

The dates are in descending order. Each time we choose a topic, one or more volunteers design this system. If you have a good topic to discuss, please let me know. We follow the pattern in actual interviews without a time limit.

8/21

Continue designing the bidding system.

[The same whiteboard](#)

8/14

Redacted

[A new whiteboard](#)

8/7

Continue the design of the seat booking and locking system

[The same whiteboard](#)

7/31

Redacted

[A new whiteboard](#)

7/24

[Loyalty system](#)

[A new whiteboard](#)

7/17

Topic redacted

[A new whiteboard](#)

7/10

[Build an in-process Background Job Service](#)

[A new whiteboard](#)

~~6/26~~ 7/3

Continue the optimization of AI agent for shopping

[The same whiteboard](#)

6/129

Build an AI agent for shopping

[Link1](#)

[Link2](#)

[A new whiteboard](#)

6/5

45 min. I will choose an interviewer and pass a secret requirement. A candidate will try to clarify the requirement and write an API design.

15 min. Retrospect.

[A new whiteboard](#)

5/29

Design a system with [a vague requirement](#)

[A new whiteboard](#)

5/8

Design a web crawler on wiki (6M pages) again.

[A new whiteboard](#)

4/17 and 5/1

[Design a google drive](#)

3 billion users

Max 750GB upload per day.

On average, user store 10 GB data

12000 queries per 60 seconds

[A new whiteboard](#)

4/10

Design a price tracking systems for stock tickers. The requirement was to allow users to subscribe to stocks and notify them when stock price movement exceeded a DELTA value.

([source](#))

Ref: [limit order](#)

User: 20 million users

Securities: 10000

[A new whiteboard](#)

A new whiteboard

4/3

Design a idempotency subsystem for payment.

[The same whiteboard](#)

3/27

Payment system

Account: 200million

Transaction: 25 billion/year

Warehouse system

[A new whiteboard](#)

3/20

[Design a book store](#)

100/sec purchase, 500 million product types

Books are limited

How to make sure the payment is valid?

[Paypal api](#)

[A new whiteboard](#)

3/6

Design a twitter and show [top popular tweets](#) for users.

DAU: 200 million

Day: 100000sec

Post: 5000/sec

[A new whiteboard](#)

2/27

Design [a job scheduler](#) to handle 10 billion jobs every 5 days.

[A new whiteboard](#)

2/20

Design an authorization system like [Entra ID](#) that supports [RBAC role](#)

[A new whiteboard](#)

~~4/30~~ 2/6

Continue finalizing the database design for the bidding system.

[The old whiteboard](#).

1/23

Meetup entry expires

1/16

New format:

In this session, I will pick up some interviewers and some interviewees talking about the remaining part of the bidding system.

[The old whiteboard](#).

1/9

Continue the discussion of the taxi system

Question:

- How to handle the rider updating his location
- How to accept an order from rider

[The old whiteboard](#).

1/2

[Deep dive]

Design a taxi system for drivers and riders.

[A new whiteboard](#)

12/19

[Deep dive] Design a geo-based business search system

See questions on [the whiteboard](#)

~~Design an Uber system.~~

12/12

[Formal format] Design a geo-based business search system

10 million daily active users, 10 queries on average per person

10 million business.

Each query returns top 10 closest businesses.

[A new whiteboard](#)

12/5

[Formal format] Design a rate limiter by user ip

Requirements:

1 million requests per second across 100 million daily active users.

[A new whiteboard](#)

11/14

Host our messenger application in a k8s cluster, including database

[The same whiteboard](#)

~~10/24 10/31~~ 11/7

[Deep dive] Design a whatsapp

[The same whiteboard](#)

10/17

[Formal format] [Design a whatsapp](#)

Support 1:1 real-time messaging between users. Text only

Store and retrieve chat history for each user on the server.

[optional] Show online/offline status and last seen time of users.

DAU: 500 million. Each user sends 10 messages daily on average.

[A new whiteboard](#)

10/10

[Deep dive] Continue the design of an autocomplete system

Design the API

Design the data storage

[The same whiteboard](#)

10/3

[Deep dive] Design an autocomplete system

[The same whiteboard](#)

9/26

[Formal format] Design [an autocomplete system](#)

100 million daily active users

Each user makes 20 queries a day

Search data should be updated daily

170 thousand words in english

[A new whiteboard](#)

9/19

[Deep dive] Design an authentication service

Design the endpoint and database

[The same whiteboard](#)

9/12

[Formal format] Design a authentication service

User: 5 billion active users. 1000 requests per seconds for a refresh login. External API can query if a user is authenticated by 1M/s

[A new whiteboard](#)

9/5

[Deep dive]Design a news feeding system

New requirements: The user can only view 10 latest posts from subscribed users since the subscription. There are users that are subscribed by many other users.

Scale the system.

[The same whiteboard](#)

8/29

[Deep dive]Design a news feeding system

Design the storage

[optional] Scale the system.

[The same whiteboard](#)

8/22

[Formal format] Design a news feeding system

Feature: 100M users. Each user posts 1 post/day and subscribes 10 others. Text length is 1K.

Optional: Some users are subscribed by 100M users.

[whiteboard](#)

8/1

[Deep dive] Design a monitoring system

Data: 2M events/second

[Whiteboard](#)

~~7/11-7/18~~ 7/25

[Formal format]Design a monitoring system. Like in [prometheus](#)

Data: 2M events/second

Scenario: metric is collected from everywhere and we need to monitor the health of the system.

Rules are unknown. High availability is required.

[whiteboard](#)

6/27

Deep dive:

Persistent layer of a blob storage system.

[whiteboard](#)

6/20

A storage system

In regular interview format: 45 min

[whiteboard](#)

6/13

A storage system to store videos

Existing tables in Cassandra like db:

- Video metadata and chunk list

Each video is split into small chunks

Same [whiteboard](#)

6/6

Load balancing of video streaming

Same [whiteboard](#)

5/30

Video streaming

10 million hours videos being watched per day in different areas

10 hours video per minute being uploaded

Average video is 10 min long

Auth is optional

[whiteboard](#)

5/16

Rate limiting

Limit: ~40k/s or ~6G/s per region (10k active users)

[whiteboard](#)

5/9

Web crawler

Feature: Searching text in the downloaded wiki

[Same whiteboard](#)

~~4/23~~ 5/2

Failure scenarios:

- Fail to fetch the content
- Fail to parse the content

Scale

- Assume 10 billion pages on wiki

[Same whiteboard](#)

4/16

Design a web crawler on wiki (6M pages). [Some common system designs](#)
Operation: read and search (optional)

[Whiteboard](#)

4/11/2025

Upload API design

Or [restaurant dashboard](#)

[Whiteboard](#)

4/4/2025

Blob storage

40k requests/sec

One single region

No modification. Appending is optional

[Whiteboard](#)

3/28/2025

Unique ID generator

[30M](#) unique ID per second used in a logging system.

[Whiteboard](#)

3/21/2025

Consistent hashing in sharded database nodes

data: 100TB->600TB

Db record: key, value pair

zookeeper: available

Operation:

Routing

Add additional node/remove bad node

virtual node is optional

[Whiteboard](#)

3/14.2025

~~Unique ID generator~~

~~[30M](#) unique ID per second.~~

DB sharding of url shorter

[Whiteboard](#)

3/7/2025

Continue designing the url shorter system

We have the estimation of the size and we will draw the diagram between different components.

[Same whiteboard](#)

2/28/2025

Design a url shorter system

10k read requests/second, 1k create/delete requests/second for next 10 years, 0 update requests. Up to one day sync is required

high available

(optional) rate limiting

[whiteboard](#)

2/21/2025

Follow up on telephone directory system

How to design a query subsystem

[Same whiteboard](#)

2/14/2025

Design a telephone directory system

1 billion queries per day

1 million entries

[Whiteboard](#)

1/24/2025

Design an advertisement system

1K customers

10 billion/day clicks

The customer wants to know how much to pay

[Whiteboard](#)

1/17/2025

Design an incident management system.

Active user: 100m

[Whiteboard](#)