Intro to DevOps

About Us

Ethan Geiger

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Full-stack developer in People Services IT at Winsupply for 1.5 years, working on a variety of financial applications, both legacy and newly developed. Intern with the Infrastructure team for 1.5 years prior, gaining experience with systems administration, client support, and software development.

Sean Kahle

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Started with Winsupply as an intern with the Infrastructure team, gaining exposure to many different aspects of IT. Afterwards, began a full-time position as a Systems Administrator for two years, working on various IT Infrastructure projects. Last year, I transitioned into a Front End development role with our Platform Development team where I continue to work towards our containerization and developer workflow evolution.

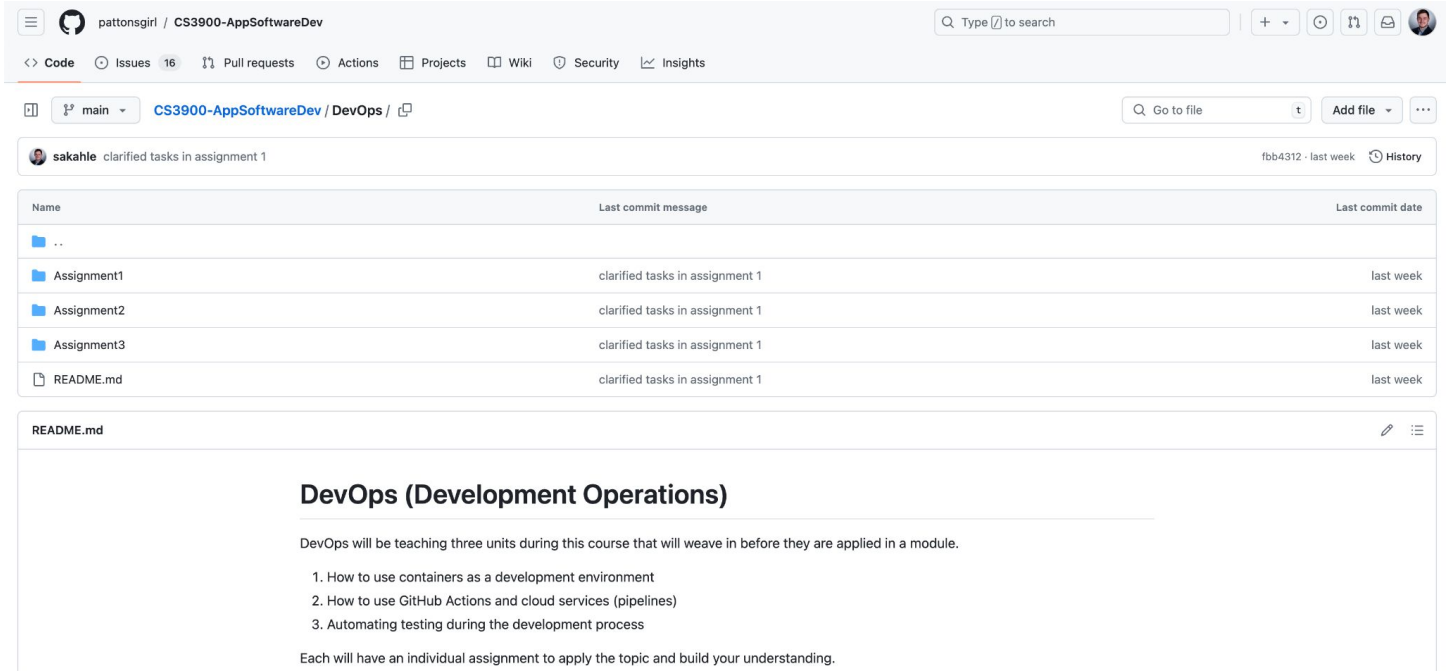
Git Refresher

As a reminder, **git** will be relied on very heavily for the content of this course. If you would like to refresh yourself on basic git commands, this video should be very helpful. A link to the video can also be found in the DevOps README file in the class GitHub repository.

Git Tutorial for Beginners: Command-Line Fundamentals - YouTube

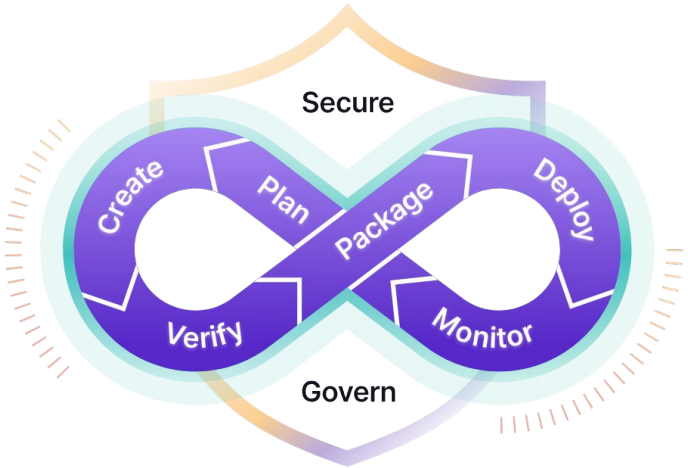
Class Repo

https://github.com/pattonsgirl/CS3900-AppSoftwareDev/tree/main/DevOps



What is DevOps?

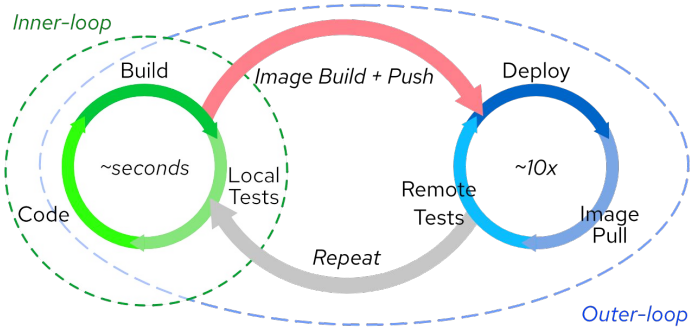
“DevOps combines development (Dev) and operations (Ops) to increase the efficiency, speed, and security of software development and delivery compared to traditional processes.” - *A Guide to Getting Started in DevOps,* from GitLab

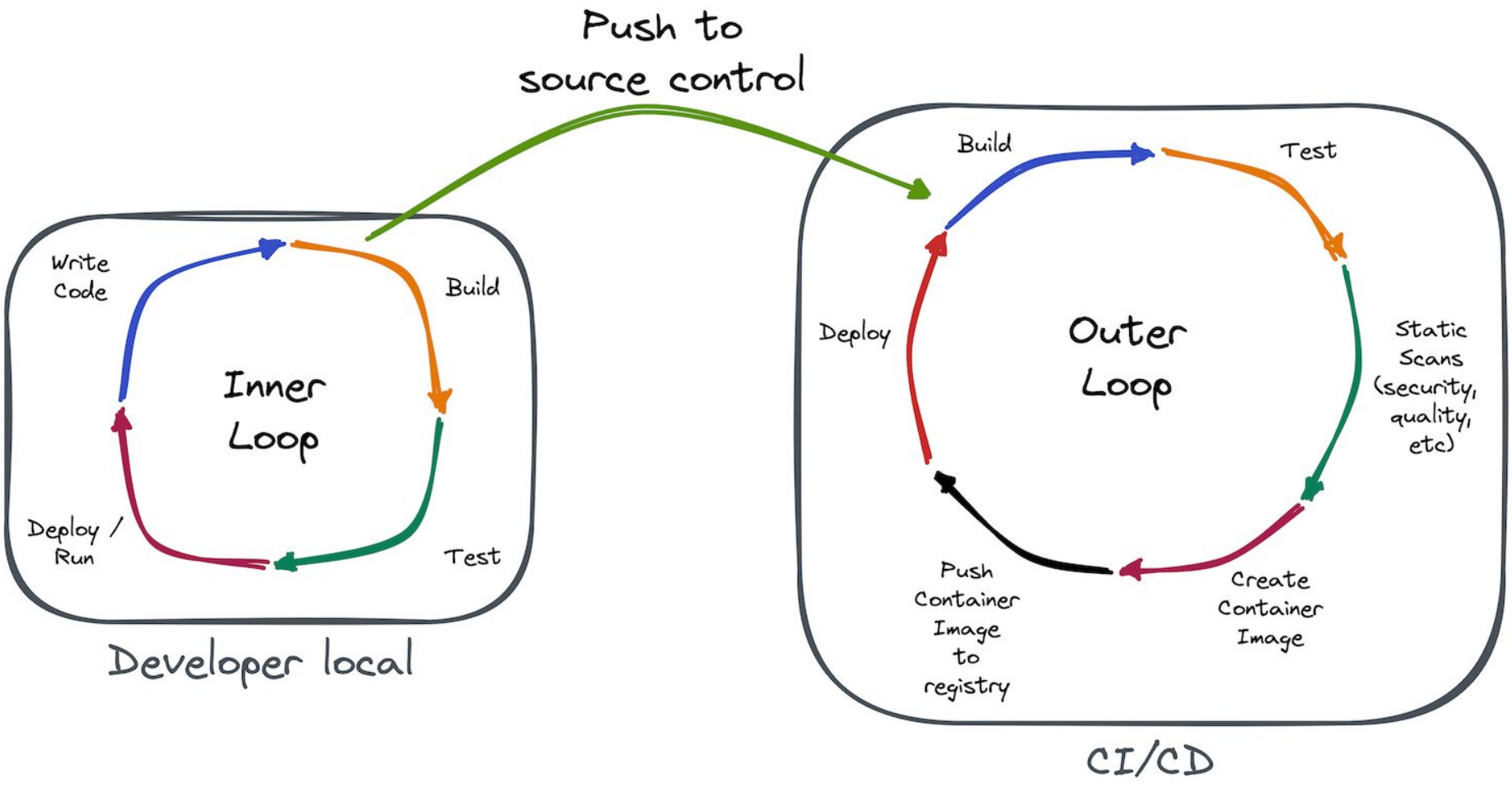


What is DevOps?

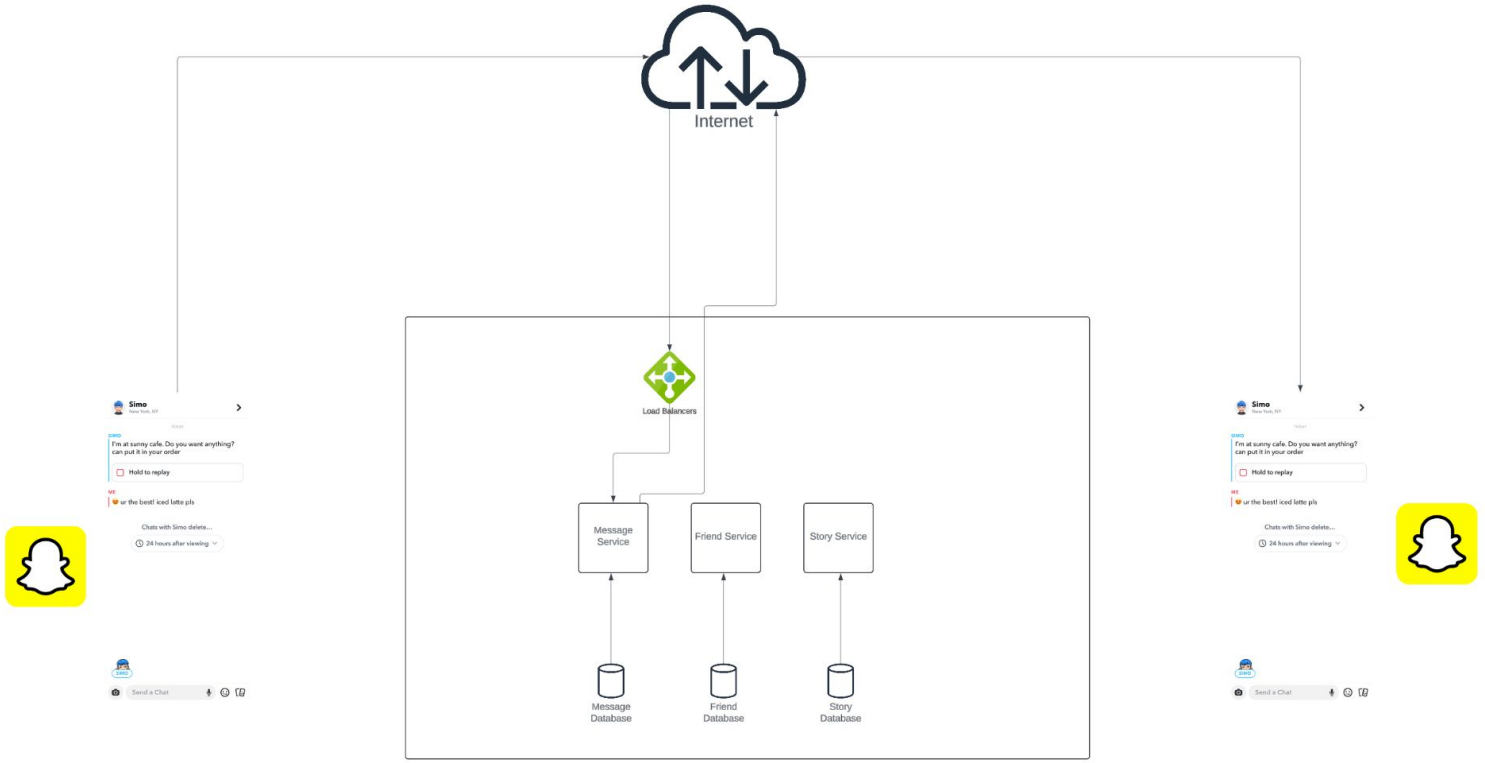
Goals:

- Encourage software to be scalable, more secure, more reliable and easier to deliver
- Development and Operations teams are no longer separated from each other
- Focuses on frequent and smaller updates to support the business



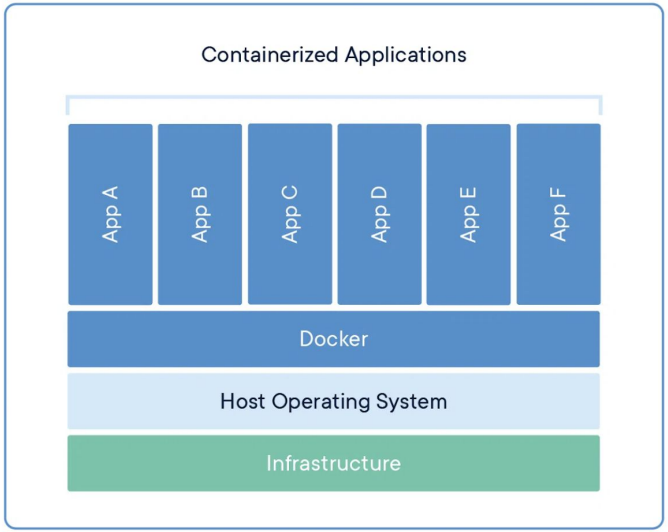

Push to
source control
Write
Code
Build
Inner
Loop
Deploy /
Run
Test
Developer local
Build
Test
Deploy
Outer
Loop
Static
Scans
(security,
quality,
etc)
Push
Container
Image
to
registry
Create
Container
Image
CI/CD

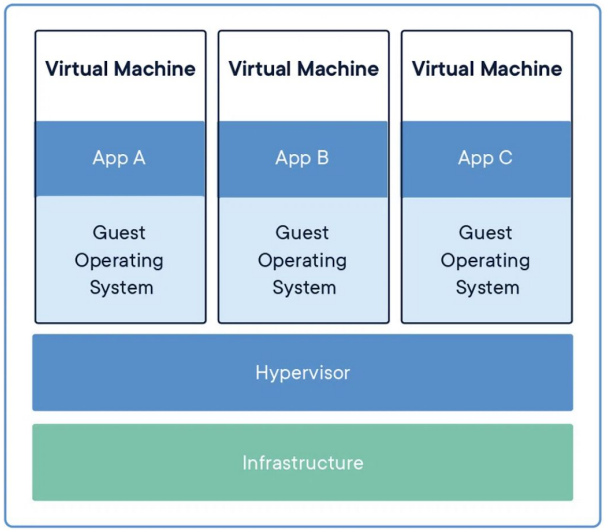
Example Development Loop(Snapchat)



Intro to Containerization

Containerization is a software deployment process that bundles an application's code with all the files and libraries it needs to run on any infrastructure.





Containers vs. Virtual Machines

Containers have some advantages over virtual machines:

- Don’t require the overhead of a Hypervisor or OS for each container
- Easier to scale quickly, no boot up time
- Easier to update for security

Building an Image

https://docs.docker.com/get-started/docker-concepts/building-images/build-tag-and-publish-an-image/

Building a MariaDB image

Docker Compose

- Defines and runs multi-container Docker applications
- Provides an isolated environment
- Uses YAML to configure all units of the application

Classwork Time

https://github.com/pattonsgirl/CS3900-AppSoftwareDev/tree/main/DevOps/Assignment1