

Integrating Modern Front-end Methodologies and Workflow in the Context of E-commerce Systems

Fayjus Salehin
 Degree Programme in Information Technology, Option of Internet Services
 Bachelor's Thesis, 15 credits

The background and aim

The thesis was commissioned by Vaimo Finland Oy, an omnichannel e-commerce solution provider. The thesis aimed to improve the development cycles and overall quality and efficiency of delivering e-commerce solutions. During the thesis, modern front-end development methodologies and development workflow were investigated in the context of e-commerce platforms and later integrated within a project. The purpose and the related goals were approached both theoretically and practically in the thesis.

Modern state of web front-end

The potential of modern web front-end was investigated, and a reference architecture was established to actualize that potential. It was found that most uprising e-commerce front-end platforms have some shared characteristics and elements within their architecture, which makes them both developer-friendly and fast for development. These elements and their impact on front-end development and workflow have been further investigated before the implementation was attempted.

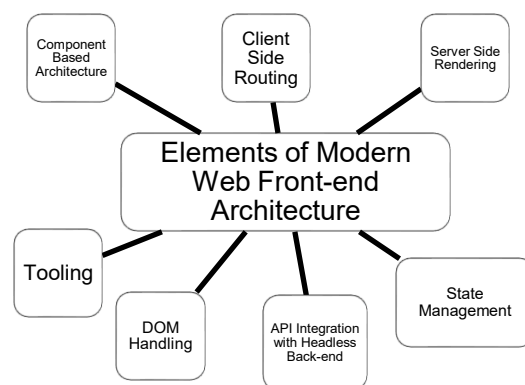


FIGURE 1. Elements of Modern Front-end

Existing platforms

There were many open-source front-end e-commerce front-end platforms available to choose as the base of the implementation. Among them, Vue Storefront had the most significant number of live projects and the highest community involvement. Thus, The implementation in this thesis used Vue Storefront as the Headless PWA platform.

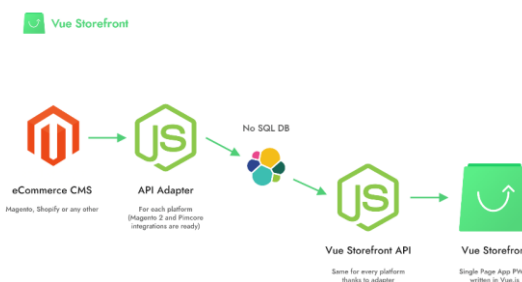


FIGURE 2. Vue Storefront Architecture (1)

Implementation

As part of the implementation, a Vue Storefront theme was initialized, A custom reusable component (HorizontalMenu) was created.

The publishing procedure of modules has been investigated and documented; also External modules that are created for Vue Storefront were used.

Benchmarking and evaluation

During the benchmarking and evaluation process, it was discovered that despite having excellent accessibility, best practices, SEO, and PWA scores, Vue Storefront and the solutions built upon it, lacks in performance compared to the demo projects from its competitors. Since the platform itself throttles the potential of achieving a high-performance score, it could be highly recommended for future projects to start with an initial performance budget.

Result

The thesis established that it is possible to integrate modern front-end methodologies such as Headless Architecture, PWA, and Design System into traditional e-commerce systems and adapt to proven front-end practices, that have the potential to amplify satisfaction for both clients and development teams.

References

1. Kwiecień, Aleksandra 2018. Vue Storefront, a powerful PWA frontend for various eCommerce platforms. [Web log post], November 27, 2018. Cited 18.12.2019, <https://divante.com/blog/vue-storefront-integrated-platforms/>.