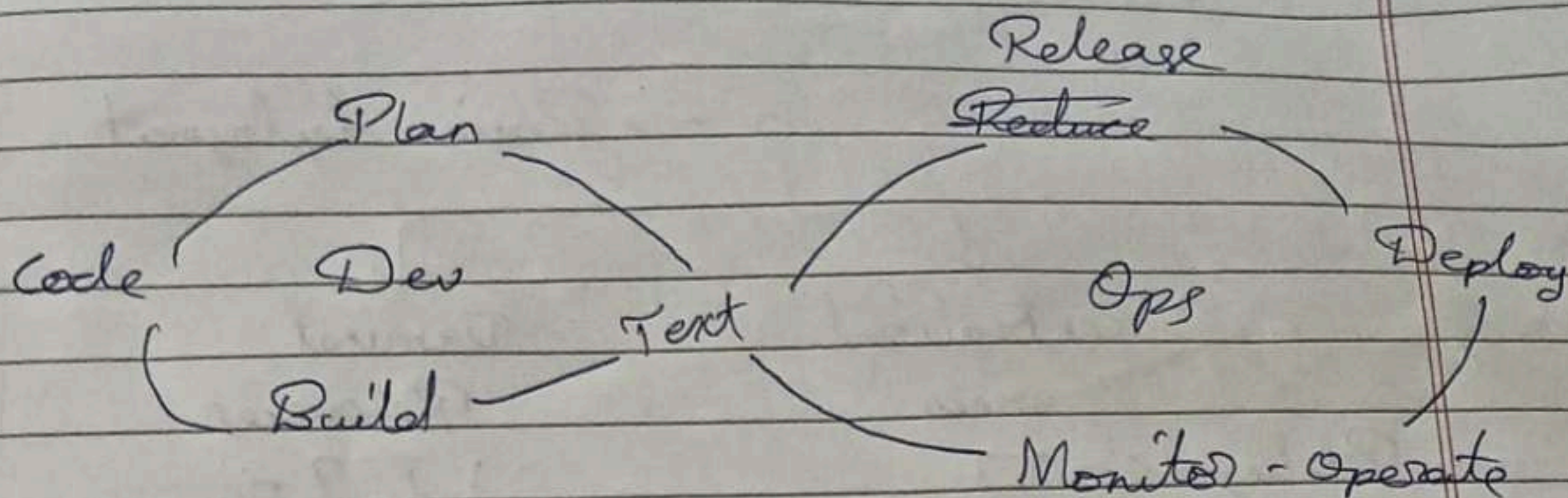


18/08/2025

Dev Ops - Day 01



Testing :

- 1.) Manual
 - 2.) Automation
- } Tawa must

DevOps = Development + Operation

- > It's not Programming Language
- > It is not a single tool
- > It is a culture with set of practices and tools which is to deliver software with less errors.

without devops	Devops
1.) develops ^{write} code ^{give} operation scheme \rightarrow server \rightarrow deploy	1.) Automation Tools 2.) Reduce manual steps 3.) Collaboration with development & operation teams 4.) Continuous feedback from user to continuous integration
	e.g :- (A \rightarrow B, B \nrightarrow A)

Real-time
Analogy

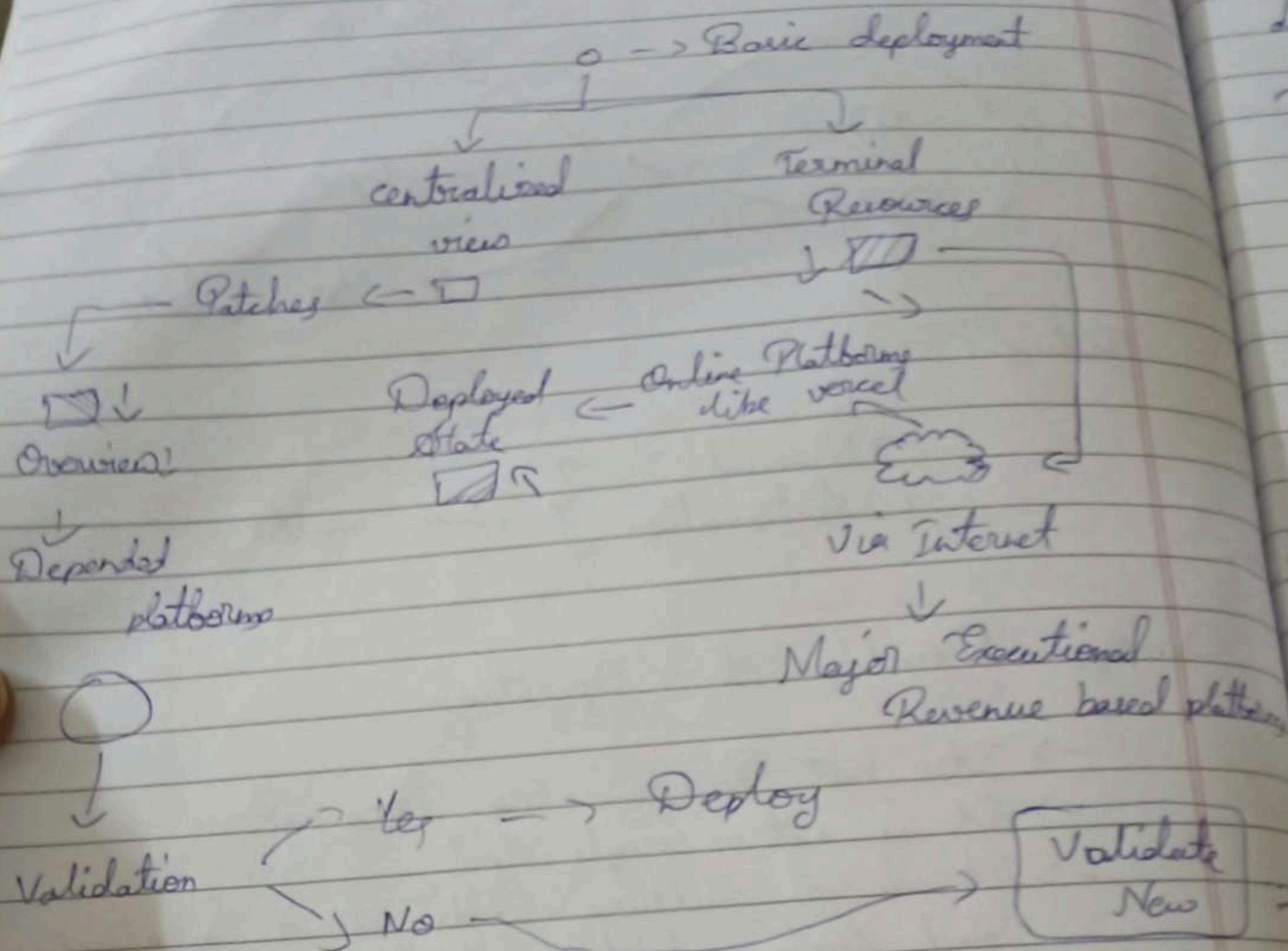


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Page
Date

19/08/2025



Platforming:-

1.1) What is Cloud Architecture?

a) Cloud architecture is a design, structure of cloud computing systems.

e.g:- Compute, storage, networking, security, deployment



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components of computers

Front End, Back End, Middle ware,
cloud delivery, cloud deployment.

Front End:-

(FE) User Interface, client side App calls to
backend web app, mobile app what
uses it.

Back End:-

(BE) Back End is the base of cloud which is
Infrastructure / server side

Middle ware:-

Compute Storage Network & security.

storage:-

* File storage * Block storage

security:-

Identity & Access Management (IAM)
Accessibility

Middle Ware:-

Acts as bridge between FE & BE.

Cloud delivery Models:-

- 1.) Software as a Service (SaaS)
- 2.) e.g:- gmail, Google Meet, Zoom. (PaaS)
- 3.) Platform as a Service (PaaS)
- 4.) Infrastructure as a Service (IaaS)



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classmate

cloud deployment platform :-

Public cloud

can access to everyone
e.g:- AWS

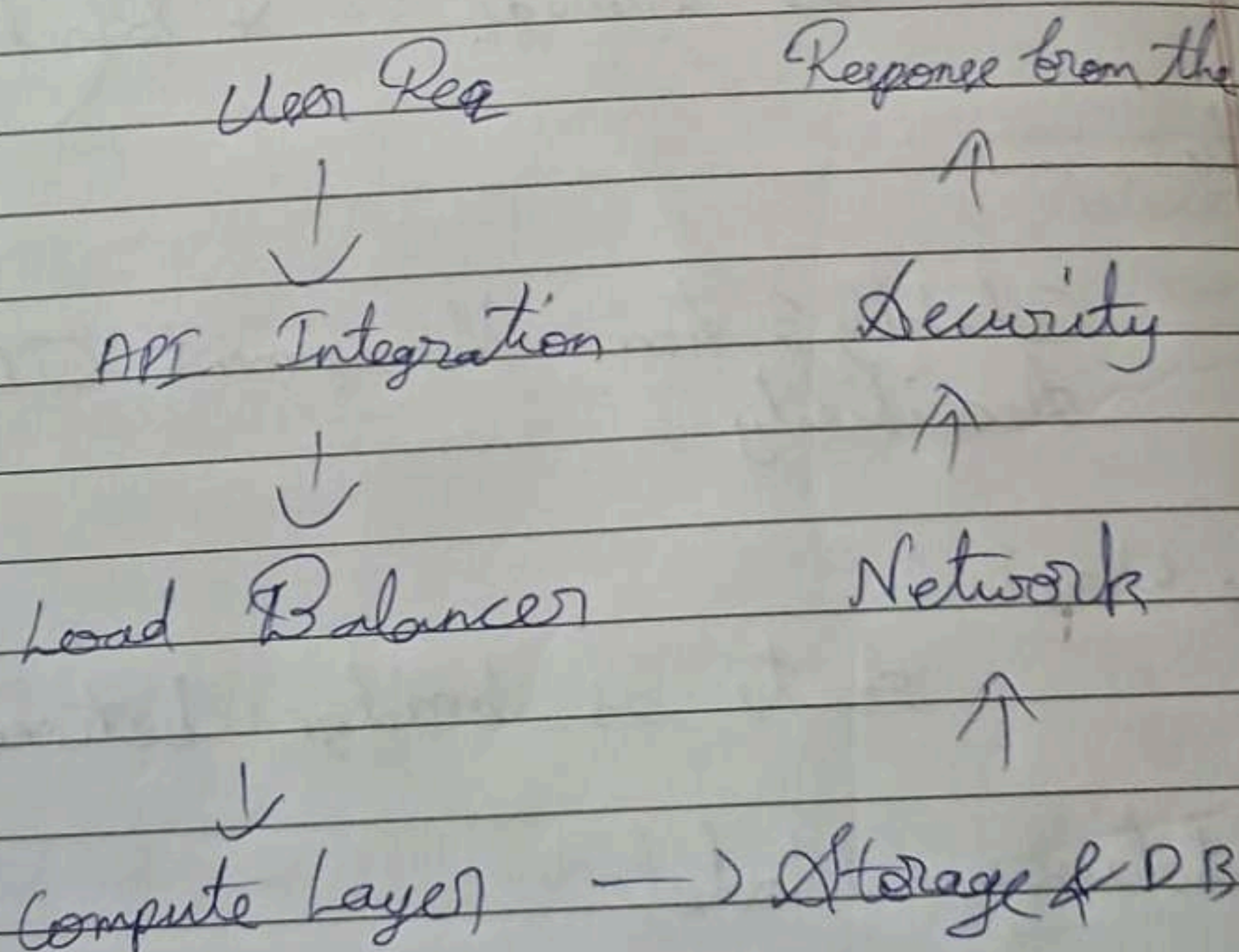
Private cloud (e.g:- Intra cloud)

can access to only one
organization

Hybrid cloud (Public as well as private)

Public and Private access

Multi cloud (more than one provider)



What is CI/CD?

Develop multiple times a day
build once per day

CD (Continuous Deployment)

ready

continuous deployment

already to production

DevOps Thinking

extract cloud
deploy

-> Test

deployment

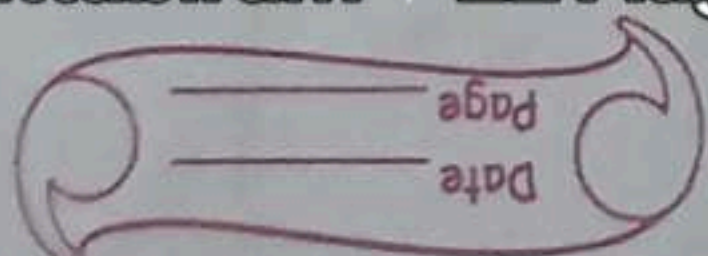
-> Test

in



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what is CI/CD?

Developers merge codes frequently daily
(or) multiple times a day into a single triggers automatic
build for per day

CD (Continuation Developing)

CD is no thing but the code is already
ready.

continuous Deploy:

The code is ready to deploy
already to production without any manual steps.

Jen Tekins:-

An automation server used to build and
extract classes.
deploys

-> It is an open source widely used in
devops world.

-> Key Features

* Full Plugins for everything

* Can run pipe lines

* can integrate with github, ^{docker,} ~~changes~~
kubernetes e.g: robo chef.

-> Jenkins will run in new pod like 8080, 8081, 5001
depends on the sources

-> To access Jenkins locally we have to install Jenkins
in our machine.



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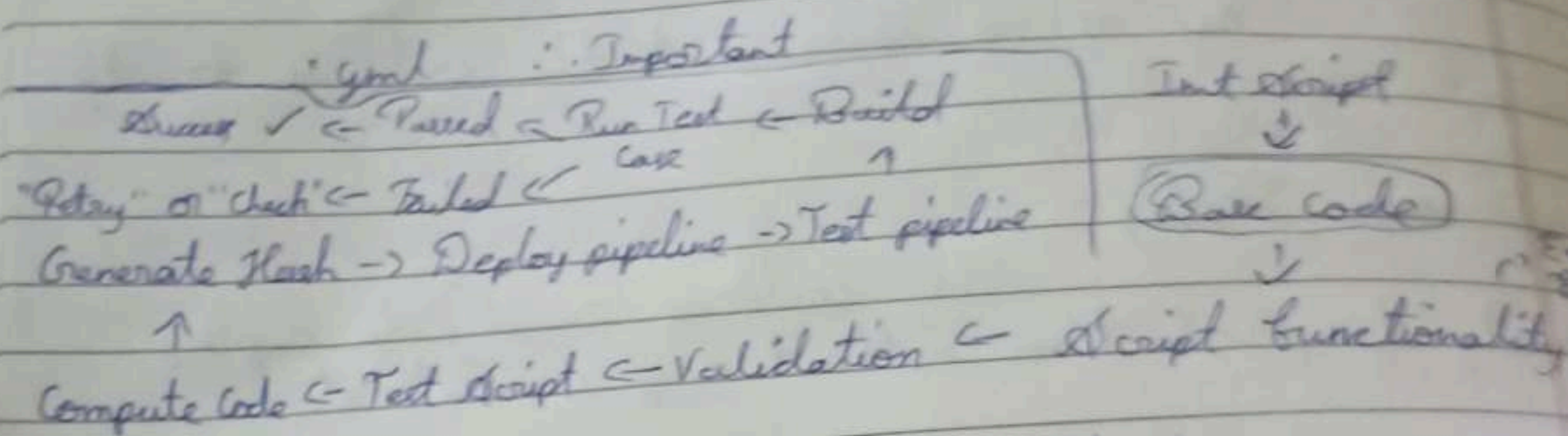
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Decops Day-03

Using gitlab as CI/CD Pipeline

- 1) Create account at - <https://gitlab.com>
- 2) Create repository
- 3) Inside repo, create a gitlab `.gitlab-ci.yml` file with sample pipeline.



CI/CD Architecture

stages:

- build
- test

build - job:

stage: build

script:

- echo "Building the project..."

test - job:

stage: test

script:

- echo "Running Tests..."

CI pipeline
code
(in editor)



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Tools

1.) Jira - software

A project managing tool used to track and progress in software project.
Teams create user stories to organise work

2.) Github

A cloud based platform to host our repositories.
Developers can collaborate review and manage projects.

3.) Git

A version control system that keeps the track of code changes like pipeline, patch

Lets you go back to your old version if something breaks

4.) Github Actions

CI/CD tool build inside github
Automate runs flows like building

5.) Docker

A tool that packages applications into containers so they run same everywhere.
Avoids "The work on the machine problem".

5.) Maven

A build automation tool for java projects, handles dependencies and projects.



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c) Gradle

It is also a automation tool compatible with Maven.

Faster than Maven and supports incremental builds.

Terraform:-

It is an infrastructure as a code and to manage service data base and network automatically.

Ensure consist and infrastructure setup across environment.

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DevOps Day - 084

Why is to use?

Collect metrics

Collect

-> CPU

-> Memory

-> Request rate

-> Errors

-> Alerts

Geo Graphana:-

The data visualization and dashboard tool.

Use?

Display metrics in the form of charts, forms

Pipeline Config

1) Tools 2) Packages 3) Validators 4) Images

5) Volume 6) Containers 7) Appline Frontiers

8) Version Control



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