

# Pre-Rendering

SSG and SSR using one of the most popular React frameworks

Daniel Latimer



# Review: SPAs

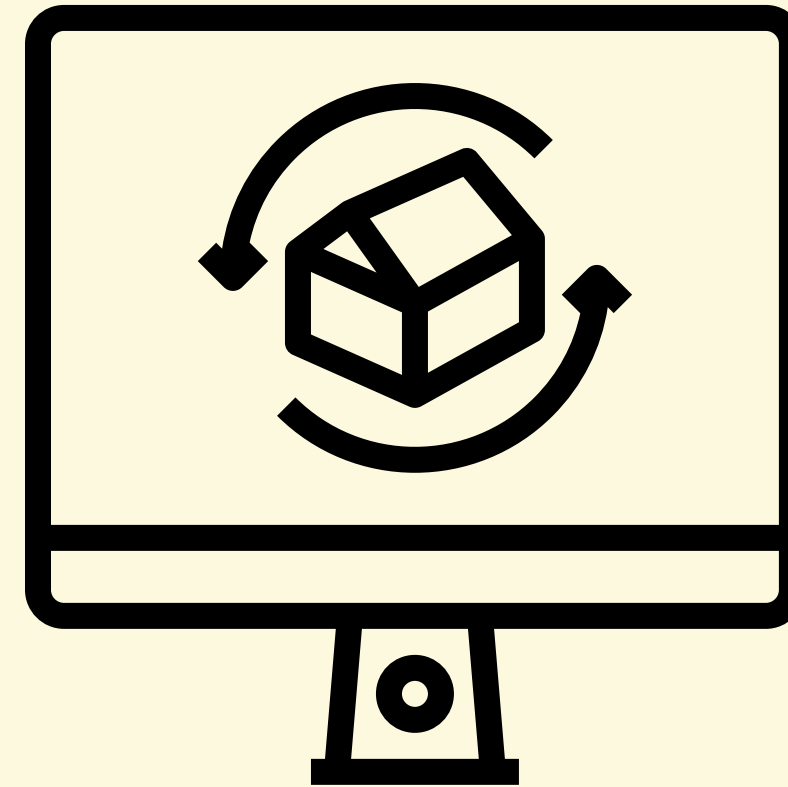
- Single Page Apps (SPAs) are a kind of web application where you only download a single HTML document.
- Rather than using the browser to navigate through pages, you use JS to request and handle responses without leaving the page.
- Advantages:
  - Faster **post-load** performance – makes it feel quite natural.
  - Can do near-instantaneous transitions between pages.
- Disadvantages:
  - Poor initial load time.
  - Browser support may vary.
  - **Terrible SEO.**



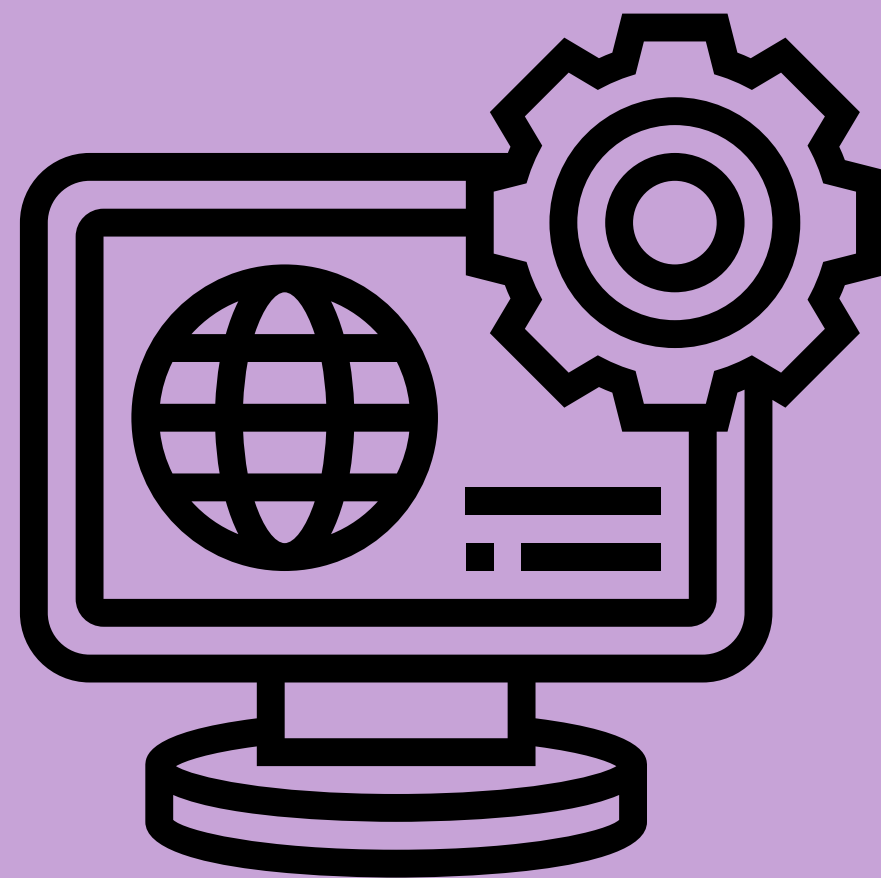
# Review: SPAs

- Search engine optimisation (SEO) basically means how well web crawlers understand the contents of a website.
- A good SEO means your website will be ranked higher in search engines – which is important for any business in gaining exposure.
- For an SPA, the default HTML document is empty and the "pages" in the website haven't been rendered by JS yet.
- This makes an SPA bad for crawlers, as they will miss important details in the website.

- Solution that allows web crawlers to understand an SPA.
- Pre-rendering involves generating the HTML for each page in advance, instead of having the browser do it.
- Generated page includes minimal JS needed for that page. On page load, the JS runs and makes the page fully interactive (this is called **hydration**).
- Gives us better performance & SEO!
- Two types:
  1. Static site generation (SSG)
  2. Server-side rendering (SSR)



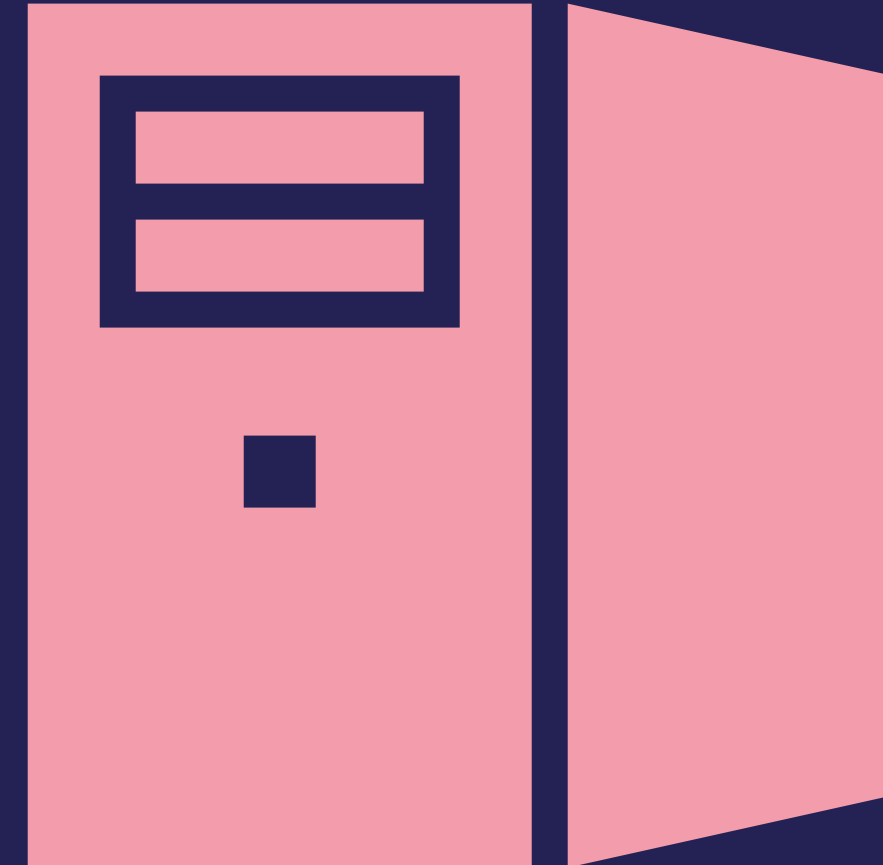
# Pre-rendering



# SSG

- Static site generation (SSG) involves pre-rendering at **build time**.
- Effectively, the HTML pages are created once and can be distributed to CDNs from there.
- You should use static generation as much as possible. One build can serve multiple user's requests.
- If the page depends on external data before it is populated, there are methods available that still enable you to pre-render the page with SSG (we'll see this later on).
- Only case you wouldn't use SSG is when external data is frequently updating (e.g. a news API that updates every hour). In this case, you would either have the client render the page or use SSR.

- Server-side rendering (SSR) involves pre-rendering on each user request.
- This means that every time a page is requested, it will go through the pre-rendering process.
- SSR is slower than SSG because one pre-rendered page will only serve one user request.
- Only use SSR when absolutely necessary! (Meaning you won't need to use it often, if at all)



# SSR



# Next.js

- Next.js is a very popular React framework that has pre-rendering by default.
- You are able to decide what type of rendering (client-side, SSG or SSR) you want each page to have - giving you lots of granularity.
- Among other things, it has:
  - Intuitive routing system
  - Support for CSS-in-JS
  - Automatic code splitting for faster reloads
  - Fast refresh (hot loading) by default
  - Lots more!



# Next.js

- Examples of websites that use Next.js include:
  - Netflix Jobs
  - Twitch
  - Tik Tok
  - Hulu
  - Nike
  - IGN
  - TicketMaster
  - Tencent News
  - Uber Marketplace
  - Marvel
  - Deliveroo
  - (You get the idea)
- One of the main features of Next.js is pre-rendering. This list of websites shows how important it is!





# Demo

For more information, visit [Next.js](#) documentation.  
Most of the information presented here utilised this resource.