DevOps

CSSE6400

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March 21, 2022

Question

Who has heard of *DevOps*?

Question

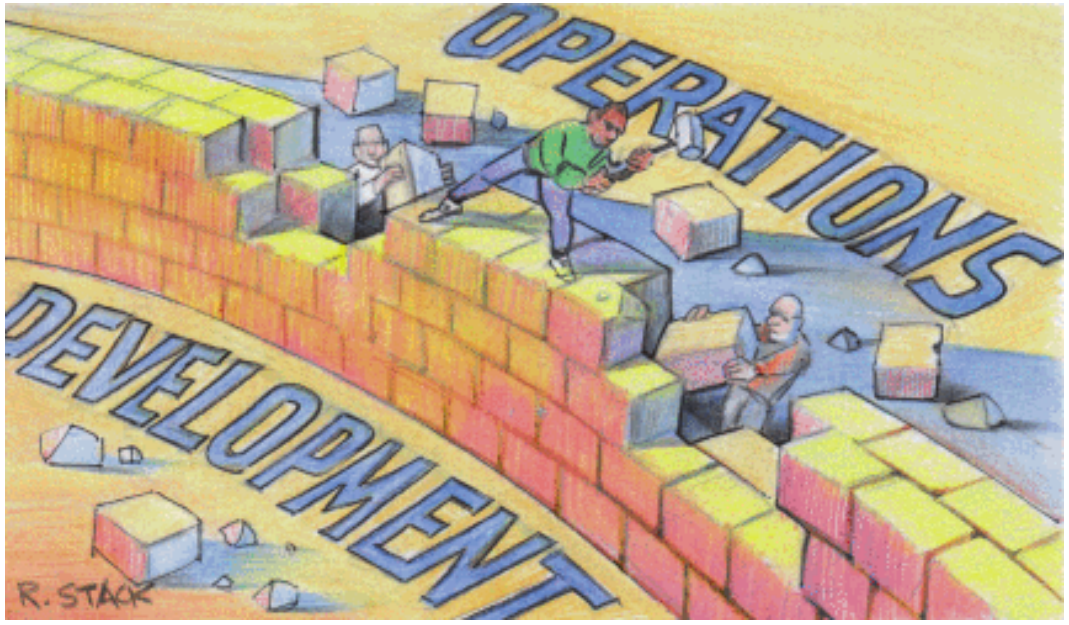
Who has used *DevOps*?

The larger story

Server Config	Config Management
Application Config	Config Files
Provisioning	Infrastructure Code
Building	Continuous Integration
Deployment	Continuous Deployment
Testing	Automated Tests
Database Administration	Schema Migration
Specifications	Behaviour Driven Development

Question

What is *DevOps*?


OPERATIONS
DEVELOPMENT
R. STACK

What is *DevOps*? [1]

- A combination of *software development* and *IT operations* skills

What is *DevOps*? [1]

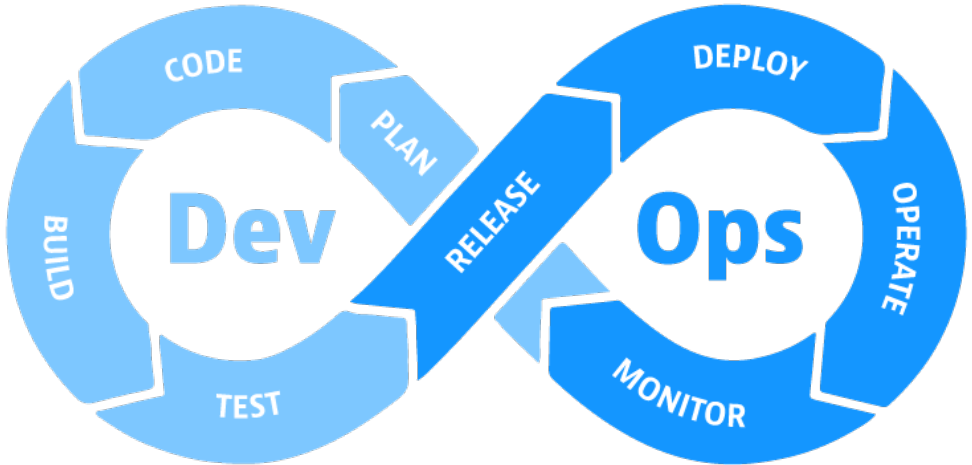
- A combination of *software development* and *IT operations* skills
- A *cultural movement* that enables rapid development with four defining characteristics: open communication, incentive and responsibility alignment, respect, and trust

Important

Continuous *

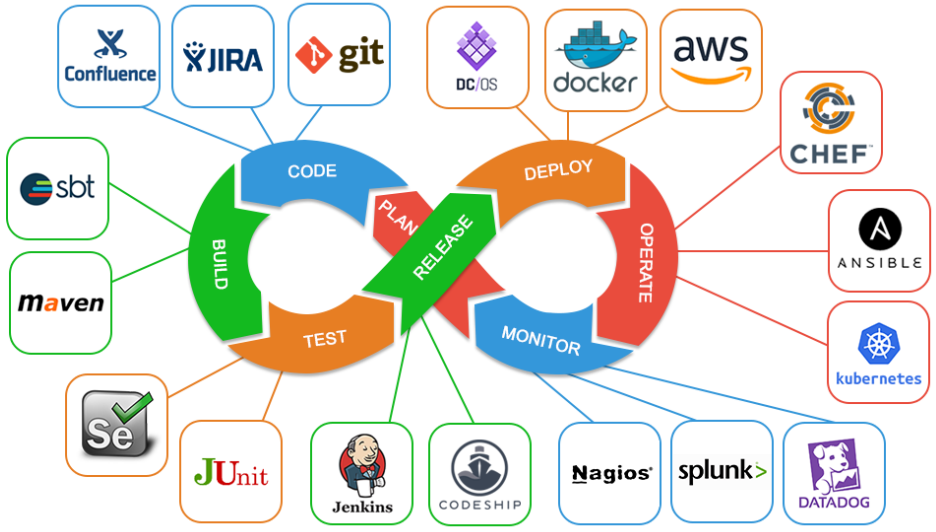
Also Important

If it hurts, do it more often


CODE
PLAN
BUILD
Dev
TEST
RELEASE
DEPLOY
OPERATE
Ops
MONITOR

Tooling

1. Continuous *development*
2. Continuous *integration*
3. Continuous *testing*
4. Continuous *deployment*
5. Continuous *operations*
6. Continuous *monitoring*
7. Continuous *feedback*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splunk>
DATADOG
CODE
BUILD
TEST
PLAN
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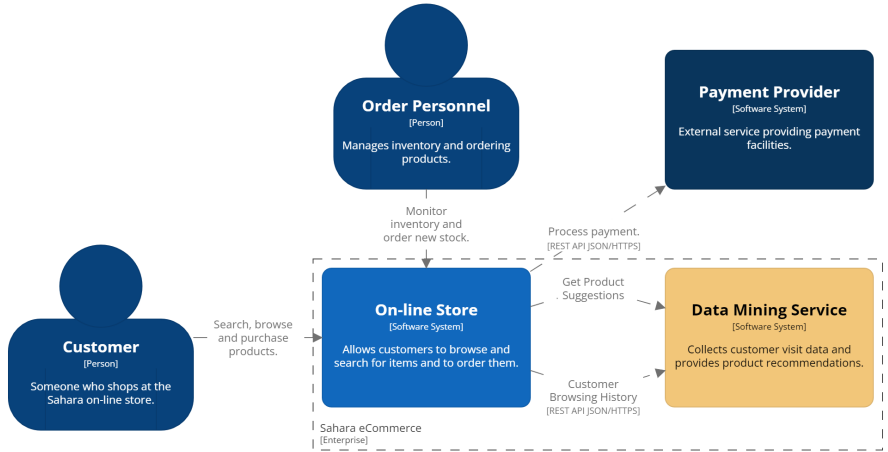
Discussion

Do the seven necessary *DevOps practices* map perfectly to the *enablers* in the article by Senapathi *et al* [1]?

- *Build* automation
- *Test* automation
- *Deployment* automation
- *Monitoring* automation
- *Recovery* automation
- *Infrastructure* automation
- *Configuration* management for code and infrastructure
- *Metrics* automation

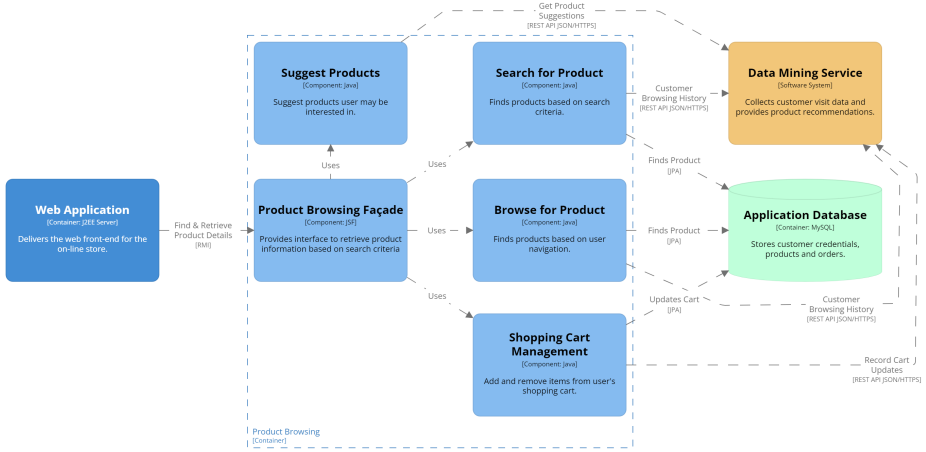
Today

Design a DevOps pipeline for *Sahara*



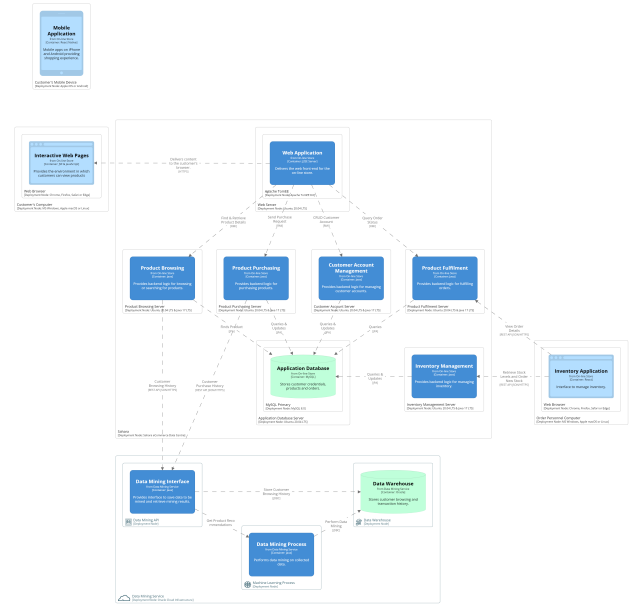
[System Context] On-line Store

Friday, 18 March 2022, 23:38 Australian Eastern Standard Time



[Component] On-line Store - Product Browsing

Sunday, 20 March 2022, 21:51 Australian Eastern Standard Time



[Deployment] - Live

Friday, 14 March 2025, 2:04 PM Australian Eastern Standard Time

1. What *types of tools* would be required?

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2. Which *specific tools* would you choose?

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3. On which type of *computing infrastructure* would you deliver the system?

1. What *types of tools* would be required?
2. Which *specific tools* would you choose?
3. On which type of *computing infrastructure* would you deliver the system?
4. What parts of the deployment and operations processes could be *automated*?

References

[1] Mali Senapathi, Jim Buchan, and Hady Osman.
DevOps capabilities, practices, and challenges: Insights from a case study.
In *Proceedings of the 22nd International Conference on evaluation and assessment in software engineering 2018*, volume 137700 of *EASE'18*, pages 57–67. ACM, 2018.