

System Design

A Step-by-Step Template

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REQUIREMENTS



Functional Requirements
Non-Functional Requirements
Daily Active Users
Read-to-Write Ratio
Usage Patterns
Peak and Seasonal Events

DATABASE



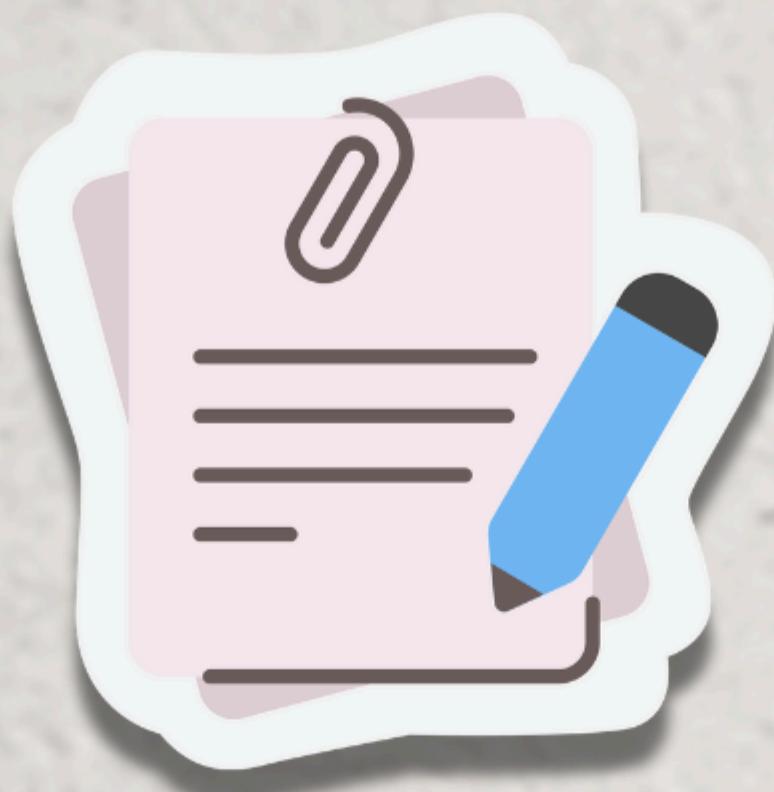
Data Model
Entity Relationship Diagram
SQL
Type of Database

API DESIGN



HTTP Verb
Request-Response Headers
Request-Response Contract

CAPACITY PLANNING



Query Per Second (Read-Write)
Bandwidth (Read-Write)
Storage
Memory

HIGH LEVEL DESIGN



Basic Algorithm
Data Flow
Tradeoffs
Alternatives
Network Protocols
(WebSocket, SSE)

DESIGN DEEP DIVE



Single Point of Failures
Bottlenecks (Hotspots)
Concurrency
Monitoring, Alerting, Logging
Deployment
Security

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