

# REACT SERVER SIDE RENDERING

# Understanding Server-Side Rendering (SSR)

- Server-side rendering involves rendering React components on the server and sending the HTML to the client.
- Unlike client-side rendering (CSR), where the browser handles rendering, SSR provides:
  - **Faster Initial Load:** The browser receives a fully-rendered HTML page.
  - **SEO Benefits:** Content is available for search engine crawlers immediately.
  - **Improved User Experience:** Users see content sooner, even on slower connections.

- SSR can provide a better experience for users with slower internet connections or devices with limited memory and processing power by performing the initial rendering of components on the server.
- SSR in React can improve page load times by eliminating unnecessary roundtrips between client and server.
- Server Side Rendering, compared to Client-Side Rendering is that it helps ensure consistency across different browsers;

# Advantages

- SSR provides faster initial page loads because all the necessary data is already rendered on the server before being sent to the client's browser.
- By having most parts of your application already rendered ahead of time you effectively eliminate any potential lag times while waiting for components or sections within an app/site.

# Disadvantages

- React offers great performance benefits compared to others when using SSR correctly, it still cannot match native mobile apps in terms of speed and responsiveness due largely in part because those apps run entirely locally so they don't need any sort of network connection at all times like webpages do.
- SSR increases complexity within an application by introducing separate layers of code needed for both server-side rendering and browser-side scripting.
- SSR requires additional infrastructure, time, and effort during development to support it properly. This isn't necessary when building a standard website since all content can be rendered on the client side through HTML or JavaScript code.

# References

- <https://thenewstack.io/how-to-build-a-server-side-react-app-using-vite-and-express/>
- <https://dev.to/yugjadvani/mastering-server-side-rendering-ssr-in-react-19-with-vite-the-ultimate-guide-for-developers-4mgm>