

# LIVING WITH YOUR LEGACY

Julie Lerman  
[thedatafarm.com](http://thedatafarm.com)

@julielerman



Julie Lerman  
@julielerman



2 days after #dotnet 3 et alia are released, I'll be giving a keynote at a .NET focused conference and talking about:

.NET Core 3.0

11%

EF Core 3.0

37%

VB6 & FoxPro 2.6

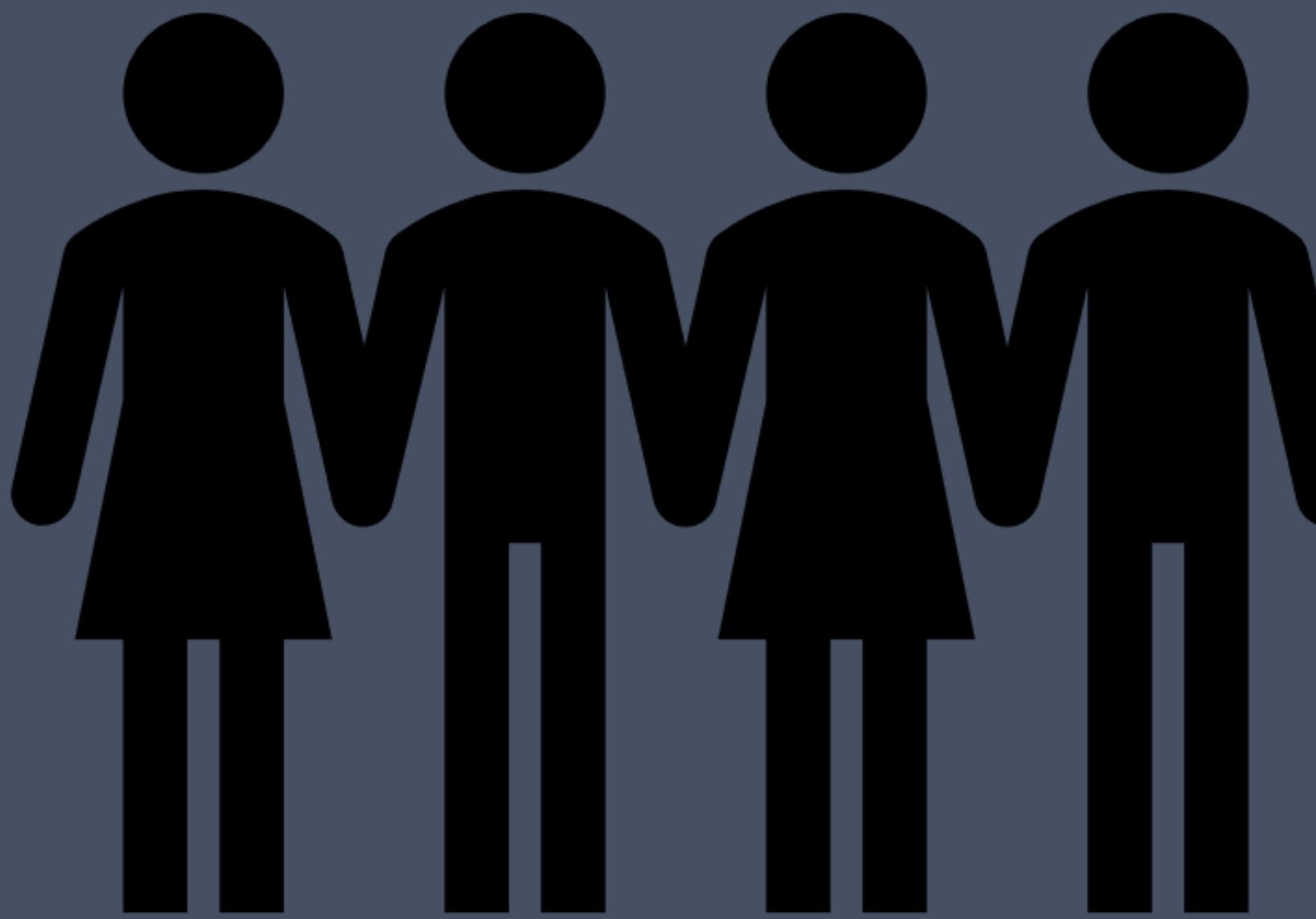


52%

99 votes · 2 hours left

'UGGH, LEGACY APPS'

# PERSPECTIVE STRATEGIES FOR THE FUTURE



1+ YEARS?

5+YEARS?

10+ YEARS?

20+YEARS?

n @julielerman · Jun 30  
y. Do I a) watch another episode of orange is he new black  
k on client requests for 25 year old **vb6** and foxpro apps?  


Julie Lerman @julielerman · Mar 18  
Replying to @ChristosMatskas  
all the walls. I have to give up for the day. I can cd and dir but no other commands work for me. Too much **VB6** I guess  


Julie Lerman @julielerman · Jan 2  
well I think that's just about enough of foxpro and **vb6** and webforms for one day. ta ta  


Julie Lerman @julielerman · Dec 18, 2018  
Today I worked in a FoxPro 2.6 database and code, **VB6** code, SQL Server database, Mongo DB database, @AzureCosmosDB database. WTF?  


Julie Lerman @julielerman · Dec 15, 2018  
I have to do a big change to my 20+ yr old **FPW26** app for my client (while waiting for a new app to be created). And I realized it's still coding. Even if it's old style without the great tools we have today. And because it's coding & thinking, it's still fun. Call me crazy!  


Julie Lerman @julielerman · Dec 12, 2018  
Replying to @SteveLasker @gcaughey and 2 others  
I am right this moment working with a client to modify a FoxPro 2.6 app and a **VB6** app.  


Julie Lerman @julielerman · Jul 10, 2018  
apply brakes to working with latest & greatest EF Core 2.1. Open Foxpro 2.6 and **VB6** apps. Uggh.  


Julie Lerman @julielerman · Jul 25, 2017  
Replying to @GinAndBacon  
@JULIELERMAN  
oh no! Still pining over **VB6**? It's time to let the sadness go. I actually  


Julie Lerman @julielerman · Jul 5, 2018  
Yes I am working in **VB6** and crystal reports 8.5 today.  


Julie Lerman @julielerman · Apr 20, 2018  
You know the day did not get off to a great start when A) pulled out the 25 year old FoxPro 2.5 book & B) had to google some **VB6** syntax  
But hope is on the horizon! Now I'm getting back to work on the @pluralsight EF Core 2 course!  


Julie Lerman @julielerman · Feb 15, 2018  
Did you know I have a time machine at my house? It has:  
1) Present (today)  
2) Future (previews and nightly builds)  
3) Past (**VB6** & FoxPro 2.6)  
At the moment I am issuing the command "Computer, tell me about your past"  


Julie Lerman @julielerman · Feb 6, 2018  
ok latest round of **VB6** effort is done.  


Julie Lerman @julielerman · Jan 24, 2018  
When my client (who I will do anything for because I love them) wants me to tweak to the **vb6** app including one of the old crystal reports for a glass of wine WHILE working  


Julie Lerman @julielerman · Aug 21, 2017  
I feel like I need to find all of my old tweets about @DontGetLeftBehind and retweet them as @AzureCosmosDB so I don't feel all VB6 is bad.  


# UNSOLICITED ADVICE TO ME

- > DROP THE CLIENT
- > JUST REWRITE IT
- > PORT IT TO VB.NET
- > HIRE US TO REWRITE IT

# WHAT IS LEGACY?

# LEGACY



@JULIELERMAN



## Microsoft FoxPro Version 2.6

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Julia Lerman

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maximum extent possible under law.

Member of Microsoft Visual Studio



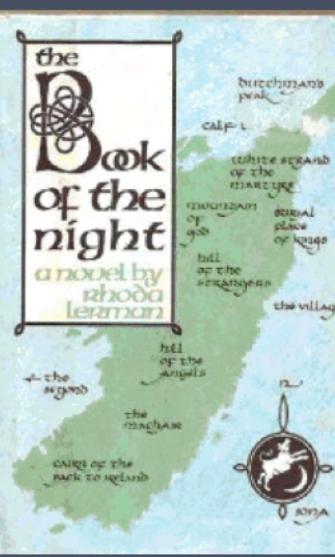
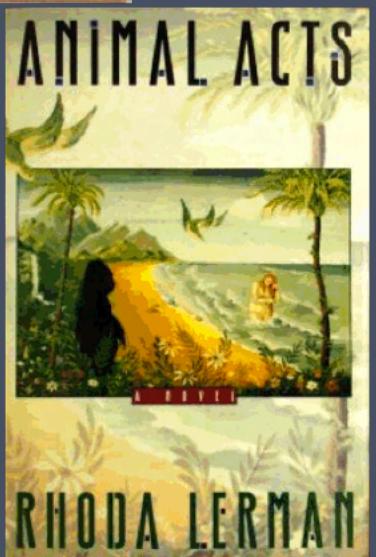
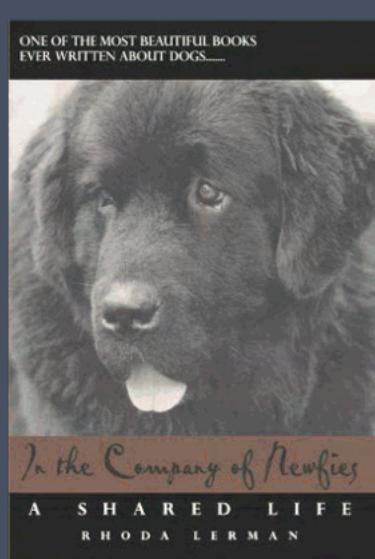
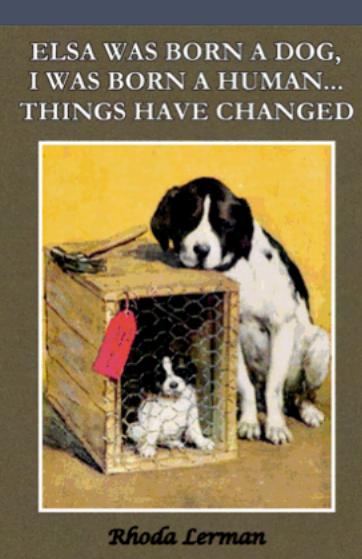
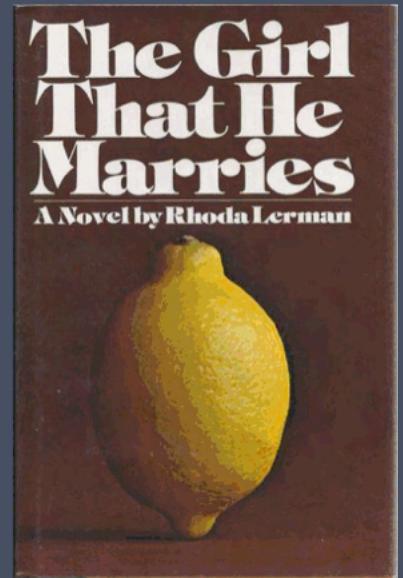
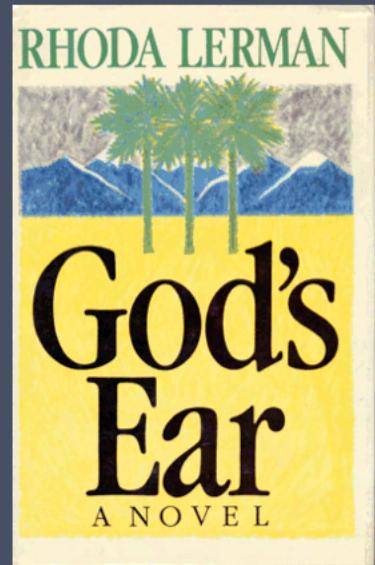
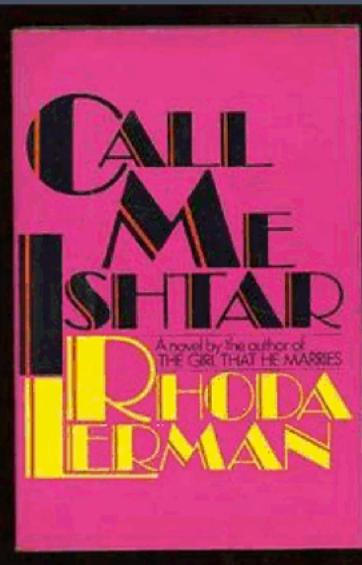
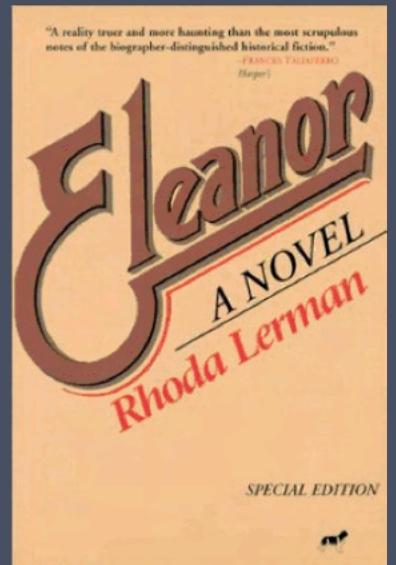
# Microsoft Visual Basic 6.0 Enterprise Edition SP6



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# LEGACY



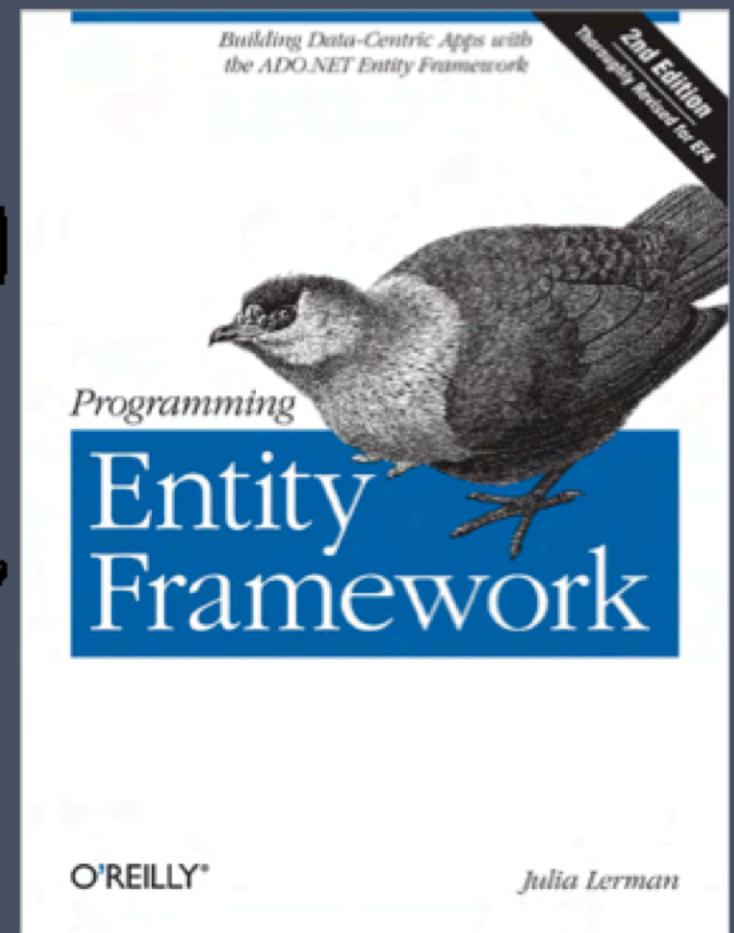
# NOT LEGACY

@JULIELERMAN

O'REILLY®



Julia Lerman & Rowan Miller

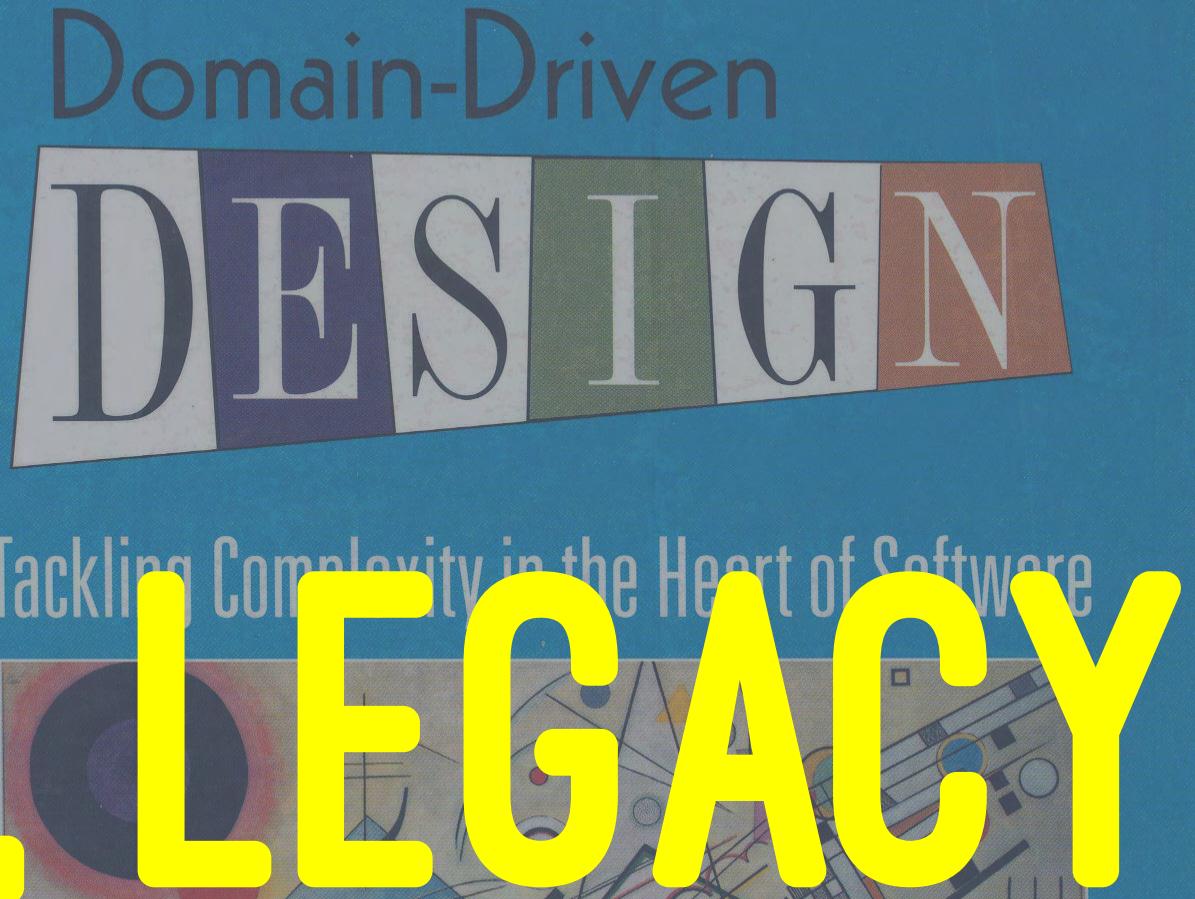


Robert C. Martin Series

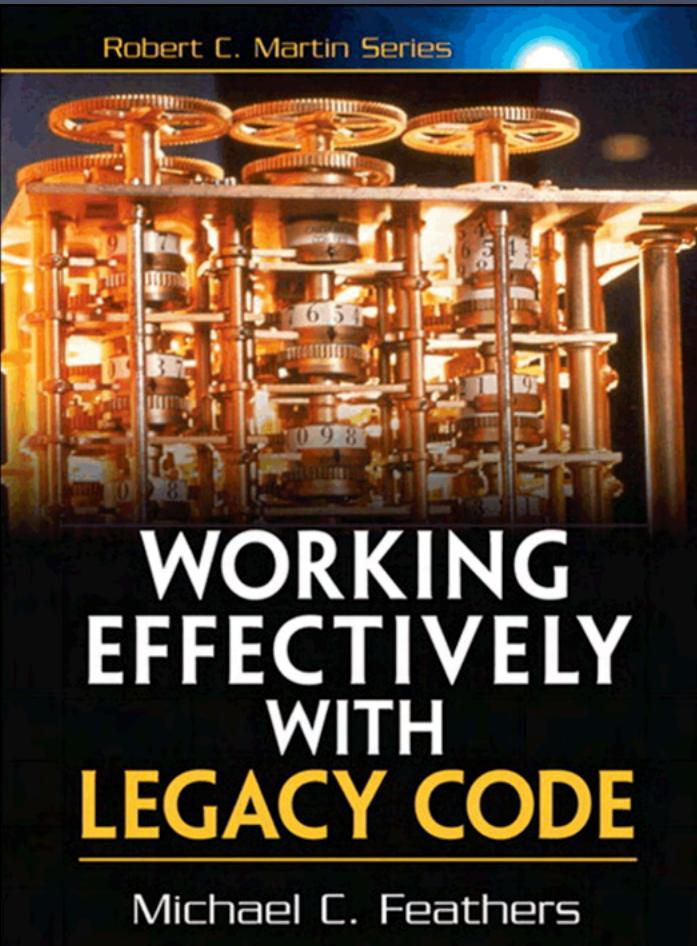


Michael C. Feathers

@JULIELERMAN



Eric Evans  
Foreword by Martin Fowler



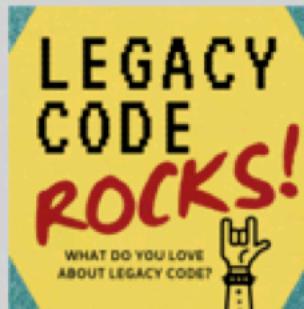
2004: "Code without tests"

2019: "when the team turns over  
faster than the code"

# 'ARTIFACTS WITHOUT COMMUNICATION'

- ANDREA GOULET. SCOTT FORD (CORGIBYTES)

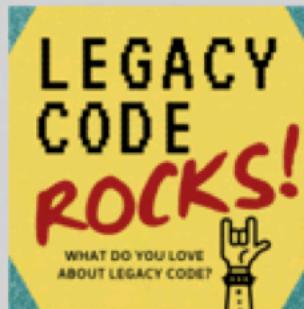
Q Search podcast...



## Event Storming with Alberto Brandolini

9/22/2019 | 32 min [Latest Episode](#)

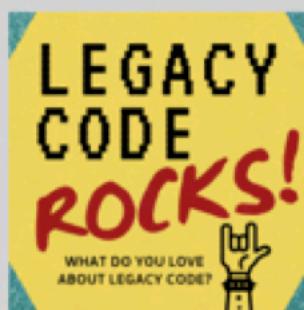
How can sticky notes help you and your team find and resolve problems which are deeply hidden within your business model? How can this quest through colorful papers accelerate the mending of a legacy code whic...



## Symmathesy with Jessica Kerr

9/9/2019 | 34 min

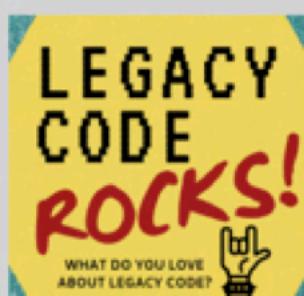
Every creature, living or artificial, is learning through the interactions with its environment all the time. It is learning not only from other creatures it interacts with, but also from the context in which these interactions...



## Unconscious Behavior in Coding with Mike Bowler

8/26/2019 | 36 min

To successfully lead a team, we must understand why our team members do what they do. To help us unpack that, we need to dig deep into their subconscious and explore their unconscious behavior which underlines...



## Front-End Tooling in Legacy Code with Jan Jorgensen

8/12/2019 | 37 min

We all strive to be "full stack" developers, but many of us feel more comfortable with either back-end or front-end programming. Today we talk with Jan Jorgensen, a front-end developer who also enjoys mending...

@JULIELEHRMAN

# LEGACY SYSTEM

adjective

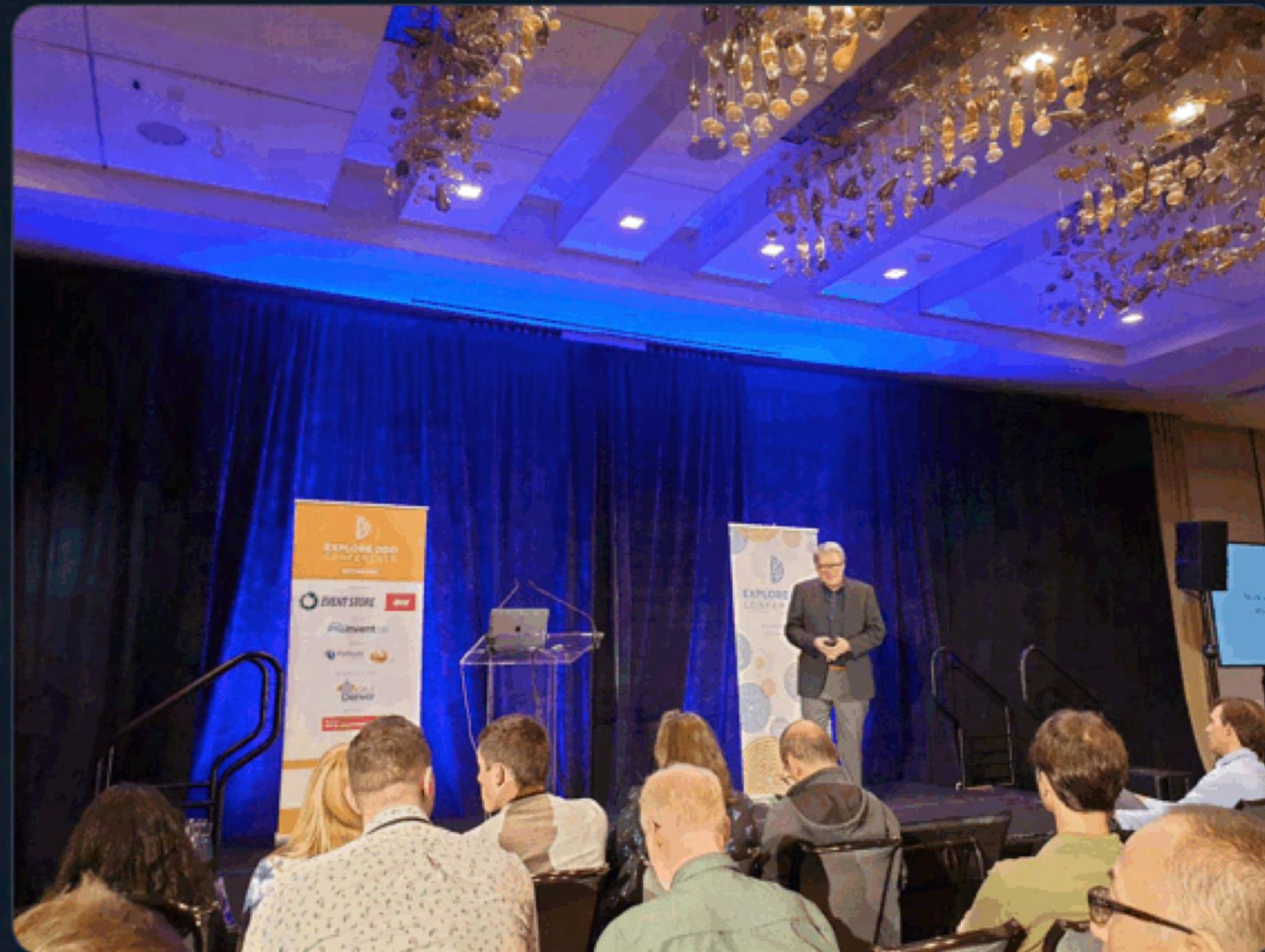
leg·a·cy | \ 'le-gə-sē

Denoting or relating to software  
or hardware that has been  
superseded but is difficult to  
replace because of its wide use.



Zsophia Herendi  
@ZHerendi

We don't honor legacy systems enough. @ericevans0  
@ExploreDDD





Vlad Magdalin  
@callmevlad

"I'm just going to fix this lil' bug in the legacy codebase  
real quick..."



@JULIELERMAN

12:41 PM · Sep 4, 2019 · Twitter Web App

LEGENDARY \* CLASSIC \* VINTAGE \* HERITAGE CODE

# MONEYMAKER





Grady Booch   
@Grady\_Booch

200 billion lines of COBOL are still in use today.

Old software never dies: you have to kill it.



COBOL turns 60: Why it will outlive us all | ZDNet

In the beginning, there was machine languages and assembler. Neither was easy to use, but then along came COBOL, and everything changed.

 zdnet.com

@JULIELERMAN

8:32 PM · Sep 7, 2019 · Twitter for iPad

**'SHOULD BE USING LATEST TECH'**

**'SHOULD BE SOLVING NEW PROBLEMS'**

**'IRRESPONSIBLE'**

'SHOULD BE USING LATEST TECH'  
'SHOULD BE SOLVING NEW PROBLEMS'  
'IRRESPONSIBLE'

**'USE NEW TOOLS ON OLD SOFTWARE'**

- ANDREA GOULET. SCOTT FORD (CORGIBYTES)



@JULIELEMAN



VMS for dev environment  
Git + BitBucket/GitHub + Git UI  
Client maintains installs  
Keep those ancient books!



# README.md

[Pull requests](#)[Check out](#)[...](#)

Here's where you'll find this repository's source files. To give your users an idea of what they'll find here, [add a description to your repository](#).

[Source](#)[master](#)[8440831](#)[Full commit](#)

/ README.md

[Edit](#)[...](#)

If you are looking at this and you are not me, then I must have died. If I am alive and you are looking at this, I'll die of embarrassment anyway so it's all the same. :)

'SHOULD BE USING LATEST TECH'  
'SHOULD BE SOLVING NEW PROBLEMS'  
'IRRESPONSIBLE'



The Clockwork Chamber with 17th-century clockwork of the  
Saint-Rumbold's Cathedral in Mechelen, BE

@JULIELERMAN

'SHOULD BE USING LATEST TECH'  
'SHOULD BE SOLVING NEW PROBLEMS'  
'IRRESPONSIBLE'

# HERO PROBLEM



TECH DEBT

# TAMING TECHNICAL DEBT WITH TIM DOHERTY

Tech debt never goes away.

It's like financial debt for a business. You're always going to incur some level of debt. But as long as you can manage it responsibly, it's not a bad thing.

I think that's the biggest cultural shift that already has taken root.

And we just need to operationalize that.

Legacy Code Rocks Podcast, 6/3/2019

# IS TECHNICAL DEBT JUST A METAPHOR?

-- MICHAEL FEATHERS

Technical Debt, like most good metaphors, is more than a metaphor - it's an accurate read of dynamics in a system.

\_From

Stephen Thomas:  
"Re-architecting the Monolith"

# ASSESS TECHNICAL DEBT

Also: tech debt was hindering maintenance, implementation of new features

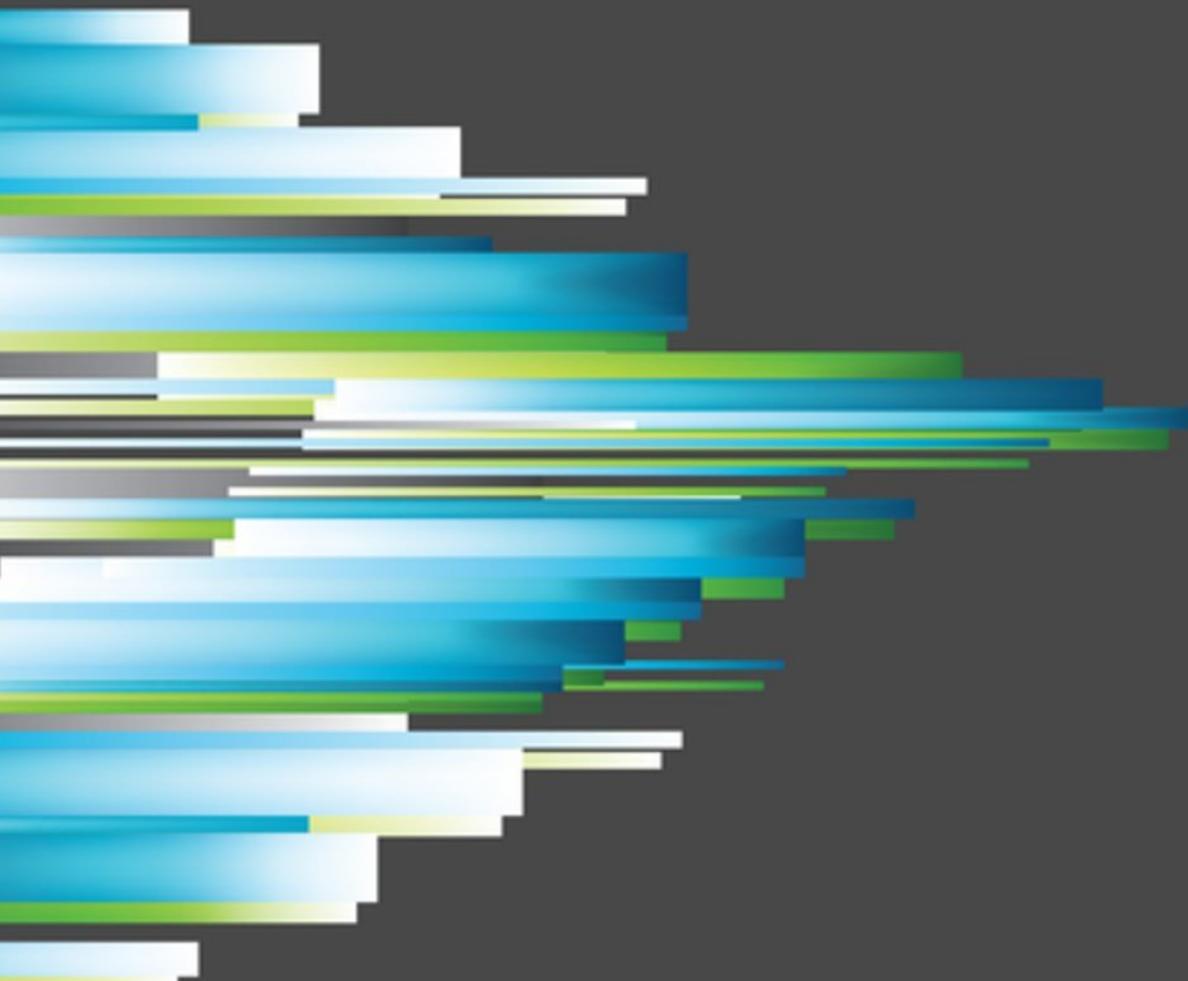
Matt Eland  
"Communicating Technical Debt to  
Business Stakeholders"

[DEV.TO/INTEGERMAN/COMMUNICATING-TECHNICAL-DEBT-3GBD](https://dev.to/integerman/communicating-technical-debt-3gb)

THE SCIENCE OF DEVOPS

# ACCELERATE

Building and Scaling High Performing  
Technology Organizations



Nicole Forsgren, PhD  
Jez Humble *and* Gene Kim

The productivity research model shows that organizations can **improve engineer productivity** by investing in easy-to-use tools and information search, implementing a culture of psychological safety, and **reducing technical debt**.

Improved productivity also helps drive better employee work/life balance and reduces burnout.

# REDUCE BUGS

# REFACTORING

# REFACTOR CODE YOU HAVE TO TOUCH!

# NICK TUNE

# CRAFT CONFERENCE 2019

Clean legacy code then  
build on top of it

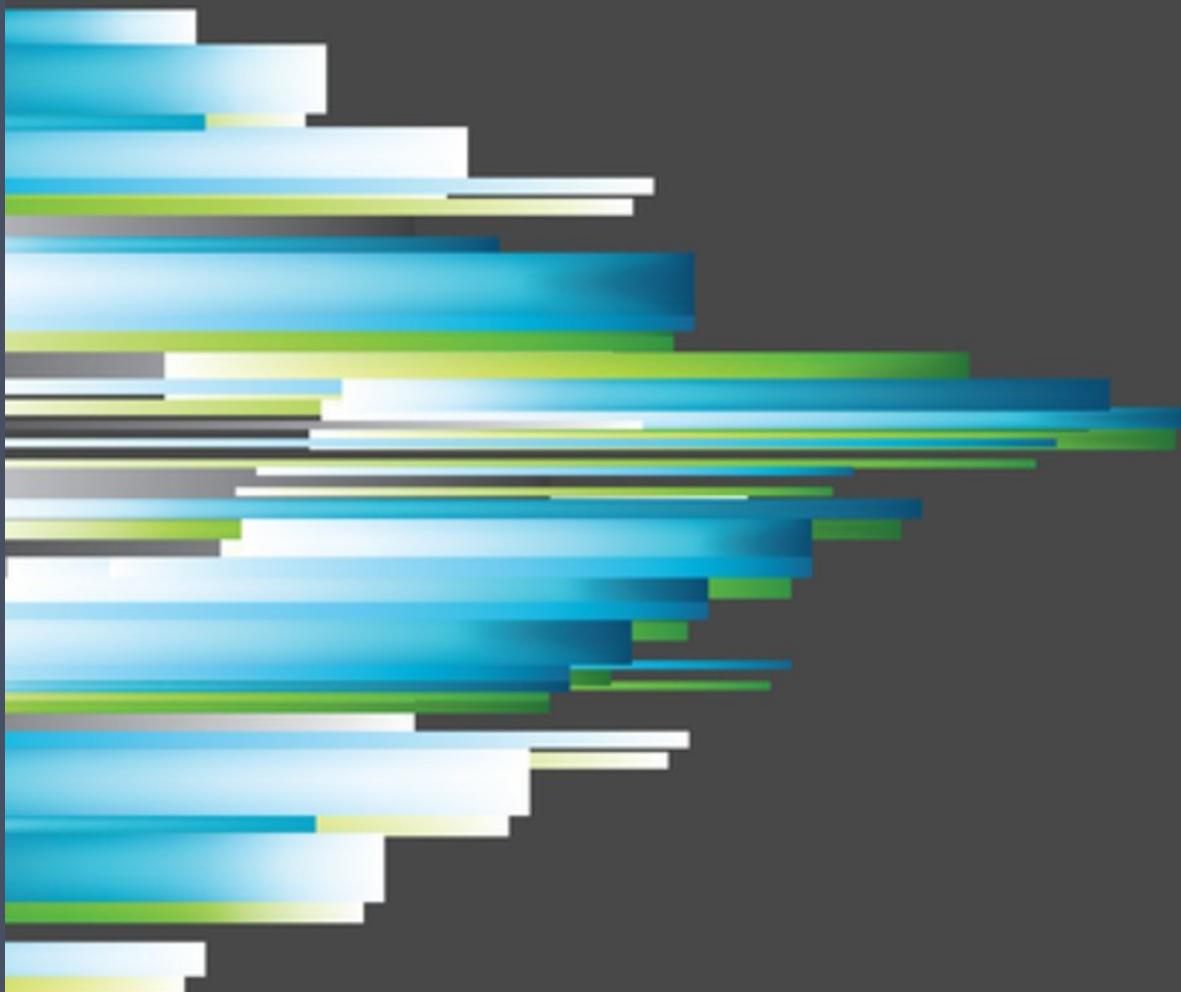
ACLs can be used to  
protect new code from  
legacy, though potential  
for overuse



THE SCIENCE OF DEVOPS

# ACCELERATE

Building and Scaling High Performing  
Technology Organizations



Investments in code maintainability, loosely coupled architecture, and monitoring help support SDO performance (via continuous delivery) and productivity (via reductions in technical debt), highlighting the importance of good tooling and systems.

Nicole Forsgren, PhD  
Jez Humble *and* Gene Kim

@julielerman



HIGH VOLUME. LOW-MARGIN. HIGHLY COMPETITIVE. OLD INDUSTRY



ORM provides views



ORM provides views



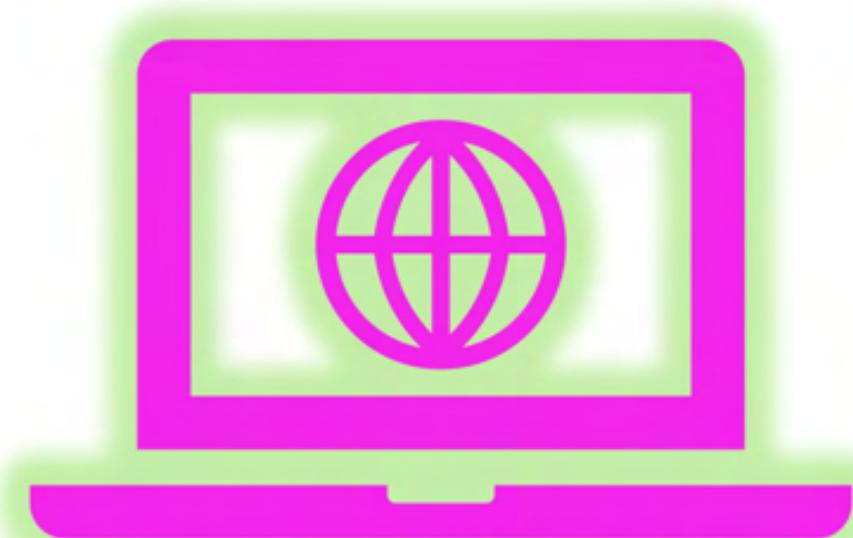
(COBOL) HTTP  
endpoint  
into legacy



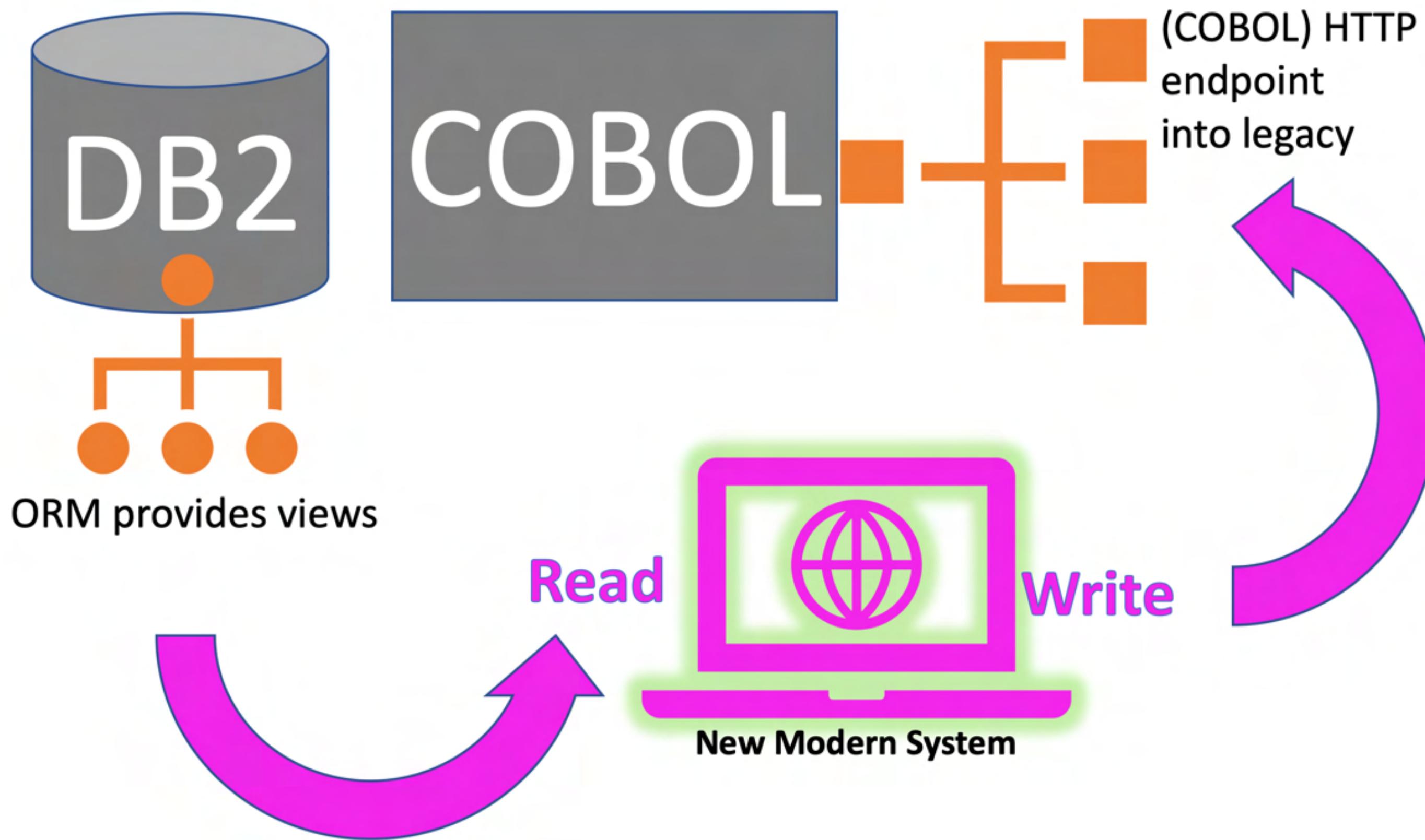
ORM provides views



(COBOL) HTTP  
endpoint  
into legacy

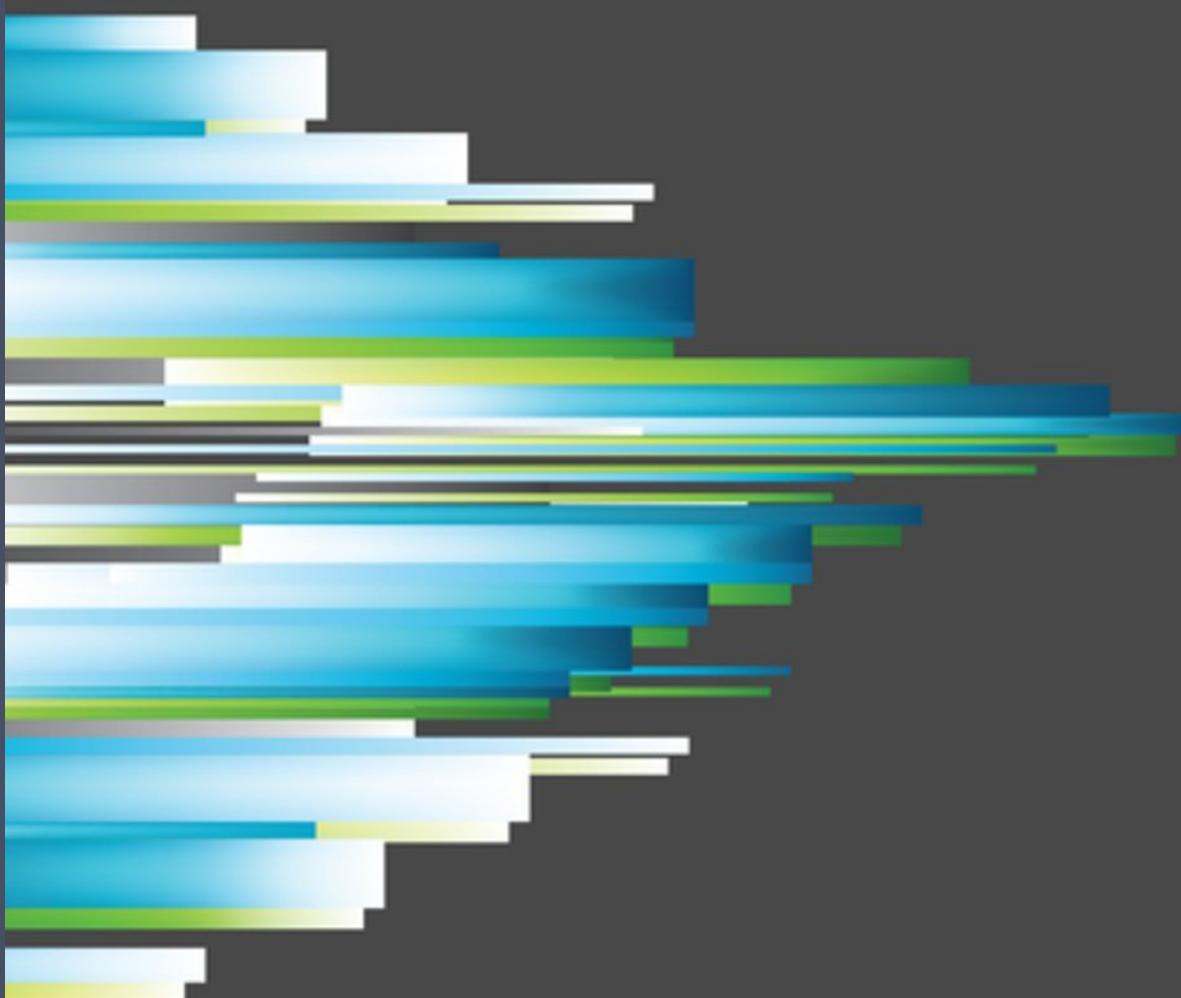


New Modern System



THE SCIENCE OF DEVOPS  
**ACCELERATE**

Building and Scaling High Performing  
Technology Organizations



Nicole Forsgren, PhD  
Jez Humble *and* Gene Kim

**BUT ... MY BEAUTIFUL  
CODE!**

Low performers use more  
proprietary software.

The cost to maintain and  
support proprietary  
software can be  
prohibitive, prompting  
high and elite performers  
to use open-source  
solutions.

# WHAT ABOUT ADDING TESTS?

TESTS HELP AVOID SIDE EFFECTS OF REFACTORING CODE

# WHAT ABOUT ADDING TESTS?

TESTS HELP AVOID SIDE EFFECTS OF REFACTORIZING CODE

# OK, BUT WHERE?

# THE 'DEATH MARCH' LEGACY APP

# THE 'DEATH MARCH' LEGACY APP

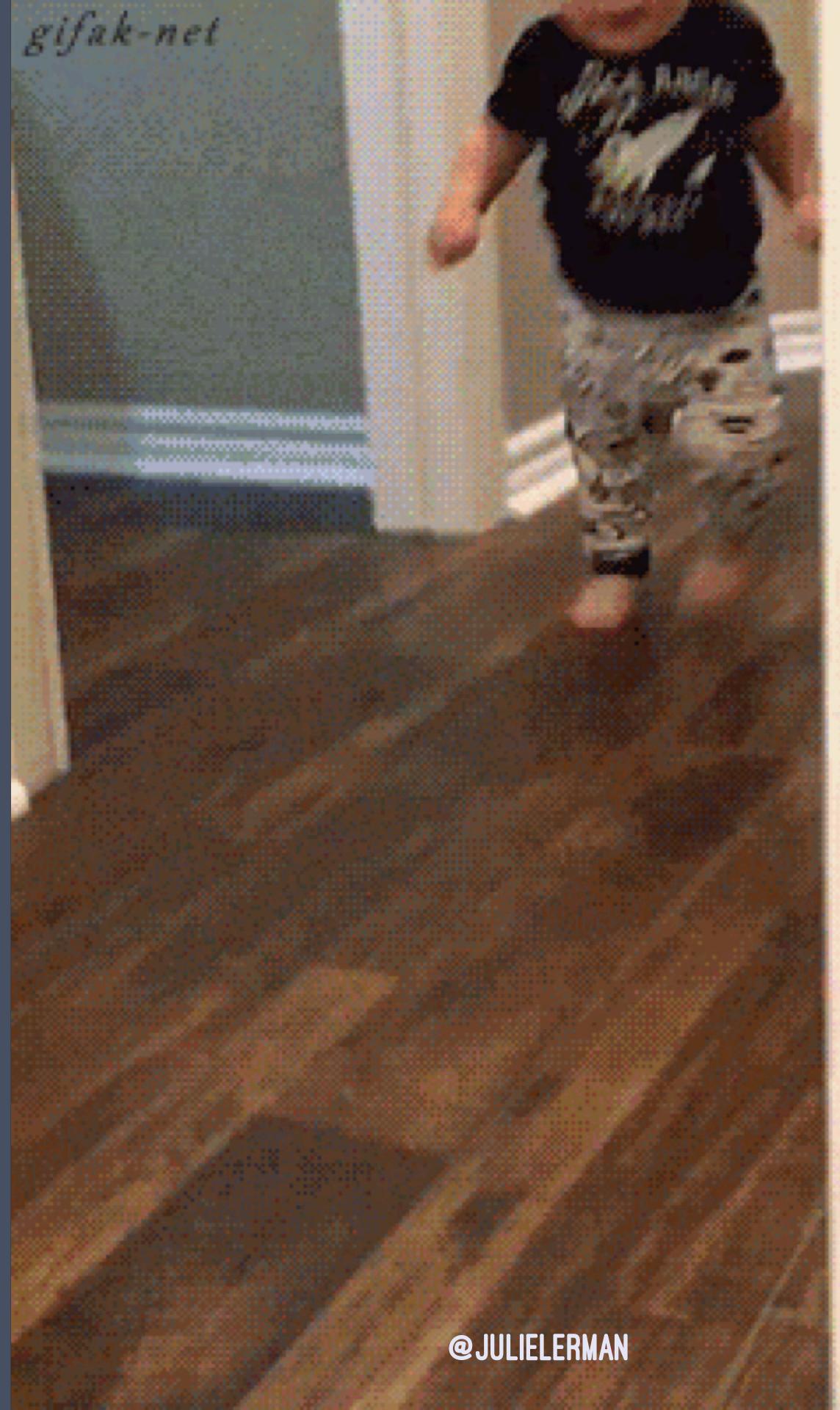
# POLITICS POLITICS POLITICS

# THE 'DEATH MARCH' LEGACY APP

ENCOURAGE POSITIVITY  
GET OUTSIDE PERSPECTIVE  
IMPROVE IT ANYWAY  
CELEBRATE WINS

# THE SERENITY PRAYER

'GOD. GRANT ME THE SERENITY TO ACCEPT THE THINGS I CANNOT  
CHANGE. COURAGE TO CHANGE THE THINGS I CAN.  
AND WISDOM TO KNOW THE DIFFERENCE'.



LIGHT AT THE END OF THE TUNNEL FOR MY CLIENT

**WORKING ON LEGACY CODE  
DOES NOT HAVE TO SUCK  
IS NOT A CAREER KILLER  
IS WHAT MOST OF US DO IN REAL LIFE**

HONOR IT  
IMPROVE IT

REFACTOR. REDUCE BUGS. ADD TESTS. USE NEW TOOLS FOR WORKFLOW OR EXTENDING

PLAN FOR ITS FUTURE

THANK YOU