Agenda

* Intro to LLD
* Why LLD is important
  - → Day to Day Job
  - → Interviews
    - * Types of LLD interviews.
* Structure of LLD Module
* Nuances / Important Expectations setting for LLD (FAQs)
  - → Why this language
  - → Assignment
  - → Amount of Theory
  - → CS Fundamentals.
  - → Job Readiness

Fresh Start

- → Attendance is very imp.
- → PSP should be very good
- → Contest

LLD 1
LLD 2
LLD 3
LLD 4
→

Introduction to LLD

↓

low level Design

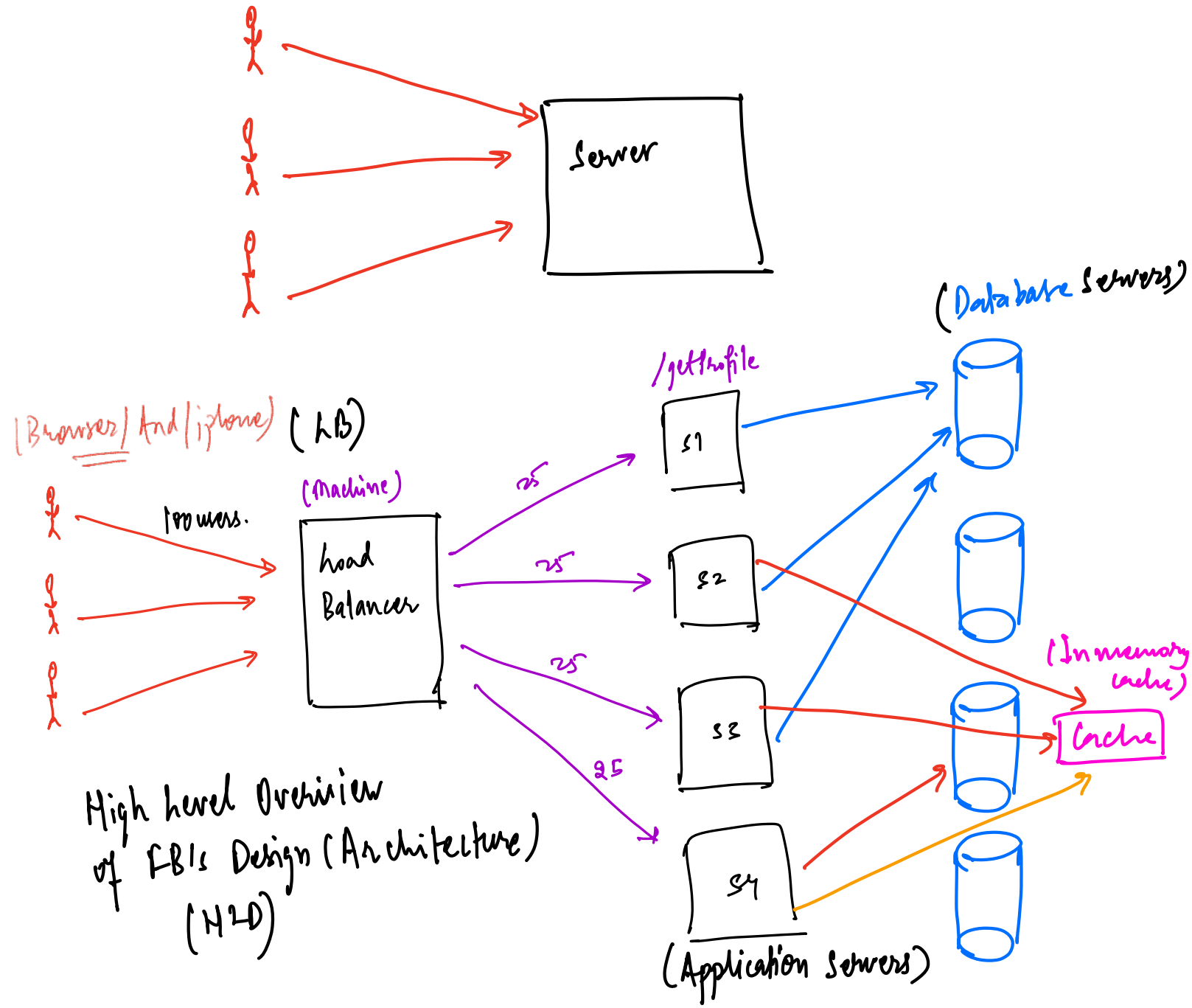
↓

High Level Design

↓

Superficial, Bird's eye view, Overview, Not going into detail.

How facebook works.



High level Overview of FB's Design (Architecture) (HLD)

What is a LB ? → Computer
What is a server ? → Computer
What is a DB ? → Computer

→ All are computers running diff. softwares.

LLD :- Deals with the details of software running on these machines.

Note :- Interviews outside India, LLD is called OOD (Object Oriented Design)

Why LLD is important

→ Day to Day Job

30%, 20%., 25%., 12%., 40%.,

What do we spend most of our time on?

1) Meeting / Scrum
2) Code Review
3) Solving Bugs
4) Documentation
5) Interviews
6) Testing
7) Learning

Events	Why?
Meetings / Scrum	Requirement Gathering, Plan
Code Review	Readability, Bug Free, Performant,
Solve Bugs.	Avoid failure of your S/W
Documentation	Readability
Testing	Detect all Errors,

12% of the total time is spent by SWE coding.

88% → utilised doing whatever we listed above

LLD helps you make the best of this 88% of your day to day.

LLD will help you write code:-

- → Understandable
- → Reusable
- → Extensible → Easy to add new features.
- → Maintainable → Easy to keep current system working
- → Modular

Why code will stop working even without changing anything?
- → Updates (adding new packages can cause error)
- → library updates.

2) Interviews.

yoe <= 2 ⟶ SDE 1

yoe > 2 && <= 5 → SDE 2

yoe > 5 → SDE 3.

Type of company	Startup	MNC	FAANG (Microsoft)
Level	Unacademy, Scaler, Razorpay, Swiggy, Zomato, GoJek, Cred, FK, Zepto, MMT, Uber.	Oracle, Adobe, IBM, Paypal, Visa, Atlassian, Mastercard, JPMC	FB, Google, Apple, Amazon, Microsoft. → LLD Round for SDE2+
SDE 1	1 Machine coding Round.	NONE	OOP; Design Patterns, Design Principles, --
SDE 2	" "	LLD Round	"
SDE 3	" "	LLD Round	

Structure of LLD Module at Scaler.

LLD 1

→ OOP (Object Oriented Programming) (4 classes)

→ Concurrency & Multithreading (OS concepts)

→ Advanced Language concepts — 10-11 classes.

- → Java Streams
- → Lambda Functions
- → Collection Framework etc.

LLD 2

→ Solid Design Principles (2 classes)

→ Design Patterns — 7-8 classes.

- → Creational (2 classes – 5 DP)
- → Structural (1 class - 3 DP)
- → Behavioral (1 class – 2 DP)

→ UML Diagrams (1 class)

LLD 3 (Interview Prep & Practice Case Studies)

Entity → How to approach a LLD problem and Design a Pen → 1 class

Game (Snake and Ladder, Management System) → Design Tic TacToe & Code Tic Tac Toe → 3-4 classes

→ Design Parking lot & Code PL → 2-3 classes.

→ Design BMS and Code BMS → 3-4 classes. → Concurrency.

→ Design Splitwise → 3 classes. → Real World Application

→ Design Cache → Engineering Problem

LLD 4 (Project Module) → 11 May

→ E-commerce website Backend.

- → Spring Boot
- → Deploy, AWS
- → Rest Api's
- → Git, Github (VCS)
- → NoSQL DBs
- → Security
- → Authentication.
- → Docker.

FAQ's

① Why Java for this module?

→ Choose language which most students know

→ Choose language that students use or are going to use in their jobs.

② Assignments (Vimp)

③ CS Fundamentals.

DBMS. → SQL classes.

OS → LLD ?
CPU Scheduling
Mem. Management.

CN → LLD ?, we will cover it.

④ Job Readiness.

SDE 1 → DSA + Language + LLD + SQL modules.

SDE2 → DSA + Lang. + LLD + SQL + HLD.