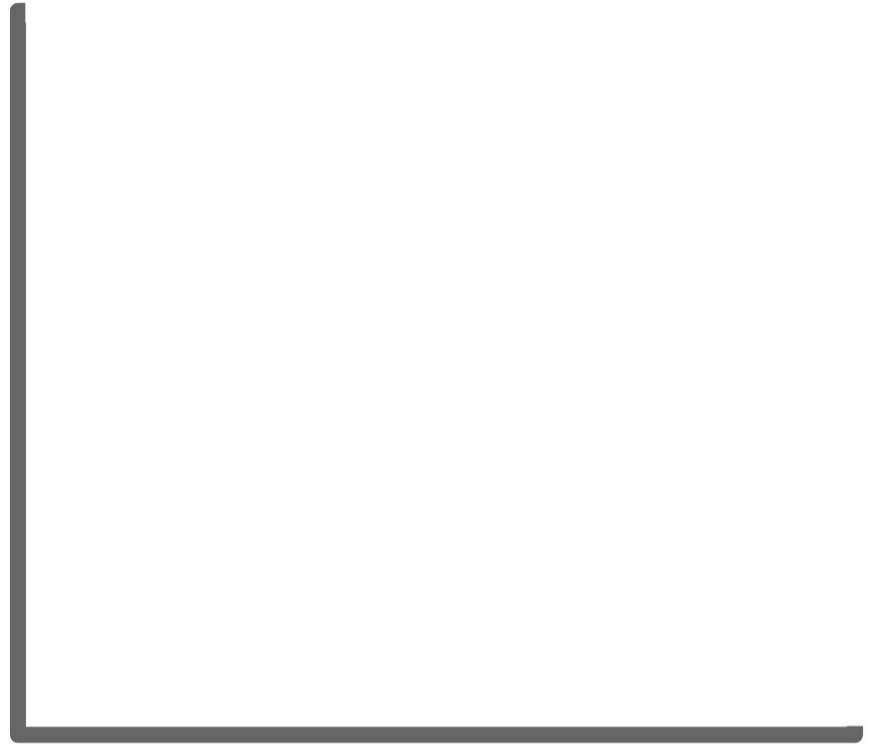
change starts small

Why we care

(including obligatory awkward audience participation)

Good design saves time

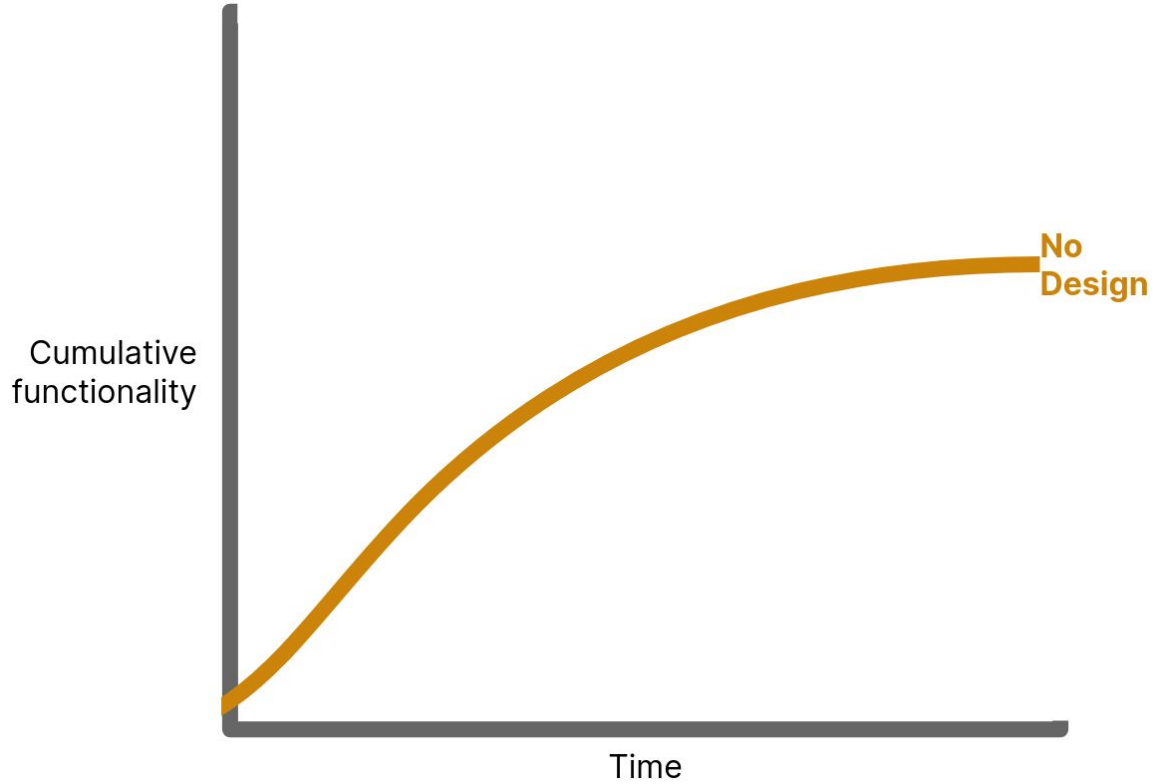
Cumulative
functionality



Time

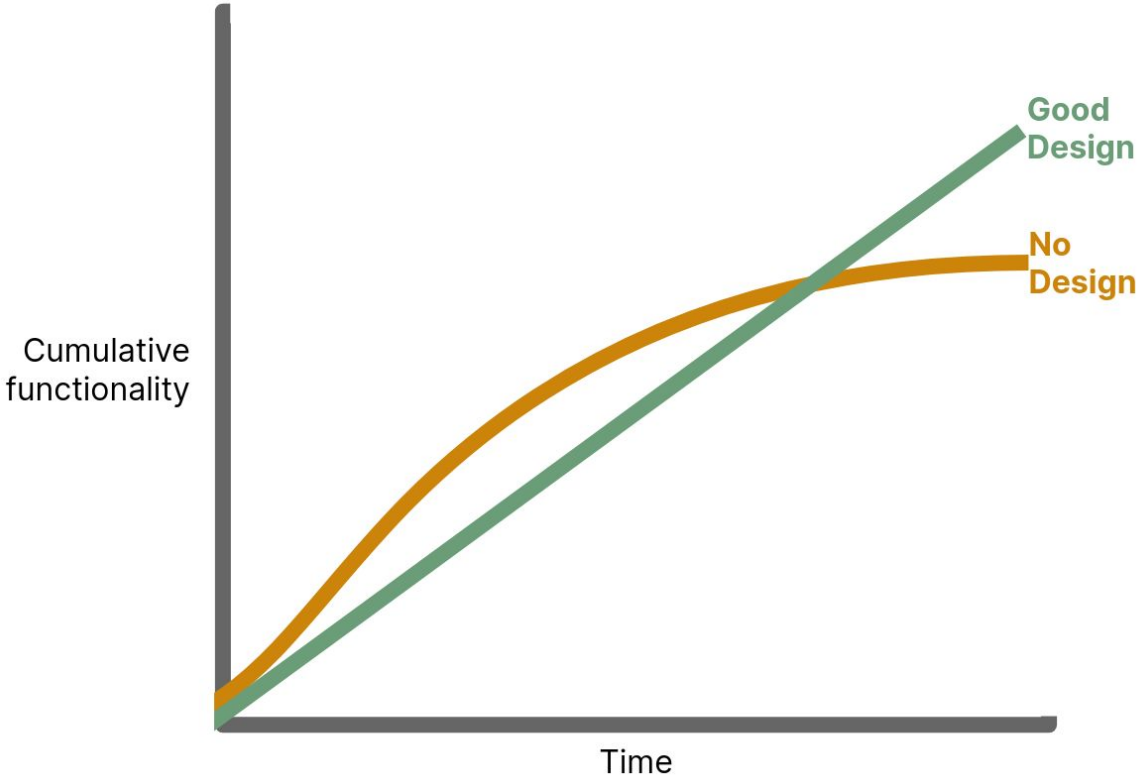
Source: martinfowler.com/bliki/DesignStaminaHypothesis.html

Good design saves time



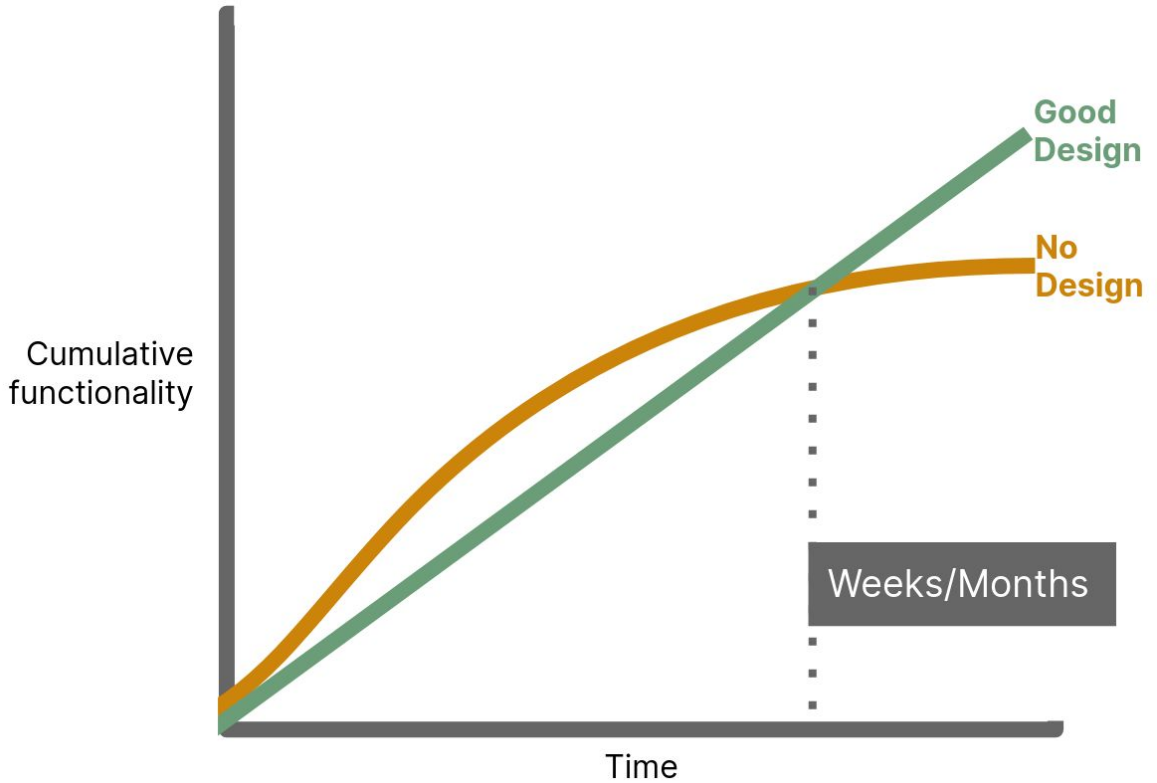
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Good design saves time



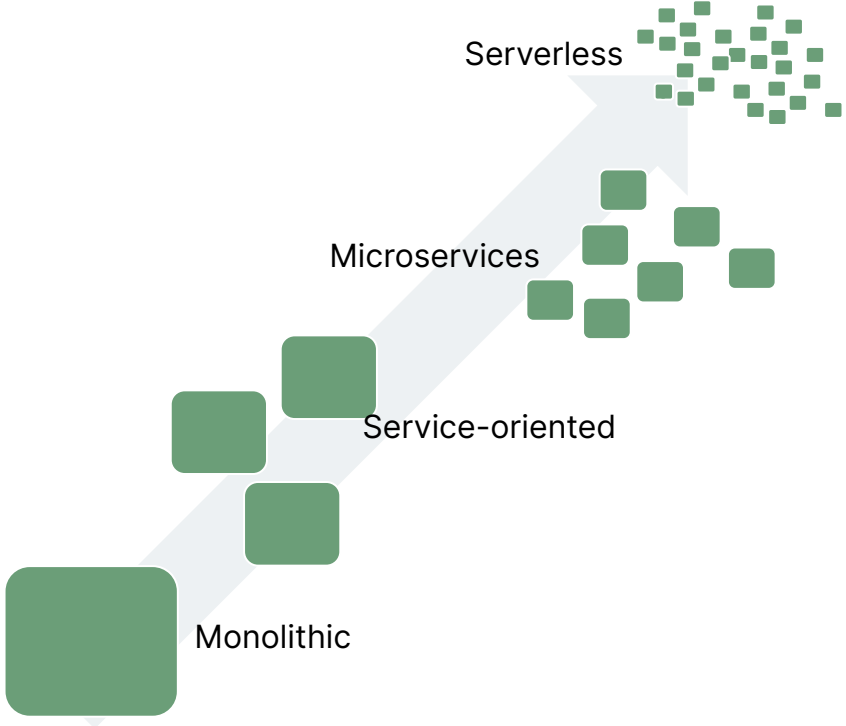
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Good design saves time

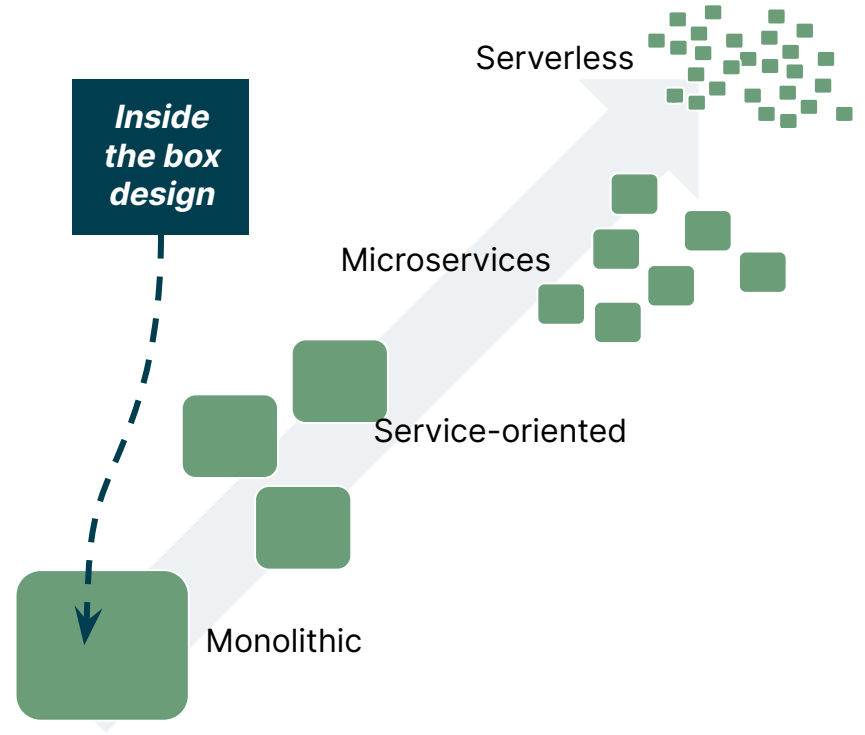


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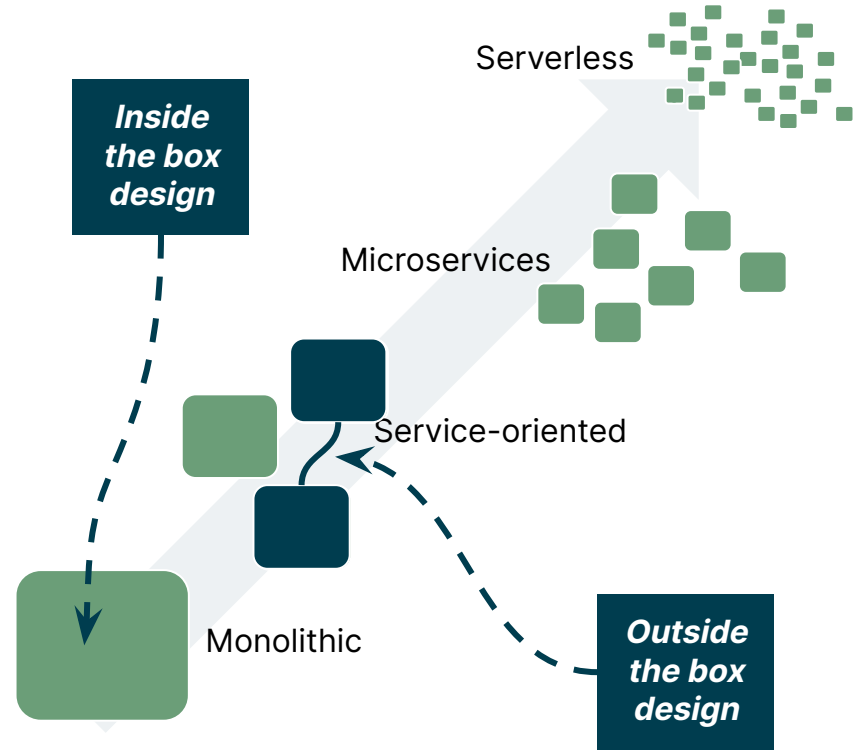
Distributed systems design is complex



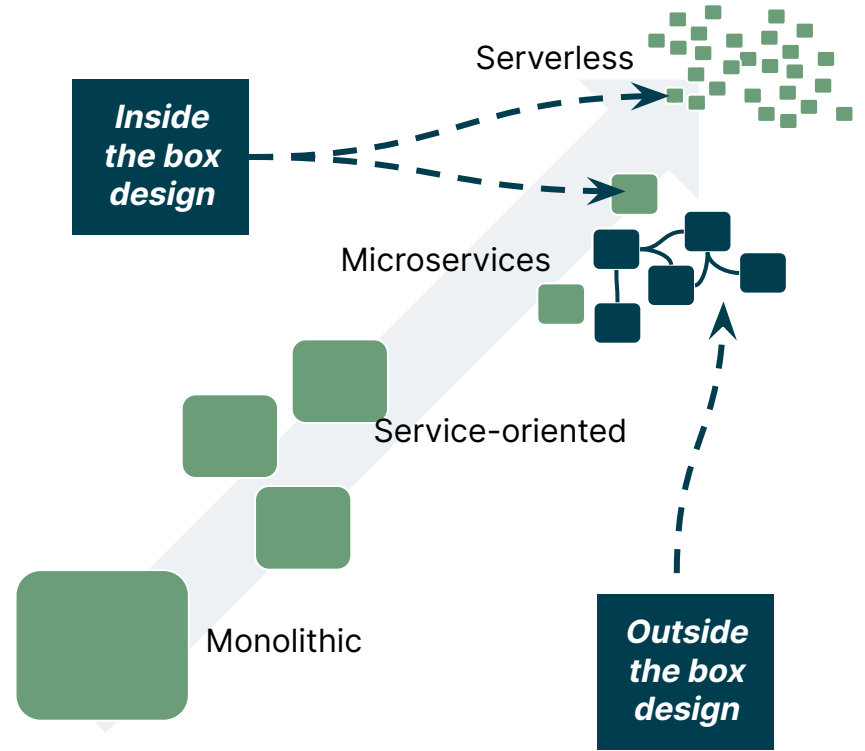
Distributed systems design is complex



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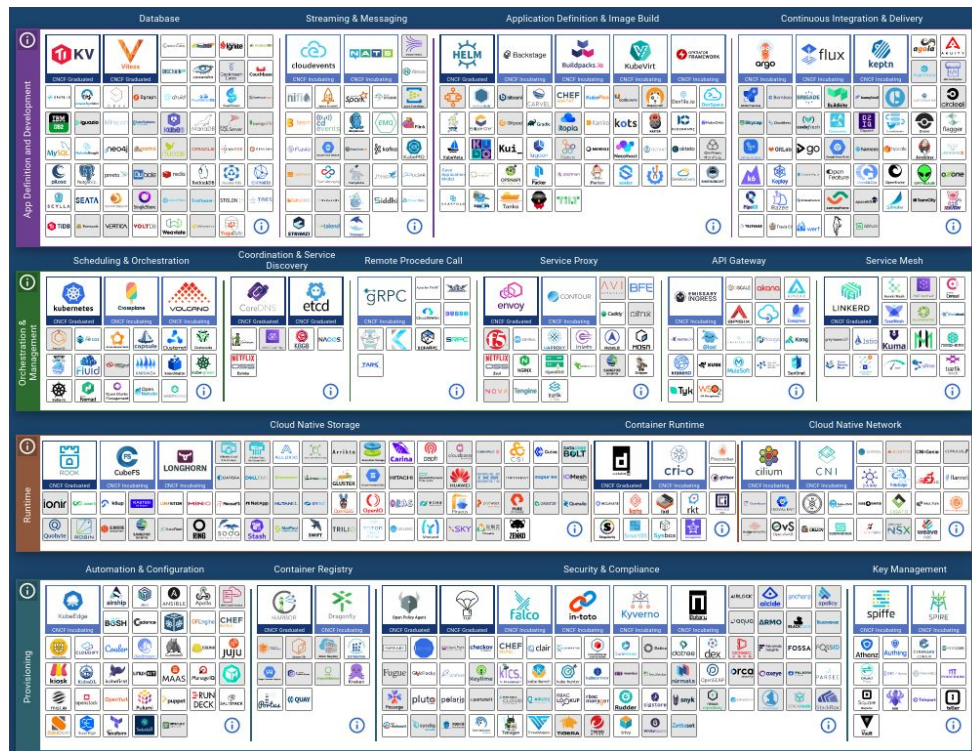
Distributed systems design is complex



**How did
we end up
here?**

Larger toolsets make mastery harder

Larger toolsets make mastery harder



Source: [cncf.io](https://landscape.cncf.io)

How did we end up here

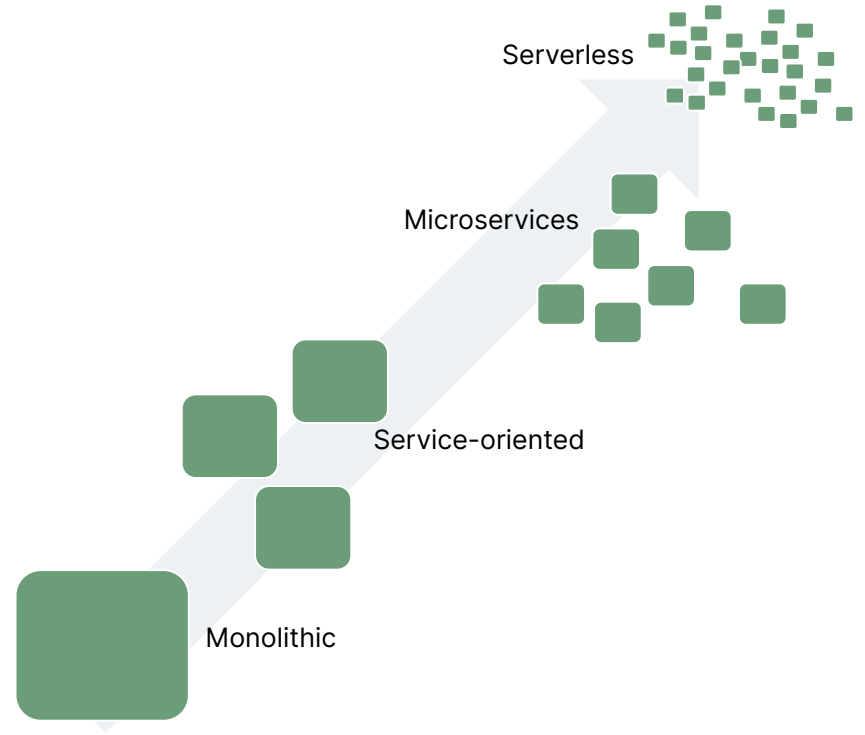
Larger toolsets make mastery harder



Source: cncf.io

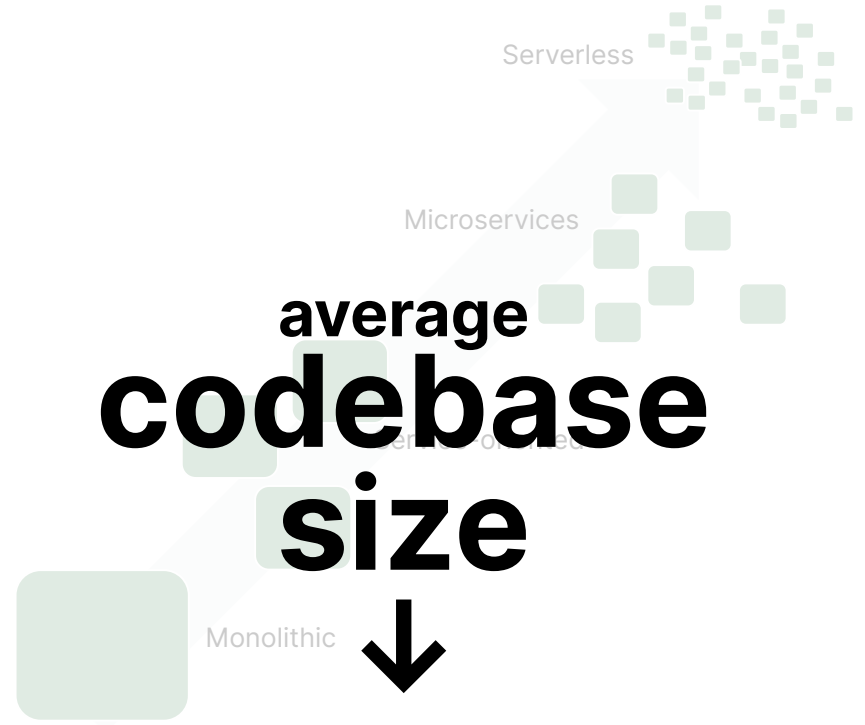
How did we end up here

“Less code” led to less attention to design



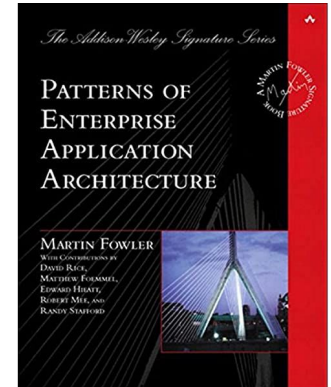
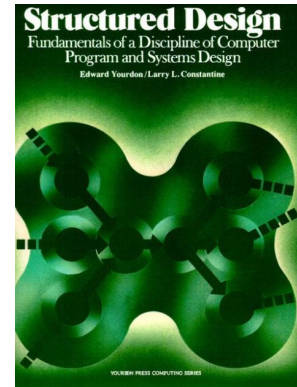
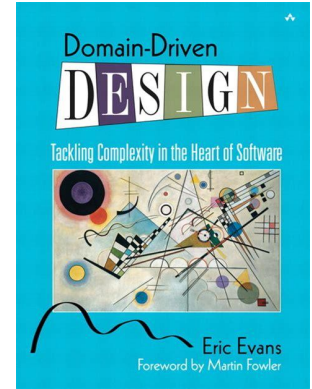
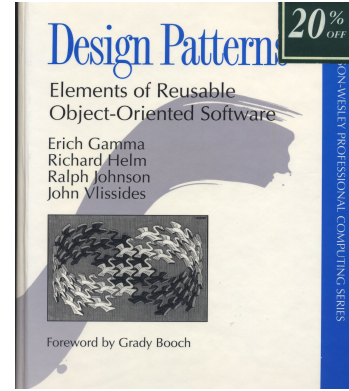
How did we end up here

“Less code” led to less attention to design



How did we end up here

Outsourcing of design atrophied our skills



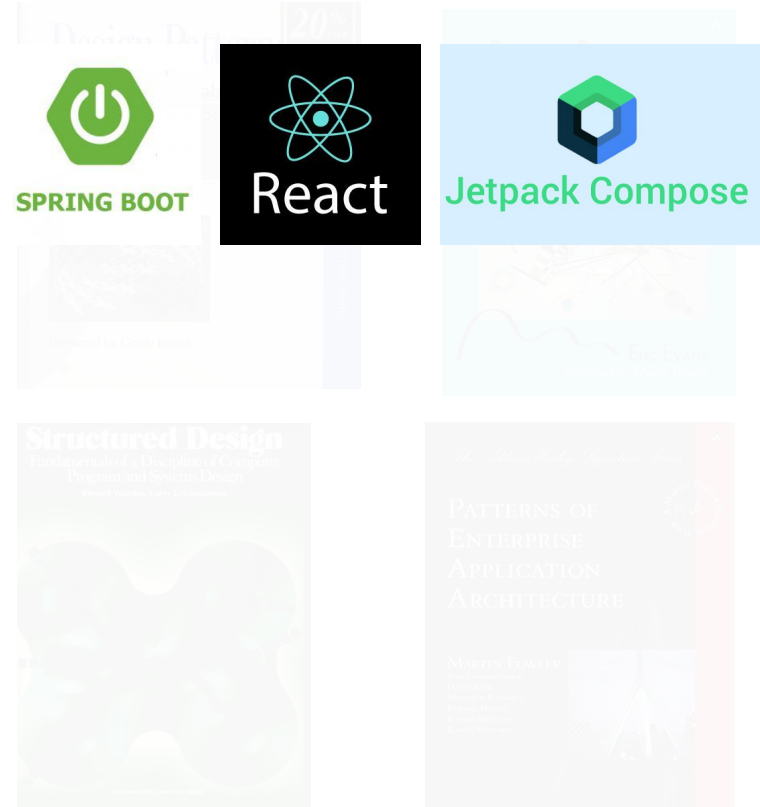
How did we end up here

Outsourcing of design atrophied our skills



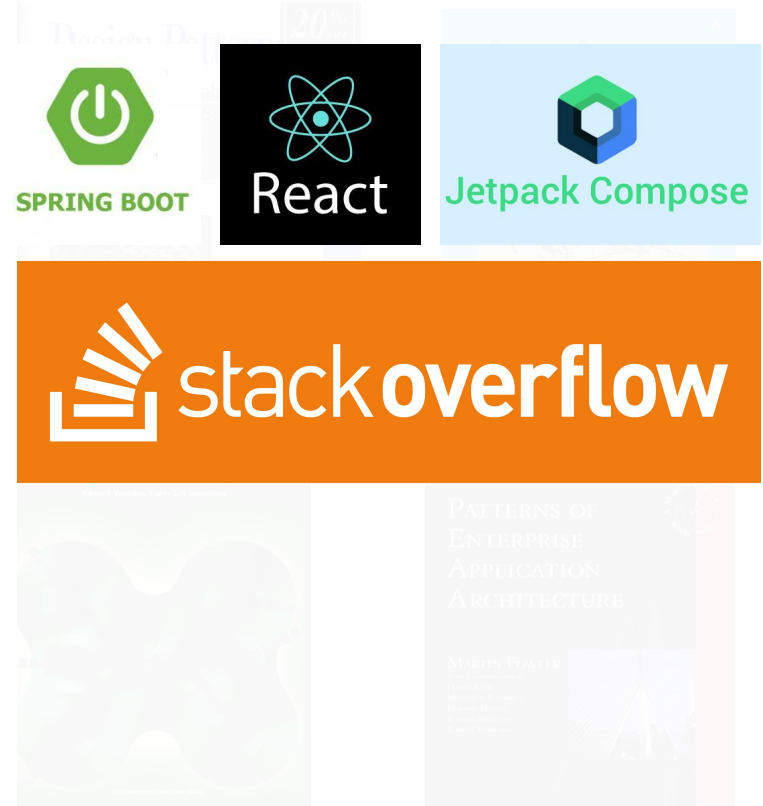
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Outsourcing of design atrophied our skills



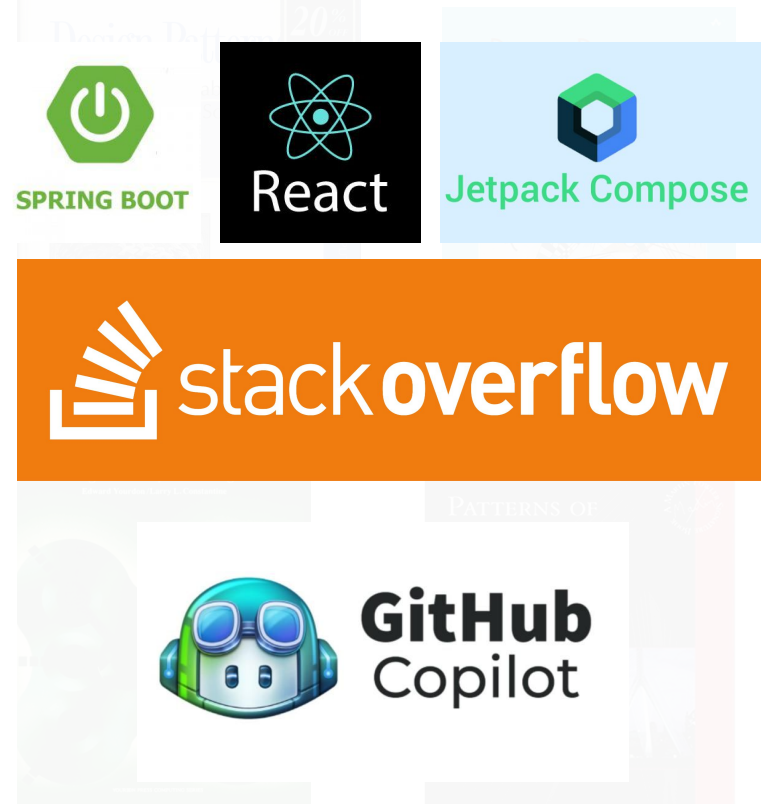
How did we end up here

Outsourcing of design atrophied our skills



How did we end up here

Outsourcing of design atrophied our skills



How did we end up here

Startup mindsets normalised *breaking things*



How did we end up here

Startup mindsets
normalised *breaking things*

**MOVE
FAST AND
BREAK
THINGS**

How did we end up here

- "Less code" led to less attention to design
- Outsourcing of design atrophied our skills
- Larger toolsets make mastery harder
- Startup mindsets normalised breaking things

**What
can
we do?**

*To afford (more)
time
for design...*

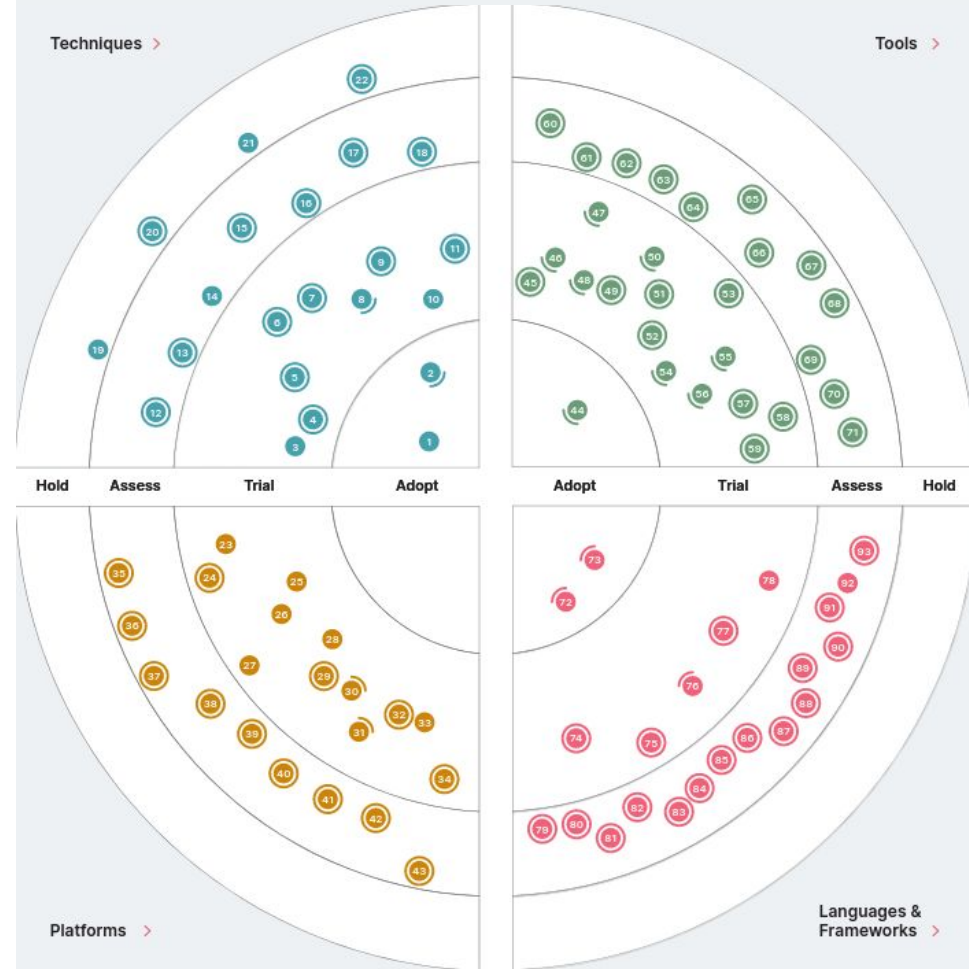
Fix the culture

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The Report of the Brundtland Commission

*To allow us to
focus on
fewer tools...*

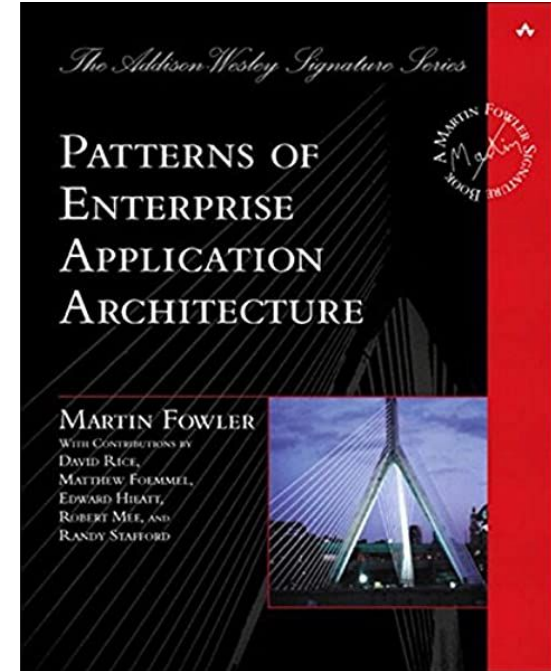
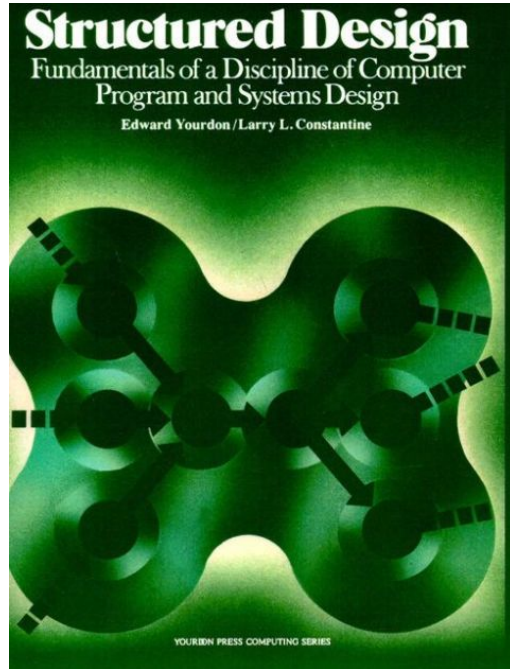
Constrain technology options



What can we do

*To raise awareness
around
good software design ...*

Rediscover the classics



What can we do



*To embed knowledge
using
practical experience...*

Practice with intent

exercism.io

freeCodeCamp.org

leetcode.com

rosettacode.org

architecturalkatas.com



To know if
the correct design decisions
are being made...

Verify your design *with fitness functions*



What can we do

```
describe "Observability" do
```

```
  it "streams metrics" do
    expect(service.has_metrics()).to
      be(true)
  end
```

```
  it "has parseable logs" do
    expect(service.has_logs()).to be(true)
  end
```

```
end
```



Summary

In summary...

Why we care

Good design saves time

Distributed systems design is complex

How did we end up here?

Larger codebases make mastery harder

“Less code” led to less attention to design

Outsourcing of design atrophied our skills

Startup mindsets made us break things

What we can do?

Constrain technology options

Fix the culture

Rediscover the classics

Practice with intent

Verify your design

“Make it work,
Make it right,
Make it fast”

- *Kent Beck*

And the winner is....

Solution 1

```
export const isPangram = (input) => {  
  const inputLowered = input.toLowerCase();  
  
  return [..."abcdefghijklmnopqrstuvwxyz"].every((c) =>  
    inputLowered.includes(c)  
  );  
};
```