System Design Interview Prep Master Doc

This is **ONE-STOP COMPILATION** to your **System Design Interview Preparation.**

This document contains everything which you'll ever need for your System Design Interview Preparation.

Believe me, just go through it. You'll not regret it.

This document is a master doc of compilation of various sites, LeetCode posts, YouTube channels, which has all the useful links for System Design.

If you'll go through this doc, then you don't need to go through any other materials.

This document contains :

- **List of all System Design YouTube Channels**
- **Exhaustive list of System Design Problems with their LeetCode hyperlinks**
- **List of must-read books**
- **All important key terminologies of System Design**
- **Exhaustive list of all Cloud Design Patterns**

Compilation Credit : Pooja Biswas
Modified by -   Aman Barnwal

All system design youtube channels

1. https://www.youtube.com/user/dimakorolev/videos
2. https://www.youtube.com/c/ByteByByte/videos
3. https://www.youtube.com/channel/UC_n-A84J0UcU5uq4sEh2CnQ
4. https://www.youtube.com/c/DefogTech/videos
5. https://www.youtube.com/c/HusseinNasser-software-engineering/videos
6. https://www.youtube.com/c/SystemDesignInterview/videos
7. https://www.youtube.com/c/sudoCODE/videos
8. https://www.youtube.com/c/codeKarle/videos
9. https://www.youtube.com/c/CMUDatabaseGroup/videos
10. https://www.youtube.com/c/interviewingio/videos
11. https://www.youtube.com/c/GauravSensei/videos
12. https://www.youtube.com/c/EngineeringwithUtsav/videos
13. https://www.youtube.com/channel/UClB4KPy5LkJj1t3SgYVtMOQ/videos
14. https://www.youtube.com/c/ExponentTV/videos
15. https://www.youtube.com/watch?v=cQP8WApzIQQ&list=PLrw6a1wE39_tb2fErI4-WkMbsvGQk9_UB

16. https://www.youtube.com/c/TheInterviewSage/videos
17. https://www.youtube.com/c/ThinkSoftware/videos
18. https://www.youtube.com/c/SuccessinTech/videos
19. https://www.youtube.com/c/TechDummiesNarendraL/videos
20. https://www.youtube.com/c/OktaDev/videos

Important Books :

1. Amazon.com: System Design Interview – An Insider's Guide eBook: Xu, Alex: Kindle Store
2. Amazon.com: Operating Systems: Three Easy Pieces eBook: Arpaci-Dusseau, Remzi, Arpaci-Dusseau, Andrea: Kindle Store
3. Web Scalability for Startup Engineers: Ejsmont, Artur: 9780071843652: Amazon.com: Books
4. Understanding Distributed Systems: What every developer should know about large distributed applications: Vitillo, Roberto: 9781838430207: Amazon.com: Books
5. Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems: Kleppmann, Martin: 9781449373320: Amazon.com: Books
6. Kafka: The Definitive Guide: Real-Time Data and Stream Processing at Scale: 9781491936160: Computer Science Books @ Amazon.com
7. Buy Distributed Algorithms – An Intuitive Approach 2e (The MIT Press) Book Online at Low Prices in India | Distributed Algorithms – An Intuitive Approach 2e (The MIT Press) Reviews & Ratings - Amazon.in
8. Elasticsearch: The Definitive Guide: A Distributed Real-Time Search and Analytics Engine eBook: Gormley, Clinton, Tong, Zachary: Amazon.in: Kindle Store
9. Buy Cassandra – The Definitive Guide, 3e: Distributed Data at Web Scale Book Online at Low Prices in India | Cassandra – The Definitive Guide, 3e: Distributed Data at Web Scale Reviews & Ratings - Amazon.in

Imp keywords

1. Write ahead logging
2. SSL passthrough / termination on load balancers
3. Clock vectors
4. Hinted handoff
5. Bloom filters
6. Gossip protocols
7. Merkle trees
8. Two phase commit
9. Two phase locking
10. Consistent hashing
11. Data replication
12. Total order broadcast
13. Isolation levels (read uncomitted, read comitted, repeatable read, serializable)
14. Quad trees (GeoHashin)

15. Inverse indexing - Google search/any search indexing
16. Gaming ranking - rank players based on score and faster.
17. Word search in trie - auto suggestions system design
18. Sort 5gb data in 1gb memory - merge sort
19. Paxos algo
20. Merkle Tree
21. Backpressure
22. Circuit breaker
23. Raft
24. Service discovery
25. Saga
26. Hyperloglog

Important algorithms

https://github.com/resumejob/system-design-algorithms

- Frugal Streaming
- Geohash / S2 Geometry
- Leaky bucket / Token bucket
- Loosy Counting
- Operational transformation
- Quadtree / Rtree
- Ray casting
- Reverse index
- Rsync algorithm
- Trie algorithm
- Consistent Hashing
- Count-Min Sketch
- Bloom Filters
- HyperLogLog
- Skip Lists
- LRU
- B tree
- Hierarchical Timing Wheels https://blog.acolyer.org/2015/11/23/hashed-and-hierarchical-timing-wheels/
- Merkle trees
- Fenwick Tree
  - http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=2FDD6F53D3DC3BB91FA42E7277B6765B?doi=10.1.1.14.8917&rep=rep1&type=pdf
- AMS (Alon Matias Szegedy) algorithm

Cloud design patterns

https://docs.microsoft.com/en-us/azure/architecture/patterns/index-patterns
Cloud arch pattern

Ambassador	Create helper services that send network requests on behalf of a consumer service or application.	Design and Implementation, Operational Excellence
Anti-Corruption Layer	Implement a façade or adapter layer between a modern application and a legacy system.	Design and Implementation, Operational Excellence
Asynchronous Request-Reply	Decouple backend processing from a frontend host, where backend processing needs to be asynchronous, but the frontend still needs a clear response.	Messaging
Backends for Frontends	Create separate backend services to be consumed by specific frontend applications or interfaces.	Design and Implementation
Bulkhead	Isolate elements of an application into pools so that if one fails, the others will continue to function.	Reliability
Cache-Aside	Load data on demand into a cache from a data store	Data Management, Performance Efficiency
Choreography	Let each service decide when and how a business operation is processed, instead of depending on a central orchestrator.	Messaging, Performance Efficiency
Circuit Breaker	Handle faults that might take a variable amount of time to fix when connecting to a remote service or resource.	Reliability
Claim Check	Split a large message into a claim check and a payload to avoid overwhelming a message bus.	Messaging
Compensating Transaction	Undo the work performed by a series of steps, which together define an eventually consistent operation.	Reliability
Competing Consumers	Enable multiple concurrent consumers to process messages received on the same messaging channel.	Messaging

Compute Resource Consolidation	Consolidate multiple tasks or operations into a single computational unit	Design and Implementation
CQRS	Segregate operations that read data from operations that update data by using separate interfaces.	Data Management, Design and Implementation, Performance Efficiency
Deployment Stamps	Deploy multiple independent copies of application components, including data stores.	Reliability, Performance Efficiency
Event Sourcing	Use an append-only store to record the full series of events that describe actions taken on data in a domain.	Data Management, Performance Efficiency
External Configuration Store	Move configuration information out of the application deployment package to a centralized location.	Design and Implementation, Operational Excellence
Federated Identity	Delegate authentication to an external identity provider.	Security
Gatekeeper	Protect applications and services by using a dedicated host instance that acts as a broker between clients and the application or service, validates and sanitizes requests, and passes requests and data between them.	Security
Gateway Aggregation	Use a gateway to aggregate multiple individual requests into a single request.	Design and Implementation, Operational Excellence
Gateway Offloading	Offload shared or specialized service functionality to a gateway proxy.	Design and Implementation, Operational Excellence
Gateway Routing	Route requests to multiple services using a single endpoint.	Design and Implementation,

		Operational Excellence
Geodes	Deploy backend services into a set of geographical nodes, each of which can service any client request in any region.	Reliability, Operational Excellence
Health Endpoint Monitoring	Implement functional checks in an application that external tools can access through exposed endpoints at regular intervals.	Reliability, Operational Excellence
Index Table	Create indexes over the fields in data stores that are frequently referenced by queries.	Data Management, Performance Efficiency
Leader Election	Coordinate the actions performed by a collection of collaborating task instances in a distributed application by electing one instance as the leader that assumes responsibility for managing the other instances.	Design and Implementation, Reliability
Materialized View	Generate prepopulated views over the data in one or more data stores when the data isn't ideally formatted for required query operations.	Data Management, Operational Excellence
Pipes and Filters	Break down a task that performs complex processing into a series of separate elements that can be reused.	Design and Implementation, Messaging
Priority Queue	Prioritize requests sent to services so that requests with a higher priority are received and processed more quickly than those with a lower priority.	Messaging, Performance Efficiency
Publisher/Subscriber	Enable an application to announce events to multiple interested consumers asynchronously, without coupling the senders to the receivers.	Messaging
Queue-Based Load Leveling	Use a queue that acts as a buffer between a task and a service that it invokes in order to smooth intermittent heavy loads.	Reliability, Messaging, Resiliency, Performance Efficiency

Retry	Enable an application to handle anticipated, temporary failures when it tries to connect to a service or network resource by transparently retrying an operation that's previously failed.	Reliability
Scheduler Agent Supervisor	Coordinate a set of actions across a distributed set of services and other remote resources.	Messaging, Reliability
Sequential Convoy	Process a set of related messages in a defined order, without blocking processing of other groups of messages.	Messaging
Sharding	Divide a data store into a set of horizontal partitions or shards.	Data Management, Performance Efficiency
Sidecar	Deploy components of an application into a separate process or container to provide isolation and encapsulation.	Design and Implementation, Operational Excellence
Static Content Hosting	Deploy static content to a cloud-based storage service that can deliver them directly to the client.	Design and Implementation, Data Management, Performance Efficiency
Strangler Fig	Incrementally migrate a legacy system by gradually replacing specific pieces of functionality with new applications and services.	Design and Implementation, Operational Excellence
Throttling	Control the consumption of resources used by an instance of an application, an individual tenant, or an entire service.	Reliability, Performance Efficiency
Valet Key	Use a token or key that provides clients with restricted direct access to a specific resource or service.	Data Management, Security

Data Management patterns

Data management is the key element of cloud applications, and influences most of the quality attributes. Data is typically hosted in different locations and across multiple servers for reasons such as performance, scalability or availability, and this can present a range of challenges. For example, data consistency must be maintained, and data will typically need to be synchronized across different locations.

Additionally data should be protected at rest, in transit, and via authorized access mechanisms to maintain security assurances of confidentiality, integrity, and availability. Refer to the Azure Security Benchmark Data Protection Control for more information.

Pattern	Summary
Cache-Aside	Load data on demand into a cache from a data store
CQRS	Segregate operations that read data from operations that update data by using separate interfaces.
Event Sourcing	Use an append-only store to record the full series of events that describe actions taken on data in a domain.
Index Table	Create indexes over the fields in data stores that are frequently referenced by queries.
Materialized View	Generate prepopulated views over the data in one or more data stores when the data isn't ideally formatted for required query operations.
Sharding	Divide a data store into a set of horizontal partitions or shards.
Static Content Hosting	Deploy static content to a cloud-based storage service that can deliver them directly to the client.
Valet Key	Use a token or key that provides clients with restricted direct access to a specific resource or service.

DATA MANAGEMENT PATTERNS

Design and Implementation patterns

Good design encompasses factors such as consistency and coherence in component design and deployment, maintainability to simplify administration and development, and reusability to allow components and subsystems to be used in other applications and in other scenarios.

Decisions made during the design and implementation phase have a huge impact on the quality and the total cost of ownership of cloud hosted applications and services.

Pattern	Summary
Ambassador	Create helper services that send network requests on behalf of a consumer service or application.
Anti-Corruption Layer	Implement a façade or adapter layer between a modern application and a legacy system.
Backends for Frontends	Create separate backend services to be consumed by specific frontend applications or interfaces.
CQRS	Segregate operations that read data from operations that update data by using separate interfaces.
Compute Resource Consolidation	Consolidate multiple tasks or operations into a single computational unit
External Configuration Store	Move configuration information out of the application deployment package to a centralized location.
Gateway Aggregation	Use a gateway to aggregate multiple individual requests into a single request.
Gateway Offloading	Offload shared or specialized service functionality to a gateway proxy.
Gateway Routing	Route requests to multiple services using a single endpoint.
Leader Election	Coordinate the actions performed by a collection of collaborating task instances in a distributed application by electing one instance as the leader that assumes responsibility for managing the other instances.
Pipes and Filters	Break down a task that performs complex processing into a series of separate elements that can be reused.
Sidecar	Deploy components of an application into a separate process or container to provide isolation and encapsulation.
Static Content Hosting	Deploy static content to a cloud-based storage service that can deliver them directly to the client.

Strangler Fig	Incrementally migrate a legacy system by gradually replacing specific pieces of functionality with new applications and services.

DESIGN AND IMPLEMENTATION PATTERNS

Messaging patterns

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The distributed nature of cloud applications requires a messaging infrastructure that connects the components and services, ideally in a loosely coupled manner in order to maximize scalability.

Asynchronous messaging is widely used, and provides many benefits, but also brings challenges such as the ordering of messages, poison message management, idempotency, and more.

Pattern	Summary
Asynchronous Request-Reply	Decouple backend processing from a frontend host, where backend processing needs to be asynchronous, but the frontend still needs a clear response.
Claim Check	Split a large message into a claim check and a payload to avoid overwhelming a message bus.
Choreography	Have each component of the system participate in the decision-making process about the workflow of a business transaction, instead of relying on a central point of control.
Competing Consumers	Enable multiple concurrent consumers to process messages received on the same messaging channel.
Pipes and Filters	Break down a task that performs complex processing into a series of separate elements that can be reused.
Priority Queue	Prioritize requests sent to services so that requests with a higher priority are received and processed more quickly than those with a lower priority.
Publisher-Subscriber	Enable an application to announce events to multiple interested consumers asynchronously, without coupling the senders to the receivers.
Queue-Based Load Leveling	Use a queue that acts as a buffer between a task and a service that it invokes in order to smooth intermittent heavy loads.
Scheduler Agent Supervisor	Coordinate a set of actions across a distributed set of services and other remote resources.
Sequential Convoy	Process a set of related messages in a defined order, without blocking processing of other groups of messages.

MESSAGING PATTERNS

Book https://learning.oreilly.com/library/view/cloud-architecture-patterns/9781449357979/

LEETCODE all system design problems

1. Web Crawler']

    https://leetcode.com/discuss/interview-question/system-design/124657/Facebook-or-System-Design-or-A-web-crawler-that-will-crawl-Wikipedia

2. Detect web crawler

    https://leetcode.com/discuss/interview-question/system-design/548816/Amazon-or-System-Design-or-Web-Crawler-Detector

3. Yelp
4. Distributed file system

5. URL shortening and Pastebin

    https://leetcode.com/discuss/interview-question/system-design/124804/Design-Pastebin

    https://leetcode.com/discuss/interview-question/system-design/124658/Design-URL-Shortening-service-like-TinyURL

6. Instagram

    https://leetcode.com/discuss/interview-question/system-design/124802/Design-Instagram

    https://leetcode.com/discuss/interview-question/system-design/586749/design-Instagram

    https://leetcode.com/discuss/interview-question/system-design/719253/Design-Facebook-%3A-System-Design-Interview

7. Dropbox.

8. Twitter

    https://leetcode.com/discuss/interview-question/system-design/124689/Design-twitter

9. Redis

    https://leetcode.com/discuss/interview-question/system-design/125751/Design-a-distributed-cache-system

10. Youtube or Netflix

    https://leetcode.com/discuss/interview-question/system-design/733520/Design-YouTube-Very-detailed-design-with-diagrams

https://leetcode.com/discuss/interview-question/system-design/144287/Design-Recommendation-System-for-Amazon-Videos

https://leetcode.com/discuss/interview-question/system-design/600861/System-Design-Youtube-add-click-counts

https://leetcode.com/discuss/interview-question/system-design/557250/Design-a-video-streaming-service-to-support-playback-video-from-different-devices

https://leetcode.com/discuss/interview-question/system-design/496042/Design-video-sharing-platform-like-Youtube

https://leetcode.com/discuss/interview-question/system-design/158698/Distributed-database%3A-Netflix

https://leetcode.com/discuss/interview-question/system-design/124565/Design-Netflix-recommendation-engine

https://leetcode.com/discuss/interview-question/system-design/150607/Design-youtube

11. Ticketmaster

https://leetcode.com/discuss/interview-question/system-design/124803/Design-BookMyShow

https://leetcode.com/discuss/interview-question/system-design/315763/System-Design-or-Seat-reservation-application-like-Ticket-Master-or-BookMyShow

12. Facebook Messenger or WhatsApp

https://leetcode.com/discuss/interview-question/system-design/585930/Amazon-or-System-Design-or-Design-a-Chat-Service

https://leetcode.com/discuss/interview-question/system-design/220073/How-would-you-design-WhatsApp

https://leetcode.com/discuss/interview-question/system-design/124613/Amazon-or-System-Design-or-A-scalable-chat-application-on-phone-browsing

13. Typeahead suggesions.
14. Twitter search.

15. Newsfeed ranking

https://leetcode.com/discuss/interview-question/system-design/349627/How-do-you-design-a-meta-data-for-a-news-feed

https://leetcode.com/discuss/interview-question/system-design/153871/Design-a-News-Feed-system-(like-Facebook-Linkedin-etc.)

16. Web search.

17. LinkedIn "you may know ...".,

    https://leetcode.com/discuss/interview-question/system-design/1036762/Google-Onsite-System-Design-How-to-do-it

    https://leetcode.com/discuss/interview-question/system-design/153941/Design-the-%22People-You-May-Know%22-feature-on-LinkedIn-or-Facebook.

18. Uber / Luxe (anti-uber)?
19. Freight / delivery orchestration? (edited)

20. Botnet/decentralized web crawler/torrent

    https://leetcode.com/discuss/interview-question/system-design/594844/System-design-question-Help-needed

    https://leetcode.com/discuss/interview-question/system-design/464997/Design-a-P2P-file-sharing-application-like-BitTorrent

21. Coupon redeeming system

    https://leetcode.com/discuss/interview-question/system-design/353302/Design-a-couponvoucher-management-system-or-DellEMC

    https://leetcode.com/discuss/interview-question/system-design/459593/Facebook-or-System-Design-or-E-commerce-Apply-discount-on-every-nth-order

22. Message queue kafka, service bus

    https://leetcode.com/discuss/interview-question/system-design/124761/Deciding-which-queue-to-send-a-post-to

    https://leetcode.com/discuss/interview-question/system-design/206134/Amazon-or-System-Design-or-Design-a-Distributed-Message-queue

    https://leetcode.com/discuss/interview-question/system-design/734303/Microsoftor-Design-an-Enterprise-Service-Bus

23. Rate limiter

    https://leetcode.com/discuss/interview-question/system-design/637402/Design-a-efficient-client-side-rate-limit-handler

    https://leetcode.com/discuss/interview-question/system-design/124558/Uber-or-Rate-Limiter

24. Design leetcode - asked in amazon and fb.

    https://leetcode.com/discuss/interview-question/system-design/649021/Design-Leetcode

    https://leetcode.com/discuss/interview-question/system-design/409736/Facebook-or-System-Design-or-Hacker-Rank-LeetCode-Contest-Leadership-Board-System

    https://leetcode.com/discuss/interview-question/system-design/308452/System-Design-or-Programming-contest-platform-like-LeetCode

26. Large log data collection and processing system

    https://leetcode.com/discuss/interview-question/system-design/124603/Amazon-or-Phone-screen-or-How-to-handle-large-log-data

    https://leetcode.com/discuss/interview-question/system-design/128037/How-would-you-parse-a-huge-log-file

    https://leetcode.com/discuss/interview-question/system-design/189030/Design-a-system-which-can-report-frequently-occurring-exceptions-on-a-dashboard

    https://leetcode.com/discuss/interview-question/system-design/196142/Copy-coredump-files-from-millions-of-system-to-single-Storage-server-like-S3

    https://leetcode.com/discuss/interview-question/system-design/431023/Google-or-Onsite-or-Get-all-logs-between-times

    https://leetcode.com/discuss/interview-question/system-design/440546/Facebook-or-System-Design-Onsite-or-Compute-Percentile-Metrics-Over-Time-Series

    https://leetcode.com/discuss/interview-question/system-design/124603/Amazon-or-Phone-screen-or-How-to-handle-large-log-data

    https://leetcode.com/discuss/interview-question/system-design/1133962/Service-which-will-download-data-from-multiple-sources-and-ingests-it-in-the-system

    https://leetcode.com/discuss/interview-question/system-design/942087/System-Design%3A-Design-a-system-to-process-data-in-different-formats-from-different-sources

    https://leetcode.com/discuss/interview-question/system-design/852238/Need-help-with-System-Design-problem-asked-in-a-real-interview

    https://leetcode.com/discuss/interview-question/system-design/820877/Bloomberg-System-Design

    https://leetcode.com/discuss/interview-question/system-design/778868/Facebook-oror-Onsite-oror-System-Design-Aggregation-click-events

https://leetcode.com/discuss/interview-question/system-design/725364/System-Design-or-IOT-sensor-data-aggregator

https://leetcode.com/discuss/interview-question/system-design/202946/Design-a-system-to-aggregate-metrics-from-large-cluster(800%2B)-of-web-servers

27. Realtime stock price monitoring system/ live score update cricbuzz, realtime gaming score

    https://leetcode.com/discuss/interview-question/system-design/625918/Amazon-or-System-Design-or-Design-a-real-time-gaming-ranking-system

    https://leetcode.com/discuss/interview-question/system-design/431712/Bloomberg-or-Design-a-system-to-give-prices-of-a-stock

28. Stock trading system

    https://medium.com/@narengowda/stock-exchange-system-design-answered-ad4be1345851

    https://leetcode.com/discuss/interview-question/system-design/820877/Bloomberg-System-Design

    https://leetcode.com/discuss/interview-question/system-design/124794/Design-a-Multicurrency-trading-system

    https://leetcode.com/discuss/interview-question/system-design/490034/FAANG-or-Onsite-or-Intern-or-System-Design-Stock

29. Kill switch for stopping stock trading

    https://leetcode.com/discuss/interview-question/system-design/124553/Kill-Switch

30. Design network fail over

    https://leetcode.com/discuss/interview-question/system-design/124598/Design-network-fail-over

31. Design AB testing framework

    https://leetcode.com/discuss/interview-question/system-design/124595/AB-Testing

    https://leetcode.com/discuss/interview-question/system-design/228661/Design-a-Data-Experimentation-platform

32. Design parking lot system

    https://leetcode.com/discuss/interview-question/system-design/124576/Design-a-parking-lot-system.

    https://leetcode.com/discuss/interview-question/system-design/575186/Design-a-Parking-Spot-System

    https://leetcode.com/discuss/interview-question/system-design/598634/Microsoft-or-Onsite-or-System-Design-or-SDE-2

    https://leetcode.com/discuss/interview-question/system-design/850712/System-Design-Amazon-2020-(SDE-2)

    https://leetcode.com/discuss/interview-question/system-design/765686/System-Design-Interview-Question%3A-Parking-Lot-or-Low-Level-Design

    https://leetcode.com/discuss/interview-question/system-design/125260/Parking-Lots-Design

33. Reccomendation Engine

    https://leetcode.com/discuss/interview-question/system-design/124565/Design-Netflix-recommendation-engine

34. Smart voice assistant like siri, alexa

    https://leetcode.com/discuss/interview-question/system-design/124566/Design-AlexaSiriGoogle-Home-Architecture

    https://leetcode.com/discuss/interview-question/system-design/848252/Amazon-System-Design

35. Nearest store location, another variation of topk

    https://leetcode.com/discuss/interview-question/system-design/124567/Nearest-Store-Locators

    https://leetcode.com/discuss/interview-question/system-design/533061/How-to-implement-nearest-location-kind-of-functionality-in-a-google-map-type-application

    https://leetcode.com/discuss/interview-question/system-design/154172/Design-google-map-database

36. Job scheduling system

     https://leetcode.com/discuss/interview-question/system-design/124697/Walmartlabs-onsite

    https://leetcode.com/discuss/interview-question/system-design/124786/Google-Scheduling-Job-Involving-both-RAM-and-CPU

https://leetcode.com/discuss/interview-question/system-design/692996/Microsoft-System-Design-Please-help

https://leetcode.com/discuss/interview-question/system-design/553563/Googleor-Distributed-SystemorPerformance

https://leetcode.com/discuss/interview-question/system-design/344524/Amazon-or-Design-a-JobTask-Scheduler

https://leetcode.com/discuss/interview-question/system-design/124672/Implement-a-task-scheduler

37. Elevator system

https://leetcode.com/discuss/interview-question/system-design/149264/Design-an-Elevator-system

38. Malware detection system

https://leetcode.com/discuss/interview-question/system-design/1019028/FB-or-System-Design-or-Multi-Engine-Malware-Analyzer

https://leetcode.com/discuss/interview-question/system-design/150610/Design-a-malware-detection-system

39. Garbage collector

40. Google docs

https://leetcode.com/discuss/interview-question/system-design/148187/System-Design-or-Google-Docs

https://leetcode.com/discuss/interview-question/system-design/148187/System-Design-or-Google-Docs

https://leetcode.com/discuss/interview-question/system-design/208207/Design-a-Google-Sheet-System

https://leetcode.com/discuss/interview-question/system-design/349669/Google-SWE-L5-or-Onsite-or-Design-Google-Docs-Versioning-System

https://leetcode.com/discuss/interview-question/system-design/322448/Content-Management-System-Design

https://leetcode.com/discuss/interview-question/system-design/194402/Design-a-file-sharing-system

41. Ecommerce Price checker system

    https://leetcode.com/discuss/interview-question/system-design/140742/E-commerce-(Amazon)Website-looking-into-other-competitor-Website-products-prices-and-update

42. Notification system

    https://leetcode.com/discuss/interview-question/system-design/138097/Design-Notification-Service-for-Amazon-Alexa

43. Online ludo game
44. Metric monitoring service

45. Ecommerce site ,Shopping cart, product catalog, payment gateway

    https://leetcode.com/discuss/interview-question/system-design/211415/Interview-Question-Ecommerce-System-design-(-Eg-%3A-Amazon-)%3A-Concurrency-issues-handling

    https://leetcode.com/discuss/interview-question/system-design/589546/Amazon-or-System-Design-or-Amazon-Order-System

    https://leetcode.com/discuss/interview-question/system-design/675539/System-Design-question-asked-in-interview

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    https://leetcode.com/discuss/interview-question/system-design/886390/Design-Recommendation-API-or-Akamai-Interview

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    https://leetcode.com/discuss/interview-question/system-design/706038/System-Design-Payment-System-Wallet-system-Payment-gateway

46. Seller summary page

    https://leetcode.com/discuss/interview-question/system-design/124612/Phone-Interview-Question%3A-Design-an-Seller-Summary-Page

47. Customer who bought this also bought

https://leetcode.com/discuss/interview-question/system-design/124557/Amazon's-%22Customers-who-bought-this-item-also-bought%22-recommendation-system

48. Distributed key value store,

https://leetcode.com/discuss/interview-question/system-design/1120468/Design-Assignment-or-Implement-a-distributed-Key-Value-(KV)-store-or-SE-Role-Avalara

https://leetcode.com/discuss/interview-question/system-design/747591/Amazon-or-Onsite-or-System-design-or-Please-help

49. Facebook live commenting

https://leetcode.com/discuss/interview-question/system-design/583184/FBInstagram-'Live-Comments'-System-design

50. Facebook status search

51. Image editing (asked in fb 2021)

https://leetcode.com/discuss/interview-question/system-design/1077411/Facebook-or-Onsite-2021-or-System-Design-or-Design-image-editing

52. File download application system

https://leetcode.com/discuss/interview-question/system-design/1071562/Design-a-File-Download-Application-System

53. Proximity server

https://leetcode.com/discuss/interview-question/system-design/923677/Facebook-or-System-Design

54. Top N songs, another top k problem

https://leetcode.com/discuss/interview-question/system-design/124702/Design-a-service-to-calculate-the-top-k-listened-songs-in-past-24-hours

https://leetcode.com/discuss/interview-question/system-design/243604/Design-a-real-time-dashboard-showing-the-most-played-songs

55. Privacy setting at facebook
56. Distributed configuration management system

57. Design gmail

https://leetcode.com/discuss/interview-question/system-design/1014986/Google-or-Onsite-or-System-Design%3A-Design-an-Email-system-like-GMAIL

58. News reading feature in alexa

    https://leetcode.com/discuss/interview-question/system-design/1014181/Amazon-or-System-Design-or-SDE2

59. Ads click visualisation system

    https://leetcode.com/discuss/interview-question/system-design/1002923/Facebook-or-Online-or-Real-time-data-visualization-for-ads-clicks

60. IoT devices management system

    https://leetcode.com/discuss/interview-question/system-design/974890/Design-a-system-for-management-of-IOT-devices

61. Timer service

    https://leetcode.com/discuss/interview-question/system-design/973207/System-Design-or-Timer-service

62. Service monitoring and alerting system like pagerduty, azure monitor etc

    https://leetcode.com/discuss/interview-question/system-design/958919/System-Design-Interview-or-Service-Health-Monitoring-and-Alerting-Service

    https://leetcode.com/discuss/interview-question/system-design/287678/Design-a-monitoring-or-analytics-service-like-Datadog-or-SignalFx

63. Load balancer

    https://leetcode.com/discuss/interview-question/system-design/943352/Facebook-or-E5-System-Design-Interview-Question-or-Menlo-Park

64. Design undergeound system

65. Leader board table design

    https://leetcode.com/discuss/interview-question/system-design/892083/Leaderboard-table-system-design-for-online-game

Slot booking system for playarena etc

https://leetcode.com/discuss/interview-question/system-design/880581/Event-Booking-for-playarenas-Low-level-design

https://leetcode.com/discuss/interview-question/system-design/423613/Amazon-or-Phone-Screen-or-Design-Restaurant-Reservation-System

67. Food delivery app

https://leetcode.com/discuss/interview-question/system-design/874074/Food-Delivery-App-or-Low-Level-Design-or-Interview-Question

68. Online gaming lobby service

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69. URL fishing varifier

https://leetcode.com/discuss/interview-question/system-design/896312/Google-system-design

70. Design whatsapp/instagram story

https://leetcode.com/discuss/interview-question/system-design/388222/Snapchat-or-System-Design-or-Instagram-Story-Feature

71. File sharing with collaborative editing

https://leetcode.com/discuss/interview-question/system-design/838085/File-sharing-service-with-collaborative-editing-or-Amazon

https://leetcode.com/discuss/interview-question/system-design/824659/Intuit-or-Long-Poll-vs-Web-socket-vs-Server-send-Events

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https://leetcode.com/discuss/interview-question/system-design/838025/Design-a-tagging-system-like-tags-used-in-stack-overflow

https://leetcode.com/discuss/interview-question/system-design/307558/Design-Stack-Overflow

73. Tinyurls

https://leetcode.com/discuss/interview-question/system-design/838012/URL-Shortener-or-MD5-or-How-to-deal-with-collisions-or-FinTech-startup

74. Github like cloud repo

    https://leetcode.com/discuss/interview-question/system-design/837383/System-design-of-code-repository-like-github

75. Job posting site

    https://leetcode.com/discuss/interview-question/system-design/811840/Job-listing-storage-and-search

76. S3/cloud object store

    https://leetcode.com/discuss/interview-question/system-design/811503/System-design-Object-store-design-like-S3GCS

77. Celebrity timeline generation

    https://leetcode.com/discuss/interview-question/system-design/810561/Timeline-generation-for-celebrities-or-System-Design-or-Google

78. Kindle service

79. Bidding system

    https://leetcode.com/discuss/interview-question/system-design/792060/Bidding-System%3A-System-Design-Interview

80. Billing system - asked in fb interview

81. RPC system for client server comm

    https://leetcode.com/discuss/interview-question/system-design/790034/Client-Server-Communication%3A-System-Design-Interview

82. Autonomous driving system

    https://leetcode.com/discuss/interview-question/system-design/789961/Design-a-cloud-based-simulationvisualization-platform-for-a-self-driving-cars-company

83. Github code search

    https://leetcode.com/discuss/interview-question/system-design/789015/Github-%3A-Design-search-feature-in-Github-scale-code-repository

84. Car showroom

    https://leetcode.com/discuss/interview-question/system-design/785960/Amazon-System-Design-Question

85. Airport boarding gate security

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86. Social graph

   https://leetcode.com/discuss/interview-question/system-design/782906/Design-a-social-graph

87. Place of interest

   https://leetcode.com/discuss/interview-question/system-design/777945/Design-a-system-to-source-store-and-display-places-of-interest

88. Tinder

   https://leetcode.com/discuss/interview-question/system-design/774870/Tinder-System-Design-or-Online-Dating-App-System-Design

89. Grocery store

   https://leetcode.com/discuss/interview-question/system-design/769578/Amazon-orSystem-Design-or-Amazon-Go-or-suggestion-on-solution-welcome

   https://leetcode.com/discuss/interview-question/system-design/467655/Amazon-Onsite-or-System-Design-Pickup-Delivery-System-For-Groceries

90. Display ads

   https://leetcode.com/discuss/interview-question/system-design/761814/Design-number-of-ads-to-show-to-users-on-a-google-search

91. Add badge to peoples spotify account

   https://leetcode.com/discuss/interview-question/system-design/748408/How-to-design-a-system-to-add-badges-to-people's-Spotify-account

92. Xml to json conversation

   https://leetcode.com/discuss/interview-question/system-design/743624/System-design-question%3A-Amazon-SDE2%3A-Large-xml-files-to-json-conversion

93. Ocr web app

   https://leetcode.com/discuss/interview-question/system-design/741676/System-Design%3A-OCR-web-app

94. High scale otp generation system

   https://leetcode.com/discuss/interview-question/system-design/728464/Microsoft-
   or-Onsite-or-Modify-an-OTP-generation-system-to-handle-more-requests

95. Distributed counter

   https://leetcode.com/discuss/interview-question/system-design/685310/Microsoft-
   virtual-or-Design-distributed-counter

   https://leetcode.com/discuss/interview-question/system-design/277606/Design-a-
   performance-counter

96. Scan for viruses in uploaded file

   https://leetcode.com/discuss/interview-question/system-design/659875/Design-a-
   system-where-client-can-upload-a-file-and-viruses-need-to-be-scanned

97. Log processing at scale

   https://leetcode.com/discuss/interview-question/system-design/622704/Design-a-
   system-to-store-and-retrieve-logs-for-all-of-eBay

98. London travel card system

   https://leetcode.com/discuss/interview-question/system-design/617408/Marshall-
   Wace-or-Onsite-or-How-would-you-design-Oyster-(London-Travel-Card-system)tion

99. Payment system for newyork MTA

   https://leetcode.com/discuss/interview-question/system-design/305388/Design-a-
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100. Ad click counter

   https://leetcode.com/discuss/interview-question/system-design/584458/Facebook-
   or-System-Design-or-Ad-Click-Counter

101. Design slack

   https://leetcode.com/discuss/interview-question/system-design/582975/Design-Slack

   https://leetcode.com/discuss/interview-question/system-design/339849/System-
   Design-or-Slack

102. Wikipedia

   https://leetcode.com/discuss/interview-question/system-design/574872/Wikipedia-or-DBsystem-design-thoughts

   https://leetcode.com/discuss/interview-question/system-design/174380/Uber-design-question-Design-Wikipeida

103. ML related system design

   https://leetcode.com/discuss/interview-question/system-design/566057/Machine-Learning-System-Design-%3A-A-framework-for-the-interview-day

104. Windows update

   https://leetcode.com/discuss/interview-question/system-design/560512/System-Design-Question

105. People also searched for

   https://leetcode.com/discuss/interview-question/system-design/559481/Amazon-or-System-design-or-SDE-2-India

106.   Cashback processing system

   https://leetcode.com/discuss/interview-question/system-design/543041/Design-cashback-processing-system

107. Pub sub arch

108. Google or amazob book preview

   https://leetcode.com/discuss/interview-question/system-design/538295/Design-Google-Books-preview-Amazon-Books-look-inside

109. Design copy right detection

   https://leetcode.com/discuss/interview-question/system-design/530031/FAANG-Interview-Question-Design-a-copyright-detection-system

110. Reddit

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111. Facebook nearby friends

   https://leetcode.com/discuss/interview-question/system-design/430926/Design-Nearby-Friends

112. Google photos home page

     https://leetcode.com/discuss/interview-question/system-design/398523/System-Design-Google-photos-homepage

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113. Image upload system

     https://leetcode.com/discuss/interview-question/system-design/391183/Ebay-System-Design-Question

     https://leetcode.com/discuss/interview-question/system-design/390503/Google-or-System-Design

114. Facebook translator service

     https://leetcode.com/discuss/interview-question/system-design/386322/Design-a-translator-service-for-facebook

     https://leetcode.com/discuss/interview-question/system-design/318811/Google-or-System-design-or-Design-a-translation-service-like-Google-Translate

115. System for health care data

     https://leetcode.com/discuss/interview-question/system-design/368245/Design-Service-to-Interface-with-Healthcare-Data

116. Health score app

     https://leetcode.com/discuss/interview-question/system-design/366754/Amazon-or-System-Design-for-health-score-app

117. Railway reservation system

     https://leetcode.com/discuss/interview-question/system-design/364965/Railway-Reservation-System

118. Treadmill system

     https://leetcode.com/discuss/interview-question/system-design/362168/Google-or-Onsite-or-Tread-Mill-System-Design

119. Addressed of entire planet

     https://leetcode.com/discuss/interview-question/system-design/341980/Amazon-or-System-Design-or-System-to-capture-unique-addresses-in-the-entire-world

120. Gofundme

    https://leetcode.com/discuss/interview-question/system-design/336089/System-Design-or-GoFundMe

121. Shipping fullfilment

    https://leetcode.com/discuss/interview-question/system-design/320719/Design%3A-Scalable-Shipping-Fulfillment-Center

122. Flight search API

    https://leetcode.com/discuss/interview-question/system-design/309853/JSON-structure-for-Flight-search-API

123. Splitwise

    https://leetcode.com/discuss/interview-question/system-design/306519/System-Design-or-Splitwise

124. Google calendar

    https://leetcode.com/discuss/interview-question/system-design/305654/System-Design-or-Google-Calendar

125. Fb popular/trending pages

    https://leetcode.com/discuss/interview-question/system-design/305505/Design-a-most-populartrending-profiles-page

126. Courier service

    https://leetcode.com/discuss/interview-question/system-design/301423/Design-a-UPS-style-mail-delivery-system

127. Hr portal

    https://leetcode.com/discuss/interview-question/system-design/289092/Design-an-HR-web-portal-for-Amazon's-recruiting-team

128. Outlook recurring meeting

    https://leetcode.com/discuss/interview-question/system-design/286891/Design-Outlook-recurring-meeting-system-with-variable-input

129. Communication system for ecom sites

    https://leetcode.com/discuss/interview-question/system-design/286457/Design-a-communication-platform.

130. Imdb

https://leetcode.com/discuss/interview-question/system-design/270416/Design-a-movies-reviews-aggregator-system

131. Realtime event aggregator

https://leetcode.com/discuss/interview-question/system-design/270412/Design-a-Real-Time-Event-Aggregation-System

132. Gpay

https://leetcode.com/discuss/interview-question/system-design/270406/Design-a-Payment-System-like-Google-Pay

133. Top shared post

https://leetcode.com/discuss/interview-question/system-design/258398/Design-top-shared-post-system-in-5mins1-hour1-day1-week

134. Market place analytics

https://leetcode.com/discuss/interview-question/system-design/227797/System-Design-E-Commerce-Marketplace-analytics

135. Top 10 most liked articles

https://leetcode.com/discuss/interview-question/system-design/225609/Design-system-which-will-show-top-10-most-liked-articles-within-1524-hours.

136. Auth for multi tenant

https://leetcode.com/discuss/interview-question/system-design/225331/Design-authentication-system-to-multi-tenant-environment

https://leetcode.com/discuss/interview-question/system-design/202958/Multi-Tenant-Saas-Architecture

137. Design Changefeed

https://leetcode.com/discuss/interview-question/system-design/208888/Design-a-system-to-keep-track-of-changes-in-an-SQL-database

138. Track runners in marathon

https://leetcode.com/discuss/interview-question/system-design/200342/Bloomberg%3A-Implement-a-system-to-track-runners-in-a-marathon

139. Hotel booking page this many people visiting

140. https://leetcode.com/discuss/interview-question/system-design/163204/Design-%22How-Many-people-currently-viewing-the-property%22-for-a-E-Commerce-Hotel-Booking-Site

141. Text line editor

    https://leetcode.com/discuss/interview-question/system-design/124679/Implement-a-Text-Line-Editor

142. Location sharing service

    https://leetcode.com/discuss/interview-question/system-design/124673/Design-a-Location-Sharing-Android-Application

143. Build system

    https://leetcode.com/discuss/interview-question/system-design/124807/Design-a-build-system

144. Hourly backup from mobile phone

    https://leetcode.com/discuss/interview-question/system-design/124792/Design-a-system-that-can-handle-hourly-backups-for-mobile-phones

145. Google help system

    https://leetcode.com/discuss/interview-question/system-design/125191/Design-the-Google-help-system

Other Interesting Post about specific Component Design

1. https://leetcode.com/discuss/interview-question/system-design/136140/Write-a-class-which-is-hard-to-test

2. Interesting variation of ecart problem where first one who click buys will buy

   https://leetcode.com/discuss/interview-question/system-design/498895/Startup-interview-or-Designing-tricky-e-shop

3. Back of envelope calculation

   https://leetcode.com/discuss/interview-question/system-design/357656/Experience-with-back-of-the-envelope-calculations

4. Drawing tool

   https://leetcode.com/discuss/interview-question/system-design/1148896/System-Design-Drawing-Tool-Recos

5. Very good list

   https://leetcode.com/discuss/general-discussion/670355/Experienced-Interview-Preparation-Guide-All-Resources

6. https://leetcode.com/discuss/interview-question/1002218/Facebook-or-Google-or-Top-System-Design-Interview-Questions-(Part-1)

7. https://github.com/donnemartin/system-design-primer

8. https://github.com/binhnguyennus/awesome-scalability

9. Json parser

   https://leetcode.com/discuss/interview-question/system-design/1052608/Design-a-JSON-Parser-or-SDE2

10. https://leetcode.com/discuss/interview-question/system-design/1043657/MakeMyTrip-Backend-Developer-or-System-DesignMultithreading

11. https://leetcode.com/discuss/interview-question/system-design/1042229/Facebook-or-Google-or-Top-System-Design-Interview-Questions-(Part-2)

12. https://leetcode.com/discuss/interview-question/system-design/1038585/How-do-you-scale-up-an-Application-to-serve-thousands-of-request-per-second

13. User data access policy design

   https://leetcode.com/discuss/interview-question/system-design/895268/Google-or-System-Design

14. https://leetcode.com/discuss/interview-question/system-design/829466/Amazon-or-Phone-or-Seattle-or-Column-Store-vs-Row-Store

15. https://leetcode.com/discuss/interview-question/system-design/808216/Phone-book-and-search - suffix tree

16. https://hackernoon.com/scaling-websockets-9a31497af051

17. Online whiteboard drawing like draw.io

18. https://leetcode.com/discuss/interview-question/system-design/799474/Virtual-onsite-at-DocuSign

19. https://leetcode.com/discuss/interview-question/system-design/795890/How-many-transactions-does-Oracle-DB-handle-Read-and-write

20. How to store Recently viewed item

   https://leetcode.com/discuss/interview-question/system-design/775139/Amazon-System-Design-customer's-recently-viewed-items

21. Depth an interviewer can go

   https://leetcode.com/discuss/interview-question/system-design/773980/Watch-this-before-System-Design-Interview-the-details-an-interviewer-can-go-to-evaluate-candidate

22. Privacy api

   https://leetcode.com/discuss/interview-question/system-design/727474/System-design-critique-request-for-below-question

23. LLD

   https://leetcode.com/discuss/interview-question/system-design/692383/Google-or-Onsite-or-Design-a-organization-pharmacy-shop-with-managers

24. T9 predicitve system

   https://leetcode.com/discuss/interview-question/system-design/685338/Microsoft-or-Onsite-or-Design-the-T9-predictive-text-algorithm-and-system

25. Storsge of millions of subscriber

    https://leetcode.com/discuss/interview-question/system-design/680047/How-will-you-store-millions-of-subscribers-list-(assume-it-as-email-id)

26. Flipkart warehouse portal

    https://leetcode.com/discuss/interview-question/system-design/663037/Amazon-SystemDesign-Flipkart-Suggestions-Design-Warehouse-Portal

27. https://leetcode.com/discuss/interview-question/system-design/632537/Design-an-algorithm-to-efficiently-transfer-required-bytes-of-data-to-a-single-PC-on-the-network.

28. https://leetcode.com/discuss/interview-question/system-design/581804/Facebook-System-Design-Preparation - different type of design interviews at facebook

29. Count current active user on the page :

    https://leetcode.com/discuss/interview-question/system-design/557603/Postman-or-OA-or-System-Design

    https://leetcode.com/discuss/interview-question/system-design/532889/Design-a-counter-for-a-website-which-tells-how-many-visits-happened-to-that-website

30. Csv parsing at scale

    https://leetcode.com/discuss/interview-question/system-design/545664/CSV-parsing-at-scale

31. API to get best selling book

    https://leetcode.com/discuss/interview-question/system-design/535162/Design-read-api-to-get-best-selling-books

32. Fb mutual friend

    https://leetcode.com/discuss/interview-question/system-design/533810/FB-API-System-design

33. https://leetcode.com/discuss/interview-question/system-design/532089/Update-System-design-of-Amazon-to-handle-10x-times-more-traffic-than-what-it-currently-receives

34. https://leetcode.com/discuss/interview-question/system-design/513374/FAANG-system-design-interview-question

35. Sql scalability

    https://leetcode.com/discuss/interview-question/system-design/507833/SQL-Scalability

36. Backup from dc1 to dc2

    https://leetcode.com/discuss/interview-question/system-design/502522/System-design-to-backup-datacenter1-to-datacenter-2

37. Order within next 1 hour to get early delivery feature

    https://leetcode.com/discuss/interview-question/system-design/499558/Amazon-System-Design-Question

38. https://leetcode.com/discuss/interview-question/484956/design-airport-luggage-handling-system

39. https://leetcode.com/discuss/interview-question/system-design/483959/Google-onsite-(Theoretical-System-Design)

40. https://leetcode.com/discuss/interview-question/system-design/421969/Twitch-or-System-Design-Onsite-or-Design-Twitch-Analytics-Use-Case

41. Good discussion on designing SAAS

    https://leetcode.com/discuss/interview-question/system-design/385363/Design-Task-Executor-as-Saas

42. Track down bad request

    https://leetcode.com/discuss/interview-question/system-design/313117/Design-a-system-capable-of-tracking-bad-request-down-quickly

43. Facebook

    https://leetcode.com/discuss/interview-question/system-design/311825/Facebook-System-design

44. Flight landing with onerunway

    https://leetcode.com/discuss/interview-question/system-design/303745/Handling-flight-landing-requests-with-one-runway

45. Good read on data modelling

    https://leetcode.com/discuss/interview-question/system-design/295671/Amazon-or-Data-Engineer-Role-or-Database-Design-Question

46. Traffic light controller

   https://leetcode.com/discuss/interview-question/system-design/291233/Design-a-traffic-light-controller

47. Live streaming view count

   https://leetcode.com/discuss/interview-question/system-design/284232/Livestreaming-view-count.

48. Random number generator for a slot mschine

   https://leetcode.com/discuss/interview-question/system-design/281762/Microsoft-or-Design-a-random-number-generator-for-a-slot-machine

49. Company badge system

   https://leetcode.com/discuss/interview-question/system-design/279371/Design-a-badge-system

50. API gateway with graphql

   https://leetcode.com/discuss/interview-question/system-design/255282/Design-API-gateway

51. Good read on scaling

   https://leetcode.com/discuss/interview-question/system-design/250803/Large-amount-of-query-request-in-seconds.

52. https://leetcode.com/discuss/interview-question/system-design/249988/How-to-Transfer-1-GB-of-data-from-one-microservice-to-another

53. https://leetcode.com/discuss/interview-question/system-design/234311/Celebrity-Twitter-hack

54. Amazon locker

   https://leetcode.com/discuss/interview-question/system-design/233869/Design-Amazon-Locker-system

55. Upload large file

   https://leetcode.com/discuss/interview-question/system-design/224398/Algorithm-for-upload-large-file

56. Currency conversion

    https://leetcode.com/discuss/interview-question/system-design/216912/Design-an-app-that-converts-USD-to-another-country-currency.

57. Geohash

    https://leetcode.com/discuss/interview-question/system-design/203364/How-to-retrieve-addresses-based-on-Latitude-and-Longitude

    https://leetcode.com/discuss/interview-question/system-design/124568/How-to-design-a-system-to-retrieve-address-information-longitude-and-latitude-information.

58. Strategy to update sattelite firmware

    https://leetcode.com/discuss/interview-question/system-design/198761/Updating-Satellite-Frimware

59. Design card deck

    https://leetcode.com/discuss/interview-question/system-design/194663/Design-a-class-that-represents-a-deck-of-cards

60. Send large files

    https://leetcode.com/discuss/interview-question/system-design/193953/Distribute-binary-file-(daily)-for-thousands-of-servers

61. Extract json from a text file

    https://leetcode.com/discuss/interview-question/system-design/191944/How-to-extract-JSON-object-from-a-text-file-of-size-100-GB

    https://leetcode.com/discuss/interview-question/system-design/177823/How-to-track-overall-activity-time-of-every-user-efficiently

62. Design video pause functionality

    https://leetcode.com/discuss/interview-question/system-design/177327/Video-pause-functionality-for-multiple-devices

63. https://leetcode.com/discuss/interview-question/system-design/172809/Sync-front-end-with-back-end-in-realtime

64. Push/pull API for producer consumer

    https://leetcode.com/discuss/interview-question/system-design/158701/Design-push-and-pull-APIs-for-a-producer-consumer-system

65. HA for webproxy

    https://leetcode.com/discuss/interview-question/system-design/134797/HA-for-HTTP-proxy

66. Alarm app

    https://leetcode.com/discuss/interview-question/system-design/133426/Microsoft-Mobile-app-for-alarm

67. Snake and ladder

    https://leetcode.com/discuss/interview-question/system-design/132140/Design-online-multiplayer-snakeandladder-game

68. https://leetcode.com/discuss/interview-question/system-design/124858/First-non-repeating-word-in-a-file-File-size-can-be-100GB.

69. Store extremely large parse matrix

    https://leetcode.com/discuss/interview-question/system-design/125306/How-to-store-extremely-large-sparse-matrices

70. Implement mine swipper

OOPs Design :

https://github.com/tssovi/grokking-the-object-oriented-design-interview
https://github.com/savitansh/SystemDesignInterview

https://leetcode.com/discuss/interview-question/system-design/943886/Facebook-Product-Design-Questions

https://github.com/checkcheckzz/system-design-interview

GitHub - donnemartin/system-design-primer: Learn how to design large-scale systems. Prep for the system design interview. Includes Anki flashcards.

Drawing tool

https://leetcode.com/discuss/interview-question/system-design/758105/Remote-system-design-diagram-drawing-tool

Other Informative Posts :

If you are looking for interview perspective, you need to gain knowledge about distributed systems.

To start with, to simplify it,

For a Simple Application

Input --> Processing --> DataStore --> Processing/Output

For Distributed Systems [I wrote considering for System Design interview]

Following contains quick overlook about the list that need to have for basic understanding.

1. Input / Output :

   Communication[Rest, grpc, WebSocket, tcp/udp, webRTC], API Gateway, Proxy Server, Load Balancing -- [Reverse Proxy]

   Message Queue -- [Queue for sending/receiving information] Kafka/RabitMQ

2. Processing

   Computation -- Micro-service [Python, Springboot/Java, Go...], MapReduce

   Service Discovery/Registry -- [Finding and Redirecting the load, Saga Pattern] -- Eg: Eureka

3. Datastore/Distributed Consensus

   Cache -- [Simple Cache to reduce database hits] -- Eg: Redis

   SQL -- [SQL database for Relational Data -- Transactions based like payments, Horizontal Partition/Vertical Partition, Shading] Eg: MySQL

   NOSQL -- [NOSQL for querying documents like product, product details, CAP] Eg: MongoDB/Apache Cassandra

   Concurrency -- 2 Phase Commit, 3 Phase Commit, Saga Pattern[Choreography saga, Orchestrator Saga], Split Brain problem.

   FileSystem -- Hadoop File System

4. Security

   AAA -- Authentication, Authorisation, Auditing

Misc -- Logging/Notification

Once you have overall picture in your mind, you can start with YouTube videos like Gaurav Sen or Tech Dummies.

Product Design :

The product design interview at Facebook will involve designing a product or API to support an end-user experience. Here's a list of concepts that Facebook recommends you review before your interview :

- Scalability
- Design patterns
- Data ownership
- Protocols
- Data formats
- Client-server design
- Designing for long term vs. complexity
- Accommodating possible product changes

Some example questions involve designing a product API or an email server.

System Design

The system design interview at Facebook will ask you to design considerations for complex problems.

Here's a list of concepts that Facebook recommends you review before your interview :

- Concurrency (threads, deadlock, starvation, consistency, coherence)
- Caching
- Database partitioning, replication, sharding, CAP Theorem
- Networking (IPC, TCP/IP)

Real-world performance (relative performance RAM, disk, your network, SSD)

- Availability and reliability (types of failures, failure units, how failures may manifest, mitigations, etc.)
- Data storage and data aggregation
- QPS capacity/machine estimation (back of the envelope estimates), byte size estimation

Some example questions involve architecting a video distribution system or designing a mobile image search client.