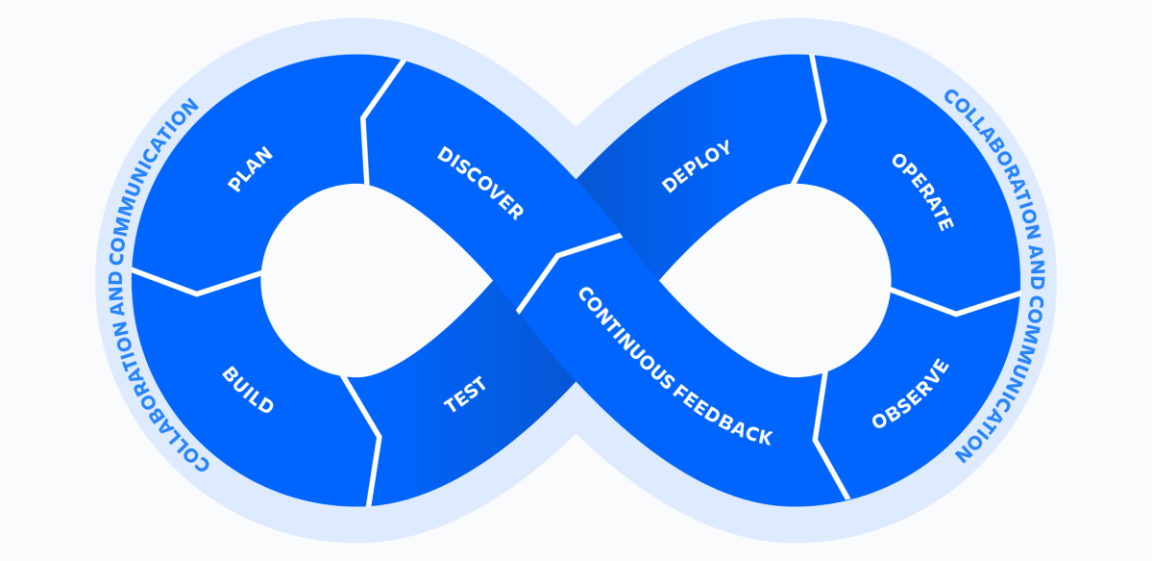
Assignment 1

AIM: To understand DevOps: principles, practices & DevOps engineer role and responsibilities.

LO Mapped: LO1

THEORY: DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

Principles:



Collaboration

The key premise behind DevOps is collaboration. Development and operations teams coalesce into a functional team that communicates, shares feedback, and collaborates throughout the entire development and deployment cycle. Often, this means development and operations teams merge into a single team that works across the entire application lifecycle.

The members of a DevOps team are responsible for ensuring quality deliverables across each facet of the product. This leads to more 'full stack' development, where teams own the complete backend-to-frontend responsibilities of a feature or product. Teams will own a feature or project throughout the complete lifecycle from idea to delivery. This enhanced level of investment and attachment from the team leads to higher quality output.

Automation

An essential practice of DevOps is to automate as much of the software development lifecycle as possible. This gives developers more time to write code and develop new features. Automation is a key element of a CI/CD pipeline and helps to reduce human errors and increase team productivity. With automated processes, teams achieve continuous improvement with short iteration times, which allows them to quickly respond to customer feedback.

Continuous Improvement

Continuous improvement was established as a staple of agile practices, as well as lean manufacturing and Improvement Kata. It's the practice of focusing on experimentation, minimizing waste, and optimizing for speed, cost, and ease of delivery. Continuous improvement is also tied to continuous delivery, allowing DevOps teams to continuously push updates that improve the efficiency of software systems. The constant pipeline of new releases means teams consistently push code changes that eliminate waste, improve development efficiency, and bring more customer value.

Customer-centric action

DevOps teams use short feedback loops with customers and end users to develop products and services centered around user needs. DevOps practices enable rapid collection and response to user feedback through use of real-time live monitoring and rapid deployment. Teams get immediate visibility into how live users interact with a software system and use that insight to develop further improvements.

Create with the end in mind

This principle involves understanding the needs of customers and creating products or services that solve real problems. Teams shouldn't 'build in a bubble', or create software based on assumptions about how consumers will use the software. Rather, DevOps teams should have a holistic understanding of the product, from creation to implementation.

Role:

The primary role of a DevOps Engineer is to introduce methodologies to balance needs throughout the software development life cycle, processes, and tools, from coding to development to maintenance and updates. They monitor health and track everything happening in all system parts during the software lifecycle.

Responsibilities:

- Implement integrations requested by customers
- Deploy updates and fixes
- Provide Level 2 technical support
- Build tools to reduce occurrences of errors and improve customer experience
- Develop software to integrate with internal back-end systems
- Perform root cause analysis for production errors
- Investigate and resolve technical issues
- Develop scripts to automate visualization
- Design procedures for system troubleshooting and maintenance

CONCLUSION: In this experiment we were learn and understood what is devops from basics.

We also learned the role and responsibilities of DevOps engineer.