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CSCI 5709

L8 Activity

Chinmaya Garg 02:37 Edited

Discussion: Front-End Development

Why Front-End Development is Complicated

1. **Rapid Technological Changes:** Constantly evolving frameworks and tools require continuous learning.
2. **High Expectations:** Demands for fast, interactive, and maintainable web apps drive complexity.
3. **State Management:** Managing application state effectively requires advanced solutions like Redux and Context API.
4. **Dependencies and Tooling:** Tools like Webpack and Babel are essential but add maintenance overhead.
5. **SEO and Performance:** Ensuring SEO and performance involves techniques like server-side rendering and code splitting.
6. **Web Evolution:** Increasing complexity to match mobile app features and engagement.

Suggestions for Beginners

1. **Master Fundamentals:** Strong foundation in HTML, CSS, and JavaScript.
2. **Start Simple:** Begin with easier frameworks like Vue.js.
3. **Learn Version Control:** Proficiency in Git is crucial.
4. **Focus on State Management:** Understand basic state management before advanced tools.
5. **Stay Updated:** Follow industry news and tutorials.
6. **Build Projects:** Apply knowledge through practical projects.

Most Important Aspect Today

User Experience (UX): Prioritize seamless, fast, and responsive user interfaces across all devices. Understanding UX principles and performance optimization is crucial.

Front-end development's complexity stems from evolving technologies, high performance and interactivity demands, and the need for effective state management and tooling. Mastering fundamentals, starting with simpler tools, and focusing on user experience are key strategies for success.

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Fig 1: Post in Discussions for Discussion on Front-End Development

Vineeth Gudipalli Yesterday 08:55

Discussion: Front-End Development

1. Why do you think Front-End Development is complicated?

EVERYONE HAS THEIR OWN PERSPECTIVES!!

The biggest challenge in designing/developing UI would be to satisfy the needs of the client/customer or sometimes even the manager or your teammates. It takes a whole lot of deal to find the middle ground of not having animations but we need animations. Sometimes designers get creative only to make the developer's life miserable *(just kidding)*.

Not spending enough time on the requirements and the design is another challenge. When the team is small and the deadline is short, we tend to say, "We'll see when it happens" and miss out on many possible scenarios, only to redo the work later. Coz at the end of the day, your customer first pays you for what they see.

Another challenge is the integration with the server. Just knowing the front end wouldn't help if we're not able to deal with handling the data.

2. What are some suggestions you'd give to anyone starting out with Front-End Development Frameworks?

In all truth, although there may be new technologies or "stacks" that keep growing from the "root" *(See, what I did there?)*, if the fundamentals are not strong enough, we'd be so dependent on the tool. I believe, that knowing how to structure a proper HTML *(while there are millions of memes saying that HTML is a joke, it's what the Web stands on)* and writing our own CSS, is quite essential to mastering a framework and maybe even contributing to a framework or better, have your own framework.

In this fast-paced world, we tend to jump into the frameworks before we understand the fundamentals. My suggestion would be to get a grasp of the basics before making your life dependent on a framework/library.

My other suggestion would be, to make a practice of going through the official documentation. Yes, they're lengthy and boring, but that gives you a lot of insight into how the framework works so that later you can configure it in the way you need it.

And at last, when you're starting out on a new framework, DO THE FRAMEWORK not learn/study the framework.

3. What do you consider the most important aspect of Front-End Development nowadays?

Having quick response time. Although it's the work of the server, the user wants something on the screen while they're waiting. It could be a loader, a placeholder, or even a game. Keeping the user engaged to stay on your page while you get the data that's required, is a challenge to consider.

SECURITY! The login page may seem like the easiest thing to do until the user tries to open another tab/window and tries again. Until they try to open it again on the other browser. The way we save personal information on the client side should be safe enough to not be misused by an impersonator.

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> **Lam Tieu** 02:08
> Amazing insights! I think you really identified the struggles of hitting the deadlines and satisfying customers' requirements. Sometimes there are tradeoffs that we need to consider when working with customers. Also security is a must-have aspect to protect users' identities.

> **Chinmaya Garg** 02:43
> Great points, Vineeth! You've effectively highlighted the practical challenges of front-end development, from balancing client needs to ensuring security and performance. Your emphasis on mastering the fundamentals and engaging with official documentation is especially valuable for new developers.

Fig 2: Comment on Vineeth Gudipalli's discussion

MD Samshad Rahman 02:37

Discussion: Front-End Development

Why is Front-End Development Complicated?

Front-end development is definitely complex, and I think it boils down to a few key factors:

1. First of all, since design must be user/human centered, I believe we all experience psychological challenges. When designing an interface, we need to consider not only how efficient and fast the system runs, but also how intuitive and simple it is for the user. Most of the time when we work on the front end, we may subconsciously think about the design from our own perspective. However, we need to change that perspective to the opposing side, which is the user's perspective. In my opinion, this is a significant challenge for front-end developers.
2. The rapid evolution of technology is one of the most difficult challenges. Just as wed get comfortable with one framework or tool, another one appears. This constant change requires front-end developers to constantly learn and adapt, which can be overwhelming at times.
3. Modern front-end development requires a large number of tools and dependencies. Webpack, Babel, and other libraries provide useful features, but they also complicate project setup and maintenance. Keeping track of all these tools and ensuring they work well together is a massive task at hand.

Tips for New Learners like Me

Here's what I'd recommend:

1. Master HTML, CSS, and JavaScript before diving into frameworks. These are the foundational components of everything we'll do. With strong fundamental knowledge, the language-specific learning curve becomes more manageable, making it easier to dive into new frameworks.
2. According to the article, ReactJS is popular for a reason, and it appears to be a good place to start. The article also includes a handy roadmap to help you learn step by step.

Most Important Aspect of Front-End Development Nowadays

I believe that the most important aspect of front-end development today is to provide a seamless user experience. This includes not only making the app visually appealing, but also ensuring that it works well across multiple devices, loads quickly, and provides a smooth, engaging experience. Today's users have high expectations of web apps, and meeting those expectations requires an in-depth knowledge of modern frameworks, performance optimization techniques, and web design best practices.

For more user-centered design, we can apply Norman's 7 design principles (Discoverability, Feedback, Conceptual Model, Affordances, Signifiers, Mappings, Constraints) [1], which can have a significant impact on front-end design and make the user experience exceptionally pleasant.

References:

[1] Norman, Donald A. 2013. The Design of Everyday Things. Cambridge, MA: The MIT Press.

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Chinmaya Garg 02:42
Great insights! You've highlighted the psychological and technical challenges of front-end development well. Your tips for new learners and focus on user experience are spot on.

↩ Reply

Fig 3: Comment on MD Samshad Rahman's discussion post