BACKEND

Saxonia Systems
So geht Software.

CODING THE !HAPPYPATH

So geht Software.

Ron Jeffries
@RonJeffries

what's the opposite of the "happy path"? Sad path? Path of Sorrow? Vale of Tears? What's the common usage?

Tweet übersetzen

4:43 nachm. · 11. Apr. 2015 · Twitter for Mac

6 Retweets **11** „Gefällt mir"-Angaben

Michael Yeaney @mikelikesitalot · 11. Apr. 2015
Antwort an @RonJeffries
@RonJeffries Reality.
1 1

Ron Jeffries @RonJeffries · 11. Apr. 2015
@mikelikesitalot when we're coding, reality is what we code, always.x

Do A Darrell Roll! 🙂🙃😇 @thenandagain · 11. Apr. 2015
Antwort an @RonJeffries
@RonJeffries your users' path
1 1

Ron Jeffries @RonJeffries · 11. Apr. 2015
@thenandagain lol so true

https://twitter.com/RonJeffries/status/586902281125232640

GOAL

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readability 😁

error handling 😁

ABOUT ME

Saxonia Systems
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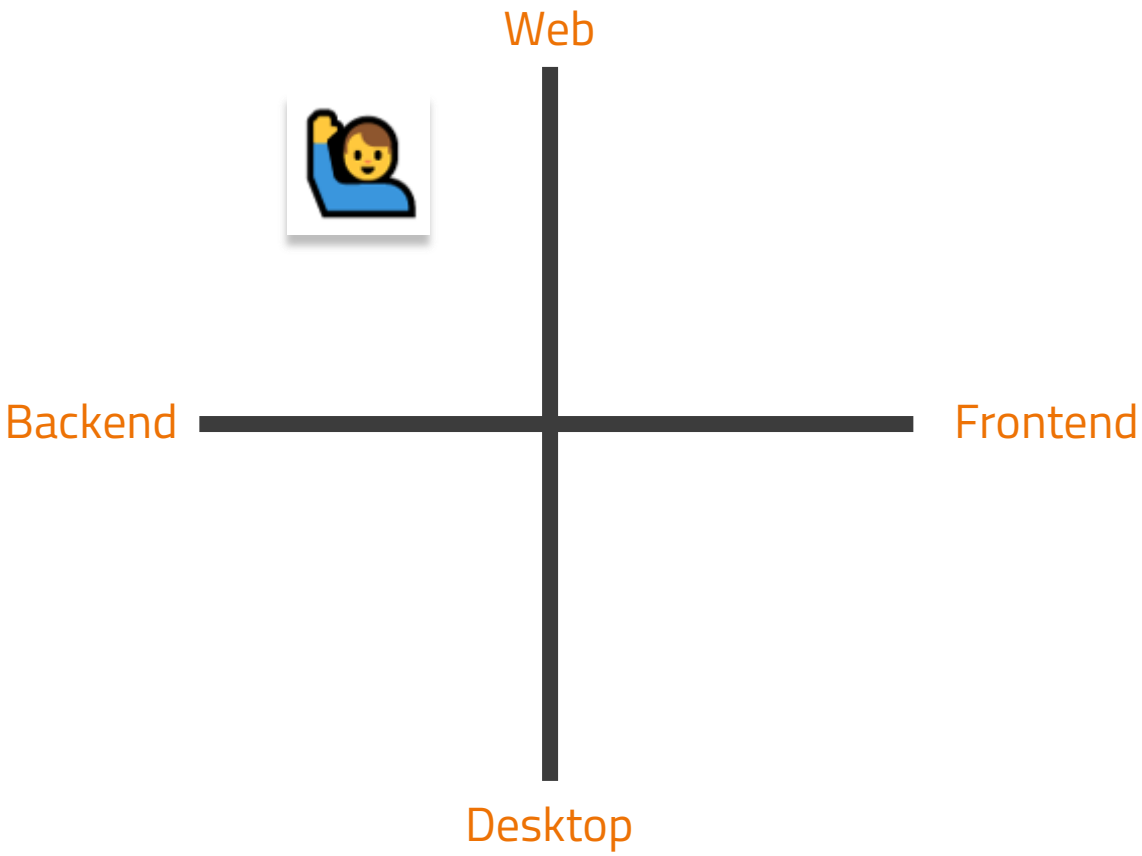
- Web APIs
  - .NET
  - MVC



FEATURE

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HTTP GET .../api/orders/{id}/printout?format=pdf

DOMAIN

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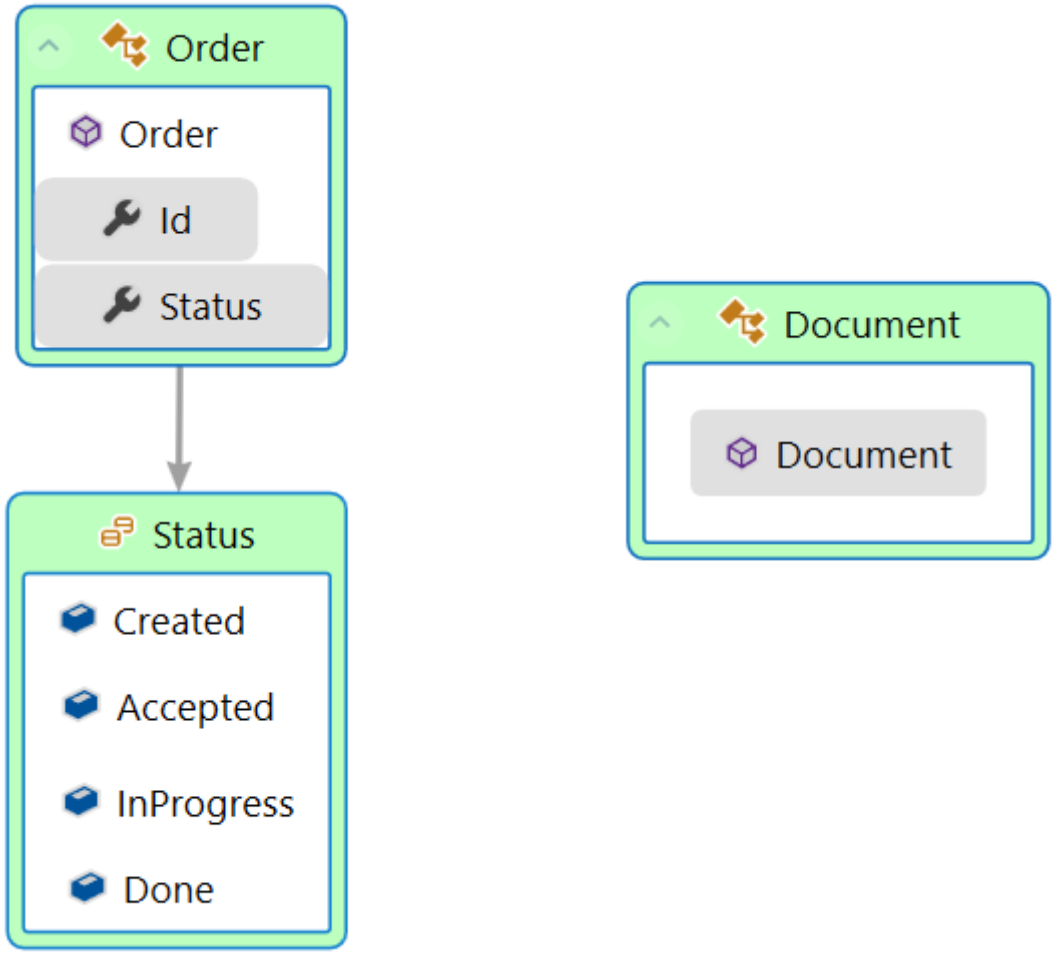

WORKFLOW

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```
Document PrintOrder(int orderId, string format)

    Order GetOrder(int orderId)
      bool IsAuthorized[...]([...]TEntity entity)
      bool IsValid(Order order)
  IPrinter GetPrinter(string format)
  Document Print(Order order)
```

DEMO I

readability 😐

error handling 😱

DEMO I

DEMO I²

readability 😕

error handling 😐

DEMO I²

Happy path

From Wikipedia, the free encyclopedia

In the context of software or information modeling, a **happy path** is a default scenario featuring no exceptional or error conditions.[1][2] For example, the happy path for a function validating credit card numbers would be where none of the validation rules raise an error, thus letting execution continue successfully to the end, generating a positive response.

Process steps for a happy path are also used in the context of a use case. In contrast to the happy path, process steps for alternate paths and exception paths may also be documented.[citation needed]

Happy path testing is a well-defined test case using known input, which executes without exception and produces an expected output.[citation needed]

Happy day (or sunny day) scenario and golden path are synonyms for happy path.[citation needed]

In use case analysis, there is only one happy path, but there may be any number of additional alternate path scenarios which are all valid optional outcomes. If valid alternatives exist, the happy path is then identified as the default or most likely positive alternative. The analysis may also show one or more exception paths. An exception path is taken as the result of a fault condition. Use cases and the resulting interactions are commonly modeled in graphical languages such as the Unified Modeling Language or SysML.[citation needed]

There is no agreed name for the opposite of happy paths: they may be known as sad paths, bad paths, or exception paths.

DEMO II

readability 😕

error handling 😊

DEMO II

CAN WE DO BETTER?

RESULT ORIENTED PROGRAMMING

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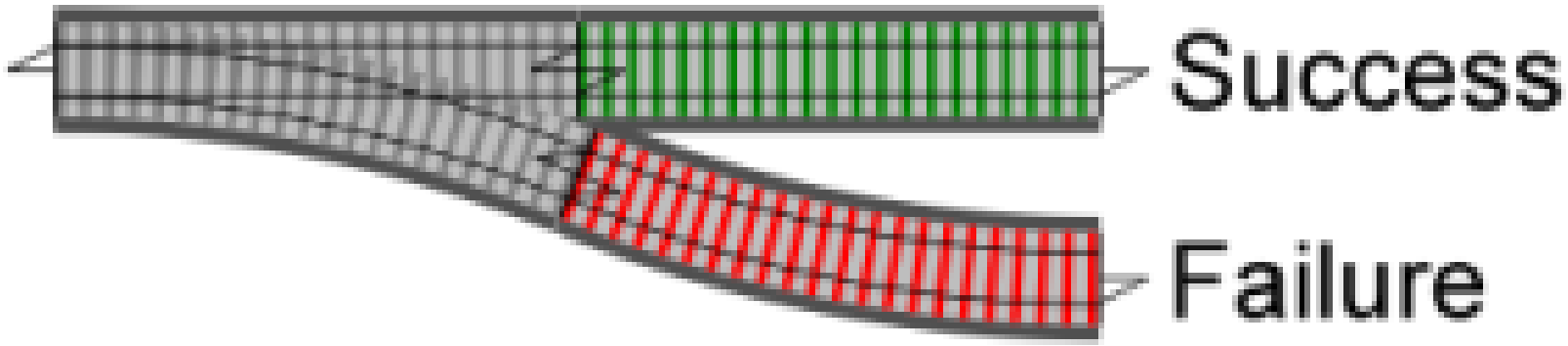
› aka Railway Oriented Programming



https://fsharpforfunandprofit.com/posts/recipe-part2/

RESULT ORIENTED PROGRAMMING

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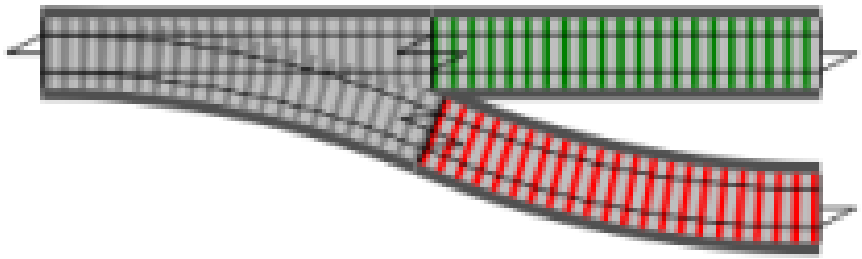
```
Order GetOrder(int orderId)
```



https://fsharpforfunandprofit.com/posts/recipe-part2/

RESULT ORIENTED PROGRAMMING

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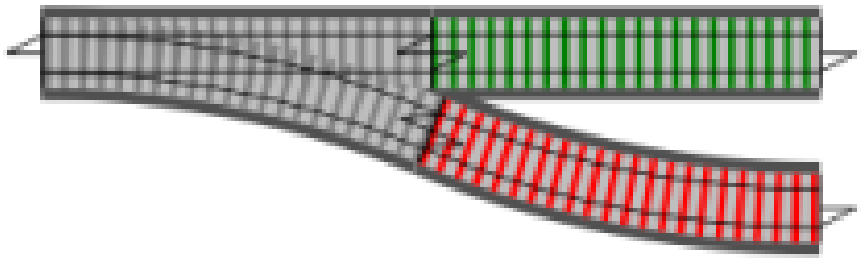
```
bool IsValid(Order order)
```



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RESULT ORIENTED PROGRAMMING

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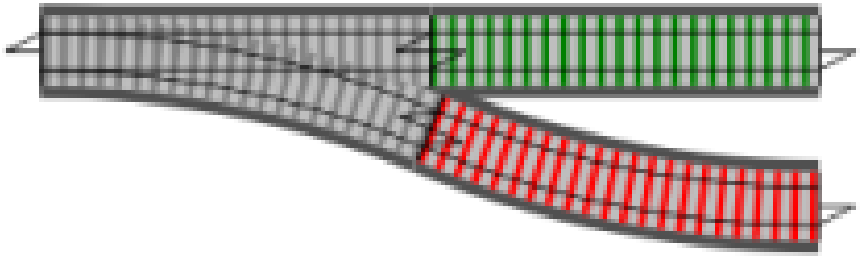
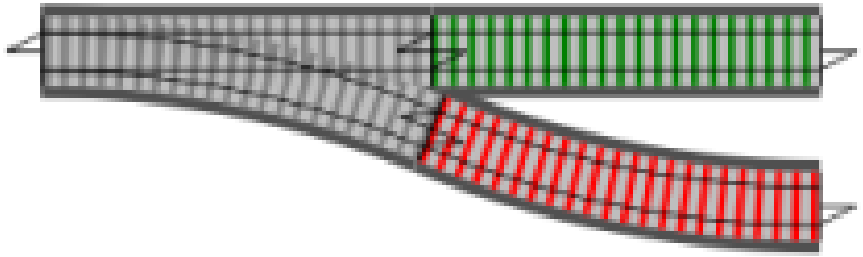
```
Order GetOrder(int orderId)
```

```
bool IsValid(Order order)
```





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RESULT ORIENTED PROGRAMMING

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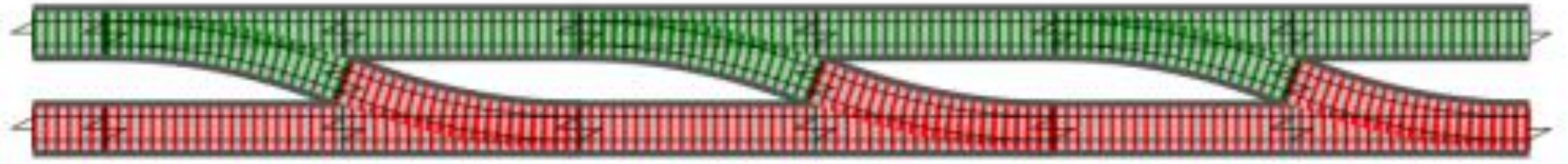
Happy Path



!Happy Path

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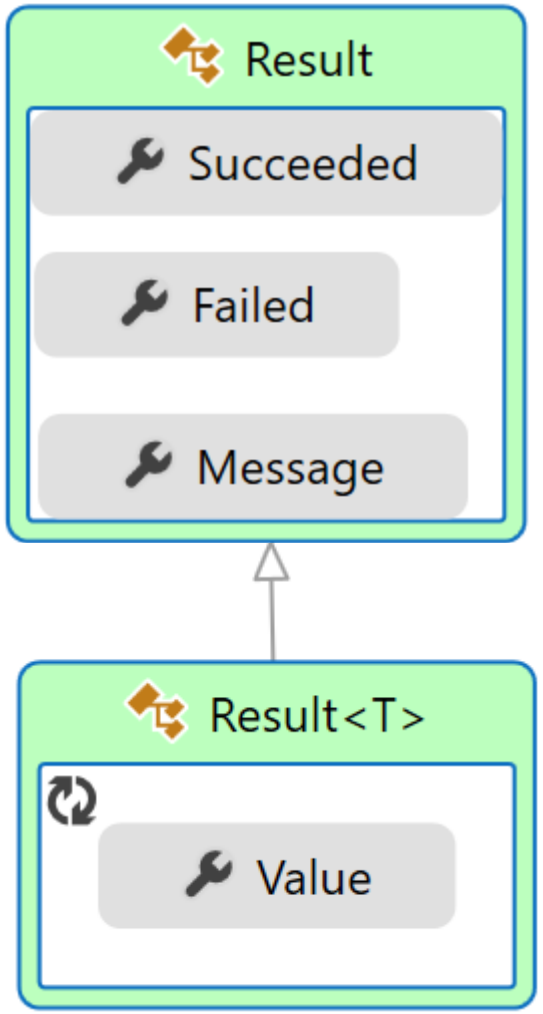
RESULT ORIENTED PROGRAMMING

Saxonia Systems
So geht Software.



https://fsharpforfunandprofit.com/posts/recipe-part2/

DEMO III

DEMO III

readability 

error handling 

CAN WE DO BETTER?

ANTI – IF - MANIFESTO

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Anti-IF Campaign

Less IFs, more power

Have you ever wondered how IFs impact on your code? Avoid dangerous IFs and use Objects to build a code that is flexible, changeable and easily testable, and will help avoid a lot of headaches and weekends spent debugging! Share how to write effective code the easy way!

The goal of the Anti-IF Campaign is to raise awareness of the effective use of software design principles and practices, by first of all removing bad, dangerous IFs.

```
//Bond class
double calculateValue() {
      if(_type == BTP)  {
return calculateBTPValue();
} else if (_type == BOT) {
return calcalateBOTValue();}
else {
return calculateEUBValue();
}
}
```

SaxSys Campus 2019

https://francescocirillo.com/pages/anti-if-campaign

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LINQ

LINQ

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- Language Integrated Query
- Expression Trees (aka. Abstract Syntax Tree aka. AST)
  - LINQ Provider
    - LINQ to SQL
    - LINQ to XML
    - ...

LINQ

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```
Orders
  .Where(x => x.Id > 5)
  .OrderBy(x => x.Id)
  .Take(10)
  .Select(x => new { x.Id, x.CreatedDate})
  .ToList()
```

```
DECLARE @p0 Int = 5

SELECT TOP (10) [Id], [CreatedDate]
FROM [Orders]
WHERE [Id] > @p0
ORDER BY [Id]
```

LINQ

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- Language Extensions
  - aka Syntactic Sugar

```
from x in Orders
where x.Id > 5
orderby x.Id
select new { x.Id, x.CreatedDate }
```

```
DECLARE @p0 Int = 5

SELECT TOP (10) [Id], [CreatedDate]
FROM [Orders]
WHERE [Id] > @p0
ORDER BY [Id]
```

DEMO IV

DEMO IV

readability 😁

error handling 😁

END

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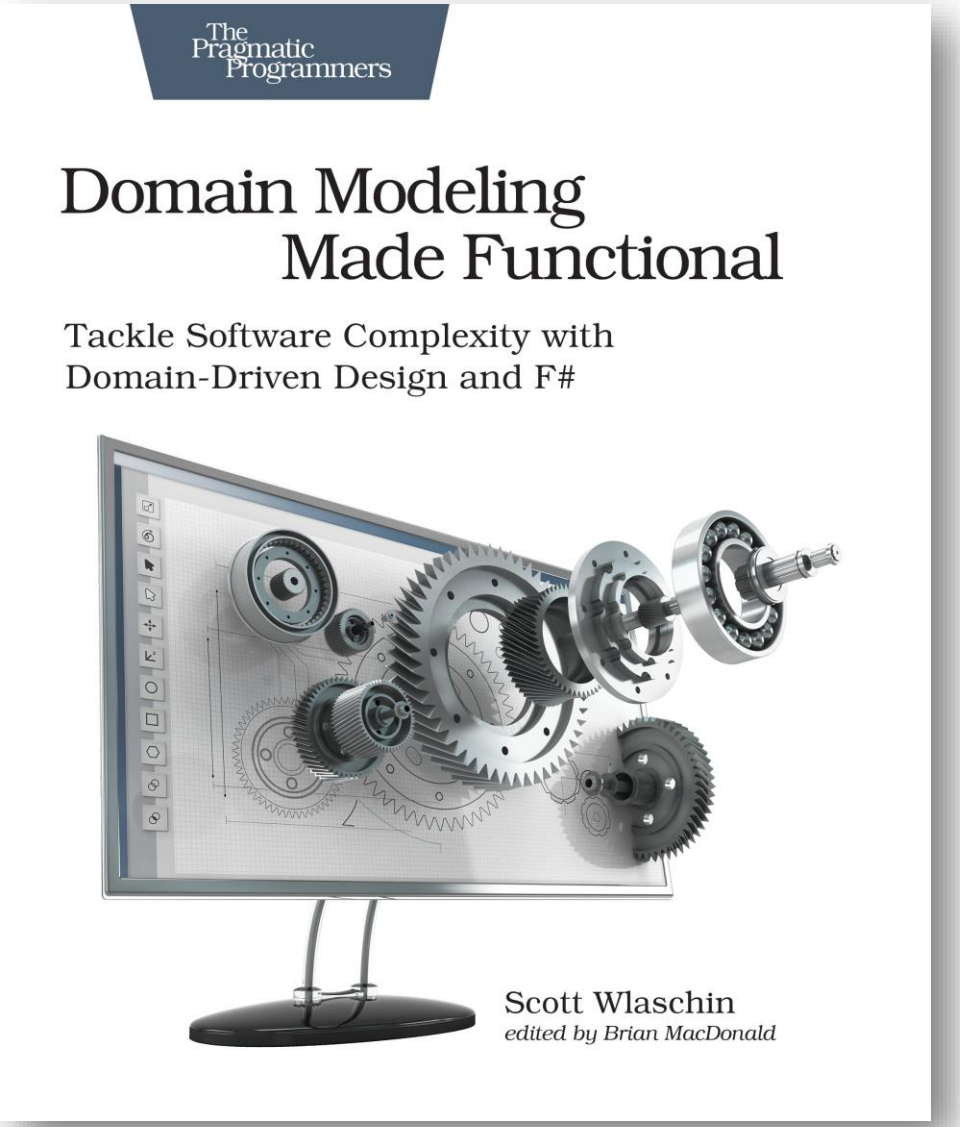
- More types like Result
  - Either<left, right>
- This is just the start
- Kudos to [@ScottWlaschin]



WARNING


Тэ дрэвэт утвикλэрэн
@TeaDrivenDev
Folgen
F# has ruined my C# style forever. There is very little left that isn't LINQ.
Übersetzung anzeigen
RETWEETS
8
GEFÄLLT
10
04:53 - 17. Feb. 2016
Antwort an @TeaDrivenDev
Steffen Forkmann @sforkmann · 10 Std.
@TeaDrivenDev people hate you for that, right?
1
Richard Dalton @richardadalton · 9 Std.
@sforkmann @TeaDrivenDev Secretly they hate themselves.
Тэ дрэвэт утвикλэрэн @TeaDrivenDev · 3 Std.
@richardadalton @sforkmann A few are probably about as annoyed by it as I am by their imperative code.