

INTRODUCTION

and

ROADMAP

To

SYSTEM

DESIGN

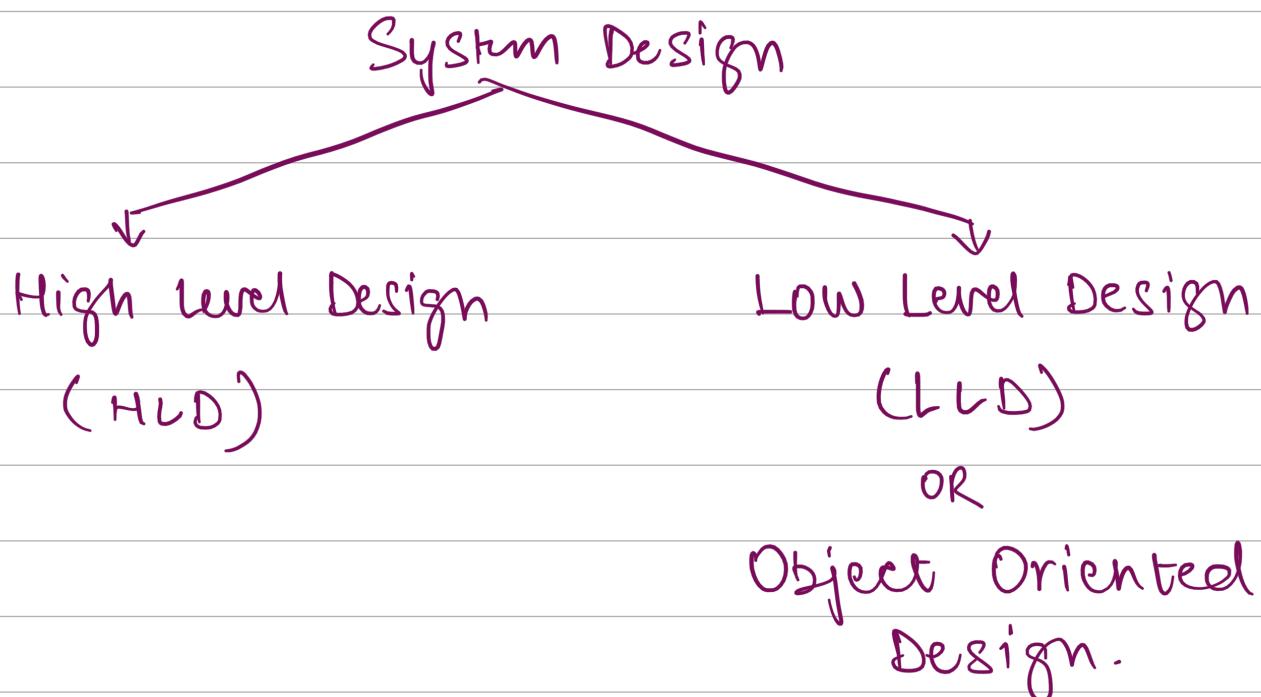
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Introduction to System Design

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ASHISH GUPTA

- * System Design is a process of defining elements of a system and how these elements and components work together.
- * In short Designing a system means creating an architecture, interfaces that satisfies specific requirements keeping in mind the utilization and trade offs.



* HLD → High Level Design



Architecture that covers the overview of entire system and it describes how components of system fit together

Knowledge Required to become better at HLD :

1. Distributed Systems
2. Microservices Architecture
3. CAP Theorem
4. Scalability and Performance
5. Proxies
6. Load Balancing
7. Consistent Hashing
8. Caching
9. Database Sharding
10. SQL vs NoSQL
11. Network Protocols (HTTP, XMPP, WebSockets)
12. Long Polling, Web Sockets, Server Sent events
13. Replication
14. Queues
15. Understanding of DNS system

So while designing a large system we need to consider few things

1. What are different architectural pieces/components -
2. How do these components work with each other.
3. Best utilization of available resources i.e., right tradeoffs to be made .

Turn Over

LLD → Low Level Design

or

OOD → Object Oriented Design

LLD is component-level design process which follows a step-by-step refinement process.

The purpose of LLD is to give the internal logic design of the actual program code.

It is created based on HLD itself.

LLD describes the class diagrams along with the methods and the relation between classes and program spec.

Also in LLD detailed flow charts, activity diagrams etc are created.

Better LLD & Easy to code

Knowledge Required to be great
in LID.

1. OOPS Concept

2. Design Patterns

3. UML Diagrams

4. Schema Design

5. S.O.L.I.D Principles.

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