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Trilha – Big Data

Passo a Passo para implementar DataOps em projetos de Big Data

Eduardo Hahn

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- + BuzzWord
- "**DataOps** is an automated, process-oriented methodology, used by analytic and data teams, to improve the quality and reduce the cycle time of data analytics." Wikipedia
- "**DataOps** is about more than speed and quality. With a culture of continuous improvement, organizations can deliver data analytics solutions more efficiently, releasing valuable team members for more valuable activities, such as building innovative new products." Eckerson Group

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- 2014....

IBM Big Data & Analytics Hub

Blogs

3 reasons why DataOps is essential for big data success

JUNE 19, 2014

by Lenny Liebmann
Contributing Editor, InformationWeek
Follow me on LinkedIn, Twitter

Developers once wrote application code and just "threw it over the wall" to IT operations, which then had to ensure that those applications performed well in the production environment. This was always a less-than-optimal approach, but it became untenable as the business began to depend more and more on lots of fresh code getting rolled out into production quickly and with a high degree confidence. So IT organizations are now embracing a set of best practices known as *DevOps* that improve coordination between development and operations.

"A ciência de dados é uma disciplina excepcionalmente importante hoje em dia. Mas essa ciência só é útil na medida em que pode ser executada de forma eficiente e confiável. E para que isso aconteça, você precisa de DataOps."

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- 2015...

From DevOps to DataOps, By Andy Palmer

Posted on Thursday, May 7th, 2015 at 1:55 PM.
Written by Andy Palmer

Why It's Time to Embrace "DataOps" as a New Discipline

Over the past 10 years, many of us in technology companies have experienced the emergence of "DevOps." This new set of practices and tools has improved the velocity, quality, predictability and scale of software engineering and deployment. Starting at the large internet companies, the trend towards DevOps

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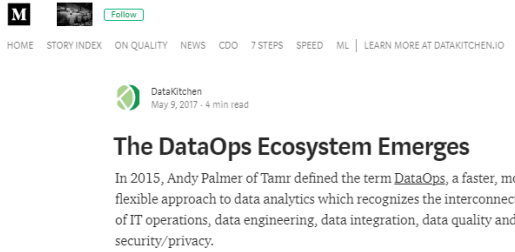
Acelerou.....

- 2017....



Agora sim.....

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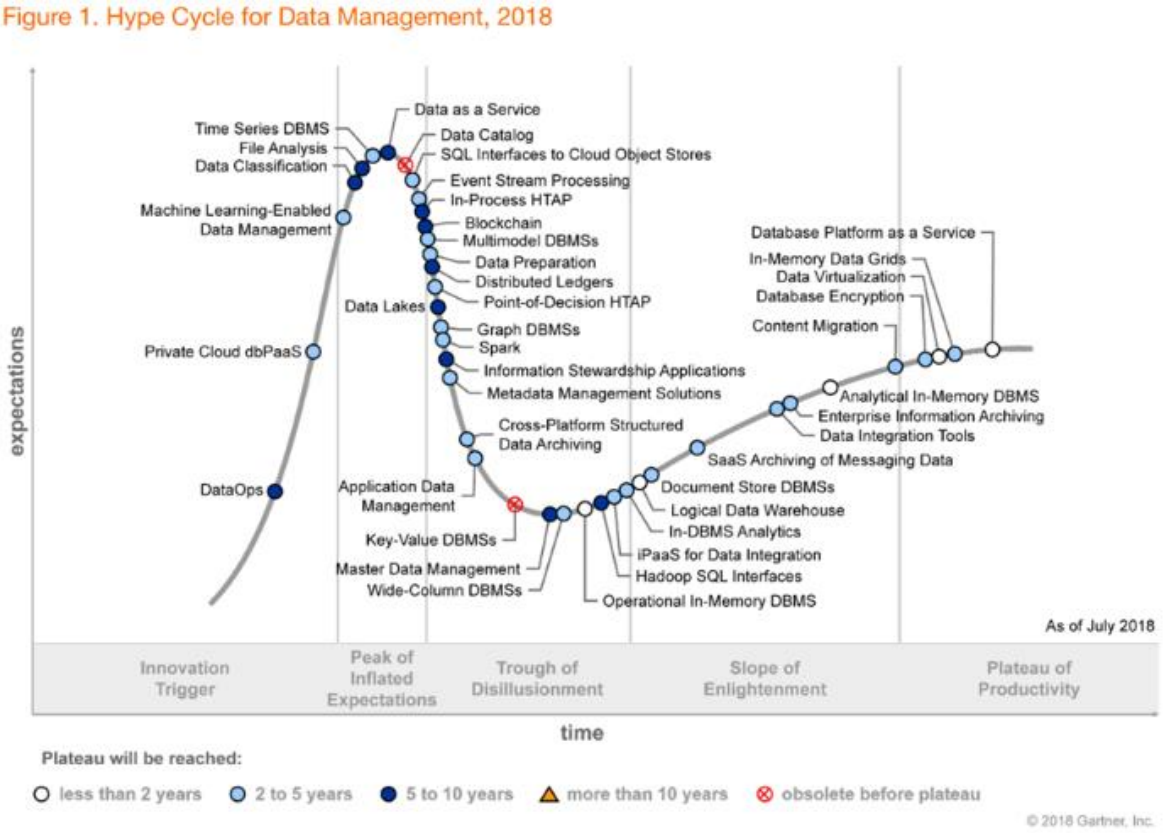
- 2018...



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DataOps is a collaborative data management practice focused on improving the communication, integration and automation of data flows between data managers and data consumers across an organization.

Gartner

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DataOps Manifesto

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The DataOps Manifesto

Through firsthand experience working with data across organizations, tools, and industries we have uncovered a better way to develop and deliver analytics that we call DataOps.

Whether referred to as data science, data engineering, data management, big data, business intelligence, or the like, through our work we have come to value in analytics:

Individuals and interactions over processes and tools
Working analytics over comprehensive documentation
Customer collaboration over contract negotiation
Experimentation, iteration, and feedback over extensive upfront design
Cross-functional ownership of operations over siloed responsibilities

dataopsmanifesto.org/

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DataOps Manifesto

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- **Princípios do DataOps**
  - **1. Satisfaça continuamente o seu cliente**
  - **2. Valor do trabalho analítico**
  - **3. Abrace a mudança**
  - **4. É um esporte em equipe**
  - **5. Interações diárias**
  - **6. Auto-organização**
  - **7. Reduza o heroísmo**
  - **8. Reflita**
  - **9. Os códigos**
  - **10. Orquestração**
  - **11. Faça tudo ser reproduzível**
  - **12. Ambientes descartáveis**
  - **13. Simplicidade**
  - **14. Análise de dados é manufatura**
  - **15. A qualidade é primordial**
  - **16. Monitorar a qualidade e o desempenho**
  - **17. Reutilizar**
  - **18. Melhorar os tempos dos ciclos**

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Genesis of DataOps

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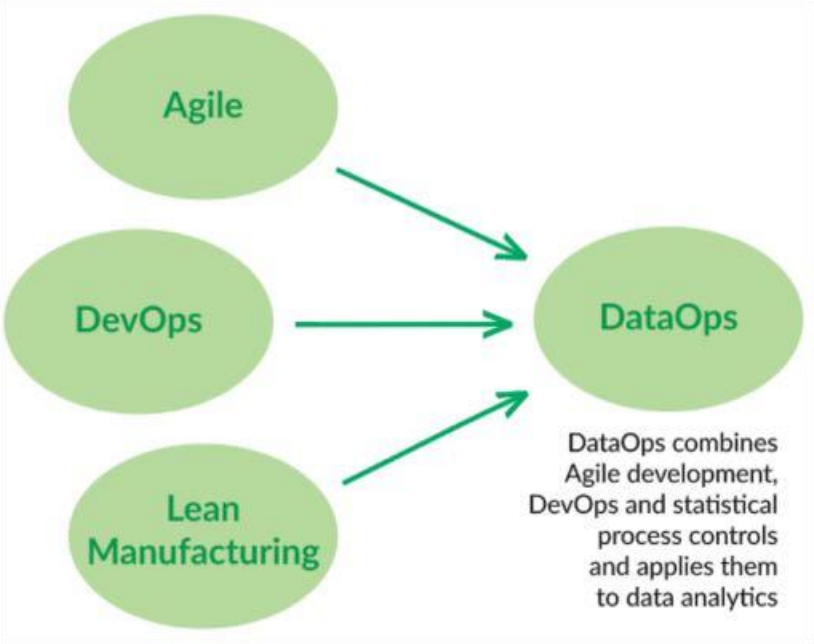
People,
Process,
Organization

Technical
Environment



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4 “As” de DataOps

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- Automatize e monitorar pipelines
- Automatizar implantações
- Automatizar e monitorar a qualidade
- Automatizar sandbox

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DataOps is NOT Just DevOps for Data

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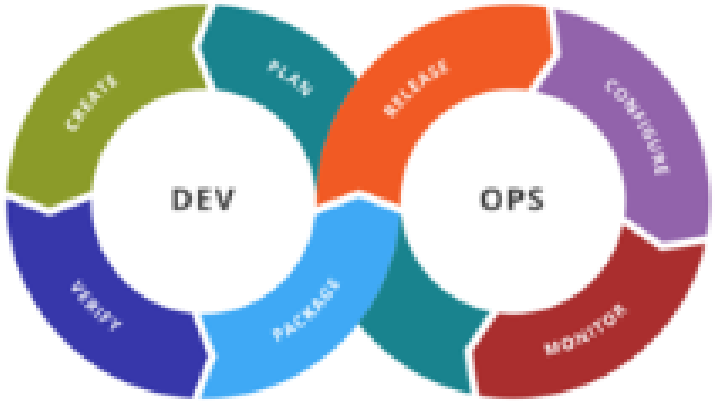
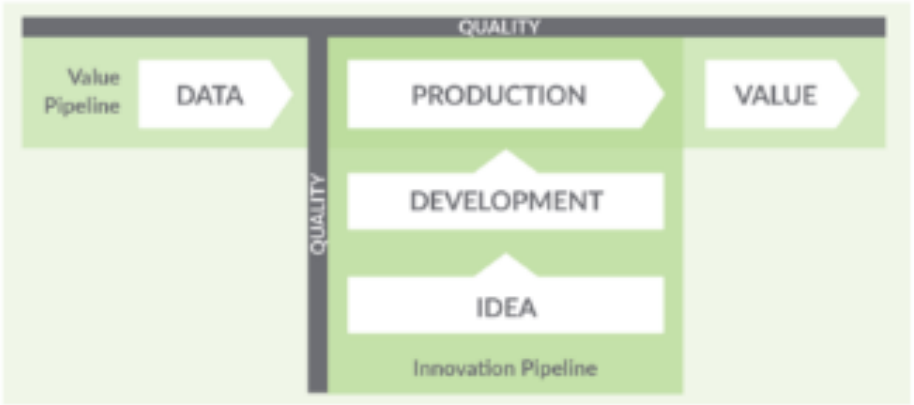


DevOps



DataOps

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Different People and Expectations

DevOps Users & Tools

Software Engineers, comfortable with coding and complexity of multiple languages, tools, and hardware/software.

DataOps User & Tools

Data Scientists, Engineers, and Analysts who want to just analyze data and build models.

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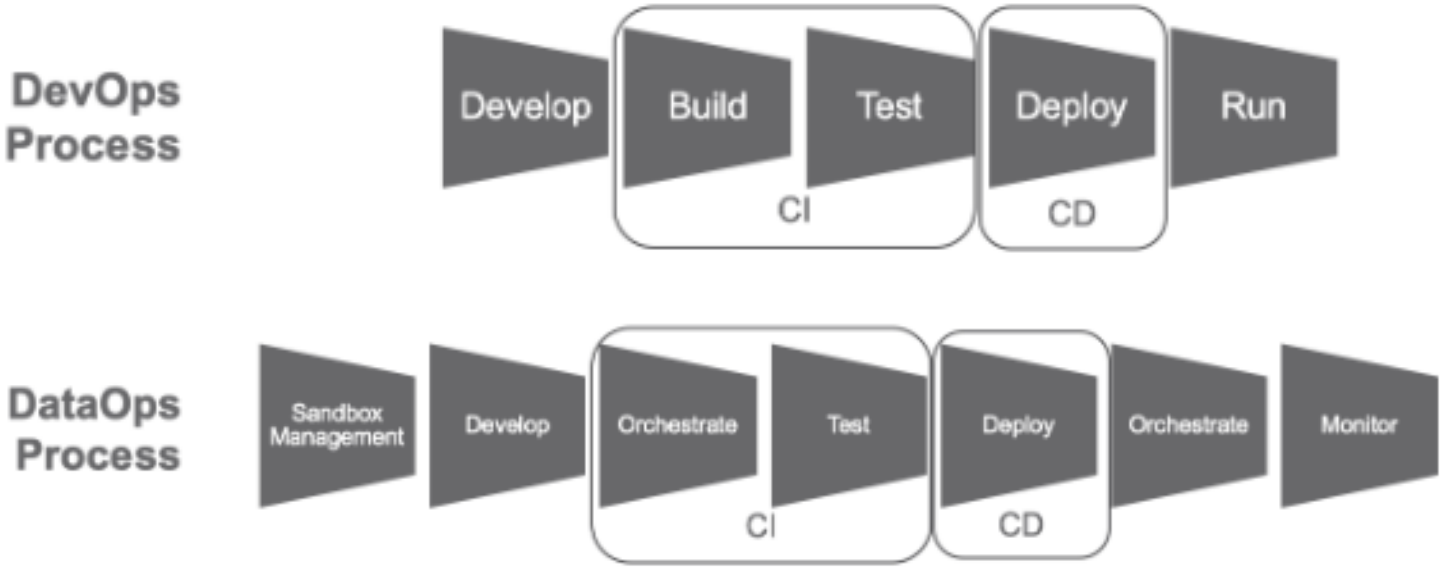

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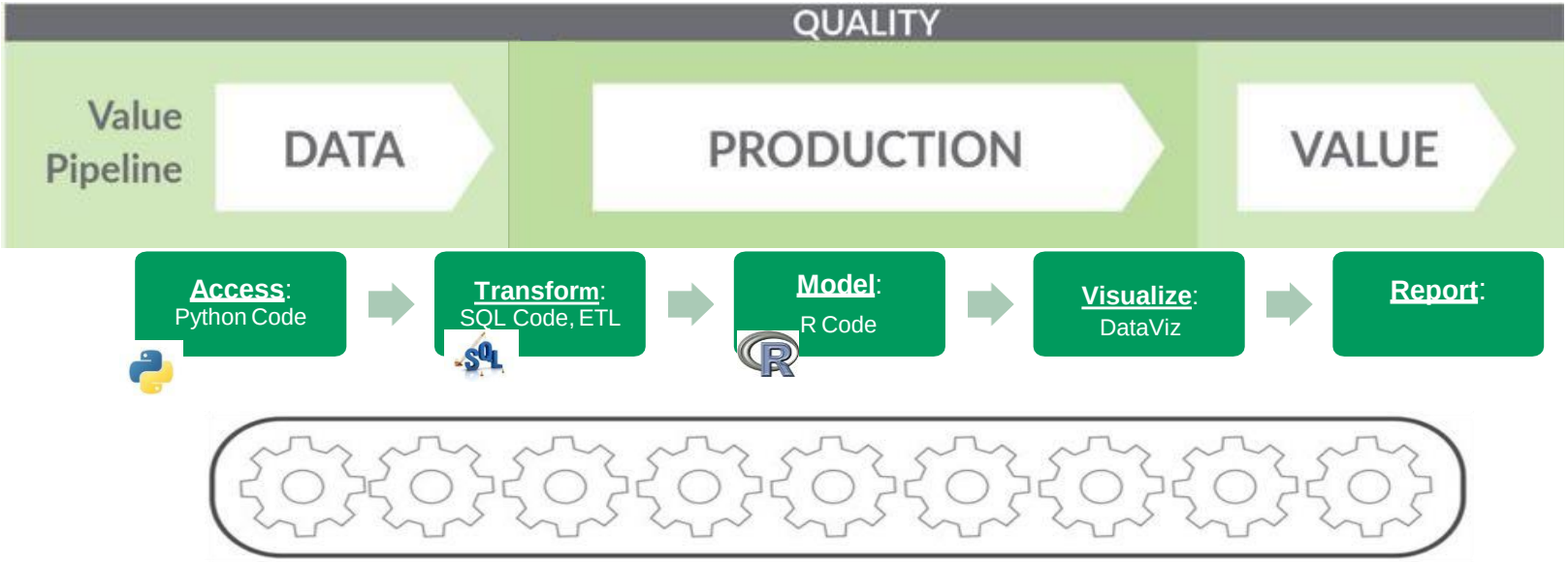
Automatize e monitorar pipelines



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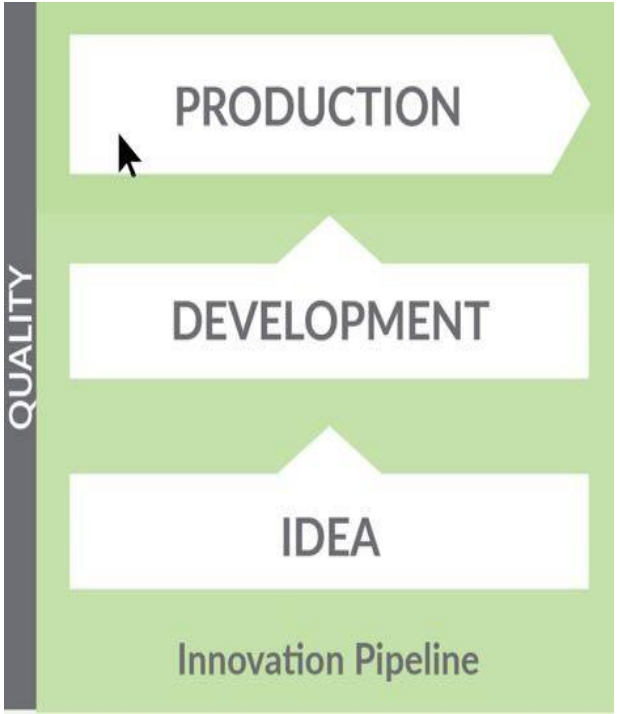
Automatizar implantações



Business
Customer

Products &
Systems

Diverse Team

Data
Engineers

Data
Scientists

Data
Analysts

Diverse Tools

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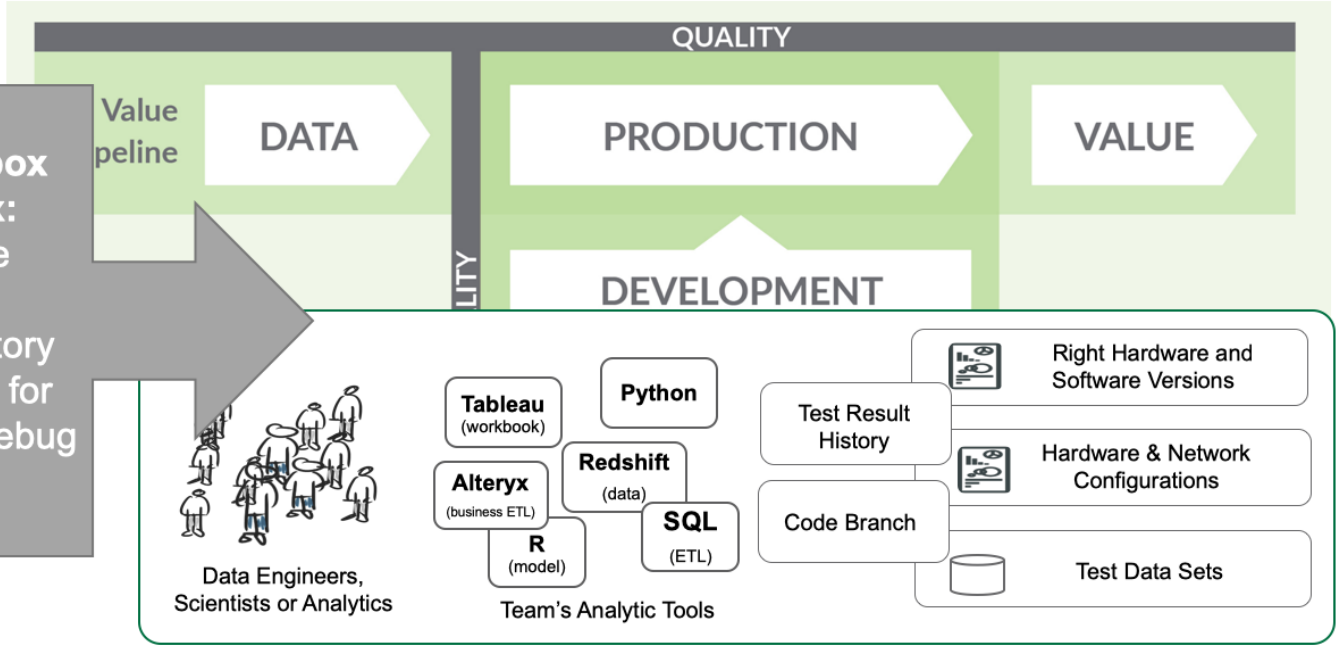
Automatizar sandbox

Development Sandbox Creation is Complex:

Hard to create the right set of data, tools, people, history and configuration for a fast build test debug cycle



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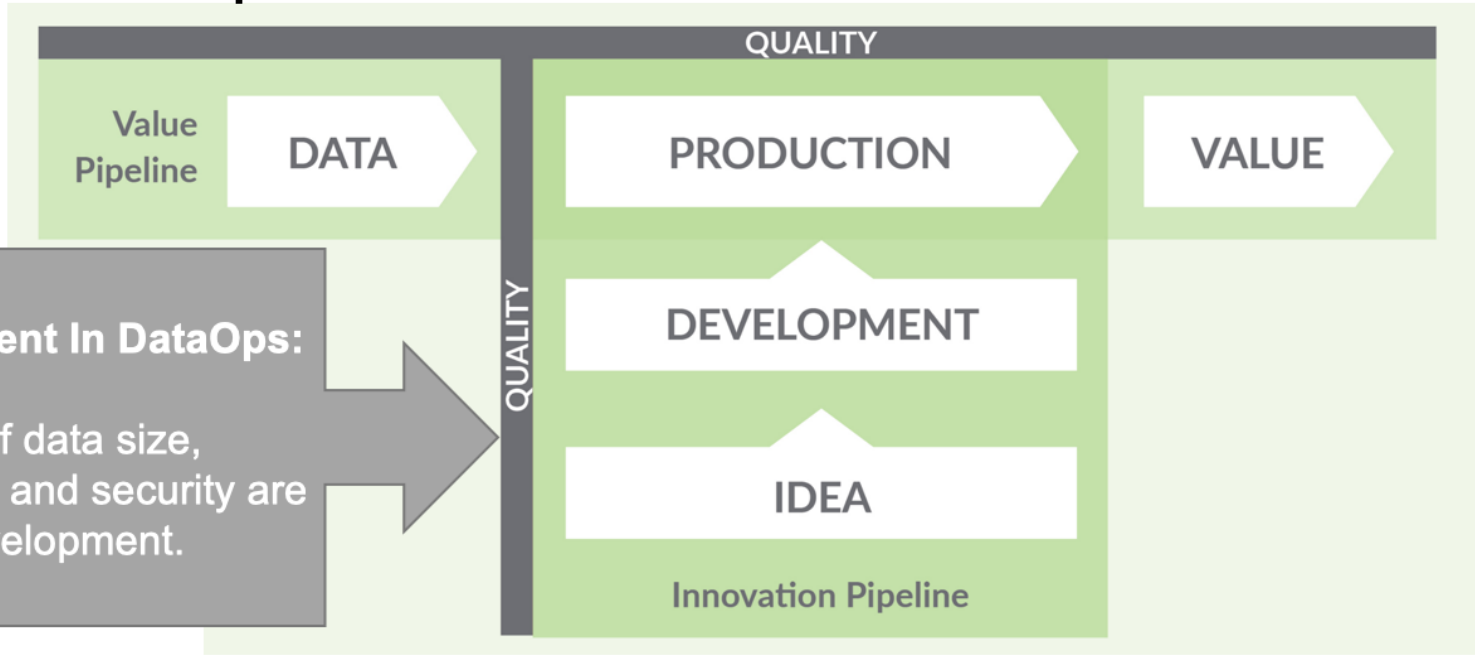
Automatizar e monitorar a qualidade



Test Data Management In DataOps:

Consideration of data size, complexity, sampling and security are required in development.

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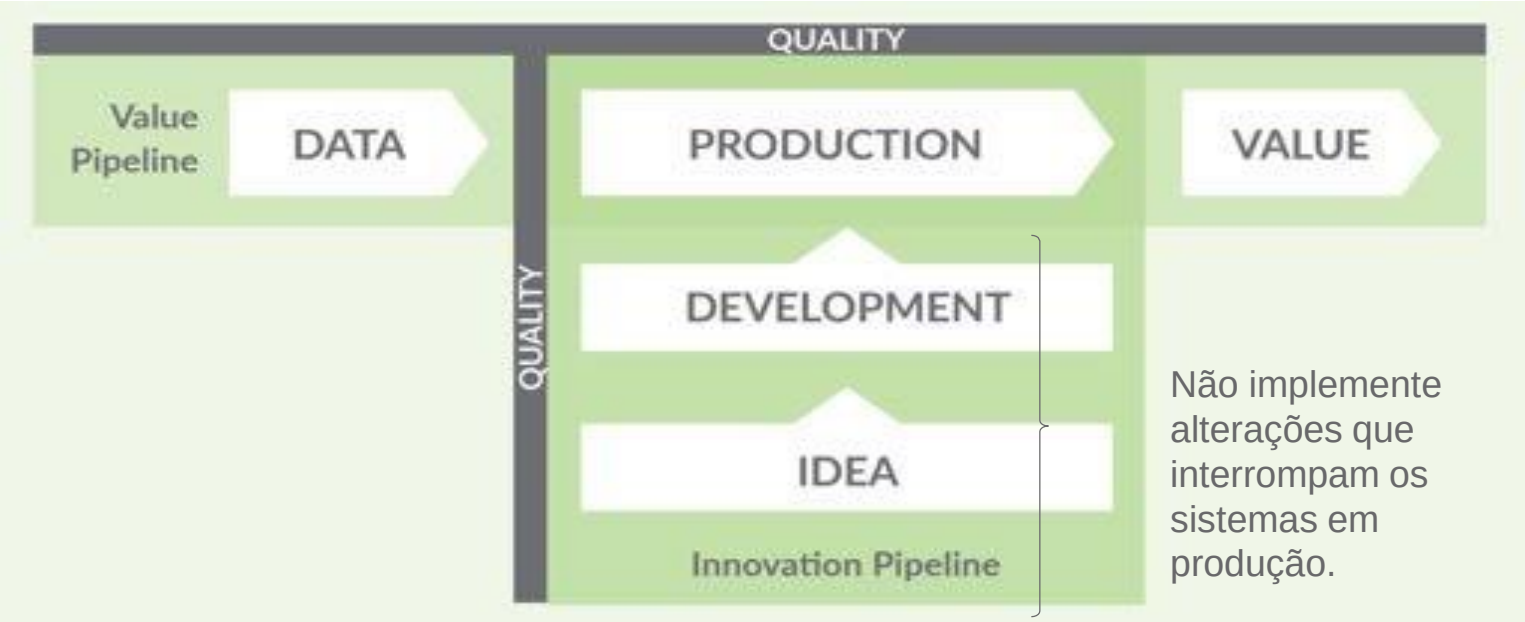
Não permita que dados de baixa qualidade cheguem aos usuários no **Value Pipeline**



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Passos para implementar DataOps

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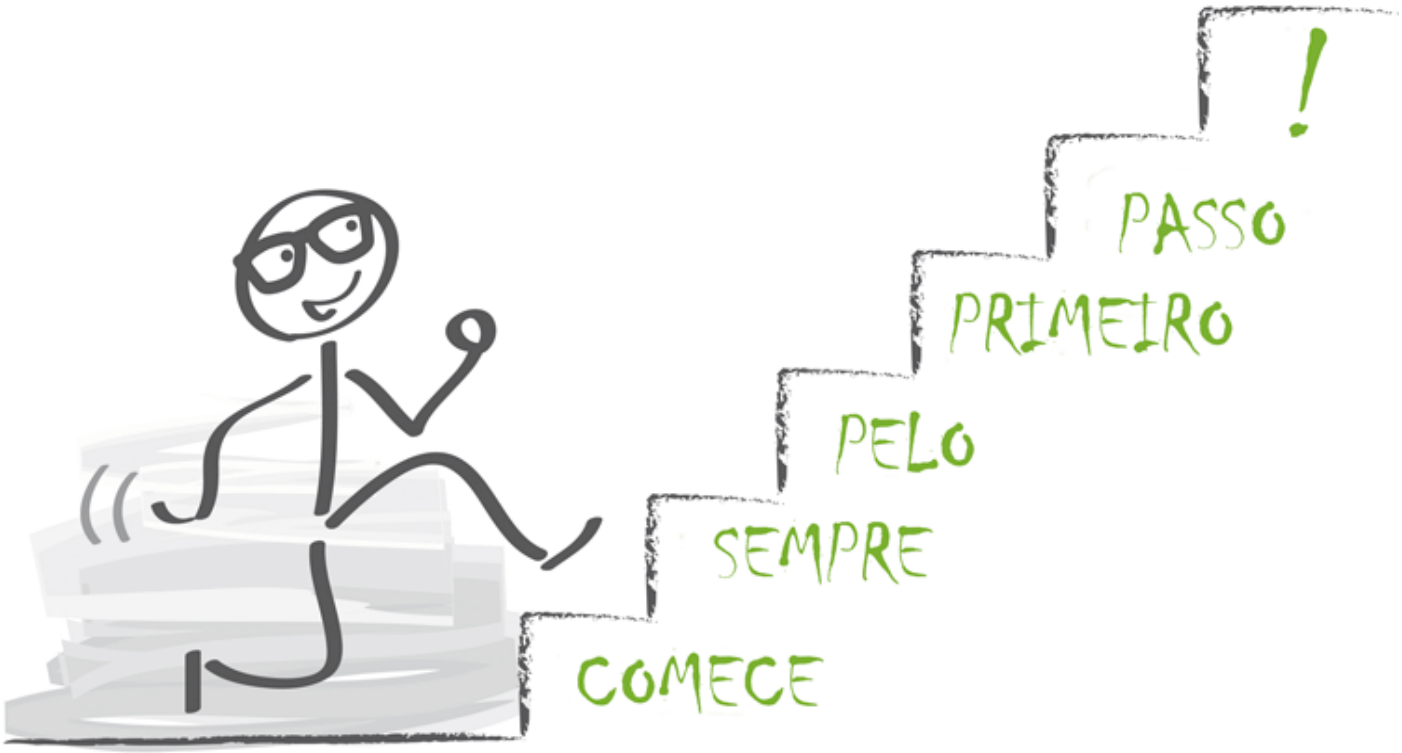

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- Passo 1: incremente Data Test e Logic Test

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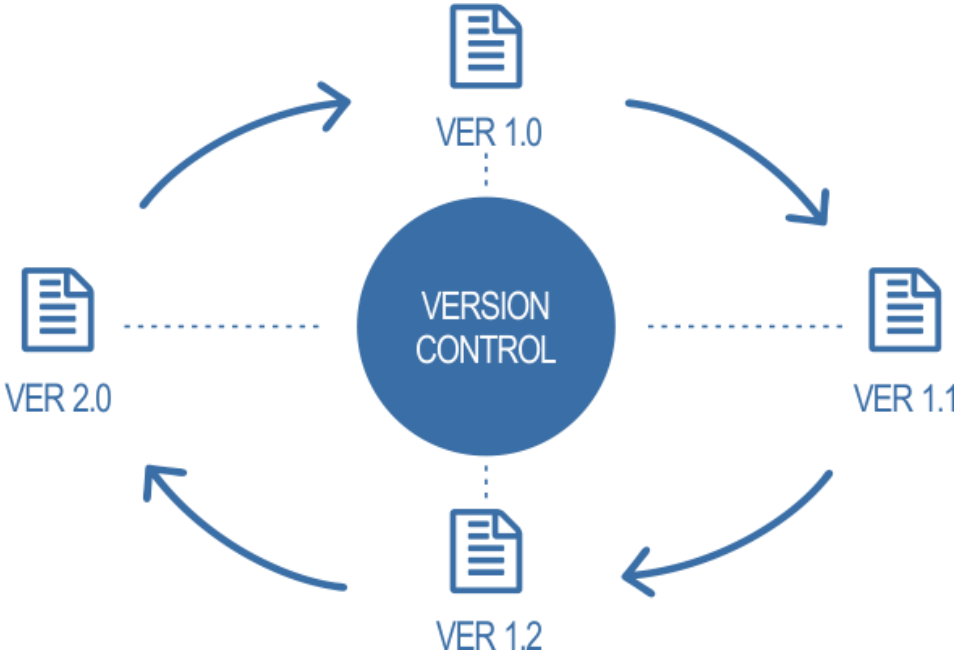
- Passo 2: use controle de versão (Branch&Merge).



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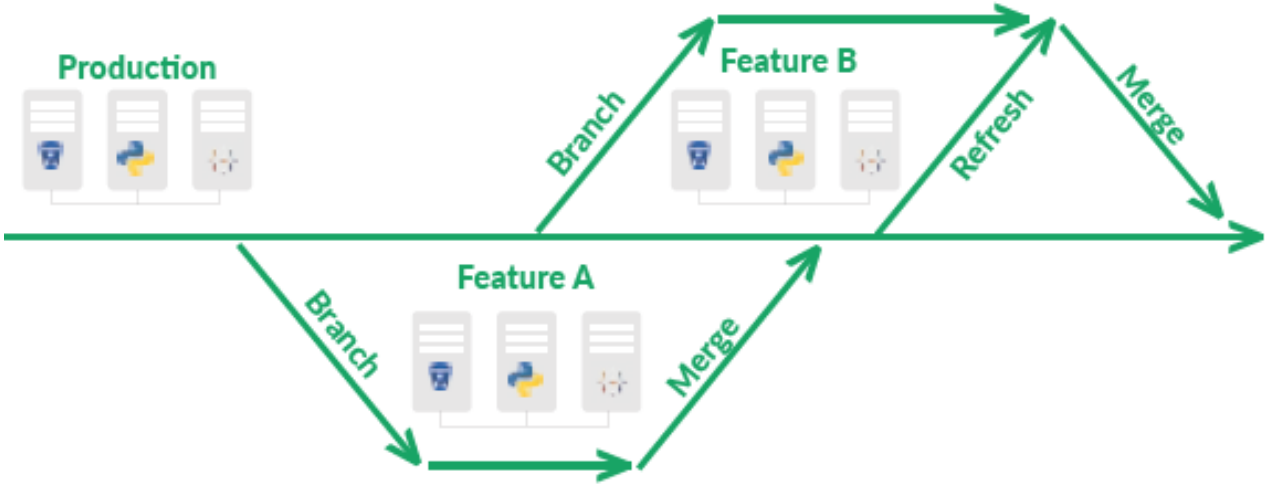
- Passo 3: Use múltiplos ambientes



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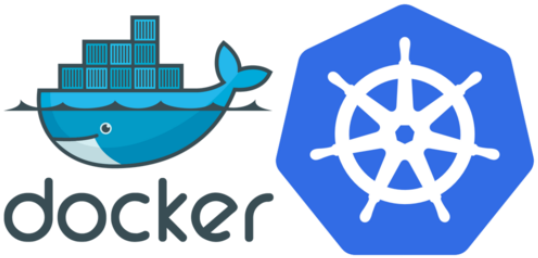
Passo 4: Reuso e containers

Outro método de aumento de produtividade para equipes é a capacidade de reutilizar e conter o código. Cada etapa intermediária no pipeline de análise de dados recebe a saída de um estágio anterior e fornece entrada para o próximo estágio. É mais fácil para os outros membros da equipe reutilizar componentes menores, se eles puderem ser segmentados ou conteinerização. Melhor caminho é usar Docker



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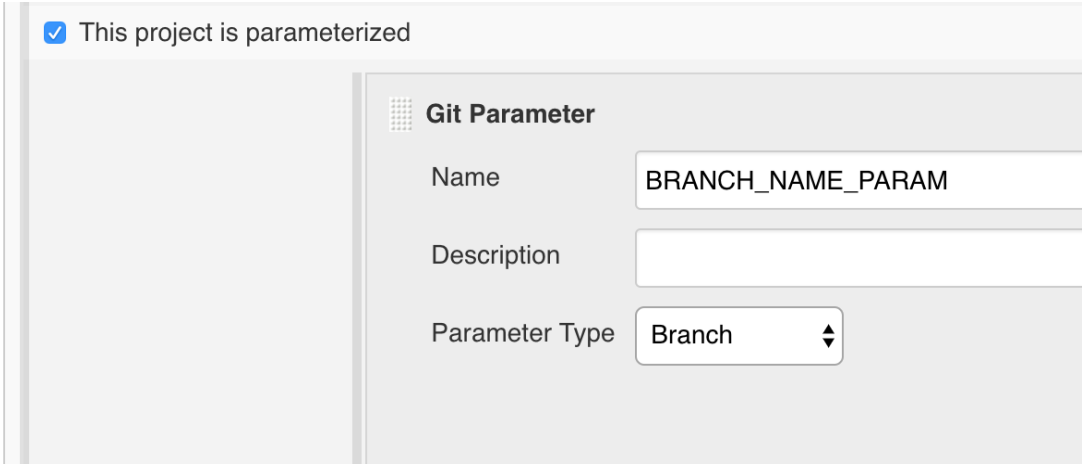
- Passo 5: Parametrize seus processos



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Passo 6: Use Simple Unique Storage

- Data Lake: os dados são movidos de diferentes silos de dados para um repositório comum, é muito mais fácil para uma equipe de análise de dados trabalhar com ele.

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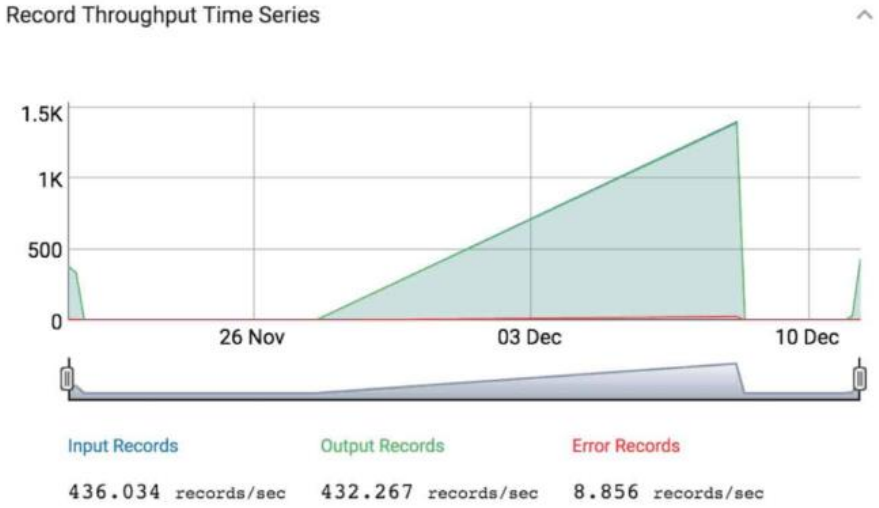
Passo 7: Medir todas as etapas do pipeline

Defina métricas de ponta a ponta para sua arquitetura. Identifique pontos de melhorias e problemas de desempenho. Visualize uma arquitetura de dados online, visualizando como os sistemas evoluem.



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DataOps Ecosystem

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Platform Solutions

composable

DATA KITCHEN

tamr

StreamSets

kinæsis

data / intelligence

talend

ATTUNITY

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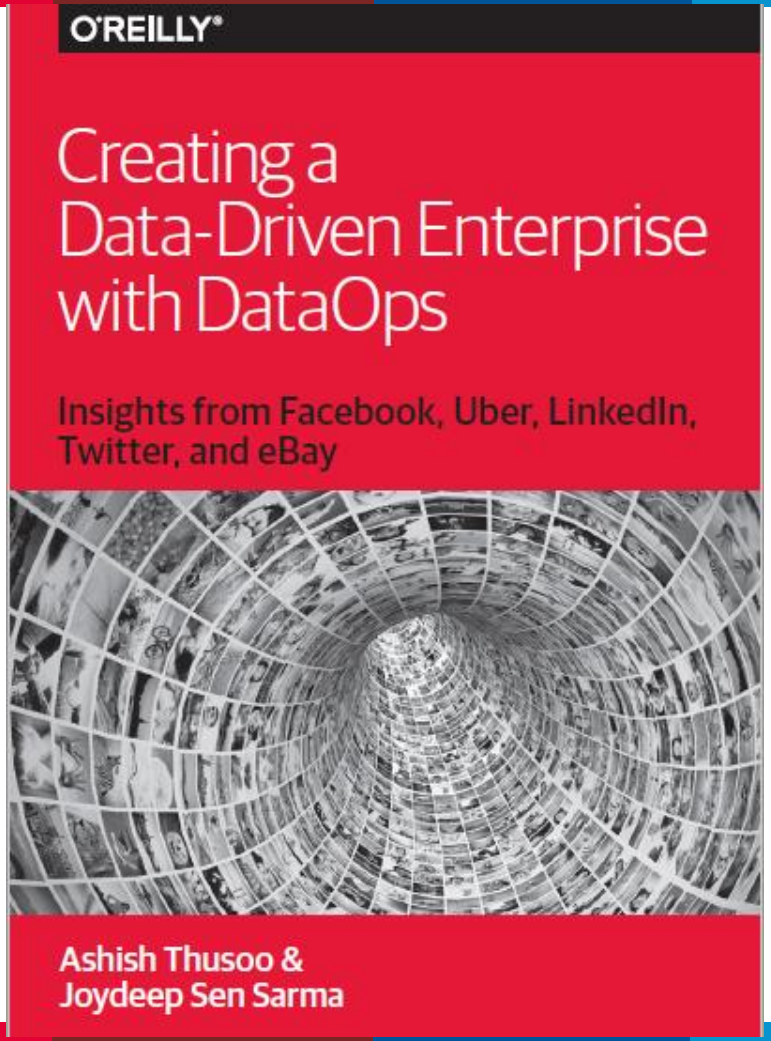
References



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Concluindo....

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- As empresas que desejam implementar DataOps devem concentrar seus esforços em três áreas:
  - Cultura
  - Processos
  - Tecnologia

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About me

Big Family

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  - /in/eduardohahn3

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