

# CHALLENGES FACED BY PROGRAMMES

## Literature Study

---

**What are the challenges faced by programmers in designing a modern and user-friendly portfolio website? And what do I need to take into account from them?**

### Question Reasoning

I asked this question to know what possible difficulties I might face in the process of creating the portfolio. Defining them before can help me to tackle them later if they happen.

### Method selection

A. Library: Literature Study.

### Method reasoning

The decision to use Literature Study was from the intention to understand potential obstacles during the portfolio development. Identifying these challenges can help me with insights to address issues in a better way.

## Method Setup

I begin by identifying keywords like "web design challenges," "web design challenges for creating a portfolio," and "web development issues" using reputable sources like established web development blogs, academic journals on UI/UX, and insights from experienced designers in online communities like medium. I found an article named "What are the 9 Biggest Web Development Challenges and Solutions to Tackle Them?" by Hardik Shah from Simform, published on March 11, 2022. I assessed its credibility by knowing that Hardik Shah has been last 10+ years into consumer and enterprise mobility, working more than 15 years in Simform company.

## Results

There are several challenges that can be faced in web development when implementing the latest web design trends. These challenges include:

1. **Browser Compatibility Challenge:** Ensuring website elements or specific languages work on all browsers, especially legacy ones like Internet Explorer, where Microsoft ceased its services after the date of June 15th, 2022. It was suggested handling DOCTYPE errors, validating HTML and CSS, and countering layout differences as solutions.
2. **User Experience Challenge:** Balancing user expectations and responsive web design. This challenge is compounded when different teams handle UI design and frontend development separately. User research is essential, but can be resource-intensive. Solutions involve user research, online surveys, guerilla research, and parallel design to create user-centric designs.
3. **Tech Stack Challenge:** Choosing the right technology stack for web development solutions includes researching the latest technologies, considering project requirements and team capabilities, leveraging community support, and ensuring future maintainability. The dynamic nature of technological choices can make decision-making challenging.

4. **Defining Project Goals Challenge:** Setting clear and specific goals for web development projects. Solutions involve creating a comprehensive project strategy, effective communication, and using project management software.
5. **Performance & Speed Challenge:** Meeting the high expectations of website loading speed, with 47% of users expecting pages to load in two seconds. This challenge involves optimizing various elements, including code, images, and plugins, and measuring performance through tools like Lighthouse's Core Web Vitals.
6. **Scaling Websites Challenge:** Scaling websites to accommodate increasing traffic while maintaining performance. Scaling is not solely about adding more resources, but also addressing architectural complexities. This challenge encompasses dealing with issues related to search, concurrency, consistency, and speed.
7. **Security Challenge:** Safeguarding websites against vulnerabilities and cyberattacks, especially considering that a significant portion of web applications remain susceptible to high-risk vulnerabilities. Common vulnerabilities include injection flaws, broken authentication, and more, posing a constant threat.
8. **Third-party Integration Challenge:** Integrating third-party services securely and efficiently. This challenge entails bridging technological differences between service providers and the website's architecture. Outdated APIs can become potential vulnerabilities if not updated and customized properly.
9. **Maintenance & Support Challenge:** Managing and maintaining websites after launch, addressing issues like unresponsive pages, security, and performance problems. Maintenance can be complicated, especially when dealing with complex dependencies and ensuring zero downtime during upgrades.

These challenges were represented in “What are the 9 Biggest Web Development Challenges and Solutions to Tackle Them?” article by Hardik Shah (March 11, 2022).

## Conclusion

In conclusion, the found article addressed 9 whole problems that could be faced in developing, maintaining and updating websites. The challenges are browse compatibility challenges , the user experience challenges, the tech stack challenges, the project goal definition challenges, the performance and speed challenges, the scaling websites challenges, the security challenges, the third party integration challenges and the maintenance and support challenges.

However, not all these challenges are estimated to affect me due to some reasons among them that the websites I am building is being built by me only, the website dos not need that much security, if it needs update and maintains there are no big deflects because it does not depend on important life-threatening data, and the website is simply to showcase the work during the semester and my curriculum vitae(CV).

On my opinion, most of these problems can be solved using the right tech stack. However, the scaling websites challenge might need me to draw a C4 model to insure a correct way of addressing architectural complexities. While for the security challenge, I need to hide the 3 private codes I will be using for receiving emails using the emailjs platform.

## The Reference

---

1. What are the 9 Biggest Web Development Challenges and Solutions to Tackle Them?  
Hardik Shah, March 11, 2022;  
<https://www.simform.com/blog/web-development-challenges/>