A **single‐page application** (**SPA**) is a web application that interacts with the user

by dynamically rewriting the current page rather than loading entire new pages

from a server

* when the user navigates on the page, only parts of it are replaced, making for a more fluid experience
* after the first load of the page, only data goes over the wire when the user navigates the app: JSON is delivered to the browser and applied to HTML templates directly to the browser
* this leads to better performance and opens the possibility for those backend services to be used for other things, as they just return data

while if a page takes 200ms more to load, this will have a potential high impact on business and sales **why not SPA everywhere** then?

*Single page apps don't perform well on search engines*

The two reasons for that are:

1. The search engine needs to "guess" when the page is complete

*When a single page is retrieved, a search engine will see only very little HTML. Only when the MVC framework kicks in will the page actually be rendered fully using the data obtained from the server.*

### SPA deep links are hard to get indexed

*Due to the lack of HTML5 History support in browsers, single page apps based their navigation URLs in HTML bookmark anchors*

ways to do it: <https://www.yearofmoo.com/2012/11/angularjs-and-seo.html> by using some **special URL routing** and a **headless browser to retrieve the HTML** for you

Angular Universal might be a good solution

<https://blog.angular-university.io/angular-2-universal-meet-the-internet-of-the-future-seo-friendly-single-page-web-apps/>

\* Angular is **owned by google** and maintained by the developer community to keep improving the SAPs development approach

\* **TypeScript** is an open‐source programming language developed and maintained

by Microsoft. It is a strict syntactical superset of JavaScript, and adds optional

static typing to the language. TypeScript also for BackEnd side (NodeJs)

