DAY-1
23/2/26

DevOps

DevOps => Development + Operation

4 Main Components of Server

→ Compute → Network → Database → Storage
(Anything that calculate) (S/w Organised Storage)

Server → Advanced computing device with high level specifications

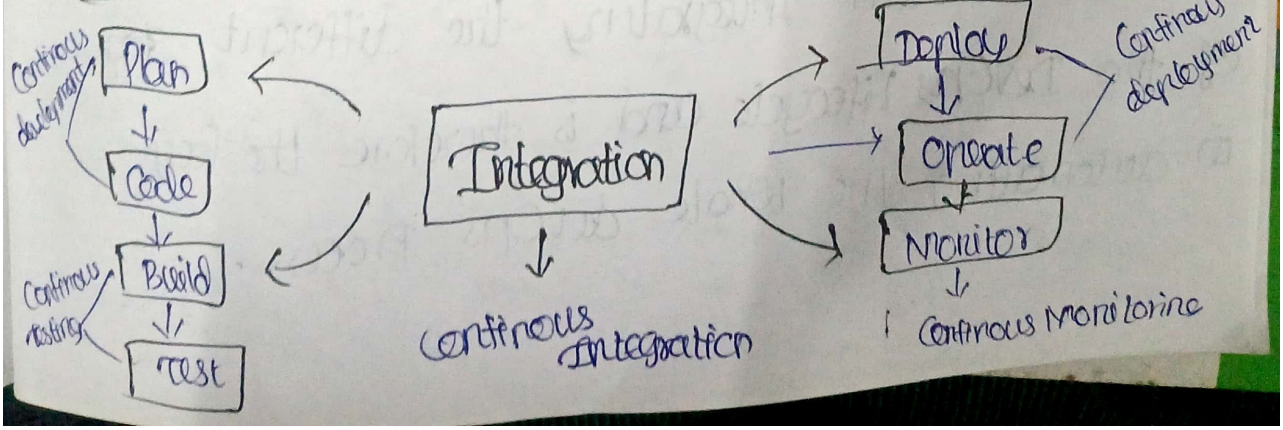
Stages of DevOps → Automate the process of SDLC

DevOps is a S/w development methodology which improves the collaboration b/w developers & operation team using automation

Developer	Operations
Plan	Release - Jenkins, Codeship
Code - git, JIRA, Confluence	Deploy - docker, AWS
Build - Sbt, Maven	Operate - Kubernates, Ansible
Test - Junit, Selenium	Monitor - Splunk, datadog, Grafana
(Continous)	

Automation - No need manual support the code is made to make automatic

DevOps Lifecycle divides The SDLC lifecycle

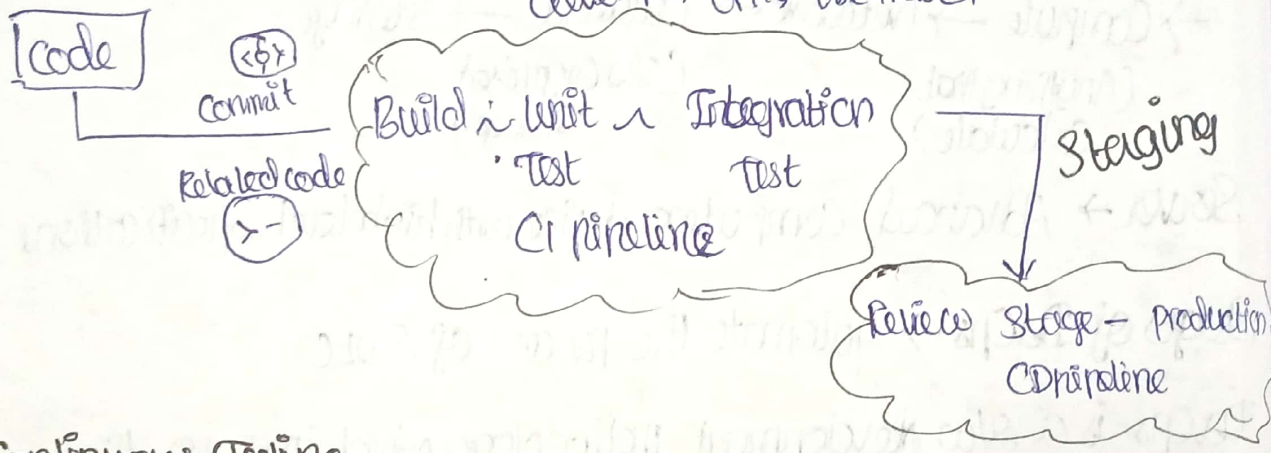


Continous Development: This stage involves commiting code to version control tools (Git or SVN) for maintaining the diff version code tools like Ant, Maven, Gradle (Build tools)

CI/CD Process:

1) Commit 2) Build 3) Test & CI 4) deliver 5) deploy

developers only use this CI



Continuous Testing The stage deals with automated testing the application pushed by the developer. If there is an error the Msg is sent back to the integration tools, this tools in turn notifies the developer of the error. If the test was a success, the Msg is sent to integration tool which pushes the build on the production server.

Continous Integration:-

- The stage is a critical point in the whole devops cycle.
- It deals with Integrating the different stages of the DevOps Lifecycle and is therefore the key in automating the whole devOps Process.

Continous Deployment :- This stage, code is built, environment of appli is containerized. Key process in this stage are configuration Management, Virtalization & Containerization.

Continuous Monitoring :- CM the deployed appli for bugs crashes. Setup to collect user feedback. This collecting data is sent to developers to improve application

DevOps Benefits :-

- ↳ Reliability
- ↳ Reduced Time To Recover
- ↳ Efficiency
- ↳ Lowes Risk
- ↳ High Quality
- ↳ Faster update
- ↳ Stability
- ↳ Shorter DevCycle
- ↳ Better user Experience
- ↳ Fewer failures
- ↳ High Quality

* Devops doesn't have high maintainence timing

Why DevOps :

Productivity is always hampered by Process bottleneck or other dependencies => issues

CLOUD COMPUTING

Cloud computing is on-demand delivery of computer power, db, storage appn & other IT resource over the internet with pay-as-you-go

On-premises → Data center
(or) ↳ private cloud
Own data

Virtualization = hypervisor
helps for virtualization to run multiple virtual machine and physical h/w

ICNO - Interconnecting Network device
↳ Exc = Hub

Btw AWS & Traditional IT

Traditional, On premises IT space

Firewalls, ACLs, Administrators → security

AWS
Security group
Network ACLs,
IAM

Router, Network pipe, Switch → Networking → Elastic load balancing
Amazon VPC

On premises Server → Computer → AMI → Amazon EC2 instance

DAS
SAM
NAS
→ Storages / database → Amazon EBS | Amz EFS

Amz S3 | Amz RDS