1. What is DevOps ?
2. DevOps v/s SRE ⇒ Google / FB
   ↳ Site Reliability Engineer

>>>

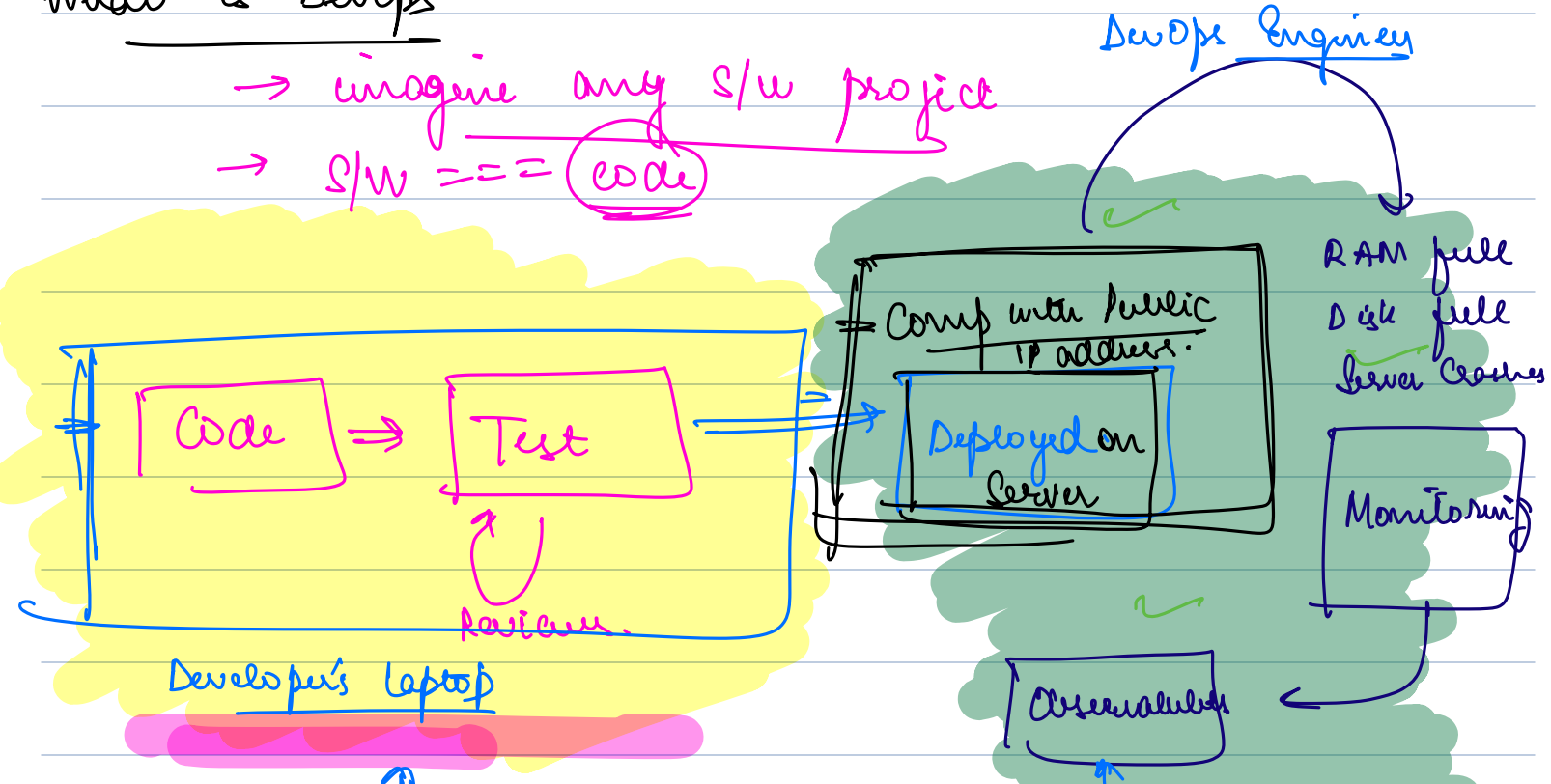
3. What all should you learn and How
4. Time Required
5. Transition to SWE
   ↳ additional skills required for SWE

Naman Bhalla
Lead, Scaler DevOps.

What is DevOps

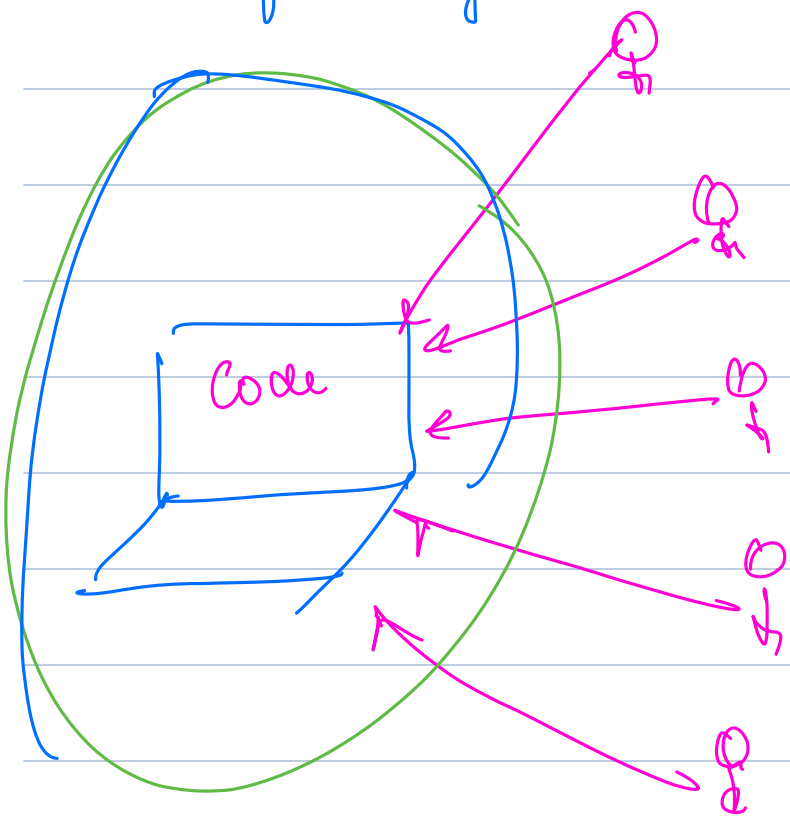
→ imagine any S/W project

→ S/W === code



Software Engineer.

Keeping track on statistics.



→ I/P address

192.168.1.1

→ When you buy an internet conn, you get a private I/P address

→ it can't be reached to directly from public internet

→ NAT
N/W address translator.

COO: Chief Op^n Officer

Operations → BAU keeps on happening

Dev Ops : Developer Operations

① Code is written
② Code is tested

} SW engineers

google does 1000+ deployments / day

③ as soon as the code is ready, deploy it (automatically)

→ prod^n / staging.

DevOps engineer:
- CI / CD
- Continuous Integration
- Continuous Deployment

↑ as soon as change happen

④ when the code is deployed, actively monitor

→ keeping check on metrics.

⑤ if something goes wrong:

→ Debug

→ Root Cause Analysis. (RCA)

→ take relevant action:

→ rollback to prev version

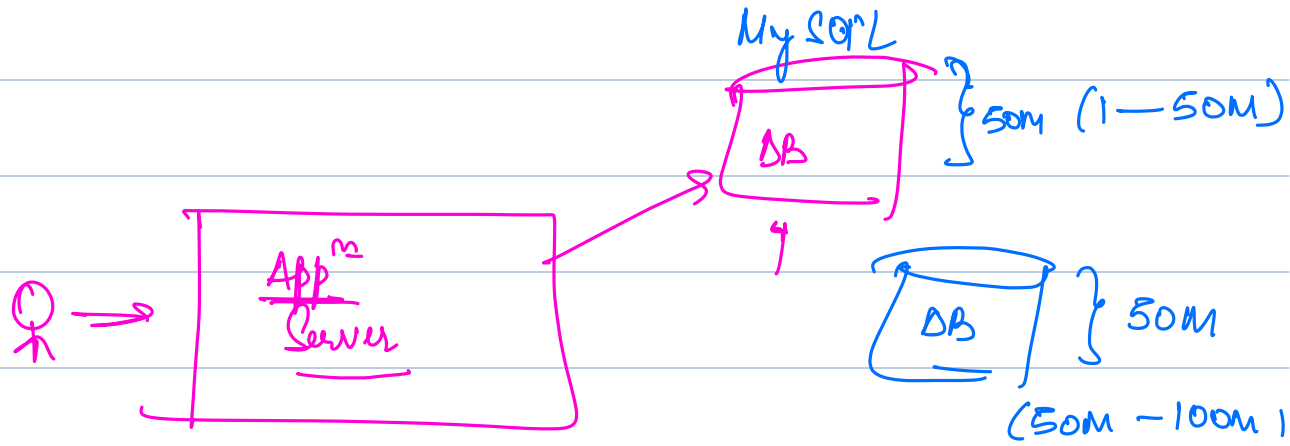
→ checking logs and trying to figure out.

⑥ day to day maintenance

RCA: root cause analysis

: real reason behind something going

wrong



in real systems:

→ split data b/w multiple DB

→ take backups.

→ updating versions

As a devops eng you are involved in

[deployment]

monitoring

CI/CD pipeline.

working with DB.

You are going to use a lot of tools.

→ Docker.

→ Kubernetes

→ Terraform

→ Jenkins.

→ Grafana

→ Prometheus.

→ AWS / Google Cloud / Azure / Self Provisioning

Where to Deploy

↳ Buy your own Server.

→ costly investment.

→ 24x7 electricity

→ 24x7 coolants.

FB / Flipkart / Cloudflare / Akamai / Banks / Amazon / Google

↳ Cloud Provider

→ AWS

→ Azure

→ GCP.

80%

Cloud Engineer / Cloud Specialist / Cloud Associate

→ DevOps Engineers working at companies that use cloud for their infrastructure

→ DevOps Engineer

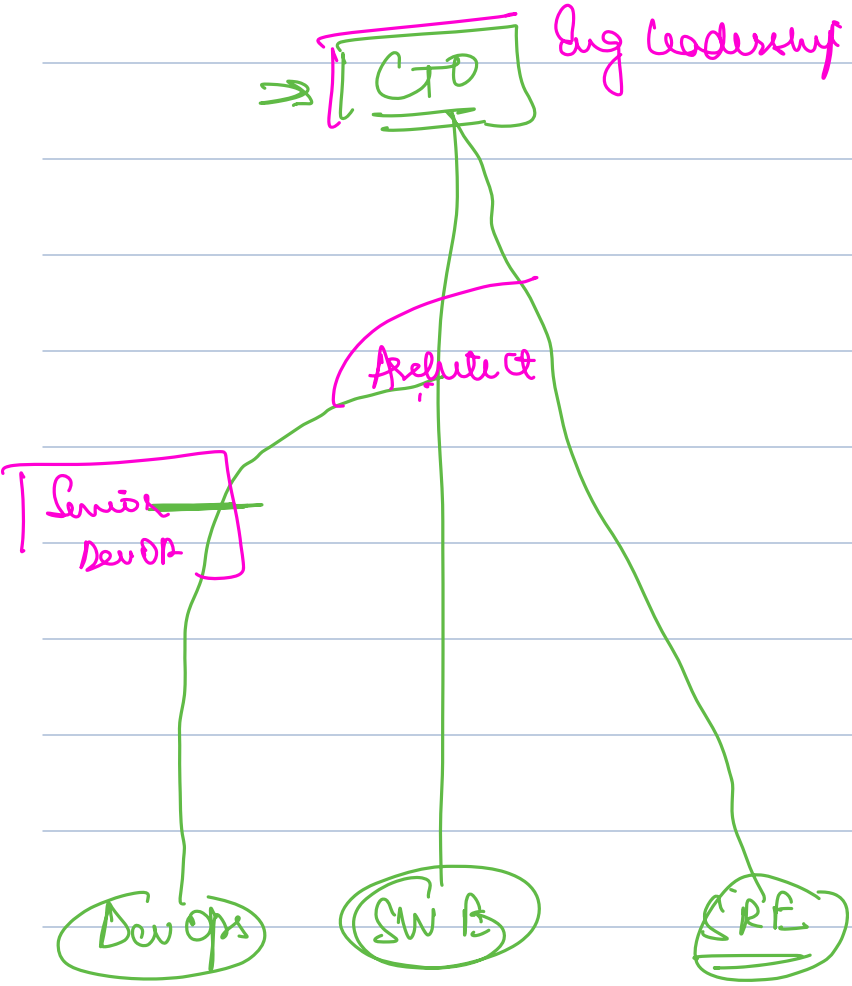
↳ Cloud Engineer.

Site Reliability Engineer

- high paying DevOps role.
- pay very similar to the pay of a SWE.
- just requires a few additional skills than a DevOps Engineer.

= DevOps + adv DSA + system design

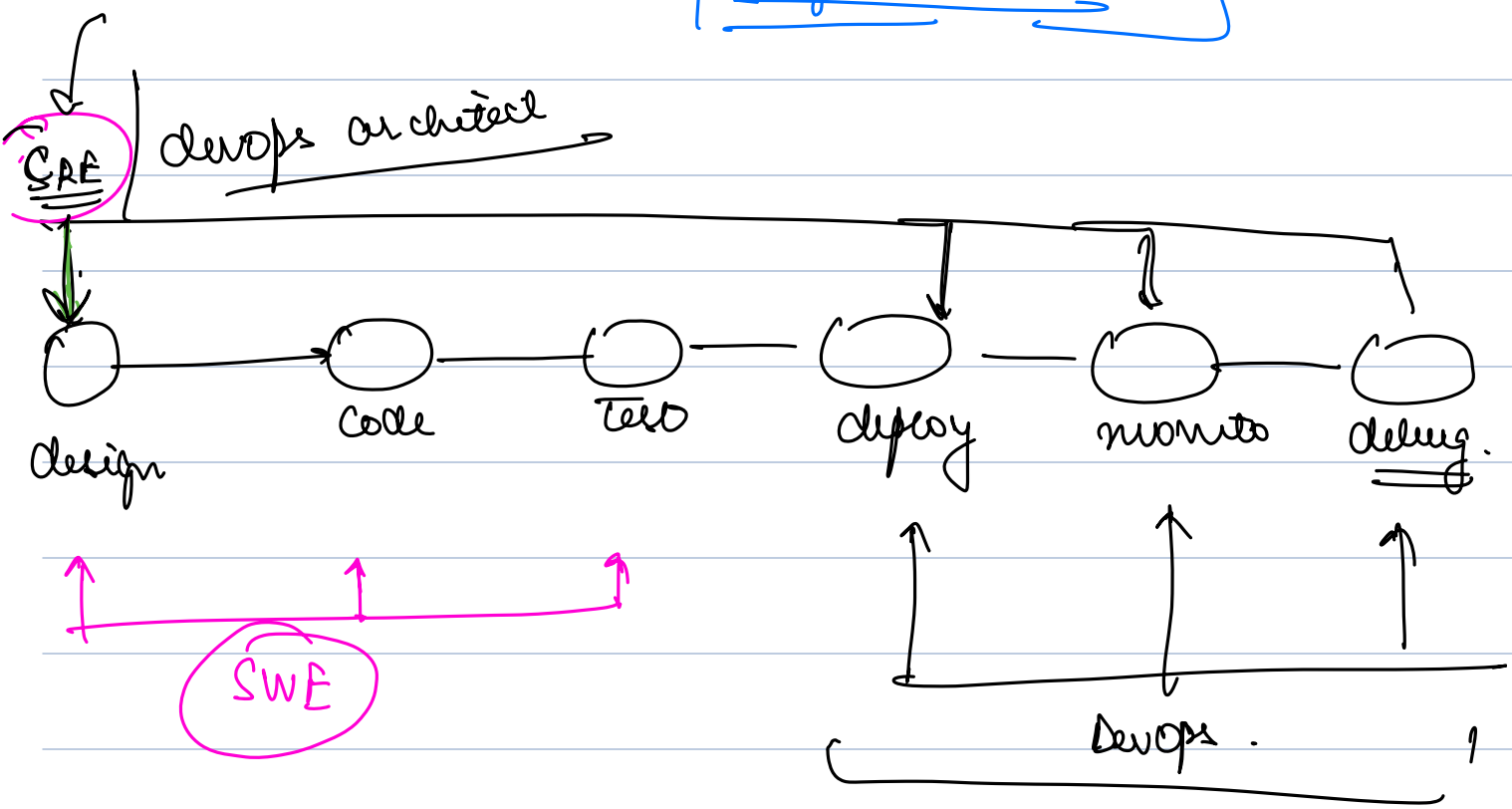
- mostly exists in high payin product based companies.



→ SRE is working hand to hand with SWE

→ SRE is involved further eng right from the architectural phase.

↳ design discussions



SRE

→ As devops eng, you are still doing some manual work

→ config

→ monitor

Something has gone wrong

→ debug
→ find a cause
→ do an intervention.

Software in itself is doing interventions.

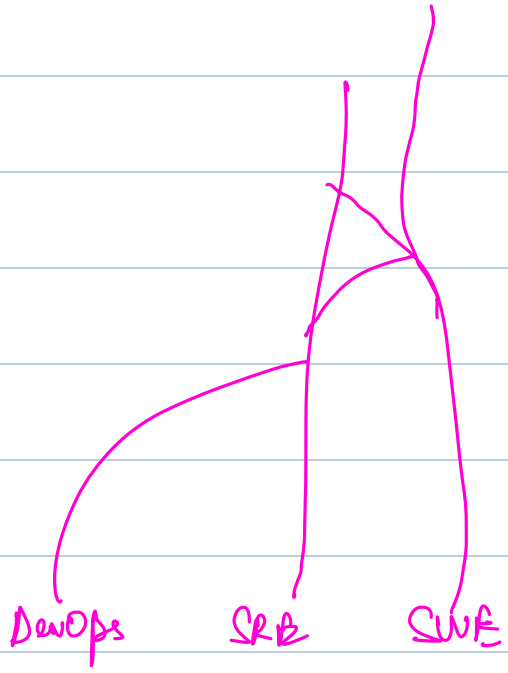
⇓

less error prone.

Site Reliability Engineering

→ eng that build tooling to ensure systems are having much higher availability.

SWE ⇒ writing code that is focused on keeping app^n 24x7 up.



What all to learn as a DevOps/ SRE

DevOps

1. How Linux Works
   - → processes.
   - → memory management
   - → Linux Commands
     - → top.
     - grep
     - awk
     - sed.
   - → System utils.
   - → Shell Scripting

OS concepts

ps -ax

as a devops eng you might come be writing some automation scripts

⇒ basic code

(2) Prog Lang → Python — Deal Breaker

→ ~~Golang~~

⇒ write basic scripts to automate stuff.

(3) DSA

⇒ Basic DSA is expected.

⇒ Arrays, Stacks, Queues, Linked List, Hash Maps, Strings.

(4) Tools

→ Docker

→ Kubernetes

90%

→ Jenkins / Grafana / Prometheus / Git / Terraform

(5) Cloud Provider

→ AWS — Most Valuable Cloud

~~→ Google Cloud~~

Amazon Cloud Prov.

~~→ Azure~~

Company Hiring for	You Have	Shortlisting
AWS	Google Cloud	≈ 20%..
AWS	AWS	≈ 100%.
Google Cloud	AWS	≈ 60-70%.

DevOps Engineer

1. Python
2. Basic DSA
3. Linux
   - → OS
   - → Computer Networks.
4. Tools : Docker & Kubernetes
5. Cloud : AWS

SRE

6. Adv DSA : Trees, Graphs, DP (≈ same level as a SWE)

7. System Design : How to build systems that scale.

↳ what type of DB

↳ SQL v/s NoSQL

How to learn diff topics req^d for DevOps + SRE

Topic	How
Python	→ Udemy (₹500) / Scaler Topics → Coursera. (free)
DSA	Theory: Abdul Bari (YT / Udemy) / Scaler Topics Solving Problems: Leetcode / Interview → learn topic 1 by 1 from theory. → Go to leetcode and solve problems of that topic → Sort By Difficulty. Every 3rd problem
Linux / Computer System / AWS / Tools	Kode Kloud (Leetcode of DevOps)

Scaler

- → Consistency
  - → Completion rate of Self paced is < 0.1%
  - → V/S Scaler completion rate → 70%
- → N/W,
- → Teaching Assistant
- → Mentor.
- → Placement Report

≈ 30hrs

12-16 months

Salaries of DevOps and SRE

Type of Company	DevOps	SRE
Junior-Mid (0-5 yoe) Product Based	9 – 15 LPA	→ 11 – 25 LPA → Google 30 LPA
Senior Levels (5-8 yoe) Product Based	12 – 35 LPA	20 – 45 LPA

100 Members

- 60 B/E
- 30 F/E
- ≈ 10 DevOps
- ≈ 10 Testing

→

- 60 B/E
- 30 F/E
- 10 DevOps
- 10 Testing
- ~~20~~ Analyst
- 5 ML engineer

jobs in devops < # jobs in SWE

Salary devops < Salary of SWE

Salary of SRE ≈ Salary of SWE

MMMM Better Salaries

Team QA/Tester/Support

if you don't like coding in depth
↳ devops
↳

QA/Testing/Support ⇒ DevOps

Freshers But Not too much into coding → DevOps

As a fresher it is easier to enter DevOps

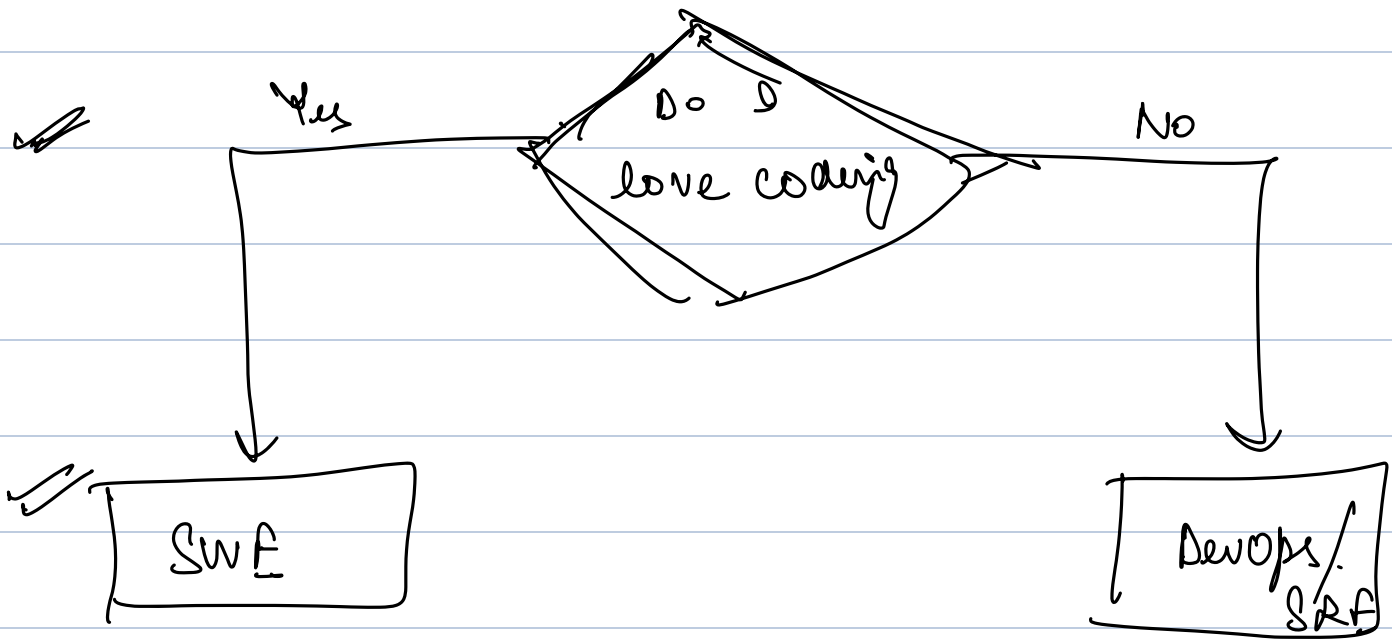
vs SWE

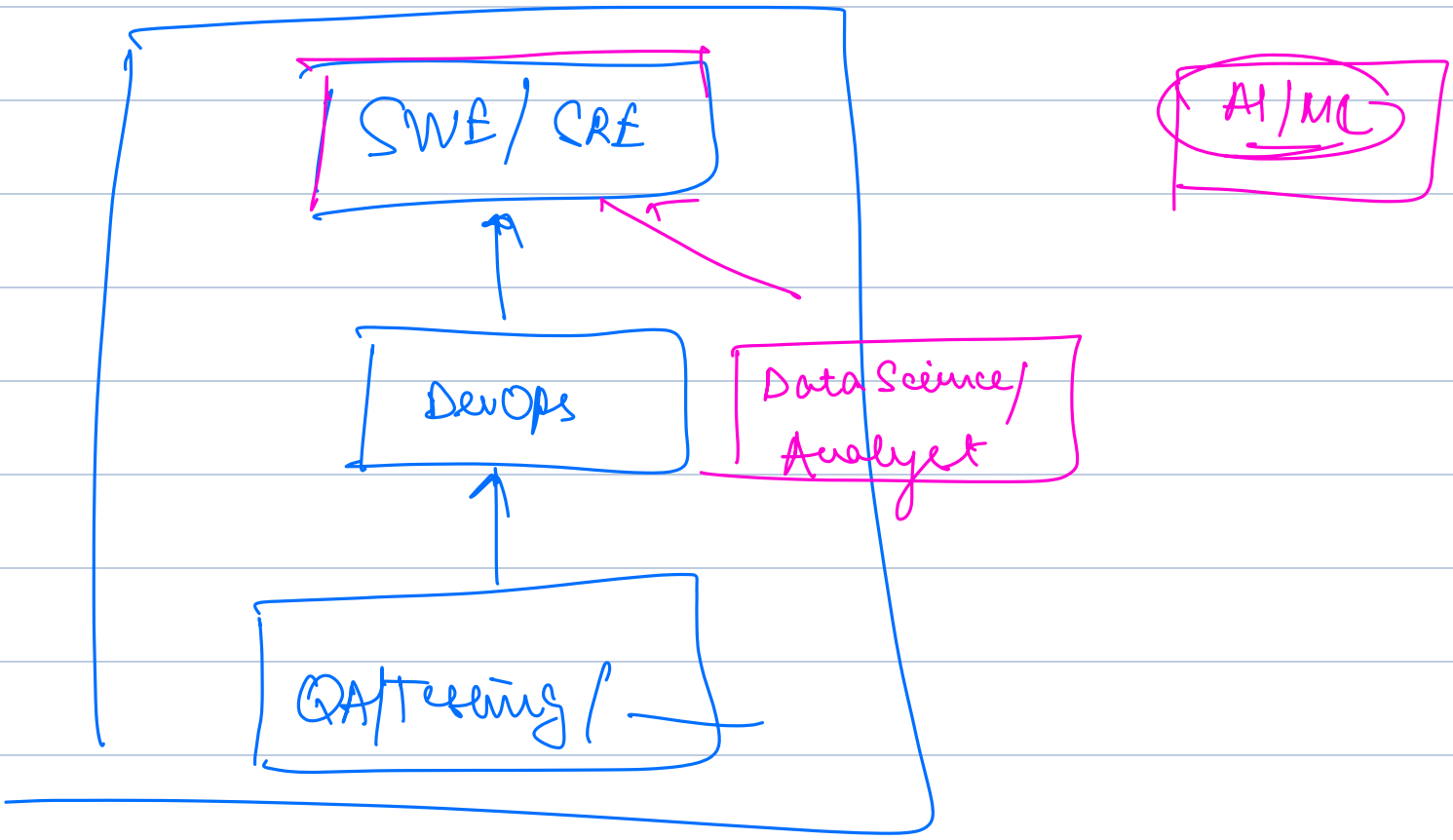
- → Clear certifications
- → AWS certificate
- → Docker
- → Kubernetes

I am a DevOps → SWE

How?

Should I move to DevOps





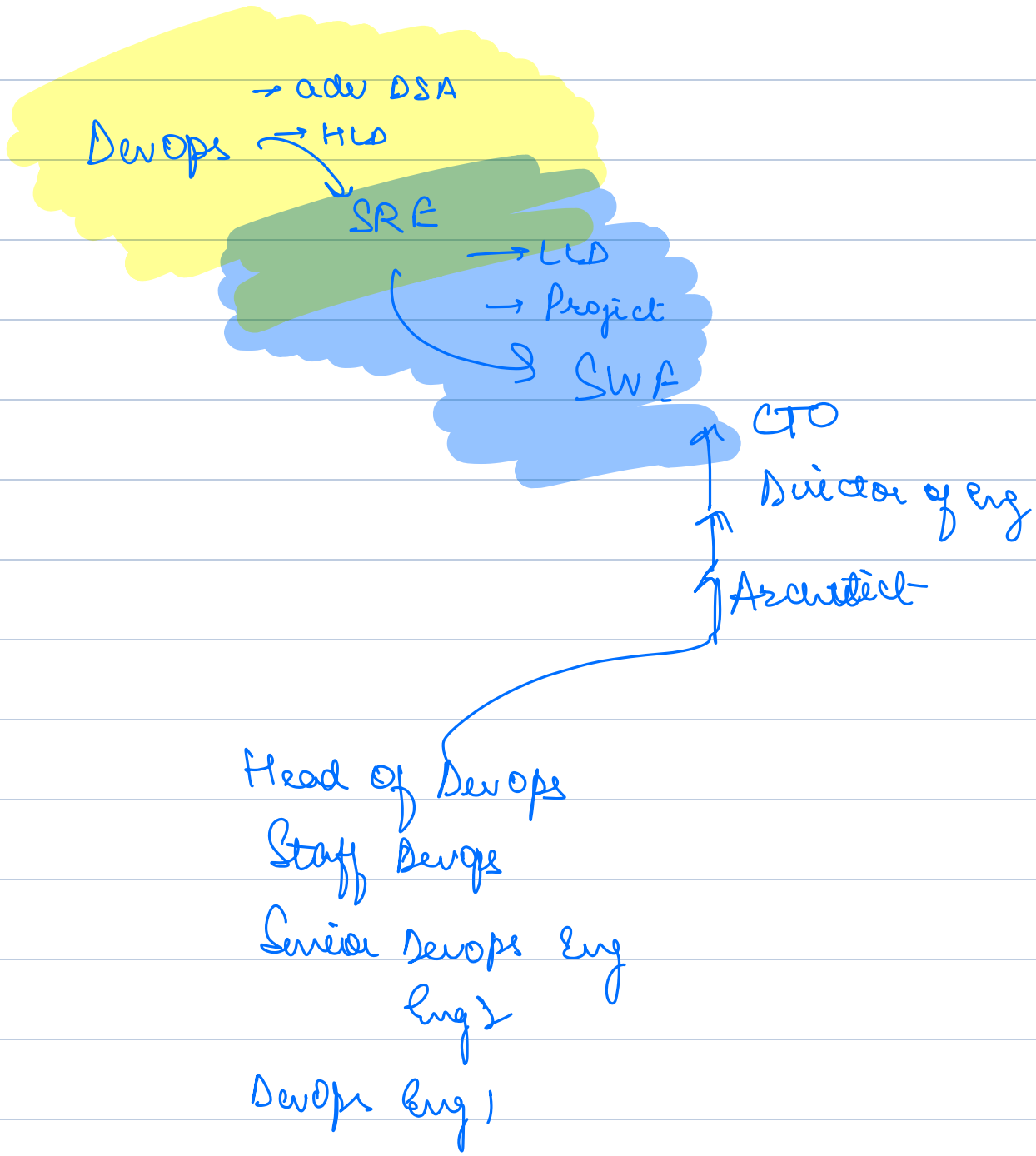
How to move from DevOps to SWE

additional skills

1. design
   - LLD → How to write good code (Low Level Design)
   - HLD → How to build scalable system
2. project
3. dsa

SRE → HLD

SRB → dsa



DevOps Project

⇒ Case Studies

→ Building a CI/CD pipeline

→ Orchestrate an env using Terraform

→ Solving a prod^n issue.

NoSQL DB → internally use DSA

≈ 70 Classes ≈ 650 – 700 problem

100

70%

95%

→ Completion

→ placement rate ≈ 68%

5 LPA → 1.2 cr PA

≈ 18-19 LPA

Platform Engineer. → SRE + CWF

↳ tools that every team within company uses.

Assessment Platform.

Paid Learning (Contents)

Interviews

Scaler Topics

SRE + SWE

DevOps

DevOps → SRE → Platform → SWE

SWE

How AI will affect the world

Why?

What?

2 eng 9 f eng