DataOps 101

A Better Way to Develop and Deliver Data Analytics

Take the Poll

Entertainment

- *Tonight (Thursday)*
  - Quiz Night & Curry – 7:30 p.m. in Expo

- *Friday*
  - Party

About Me

Experience

- 11+ years with Microsoft BI stack
- 8+ years with PowerPivot/Power BI
- 5+ years with Azure DevOps

Credentials

- MCSE: Productivity
- MS: PBI Data Analyst
- PMP

Contact Me

@JKerski

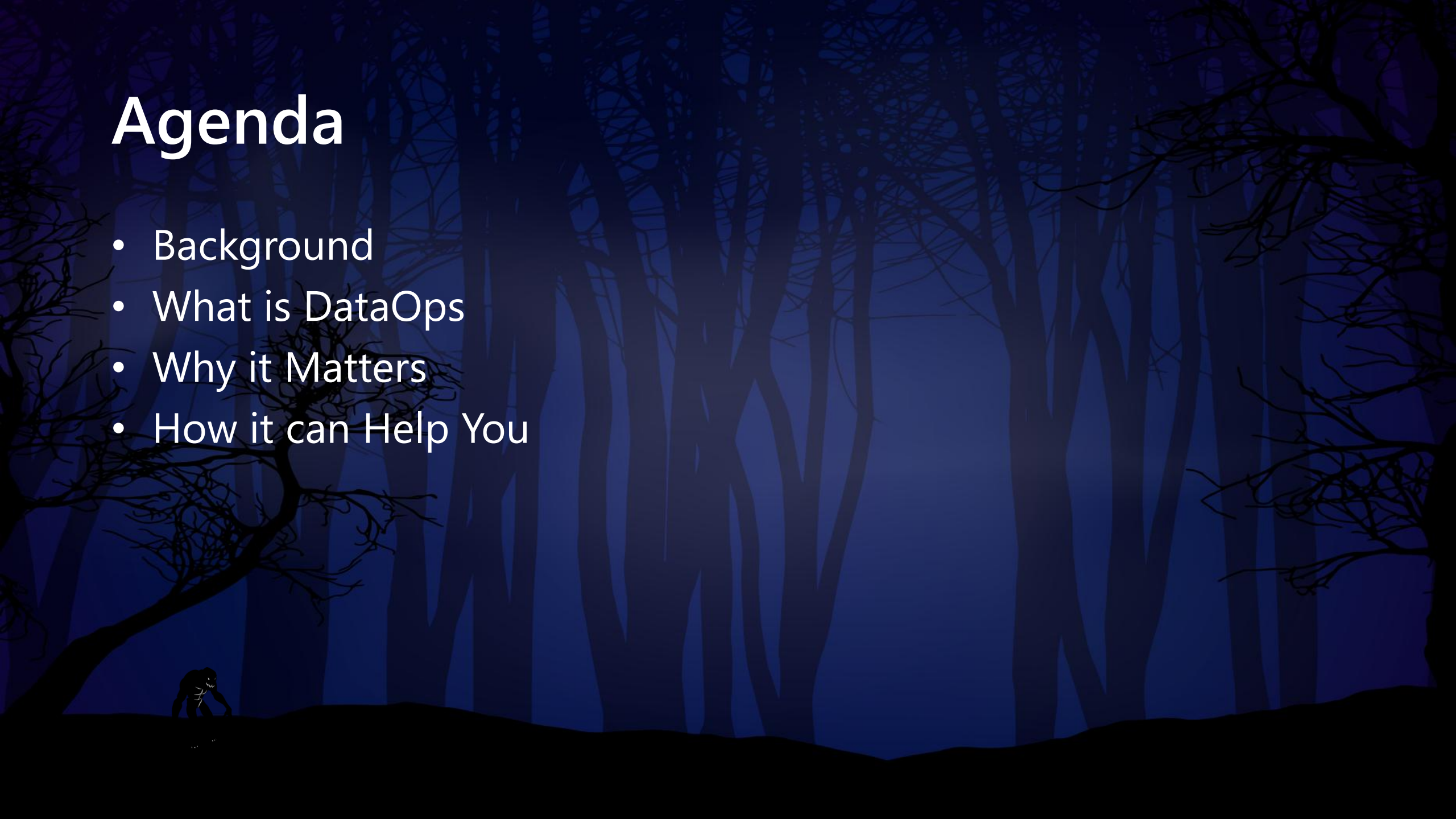
John Kerski

Blog

Slides:

Agenda

- Background
- What is DataOps
- Why it Matters
- How it can Help You



Background

- Poll
- https://forms.office.com/r/KfN8EJEZve

Scenario

- Alex – The Boss

- Bob – The Data Analyst

Day 1

Alex
Great job @Bob, the new Power BI Report is going over well with the executives!

Bob
Thanks! That’s great to hear!

Day 2

Alex **IMPORTANT!**
@Bob, The executives are in a meeting and the slicer doesn't have all the options like it did yesterday, can you fix it ASAP?

Bob
I'm on it!

Alex
Thanks for saving the day superhero

Day 3

Alex **IMPORTANT!**
@Bob, Charlie in Accounting looked at the new Power BI Report and he says the numbers in the table visual don't add up correctly when you update that slicer you fixed yesterday?

Bob
I'm on it… may take two days because I need to test.

Alex
Let's get that fixed today.

Day 4

Alex **IMPORTANT!**
I got a call from an executive, the KPI card that uses the same measure in the table you fixed yesterday looks wrong**.**

Bob
I'm on it ☹

Alex
Let's not have more errors today.

Day 5

Alex
Accounting called again, the model has a new column in it, did you do that?

Bob
No, let me check.

Alex
Alright… rough week

Show of Hands

Risks

Issues

Data is a Strategic Asset but…

Demand is High

Complex Data Lineage

Data Quality Issues

Defects & Errors

Slow Delivery

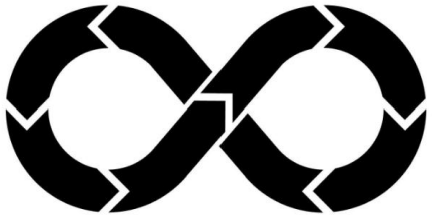
More Cost

Disappointment

DataOps

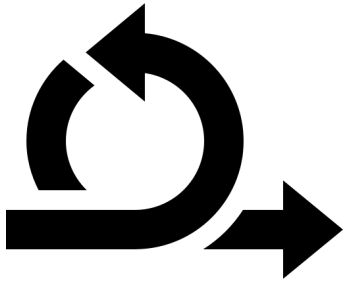
What is DataOps?

DevOps



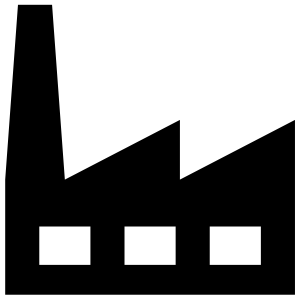
\+

Agile



\+

Lean



Manifesto

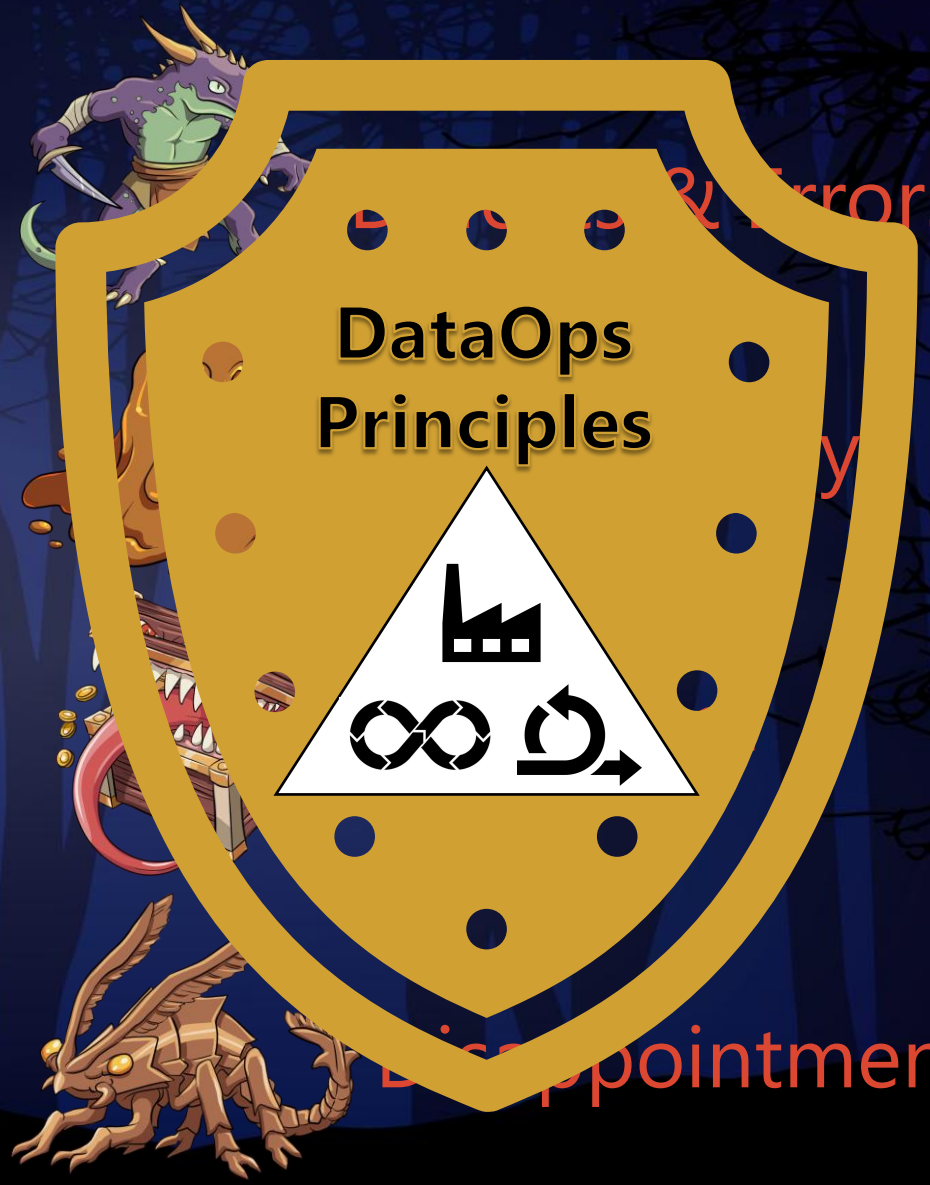
Why It Matters

Data is a Strategic Asset but…

Demand is High

Complex Data Lineage

Data Quality Issues



How can it help me?

Make it Reproducible

Reproducible results are required and therefore **we version** everything: data, low-level hardware and software configurations, and the code and configuration specific to each tool in the toolchain.

Learn Git

Get your work into Version Control

Search Results in Downloads

Executive Dashboard - real real.pbix
Executive Dashboard (28).pbix
Executive Dashboard (26).pbix
Executive Dashboard (25).pbix
Executive Dashboard (24).pbix
Executive Dashboard (23).pbix
Executive Dashboard (22).pbix
Executive Dashboard (21).pbix
Executive Dashboard (20).pbix
Executive Dashboard (19).pbix
Executive Dashboard (18).pbix
Executive Dashboard (17).pbix
Executive Dashboard (16).pbix
Executive Dashboard - real copy.pbix
Executive Dashboard - save.pbix
Executive Dashboard - real.pbix
Executive Dashboard - (50).pbix
Executive Dashboard - (49).pbix
Executive Dashboard - (48).pbix
Executive Dashboard - (47).pbix
Executive Dashboard - (46).pbix

Executive Dashboard (7).pbix
Executive Dashboard (6).pbix
Executive Dashboard (5).pbix
Executive Dashboard (4).pbix
Executive Dashboard (3).pbix
Executive Dashboard (2).pbix
Executive Dashboard (1).pbix
Executive Dashboard.pbix
Executive Dashboard (30).pbix
Executive Dashboard (30) - Copy.pbix
Executive Dashboard (30) - Copy (1).pbix
Executive Dashboard (30) - backup.pbix
Executive Dashboard (20) - backup.pbix
Executive Dashboard (5) - proposal.pbix
Executive Dashboard (5) - proposal final draft.pbix
Executive Dashboard (6) - final final.pbix
Executive Dashboard - My Edits.pbix
Executive Dashboard - DAX fix.pbix
Executive Dashboard - Prototype.pbix
Executive Dashboard (29).pbix
Executive Dashboard (31).pbix

Executive Dashboard (32).pbix
Executive Dashboard - maybe fix.pbix

Quality is Paramount

Analytic pipelines should be built with a foundation capable of **automated detection of abnormalities** and security issues in code, configuration, and data, and should provide continuous feedback to operators for error avoidance.

When you Find an Error, Build a Test

Tests are your Safety Net

Orchestrate

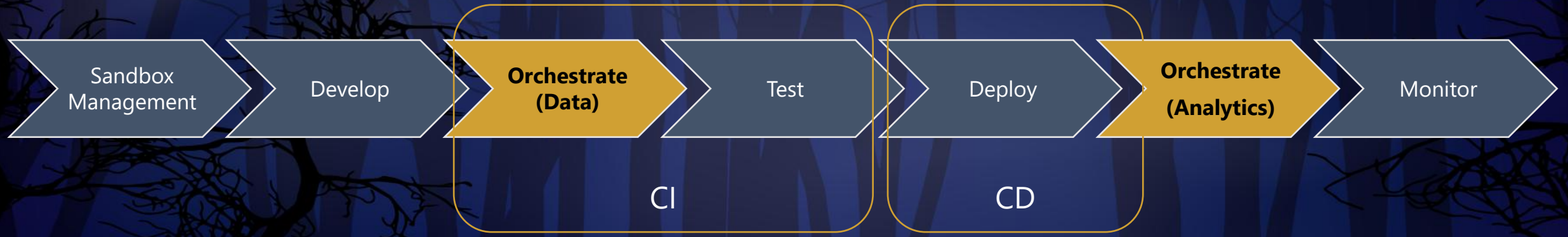
The beginning-to-end orchestration of data, tools, code, environments, and the analytic teams work is a key driver of analytic success.

Continuous Integration

Continuous Deployment

Scripts over Clicks

Orchestrate (cont.)



Monitor Quality & Performance

Our goal is to have performance, security and quality measures that are **monitored continuously** to detect unexpected variation and generate operational statistics.

Catch the Errors Before Your Customers Do

Practice What You Build

Reduce Heroism

As the pace and breadth of need for analytic insights ever increases, we believe analytic teams should strive to reduce heroism and create sustainable and scalable data analytic teams and processes.

Avoid Burnout

Recap – How Can it Help You

1. **Make It Reproducible** - Learn/Embrace Git
2. **Quality is Paramount** - Find an Error, Build a Test
3. **Orchestration** - Implement CI/CD
4. **Monitor Quality and Performance** - Catch Errors Before Your Clients Do
5. **Reduce Heroism** – Avoid Burnout

DataOps Aphorisms

- It is not about the fear of making a change; it is about the removal of fear from making changes.
- It is not about data quality; it is about low rates of error.
- It is not about the next analysis; it is about building a system that makes it easier to answer the next analysis.
- You spend all day helping your customers be more analytic, so why are you so un-analytic about how you run your data analytics teams?
- Don’t solve problems, figure out how to never create them in the first place.

Resources

- General
  - DataOps Cookbook
  - DataOps – Chris Bergh

Version Control

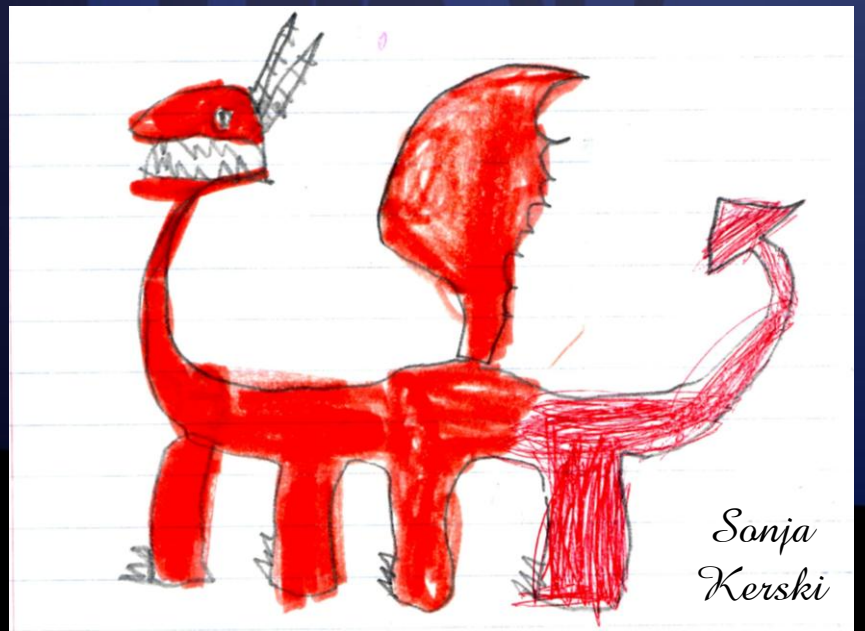
- GitHub Desktop Tutorial
- pbi-tools

- Testing & Orchestration
  - Video
  - Visual Testing

Monitoring

- Template

Questions?



Slides: