

Job Interviews

Frontend System Design Interview

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Jun 22

One topic I haven't been able to find much study info about is frontend system design interviews. Most resources focus on general systems design which typically has a heavy backend focus. I'm looking for details on what is expected from a systems design question with frontend focus and how best to prepare.

Front-end

System Design

Interview Preparation

Questions

1. How should I prepare for frontend system design interviews and which areas I should focus on?

50 words minimum.

2. What kind of questions can I expect in frontend system design interviews?

50 words minimum.

3. What are the signals that an interviewer will look for?

50 words minimum.

2 Answers

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1. How should I prepare for frontend system design interviews and which areas I should focus on?

For online resource I don't think there's any specific pages you can look at for frontend system design, but a few things you should look into: JS specific knowledge (for web development, unless you don't use JS), Android/iOS specific knowledge (if you are doing Android or iOS), DOM, accessibility, load balancing (not to detail, but at least understand how it works), how HTTP works/how does server handles request, etc.

2. What kind of questions can I expect in frontend system design interviews?

Some example questions:

1. How does closure works in JS
2. how to design mobile/tablet friendly websites
3. how to build accessible web apps (ARIA)
4. event and event propagation in DOM
5. how to implement infinite scrolling
6. how to speed up the start-up time for certain populat websites (like FB, Instagram, etc)
7. How to handle large traffics

3. What are the signals that an interviewer will look for?

We want to know that you have a good understanding of how the frontend and backend work together. So you need to know not just how to write the HTML/CSS and some basic JS, but you also need to demonstrate that you know what actually happened when use clicked on a button, that an event is fired, your frontend JS code handled it and maybe sent a request to your server, and you know how to write the server code that handles this request.

A Anonymous ★★★★★

Good info on topics to prepare and what signals interviewers are looking for

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1. How should I prepare for frontend system design interviews and which areas I should focus on?

You should prepare topics like:

SPA vs non SPA ,ES6 and promises, GraphQL vs REST

How to unit test everything and how to organize your code so it's all unit testable. JS event loop, microtask, macrotask, requestanimationframe, etc.

React/one way data flow/shadow DOM vs regular DOM manipulation

How to organize multiple inflight async actions (debouncing, queues, etc)

Component architecture and organization including composability

2. What kind of questions can I expect in frontend system design interviews?

build a complex component like:

a kanban board,

a typeahead component,

a twitter feed,

a wizard,

etc.

and so you should know how to break it down into separate components and how to create separation of concerns such as how to organize the async request handling.

In general frontend architecture is MVC and you don't need to worry about hardware, dbs, resource allocation, load

balancing, api design, etc.

3. What are the signals that an interviewer will look for?

Mistakes to avoid or what interviewer looks for:

don't jump into answering. Ask questions!! clarify and make it more clear about the situation you are designing for and all check all the constraints or state your assumptions and then start answering.

Grab common interview questions and spend at least one day for each question doing the following:

- The question is usually vague at the beginning. You need to come up with constraints and requirements by yourself. Also think about how different constraints change your approach
- List all components of the system and write down details on how you implement them. You have to be very specific such as how the API looks like and when to call what. Basically you need to write down a system that actually works
- Verify your system by run through some scenarios. If a specific scenario happens, how each component of your system works and talks to others
- Not only think about what works, think about common mistakes and what doesn't work for each part of your system.

A Anonymous ★★★★★

Great answer, this definitely gives me some clarity!

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