

Progressive Hydration

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SSR vs CSR

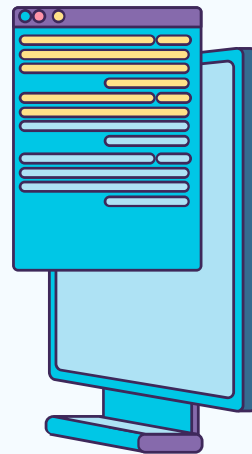
- **CSR** Refer to client-side-render. It is a concept witch allow the browser to create the website (Creation of nodes is handle by the javascript)
- **SSR** refer to server side rendering. The rendering is handle by the server

CSR
Reactjs

SSR
Nextjs

Progressive Hydration

- Progressive Hydration also known as Progressive rendering or Streaming rendering.
- Progressive Hydration Is a technique used in react to improve performance and user experience.
- Allows for a smoother and more responsive experience.



How It Works

- Deferring loading of JavaScript until after initial page content has loaded.
- Instead of creation a node we reuse existing node
- If the node not exist then create one

```
// const root = ReactDOM.createRoot(document.getElementById('root'));  
// root.render(<App />);  
hydrate(<App />, document.getElementById("root"));
```



In server side

In Server-side

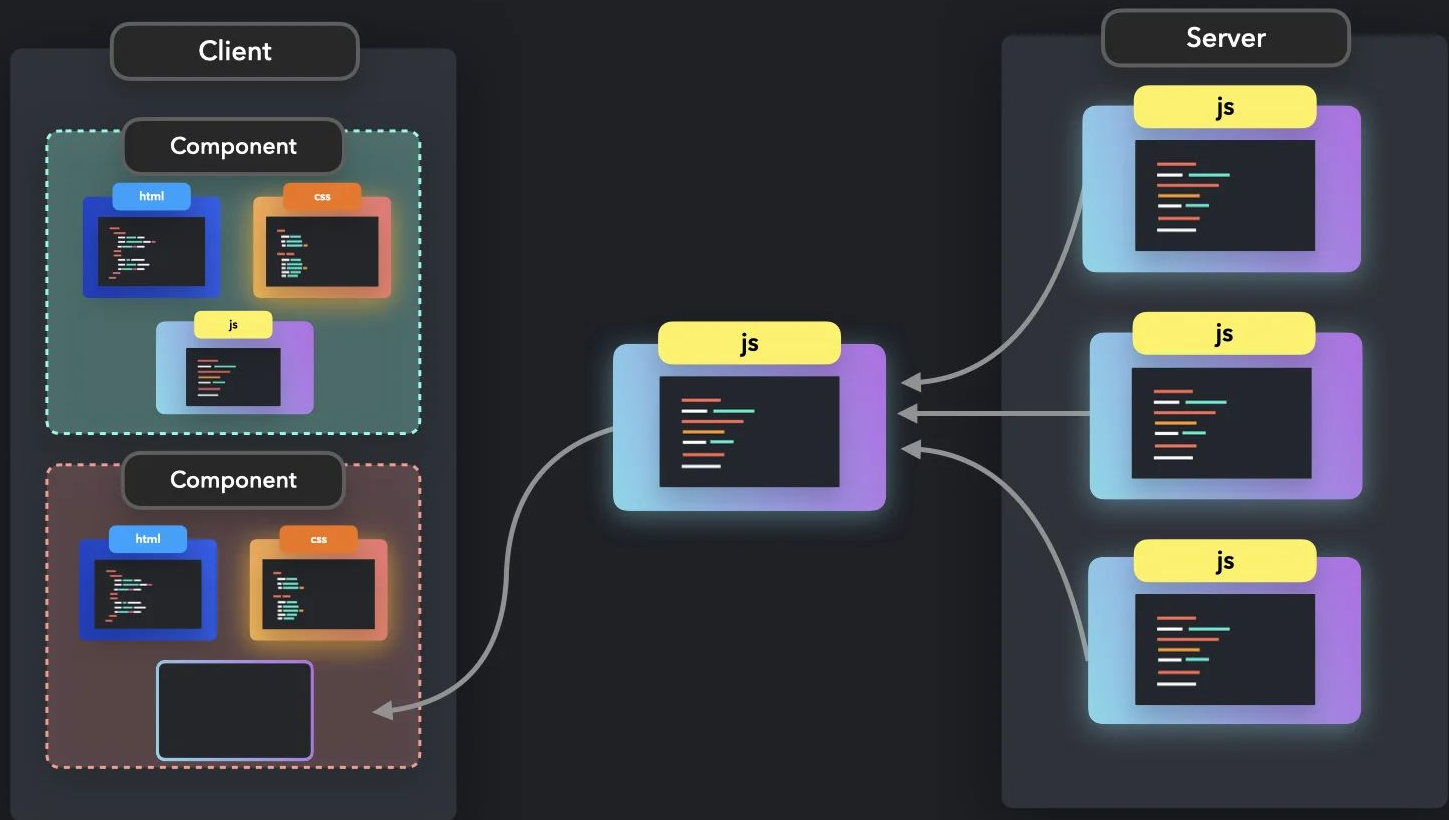
- When the page has been requested the server will return the page with the bundle
- The bundle is the initial content of the page



In client side

In client side

- Once the initial content loaded the client side will hydrate them as need
- The hydration freeze the js of the unnecessary parts

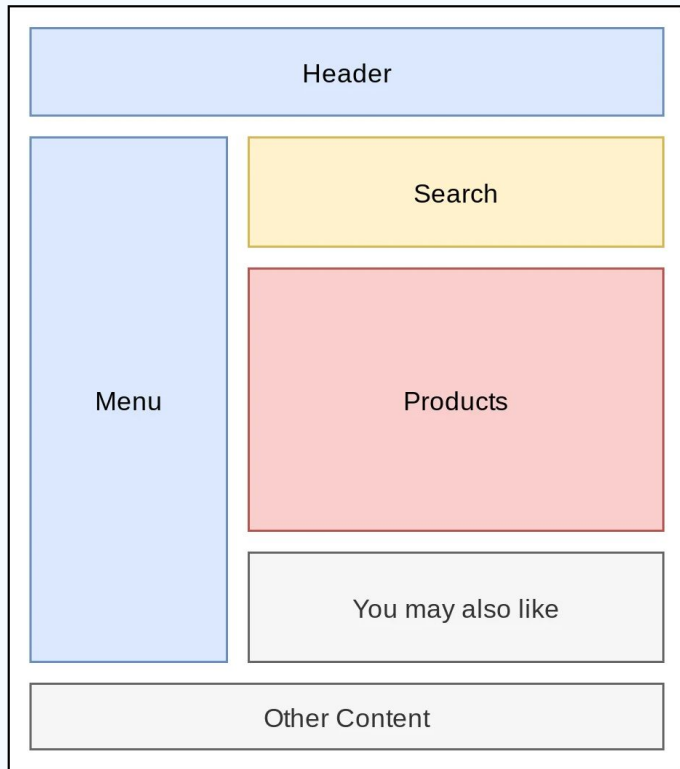


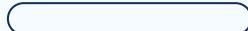


Progressive Hydration implementation

Progressive Hydration implementation

- Hydrate only certain parts of the application when the page loads
- Other content hydrated progressively as required
- Server-rendered application are activated over a period of time
- Reducing the amount of JavaScript required to make pages interactive.





How to implement

By using Interaction Observer we can hydrate the element once we scroll into it. Or even use any event handler to handle the hydration once the event detected.

Advantages of progressive hydration

- Fast Rendering to static UI
- Let the most important parts of website rendered by server
- Hydration reuse the exist nodes rather than create one





**Thank you. Please feel free to ask any
questions. 😊**