**REACTJS Questions**

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1. **Library for React Components**

* Selectable items for React
* React Target Time
* React Selections
* React Available Times

1. **What is Virtual DOM**

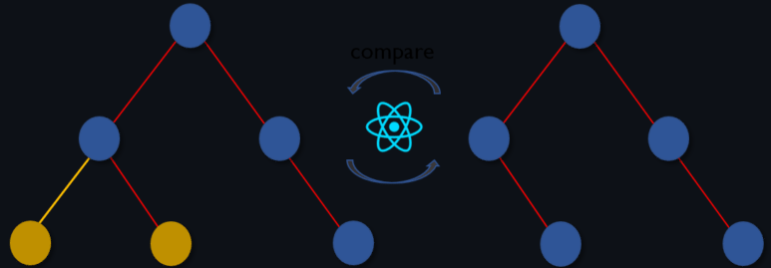
An in-memory representation of Real DOM. Giữ UI trong phần memory and dc đồng bộ với real DOM.

The Virtual DOM works in 3 steps.

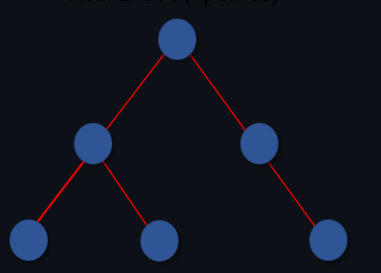
1. Whenever any underlying **data changes**, the **entire UI is re-rendered in Virtual DOM** representation.



1. Then compare the differences of nodes



1. Once the calculations are done, the real DOM will be updated with only the things that have actually changed.



1. **Props / Properties vs State**

|  |  |
| --- | --- |
| Props | State |
| Read-only | Can be changed |
| immutable | mutable |
| Chuyền data từ component này sang component khác | Chỉ tồn tại trong component đó |
| Được controlled bởi component bên ngoài | Chỉ dc controlled trong component đó |

1. **Lifting State Up in React**

Sharing state by moving state up to the closest parent component, if 2 child-components are using a single state, moving that state up to the parent of those.

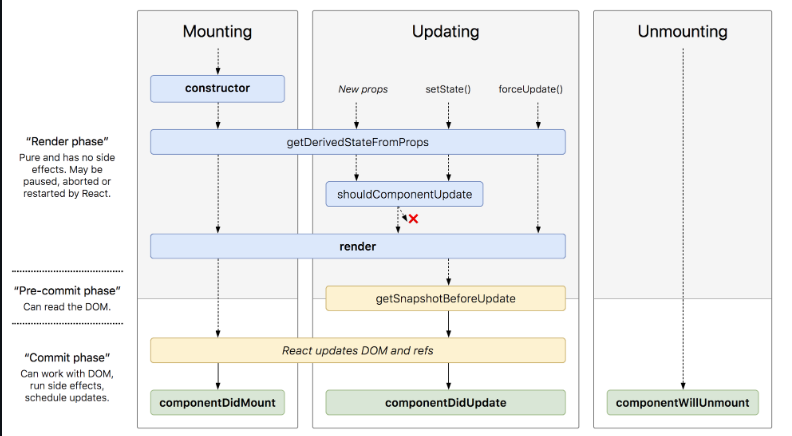
1. **different phases of component lifecycle**

Mounting:

* mount component to browser DOM. **constructor(), getDerivedStateFromProps(), render(),** and **componentDidMount()** lifecycle methods.
* Nếu data thay đổi mà component vẫn đang hiện thì sẽ ko trigger những hàm trên

Updating:

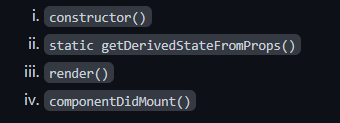
* take new props or updating state (setState). **getDerivedStateFromProps(), shouldComponentUpdate(), render(), getSnapshotBeforeUpdate()** and **componentDidUpdate()** lifecycle methods.
* ở giai đoạn change DOM sẽ có 3 bước:
  + Render: no side effect. (nghĩa là sẽ chưa apply vào DOM). Chỉ chạy hàm **render**()
  + Pre-commit: trước khi apply vào DOM, đây là lúc React đọc DOM thông qua hàm **getSnapshotBeforeUpdate()**
  + Commit: apply vào DOM, và chạy lifecycle methods **componentDidMount()** for mounting, **componentDidUpdate()** for updating, and **componentWillUnmount()**



Unmounting:

* deleted or removed from browser DOM. **componentWillUnmount()** lifecycle method

Lifecycle methods order.



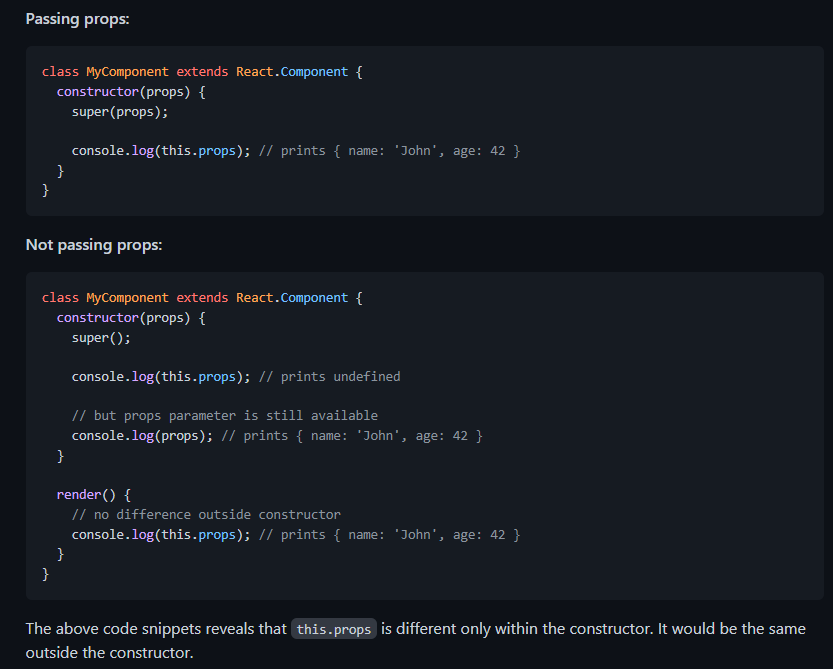
1. **lifecycle methods of React**

* **componentWillMount()**: chạy trước khi rendering. Hàm này **chỉ nên dùng** ở tầng App level để thêm config thôi. (hoặc ko dùng)
* **componentDidMount()**: chạy sau khi render lần đầu tiên của component. Dùng để call API, AJAX, addEventLisners
* **componentWillReceiveProps(nextProps)**: trigger khi props thay đổi. Dùng trong trường hợp set props vào state (state transitions)
* **shouldComponentUpdate(nextProps, nextState)**: **true**. Xét xem có re-render ko
* **componentDidUpdate(prevProps, prevState, snapshot)**: trigger ngay khi updating xảy ra.
* **componentWillUnmount()**: khi delete/remove component khỏi DOM. (nếu component bị **display:none** hay bị hide đi nhưng vẫn nằm trên DOM thì ko trigger hàm này )

1. **context API**

* context provide a way to pass data without passing props down through many levels of components

1. **using super constructor with props argument**

child class constructor cannot use this until super() has been called.(same as ES6 sub-class). 

1. **portals in React**

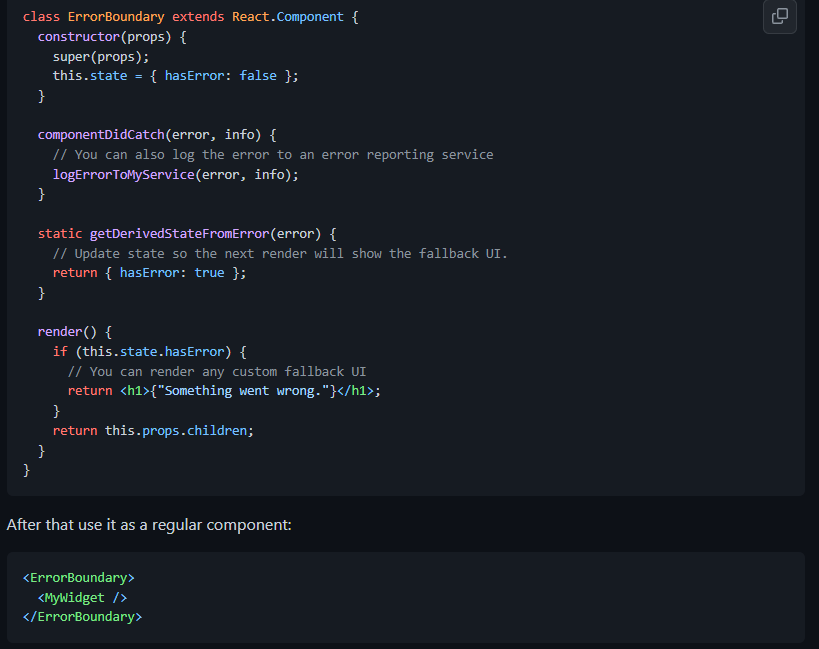
render childrent into DOM node that is outside of parent component

advantages and disadvantages of ReactJS

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| Increase performance with Visual DOM | Complex library, need to know many concepts |
| JSX apply html and javascript | Since it is a library, Not a framework. There are many styles, many structures |

1. **error boundaries in React v16**

* là component để hứng lỗi nếu component gãy, và show fallback UI thay cho việc trắng trang
* **componentDidCatch(error, info)** or **static getDerivedStateFromError()**



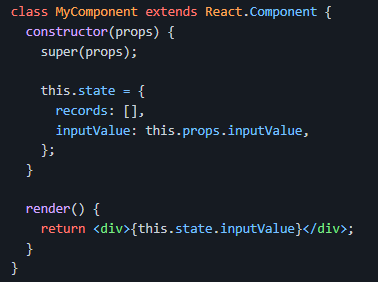
* nên để ở tầng component ngoài cùng để bắt lỗi

ko dùng call API, add listener trong componentWillMount()

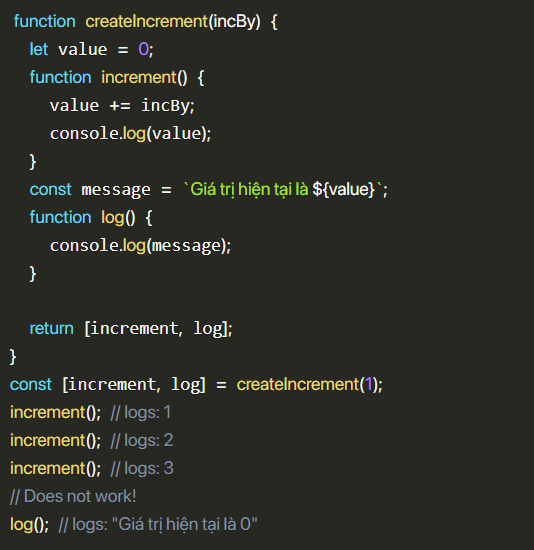
* do componentWillMount() chạy trước render()
* ko re-render
* ko thấy dc cây DOM

1. **What will happen if you use props in initial state**

Props are chaged and component not refresh, new props will not apply.



1. **Stale Closure**

 Ở đây khi gọi hàm **log(),** mong muốn của mình sẽ log ra giá trị là 3, nhưng giá trị lại là 0. Đúng bằng **value = 0** ban đầu.

Lỗi xảy ra do message được tạo ra khi gọi hàm **createIncrement** và không được cập nhật mỗi lần **increment**

**Stale closure** là một biến trong closure bị **outdate**

How to fix



Di chuyển code khởi tạo **message** vào trong hàm **log**(), mỗi khi gọi hàm **log** thì **message** sẽ được tạo lại và đảm bảo không bị outdate

1. **onScroll của ReactJS**

trong các thẻ div có hàm onScroll của ReactJS. Nên ko cần dùng addEventListener cho ref nữa.

Note:

Khi chuyển tab khác thì nếu thanh scroll đang ở giữa div thì cũng sẽ trigger hàm onScroll này vì scrollHeight === offsetHeight khi re-render lại div . Fix: scrollTop > 0

const onScroll = (*e*: React.UIEvent<HTMLDivElement>) => {

        if (isLoadingMore || !isAllowLoadMore) return

        let scrollTop = *e*.currentTarget.scrollTop,

            scrollHeight = *e*.currentTarget.scrollHeight,

            offsetHeight = *e*.currentTarget.offsetHeight;

        if (scrollTop > 0 && (scrollTop + offsetHeight >= scrollHeight - 50)) {

            onLoadMore();

        }

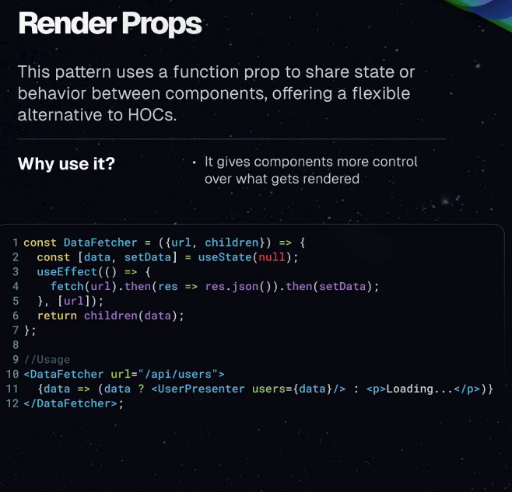
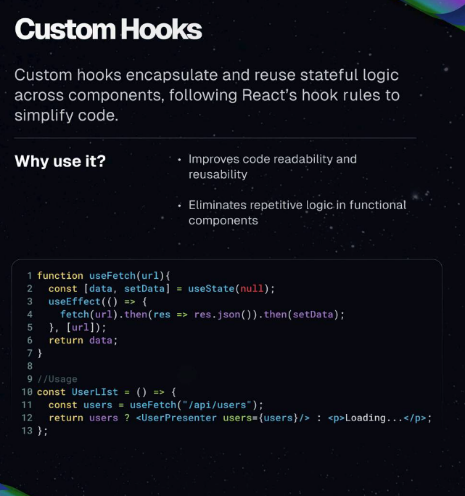
    }

return <div className={`exticket-feedback-list ticket-tabs\_\_body`} onScroll={onScroll}>

.....

    </div>

1. **Design Pattern in React**



1. **Context API vs Redux**

|  |  |
| --- | --- |
| **Context API** | **Redux** |
| - Built in feature in React  - to share data globally to other components  - avoid props drilling from parent components to many nested components | - a library for state management  - to store and share data to whole application  - more complex than context API, but it has debugger tool for Redux,  - Redux has middleware ecosystem handle **asynchronous tasks** or side effects function (API call) with redux-thunk  - data persistency  - Redux is suitable for large-scale or complex data, because  - 1 way flow so easy to debug. |