Devops Curriculum Using with Tools

Unit 1

Devops Workflow

1.1

Introduction to Devops

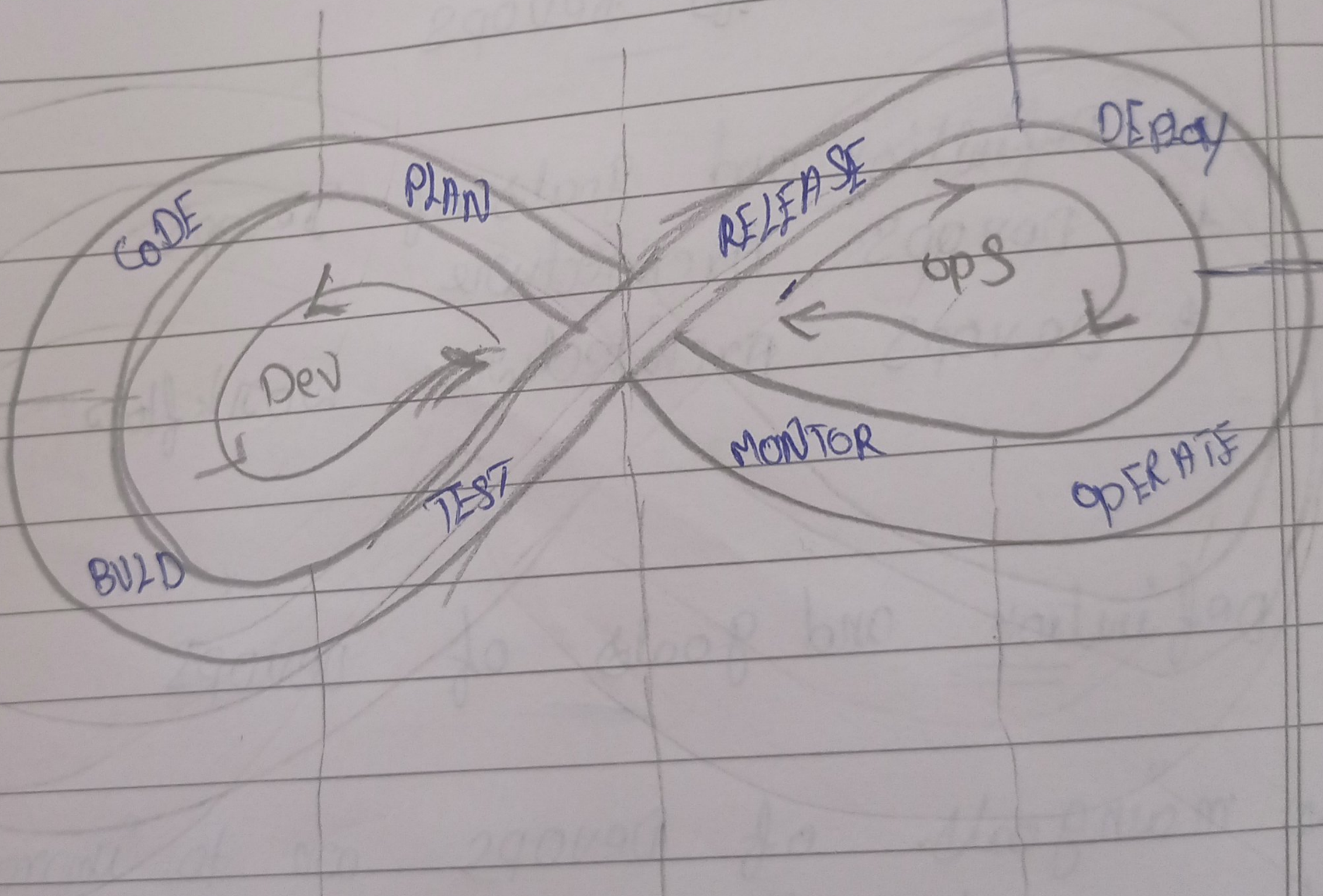
* Definition and goals of Devops
* Devops Architecture
* Devops Architecture workflow

1.1.1

Definition and goals of Devops

The main goals of Devops are to improve the Spead, efficiency and quality of Software development and delivery. Here are the primary objectives.

* Increase Deployment Frequency
* Improve Deployment Quality
* Reduce Lead Time for changes
* Enhance Collaboration and communication
* Improve Recovery Time
* Automate and streamline processes.



Devops Architecture

key Component of Devops Architecture

* Version Control System [VCS]:

purpose: Manages code version, tracks changes, and facilitates collaboration among developers

* Continuous Integration (CI)

purpose: Automates the process of integrating code changes from multiple contributors into a single software project.

* continuous Doliverg / continuous Deployment (CD) :-

pwpose : Automates the deployment of code changers to various environments ensuring that software can be released reliably at any time

* configration Mangement :-

purpose : Manages and maintains consistency in Software environments development, te

Infrastructure as code (IaC)

purpose : Managed and provision computing infrastructure through machine readable definition files, rather than physical hardware configuration or interactive configuration tools

* Continuous Monitoring and Logging

purpose : Monitors applications and infrastructure to detect performance issues, errors, and security threats.

* Collaboration and communication tools

purpose : Facilitates communication and collaboration among team members embedding faster decision making and issue resolution.

1.1.3 DevOps Workflow

Code : Develops write and commit code to a version control system (eg. Git)

Build : The CI server automatically builds the code into executable files creating artifacts that can be deployed.

Test : Automated tests are run to ensure the quality of the code. This includes unit tests, integration tests and sonetimes.

Release : fall tests pass the code is packaged and prepared for deployment.

operate : the deployed applications are monitored for performance, reliability, and security continuous monitoring tools collect metrics applications behaviors.

DevOps vs. Traditional IT operations

* Difference between DevOps and traditional Software development and IT operations
* Benefits of adopting DevOps practices
* Building a culture of collaboration and communication between development and operations teams
* The role of automation and monitoring in enhancing team efficiency.

1.2.1 Differences between DevOps and traditional Software development and IT operations

* Collaboration and Communication

* Traditional Approach: Development and IT operation teams work in silos. Developers

Water fall Mode:-

* If Can make you projects flow smothly, avoid bottlenecks help you hit dealings, ensure deliverables are met before the next phase begins and allow the team overall to shine with perfection This is in depth guide analyses the advantages of the wateful methodology.

Agile

Agile development is important because it helps to ensure the development teams complete projects on time and within budget. It also helps to improve communication between the development team and the product owner Additionally Agile development methodology