

Our DevOps Journey is Incomplete without Data

Data is the lifeblood of the system of the business

Data, Architecture & Data Management Practices Need Love & Attention
BMK Lakshminarayanan

**DEVOPS
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Flow

Problem Context



Context, Statistics, Impact

Challenges



Ownership, Silo, Locking, Standards

Solution Approach



Conventions, Architecture, Refactor

Recommendations



Useful Resources

Remaining Challenges



Call for Action

ABOUT ME

BMK Lakshminarayanan
Solutions Architect | DevOps Advocate



MISSION

*Make your life better,
Make others life better,
Make the world better*

Community



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Understanding Our Problem

Context

Continuous Delivery, DevOps & Data



Problem Context

- Manual database deployments continue to be a Software delivery bottleneck
- Speeding up database releases are most difficult
- Neglecting the data in our DevOps, Continuous Delivery processes has significant “Business Impact”
- Data issues continue to slow us down, trouble our efforts to continuously integrate, test & deploy

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Statistics

46%

Extremely or very difficult to speed database releases

23%

High risk of deployment failure & extra downtime due to database changes

20%

We are slow due to traditional siloed database development practices

57%

Application changes require corresponding database changes

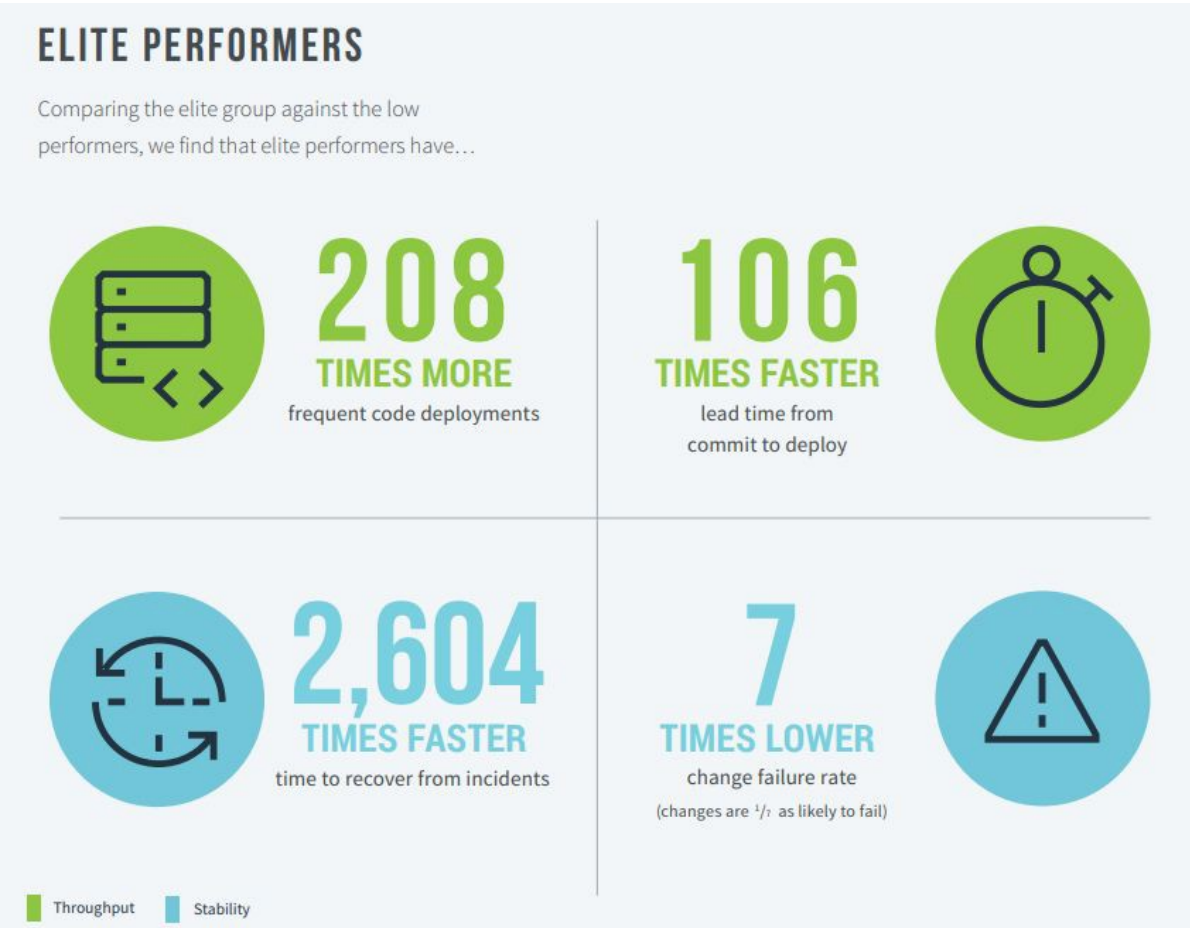
Source :<https://www.devopsdigest.com/the-state-of-database-deployments-in-application-delivery-2019>

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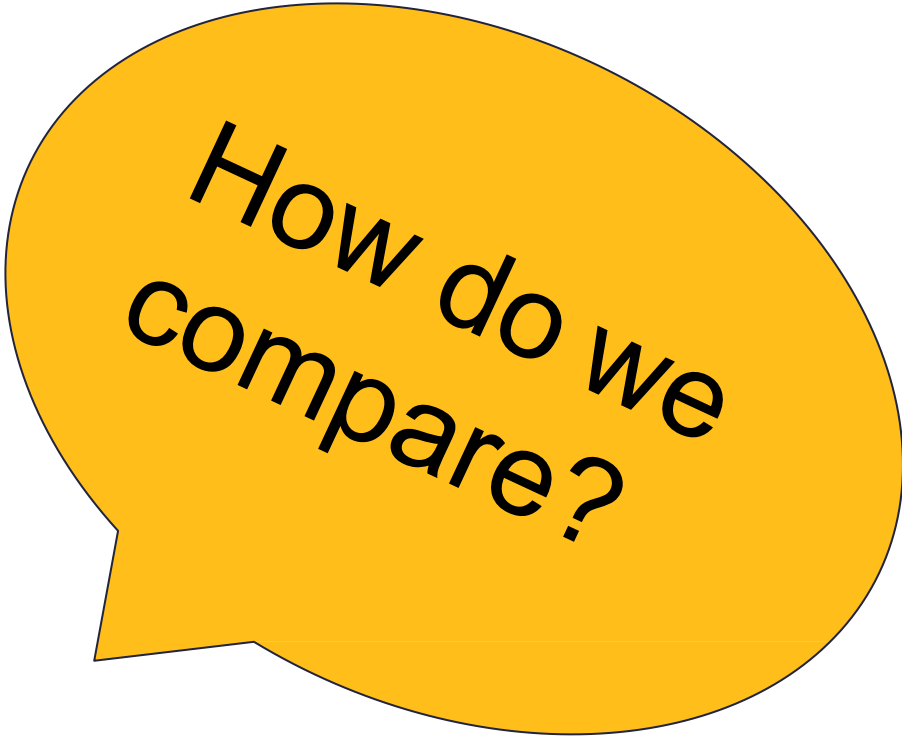


Yesterday's
DBA

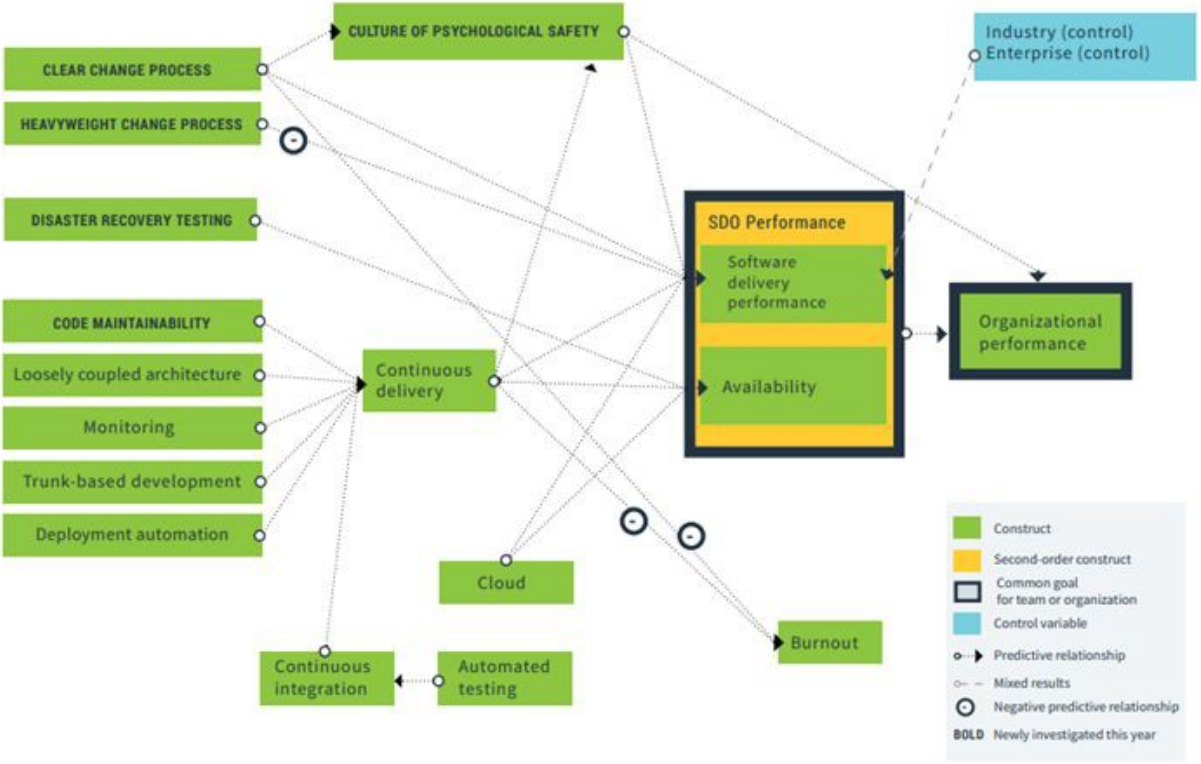
State of DevOps Report 2019



<https://services.google.com/fh/files/misc/state-of-devops-2019.pdf>



State of DevOps Report 2019



IT Performance
 ->
 Organization
 Performance

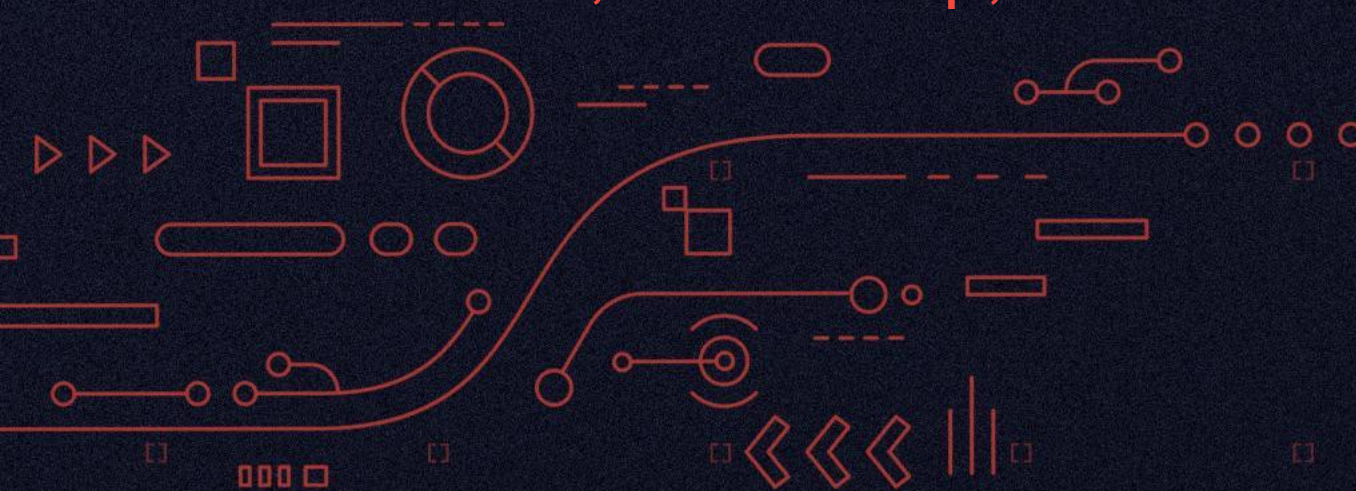
Accelerate: State of DevOps 2019 | How Do We Improve SDO & Organizational Performance?

<https://services.google.com/fh/files/misc/state-of-devops-2019.pdf>

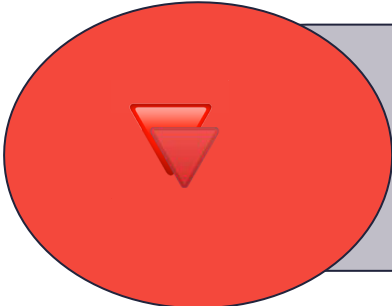
Understanding Challenges

Challenges

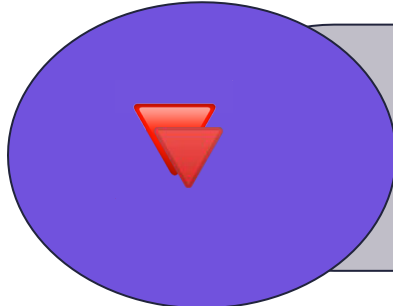
Data - Silo, Ownership, Inherited Practices



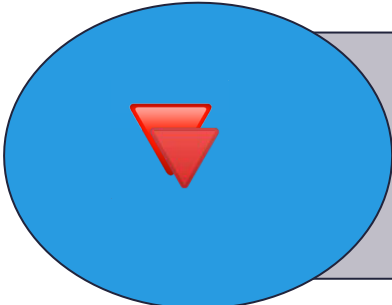
Enterprise Data Challenges



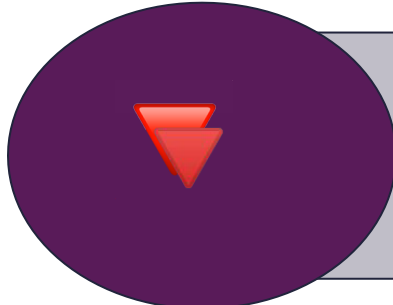
How do we think about data?



Decade old standards & conventions



Inherited data management practices



Centralize data team to design, model, deploy & operate

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Who is Responsible?

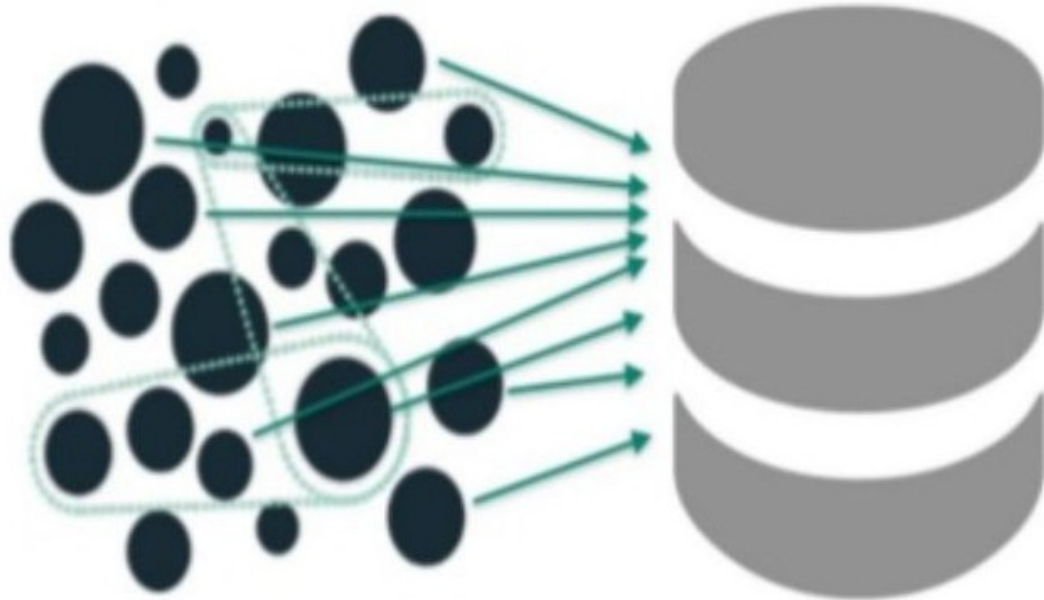
Our system complexities are because of our thinking, thinking particularly about the “Data”. We tend to compromise a lot as we could not get the “Data” in the right way, at the right time, in the proper format

**We need to level up our game
Data, Data Architecture, Data Management &
Associated Practices need our love & attention**

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Architecture Mismatch

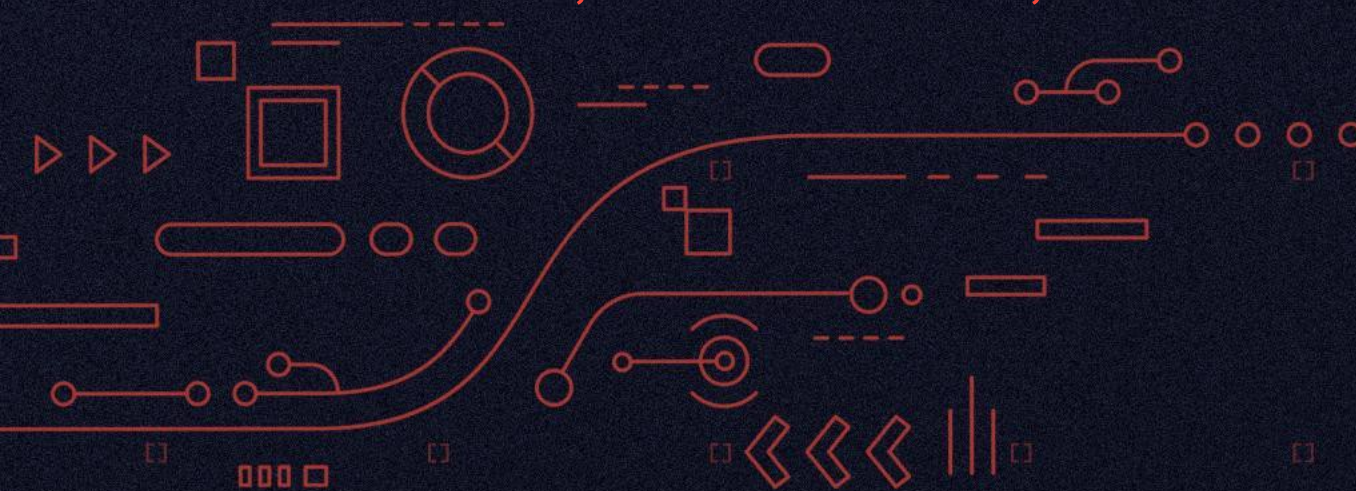
Microservices Era & Big Ball of “Data” mud



Small Steps, But in Right Direction

Solution Approach

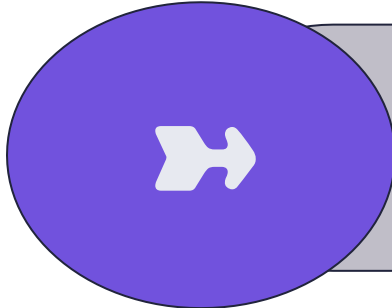
Education, Conventions, Architecture, Shift Left



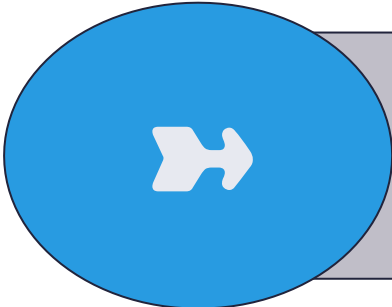
Solution Approach



Data Management Team
Decentralize



Conventions & Standards



Educate, Upskill, Tools,
Processes



Adopting Modern Practices

Help Our Data Folks - Processes

- Make the data first-class citizen
- Source control - Database schema
- Simply processes
- Review changes early
- CI/CD pipeline
- “T” & “Comb” shaped

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Help Our Data Folks - Futuristic

- “T” & “Comb” shaped
- Data Engineers
- Educator & Mentors
- Platform Builders

Help Our Dev & Ops Folks - Educate

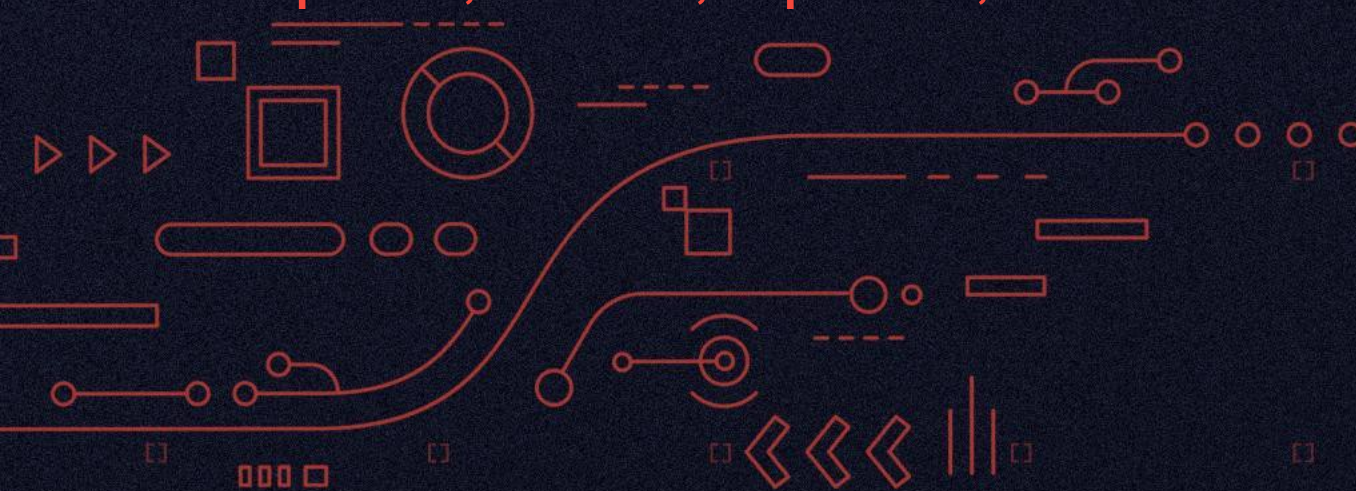
- Data Governance, Lineage
- Compliance (PCI DSS, Data Privacy)
- Regulations (GDPR, CCPA)
- Data Security (PII)
- Standards & Conventions (Naming, model, dictionary, catalogue)
- Enable Self-Service (Database request, schema change request)

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Useful Resources

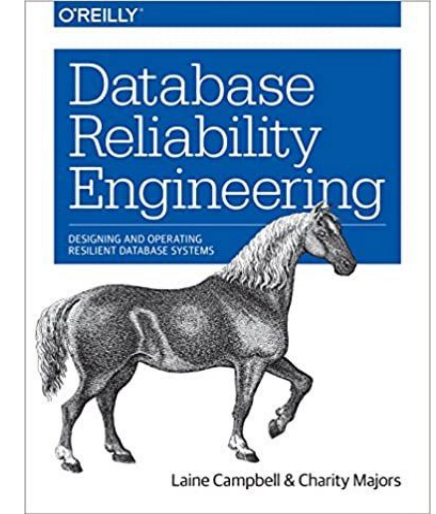
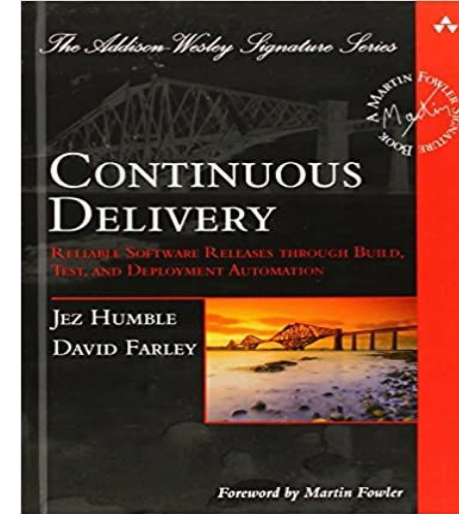
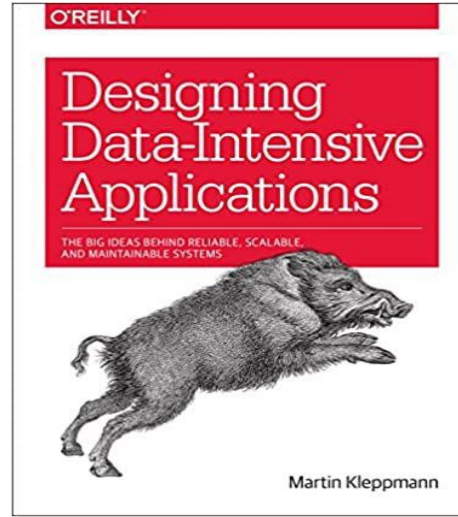
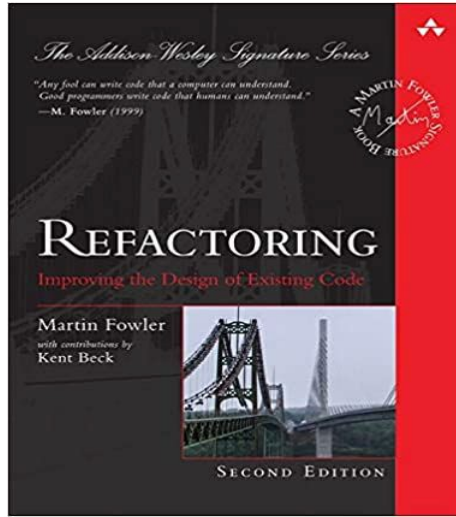
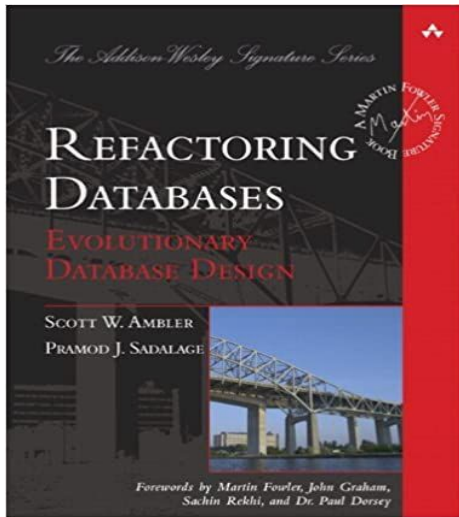
Recommendations

Upskill, Learn, Spread, Share



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Recommendations



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Recommended Approach

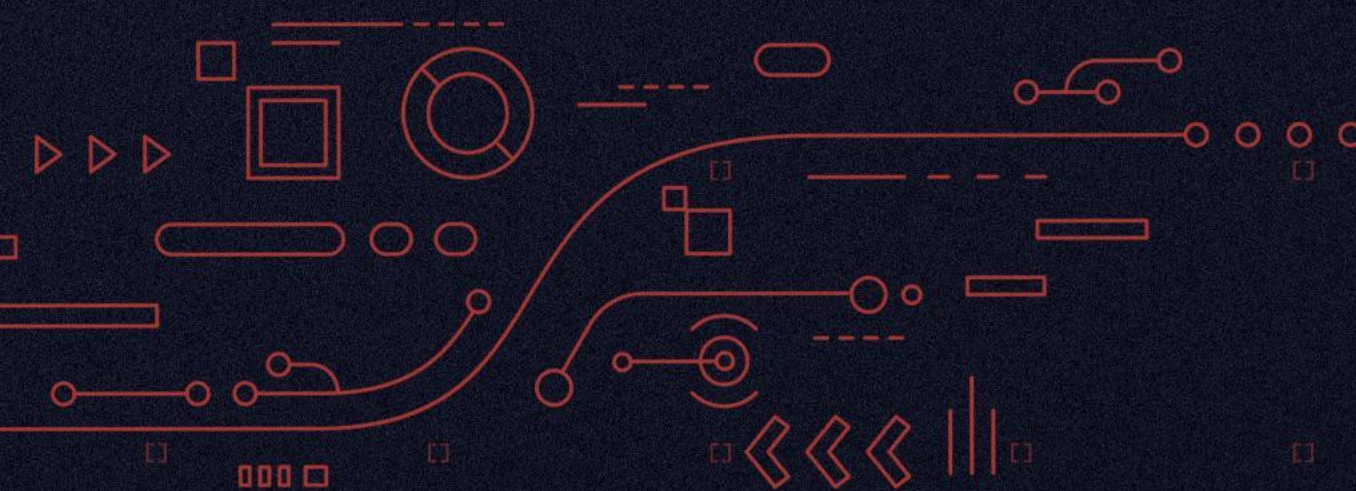
- Understanding current state (Tools, processes, roles, flow)
- Making work visible (current workloads, workloads in pipeline)
- Value Stream Management (New feature, Tech debt, Incident)
- Upskilling (DevOps, CI/CD Practices, Automation)
- Investment (Time, Tools, Self-service)

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Collectively We Need Work, Collaborate

Remaining Challenges

Call for Action



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Help

- Automated data governance
- Policies via automation and in pipeline
- Compliance as code



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