



SYSTEM Design

SYSTEM DESIGN MASTERY COURSE

INTRODUCTION

System Design is essential to develop applications that are scalable, fault-tolerant, and high-performing. It's a critical skill for software engineers, especially when applying for roles at top product-based companies like Google, Amazon, Microsoft, etc.

Key Benefits:

- Design real-world scalable systems from scratch
- Crack system design rounds in FAANG & top MNC interviews
- Enhance architectural & problem-solving skills
- Make informed decisions on tools, databases, and services
- Prepare for leadership roles like Tech Lead, Solution Architect

MODULE 1: LOW-LEVEL DESIGN (LLD)

Goal: Understand how to design clean, maintainable object-oriented systems.

OOPS Fundamentals: Inheritance, Encapsulation, Abstraction, Polymorphism

SOLID Principles: Write code that is extensible and robust

Design Patterns: Factory, Singleton, Strategy, Observer, etc.

UML Diagrams: Class, Sequence, Use Case Diagrams

LLD Case Studies: Parking Lot, BookMyShow, Splitwise, etc.

MODULE 2: HIGH-LEVEL DESIGN (HLD)

Goal: Architect scalable systems and understand distributed system fundamentals.

System Design Basics: Latency vs Throughput, CAP Theorem, Availability

Distributed Systems Concepts

Caching Strategies & Consistent Hashing

SQL vs NoSQL: Use Cases, Benefits, Trade-offs

Microservices Architecture:

Service Communication (REST, gRPC, Message Queues)

Microservices Design Patterns (Saga, Circuit Breaker, API Gateway)

Distributed Queue Systems: Kafka, RabbitMQ

Authentication & Authorization: OAuth 2.0, JWT

Load Balancing Techniques: Horizontal Scaling, Reverse Proxies

- DNS & Networking Concepts: CDN, TCP/IP, UDP, HTTP/HTTPS

MODULE 3 : END-TO-END SYSTEM DESIGN PROJECTS

Goal: Apply everything learned to real-time systems.

Example Projects:

Design WhatsApp / Chat App

Design YouTube / Video Streaming Service

Design Uber / Ride Sharing App

Design E-commerce Platform

MODULE 4 : INTERVIEW GUIDE

- **Interview Preparation**
- **Resume Guidance**
- **Mock Interviews**

COURSES OFFERING



**JAVA
FULLSTACK**



**PYTHON
FULLSTACK**



**UI
FULLSTACK**



LINUX



**CLOUD
COMPUTING**



DEVOPS



DSA



**SYSTEM
DESIGN**



**SOFTWARE
TESTING**



**CYBER
SECURITY**



**DATA
SCIENCE**



**DATA
ANALYTICS**

Our Recently Placed Students **Now it's Your Turn!**

