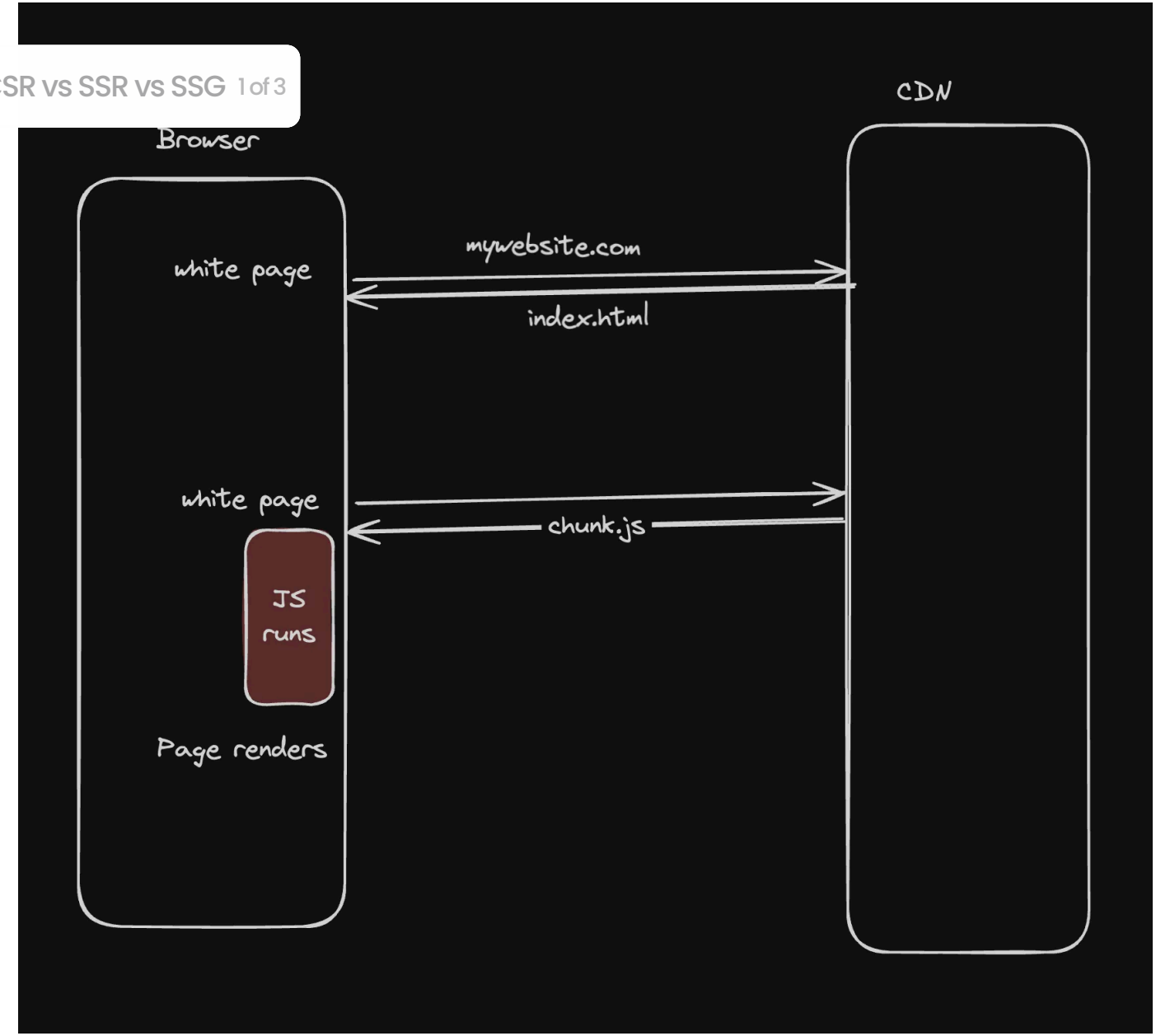
Client Side rendering

Client-side rendering (CSR) is a modern technique used in web development where the rendering of a webpage is performed in the browser using JavaScript. Instead of the server sending a fully rendered HTML page to the client

Good example of CSR - React


CSR vs SSR vs SSG 1 of 3
Browser
CDN
white page
mywebsite.com
index.html
white page
chunk.js
JS
runs
Page renders

- Initialise a react project

```
...@latest
```

- Add dependencies

```
npm i
```

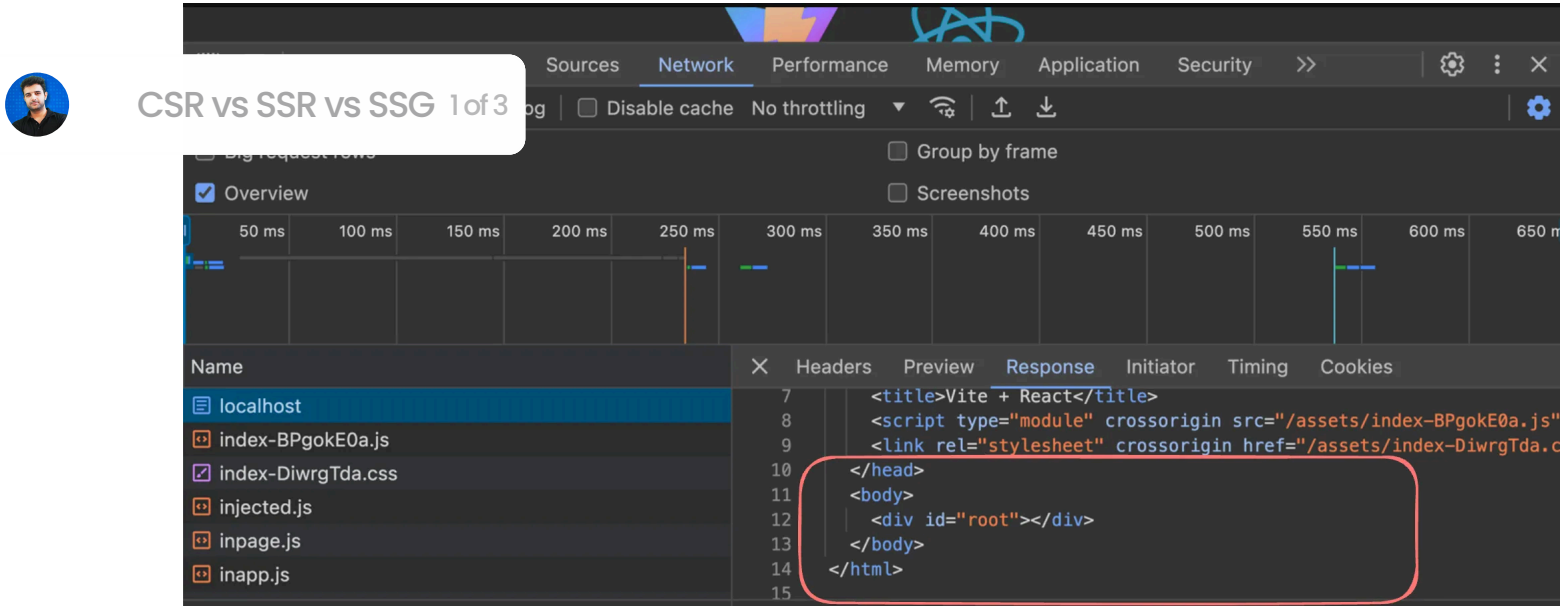
- Start the project

```
npm run build
```

- Serve the project

```
cd dist/
serve
```

Open the network tab and notice how the inital HTML file deosn't have any content



This means that the JS runs and actually populates / renders the contents on the page

React (or CSR) makes your life as a developer easy. You write components, JS renders them to the DOM.

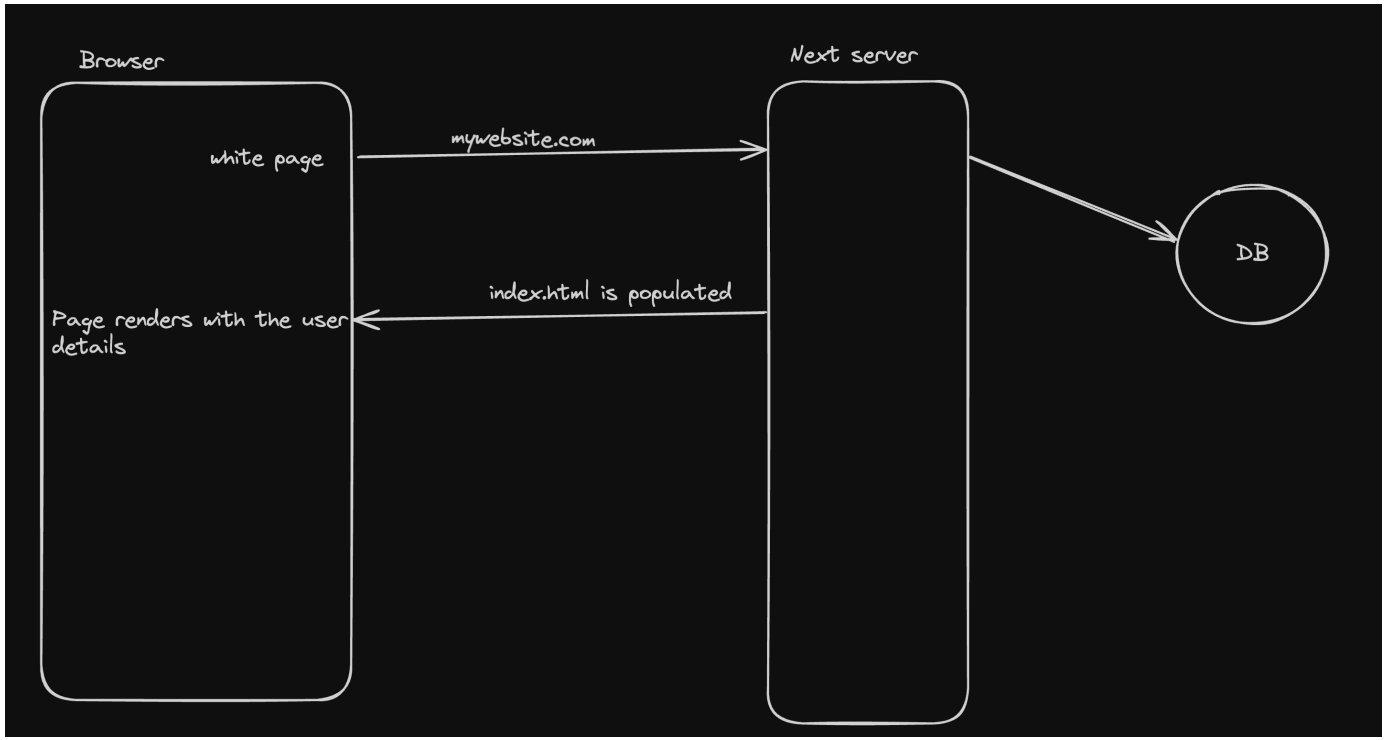
Downsides?

1. Not SEO optimised
2. User sees a flash before the page renders
3. Waterfalling problem

CSR vs SSR vs SSG 1 of 3

Server side rendering

When the rendering process (converting JS components to HTML) happens on the server, it's called SSR.



CSR vs SSR vs SSG 1 of 3

1. SEO Optimisations
2. Waterfalling problem
3. No white flash before you see content

Try creating a NextJS app and notice the HTML file you receive is populated

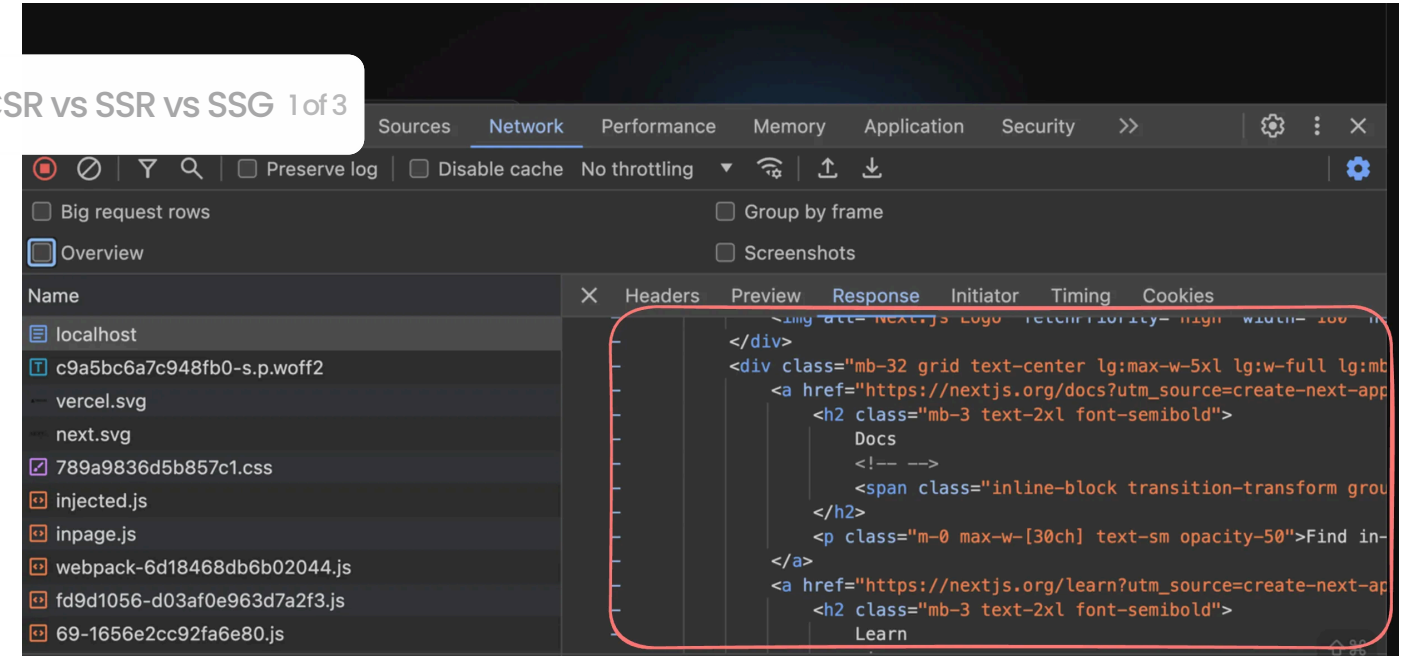
- Create next app npx create-next-app
- Build the project

```
npm run build
```

- Start the NEXT Server

```
npm run start
```

Notice the initial HTML page is populated



Static site generation

Ref https://nextjs.org/docs/app/building-your-application/data-fetching/fetching-caching-and-revalidating

If a page uses **Static Generation**, the page HTML is generated at **build time**. That means in production, the page HTML is generated when you run `next build`. This HTML will then be reused on each request. It can be cached by a CDN.

CSR vs SSR vs SSG 1 of 3

If you use static site generation, you can defer the expensive operation of rendering a page to the build time so it only happens once.

How?

Let's say you have an endpoint that gives you all the global todos of an app.

By global todos we mean that they are the same for all users, and hence this page can be statically generated.

https://sum-server.100xdevs.com/todos

- Create a fresh next project
- Create todos/page.tsx

```
export default async function Blog() {
  const res = await fetch('https://sum-server.100xdevs.com/todos')

  const data = await res.json();
  const todos = data.todos;

  console.log(todos);
  return <div>
```


```
            {todos.map((todo: any) => <div key={todo.id}>
                {todo.title}
                {todo.description}
                </div>)}
            </div>

        }
```

- Try updating the `fetch` requests

Clear cache every 10 seconds

```
const res = await fetch('https://sum-server.100xdevs.com/todos', {
    next: { revalidate: 10 }
});
```

Clear cache in a next action

```
import { revalidateTag } from 'next/cache'

const res = await fetch('https://sum-server.100xdevs.com/todos', { next: { tag
```

```
'use server'

import { revalidateTag } from 'next/cache'
```

CSR vs SSR vs SSG 1 of 3

```
async function revalidate() {
('todos')
}
```