



Teaching DevOps: A Tale of Two Universities

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Goal of This Talk

- Encourage you to add DevOps to graduate and undergraduate CS and SE curricula
- DevOps is beginning to appear in standard industrial guidance.
 - SIFA DevOps view lists DevOps skills an organization should have
 - SWEBOK is being revised and is dealing with some DevOps topics

Industry demand

- LinkedIn searches in jobs category
 - Computer science – 334,000 hits
 - devops - 114,862 hits
 - “software engineer” - 111,349 hits
 - cloud developer - 58,057 hits
 - “full stack” - 57,152 hits
 - => DevOps is an industry recognized specialty and is in high demand.
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History

- 2016 – I organized a panel at CSEE&T – “Why You Should Teach Deployment in Your Curriculum”
- 2017 – I gave a workshop on DevOps at ASEE&T (Academy for Software Engineering & Training)
- Feedback – in each case, feedback was “give us materials to help us teach this topic”

Educational Materials are now Available

- They have been successfully shared with
 - Technical University of Berlin (see paper)
 - Saint Louis University (Kate Holdener)
 - “I am enjoying teaching this class tremendously”
 - “this was a very popular class to register for – it was maxed out at the start of the semester (room capacity is 32)”

What is DevOps?

- DevOps is a set of processes intended to
 - reduce time between committing code and placing it into production
 - Reduce time to resolve incidents and restore service

DevOps Processes

Release

Approve for deployment

Test

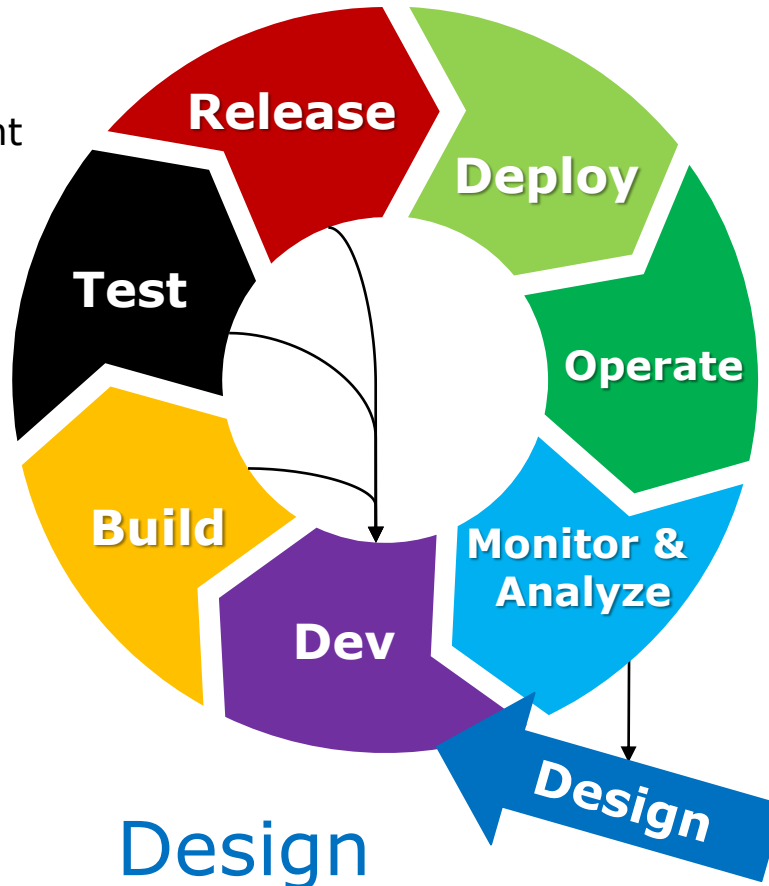
Ensure high test coverage & automate tests as much as possible

Build

Create an executable artifact

Dev

Perform normal development activities
Create scripts for other activities



Design

Design architecture to support other activities

Deploy

Move into production environment

Operate

Execute system and gather measurements about its operation

Monitor & Analyze

Display measurements taken during operation & analyze the data

What educational materials are available?

- Learning Objectives
 - Content
 - Textbook
 - videos
 - Course structure
 - Assignments
 - Grading rubrics
 - Syllabus
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Next steps

- Build community of DevOps instructors who
 - Share materials
 - Discuss different teaching styles.
 - Based on Google Groups and Google Drive
 - Google Group “devops teachers”

Conclusion

- Student demand is high
- Industrial demand is high
- Materials to teach DevOps are readily available.
- Why is DevOps not in your curriculum?

Questions?

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