=> DevOps with AWS :

=> 4 months -> 4.5

Live class -on zoom -> mail -> private Discord group + dashboard

-> All classes will be recorded -> lifetime access.

-> Notes of every module will be given.

-> Quizzes & Assignment.

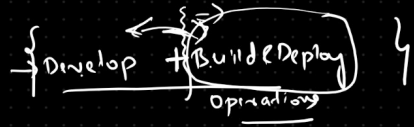
-> NO-pre requisites

=> DevOps :-

Development + Operations

DevOps is a culture /process in IT industry to simplify application delivery process to client with higher quality.

=====> Promotes Colloboration between Development Team and Operations Team



Development Team :-

-> Requirement Gathering

-> Requirement Analysis

-> Design

-> Development (coding -> writing code)

-> Unit Testing

-> Code Integration

-> Bug fixing

=

DevOps Team => roles

=> Understand Infrastructure requirement

-> Servers
-> storage
-> Backup
-> N/W
-> Security

=> Infrastructure creation in cloud (AWS, Azure, GCP, ----)
(Terraform)

=> Configuration Managment (Ansible)
=> Copy file from one machine to another
=> install any s/f (ex Java, py) ---

=> Work with Linux Machines (servers)

=> Code Repository Server (BitBucket | GIT HUB)

=> & working with Docker for containerization
app code + app dependencies => containerization

=> Manage containers -> Kubernetes (orchestration)

=> Automate Build and deployment process with Jenkins
(CICD pipelines)

=> Infra monitoring and App monitoring

Skill -> DevOps Engineer :-

① SDLC -> Software Development life cycle
-> waterfall model
-> Agile model
-> Scrum Framework
-> JIRA tool

② App Architecture :-
Front end & Backend (Techstack)
Database

③ Linux OS (commands)

↓

Shell siripting

④ Cloud Computing (AWS)

→ Virtual Machines
→ Load Balancer
→ Auto Scaling
→ Block storage

EC2

→ Unilimited Storage (S3)
→ Relational Database (RDS)
→ Users & group magnt (IAM)
→ Virtual private Cloud VPC
→ Kubernetes Clusts
→ Domain mapping → Route 53
→ Cloud watch
→ SNS

etc

DevOps :-

To create infra structure in cloud (Terraform)

Configuration management (Ansible)

Maven (Build Tool) | Gradle

GitHub

Webservers to run web app (Tomcat)

Code Review (sonar Qube)

Nexus

Containirization (Docker)
Kubernetes
Jenkins
→

Prometheus & Grafana
App log monitoring tools

=> Fundamentals before DevOps
Linux OS + scripting
AWS cloud
DevOps tools
projects
interviews

=> Software Project ?

=> Collection of programs / App ->

To Develop program / App we use programming languages

C, C++, Python, Java -----

Why S/W projects -> Simplify human life -> To make it easy
-> To solve prob for human

=> Banking App
=> To Book trains Tickets (IRIC -> Associated App)
=> Movie Tickets -> paytm, BMS, ----
=> Zomato, swiggy, Ubereats ------

=> S/W projects => stand-alone / desktop app
(only one user can access -> Calculator, Notepad ---)

=> web app -> end user -> Business
(x)
multiple (Telusko -> facebook, -> youtube --)

=> Distributed enterprise APP {

↳ enduser → Telusko → Razorpay | paypal

B ⇄ B

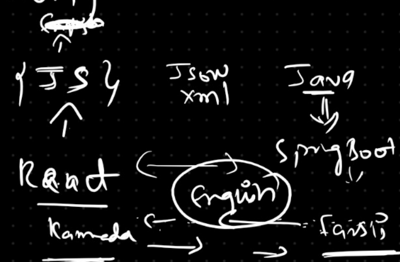
Gpay ⟺ BOB, Axis ---

Booking → Airlines

=> Mobile Applications → whatsApp, Insta, Telusko ---

=> Application Architecture :-

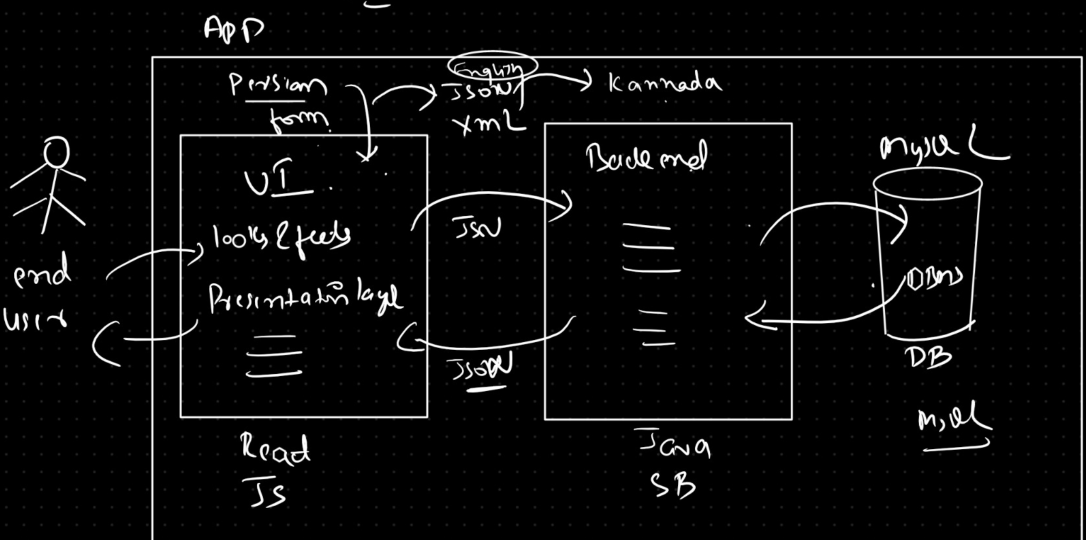
- ↳ Front end (UI → Presentation)
- ↳ Backend (Business logic)
- → DataBase (storage)



→ Front end → User Interface
(HTML, CSS, JS, React / Angular --)

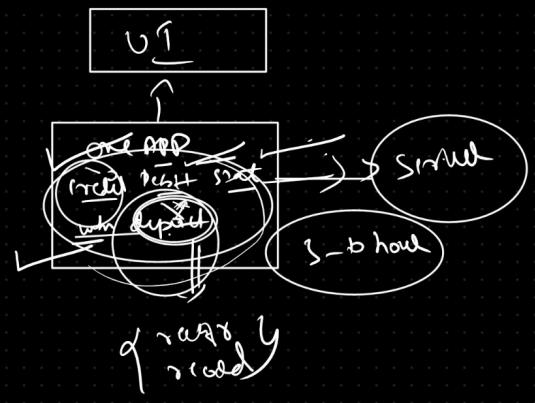
→ Backend App
(Java(spring), JS(Node.js), .Net, Python --)

→ DataBase → { Storage → oracle, mysql, MongoDB --- }



Application Tech Stack :-

App → Angular + Java + MySQL
Angular + Python + MongoDB
React + DotNet + SQL Server
React + Java + Oracle
React + Node.js + MongoDB



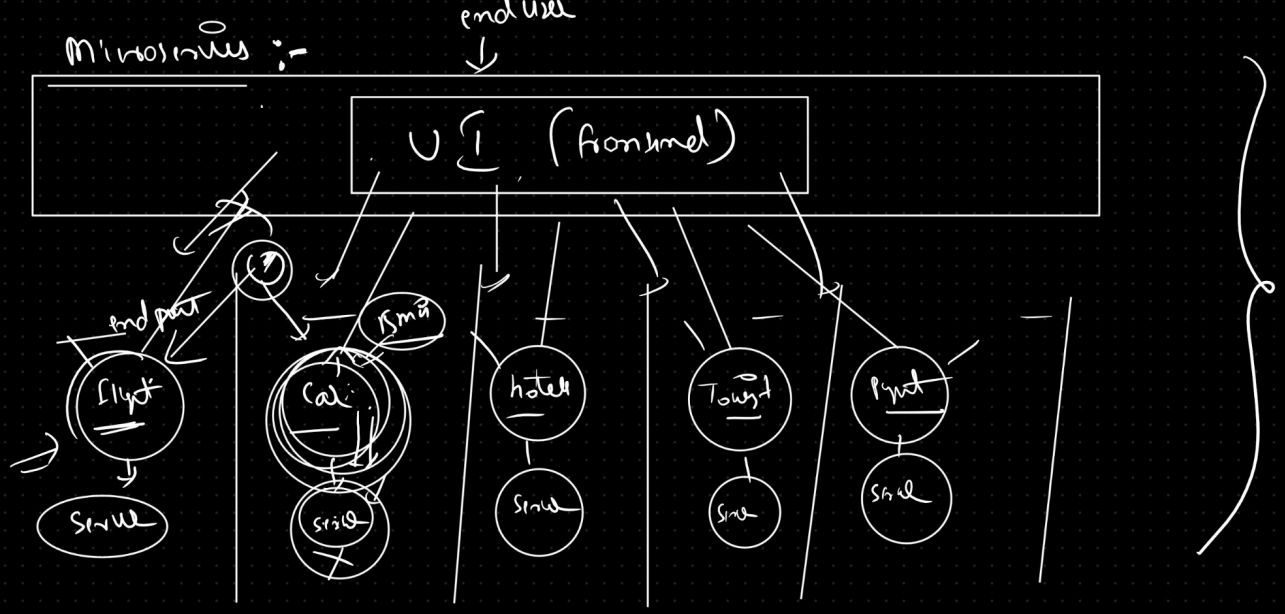
Architectural Patterns :-

① Monolith Architecture
② Microservices Architecture

⇒ If we Develop App where All functionality in one App
(Monolithic Architecture)

⇒ Everything in one place

⇒ Microservices :-



⇒

SDLC -> Software Development life cycle

Ans : Development + Operations

DevOps is a Culture / Process in IT Industry to Simplify Application Delivery Process to client with higher quality
Main aim is to promote Collaboration between Development Team And Operations Team

1.Development app
2.Building and Deploy the Application

Roles Development Team

1.Requirement Gathering
2.Requirement Analysis
3.Design
4.Actual Development of application (Coding)
5.Unit Testing
6.Code Integration
7.Testing
8.Bug Fixing

Coding + Testing + Deployment

Roles DevOps Team

1.Understand the requirement of Infrastructure
-> server
-> storage
-> backup
-> Network
-> security

2.Infrastructure creation in Cloud
-> AWS
-> Azure
-> GCP etc.
To Automate the infrastructure creation in cloud we use Terraform

3.Configuration Management tool (Ansible)
Copying file from machine to another
installing any dependency or software(Java /python etc.)

4.**Working with Linux Machines (Server)

5.Cope Repository Server
-> Bitbucket
-> GitHub

6.Working with Docker for Containerization
Application code + Application Dependencies will be done in Containerization

7.To Manage Containers we use Kubernetes -> Orchestration

8.TO Automate the Application Build and Deployment Process with Jenkins -> CICD Pipelines

Skills of DevOps Engineer

1.Software Development Lifecyle(SDLC)
-> Waterfall Model
-> Agile Model
-> Scrum Framework
-> JIRA Tool

2.Application Architecture
-> Front end
-> Back end
-> what stack are used (tech Stack)
-> Database

3.Linux OS Commands (150+ commands)
-> shell scripting

4.Cloud Computing (AWS)
-> Virtual Machines Creation
-> Load Balancer
-> Autoscaling
-> Block Storage
All the Above comes under EC2

-> Unlimited Storage (S3)
-> Relational Database (RDS)
-> Users and Group Management (IAM)
-> Virtual Private Cloud
-> Kubernetes Cluster in AWS Platform
-> Domain Mapping ->Route S3
-> Cloud Watch
-> Simple Notification Service etc.

---
etc
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DevOps Tool

1.To create the Infrastructure in cloud (Terraform)
2.Configuration Management (Ansible)
3.Build Tools Maven / Gradle
4.GitHub Repository
5.Webserver To run Web Application(TOMCAT)
6.Code Review(SonarQube)
7.Nexus
8.Containerization(Docker)
9.Kubernetes
10.Jenkins
11.Servers Monitoring tools Prometheus & Grafana
12.Application log Monitoring Tools

Fundamentals before DevOps
Linux OS + Scripting
AWS Cloud
All DevOps Tools
Projects
Interview Preparation + Resume Building

Software Project

Software project is a Collection Of Programs /Application
To develop program or application we use Programming lang (C,C++,Java...)

Why Software Project ?
To Simplify human Life to make task easy
To Solve human Problems
Example : Banking Application , Booking Train Tickets, Movie Tickets ,Weather Application ,Zomato ,UberEATS

Types of Software project

1.Standalone / Desktop Application (Calculator , Notepad) only one user can be used at a time
2.Web Application -> Multiple Users can be used (Telusko.com,Amazom.com,Facebook.com etc.)
3.Distributed Enterprise Application (Business to Business)
  -> End-user ->Telusko->Razor Pay/PayPal(B <-> B)
4.Mobile Application (WhatsApp, Instagram, Contacts)

Frontend Application

What a user can see when the application is loaded
HTML ,CSS ,JavaScript ,React ,Angular

Backend Application

Java -> Spring
JavaScript -> Nodejs
C# -> .NET
Python -> Django

Database Storage

Cassandra
MySQL
oracle
MongoDb

Application Tech Stack

Frontend + backend + database is called Tech Stack
Angular + Java + MySQL
Angular + Python + MongoDB
React + .NET + SQLServer
React + java + oracle
react + NodeJS +MongoDb (JavaScript)

Architectural Patterns

Monolith Architecture ->Developing All functionalities in One Application(Everything in One Place).
Microservice Architecture -> Developing Functionalities in Multiple Applications.