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React Components

Agenda

React Components

Props

State

Flow Of Stateless & Stateful Components

Life Cycle Of Components

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React Components

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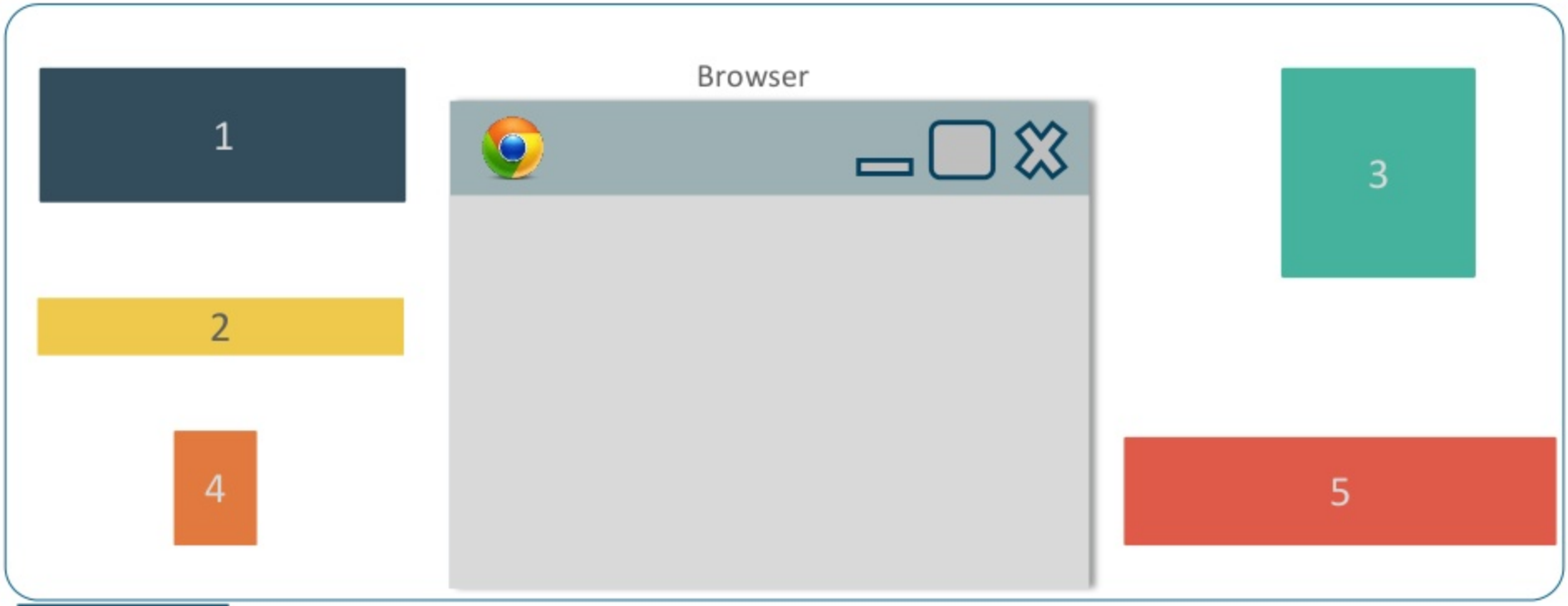
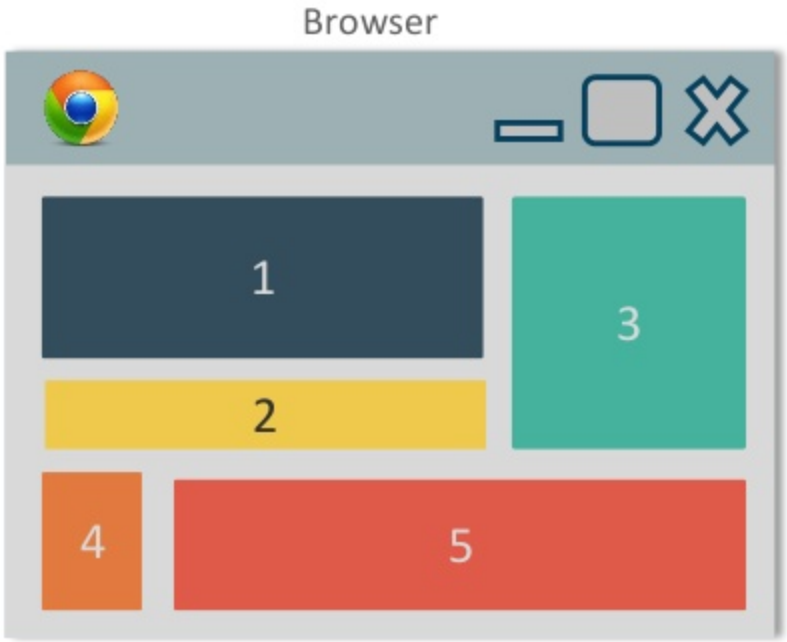
React Components

In React everything is a component



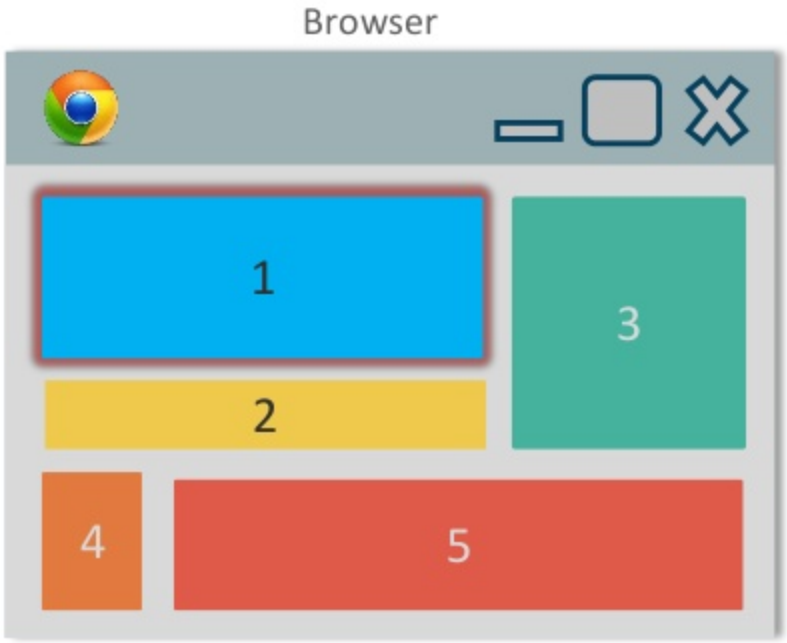
React Components

All these components are integrated together to build one application



React Components

We can easily update or change any of these components without disturbing the rest of the application

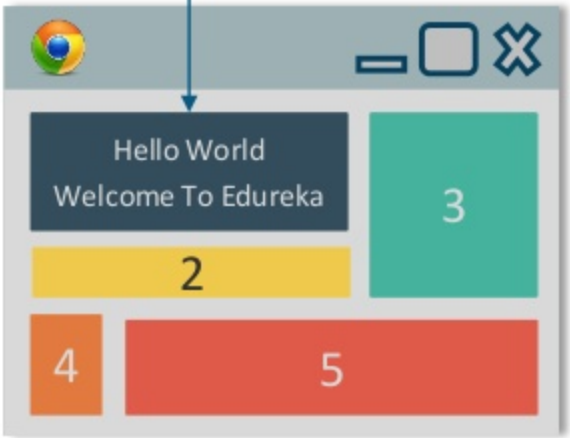


React Components – UI Tree

Single view of UI is divided into logical pieces. The starting component becomes the root and rest components become branches and sub-branches.

ReactJS Components – Sample Code

Each component returns ONE DOM element, thus JSX elements must be wrapped in an enclosing tag




```
class Component1 extends React.Component{
    render() {
        return(
        <div>
          <h2>Hello World</h2>
          <h1>Welcome To Edureka</h1>
        </div>
       );
    }
}

ReactDOM.render(
   <Component1/>,document.getElementById('content')
);
```

Enclosing Tag

React Components

React components are controlled either by Props or States

Props

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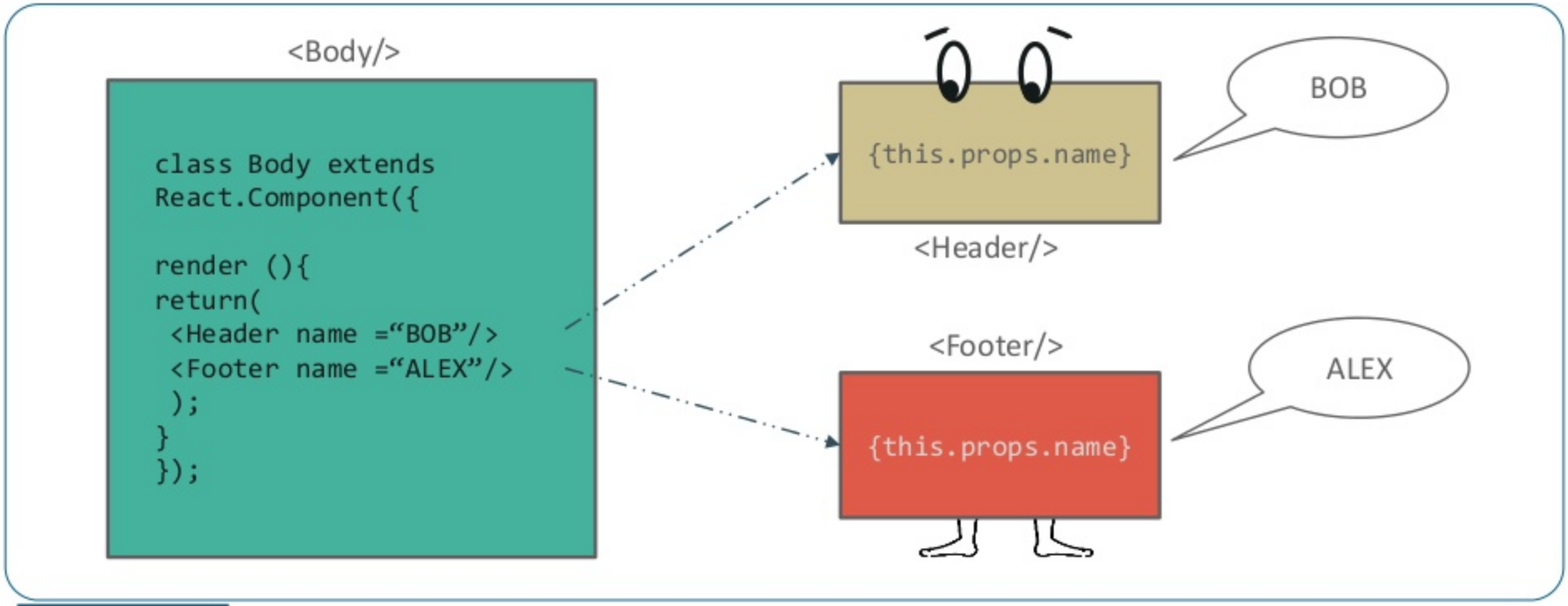
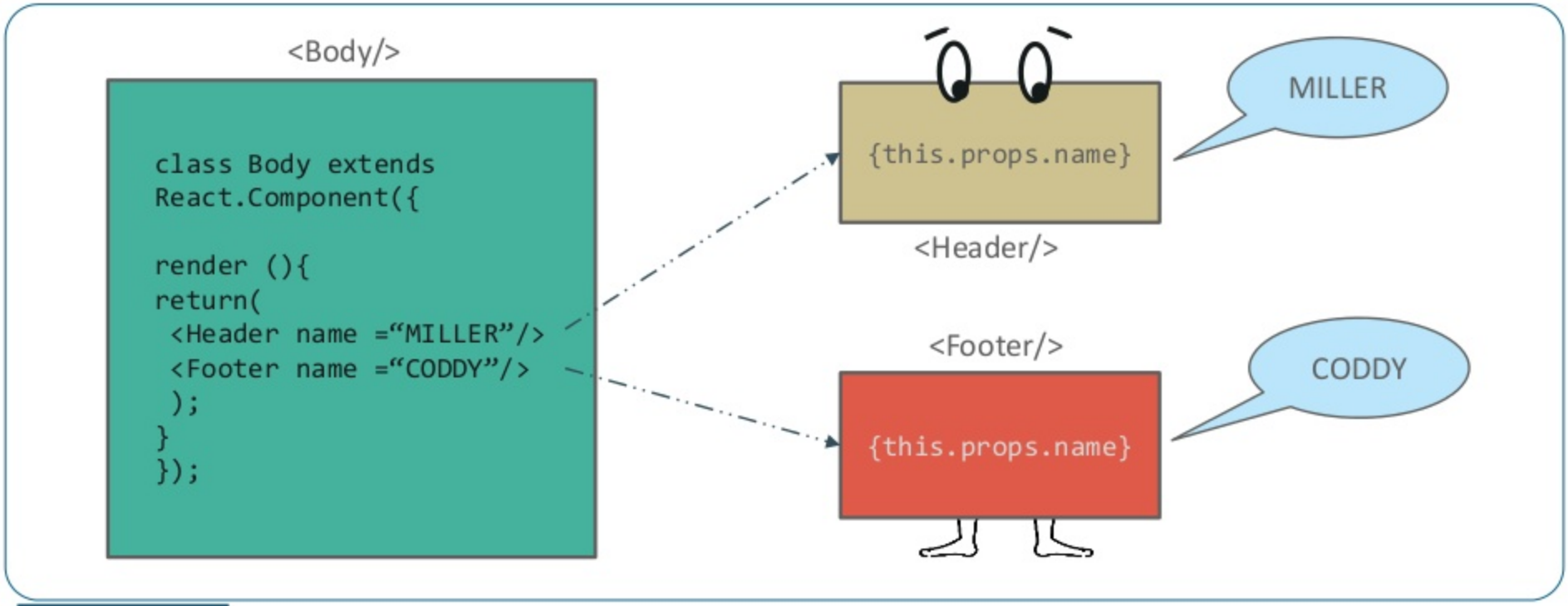
Props

Props help components converse with one another.



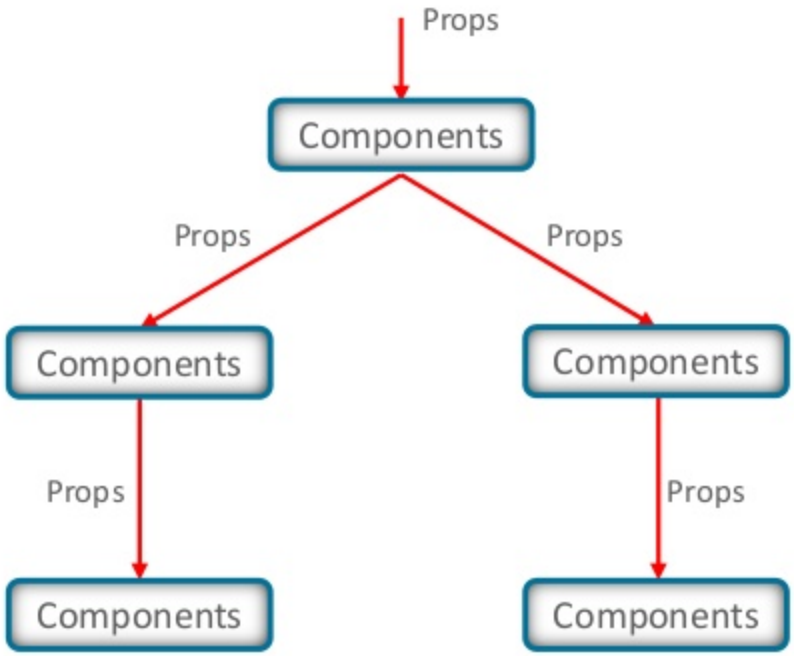
Props

Using Props we can configure the components as well



Props

1. Work similar to HTML attributes
2. Data flows downwards from the parent component
3. Uni-directional data flow
4. Props are immutable i.e pure
5. Can set default props



Props

ES5

Parent Component

```
var Body = React.createClass(
    {
        render: function(){
            return (
                <div>
                    <h1 > Hello World from Edureka!!</h1>

                    <Header name = "Bob"/>
                    <Header name = "Max"/>
                    <Footer name = "Allen"/>

                </div>
            );
        }
    }
);
```

Sending Props

Props

ES5

```
var Header = React.createClass({
        render: function () {
        return(
            <h2>Head Name: {this.props.name} </h2>
        );
    }
});
var Footer = React.createClass({
        render: function () {
        return(
            <h2>Footer Name: {this.props.name}</h2>
        );
    }
});
ReactDOM.render(
    <Body/>, document.getElementById('container')
);
```

Child Components

Receiving Props

State

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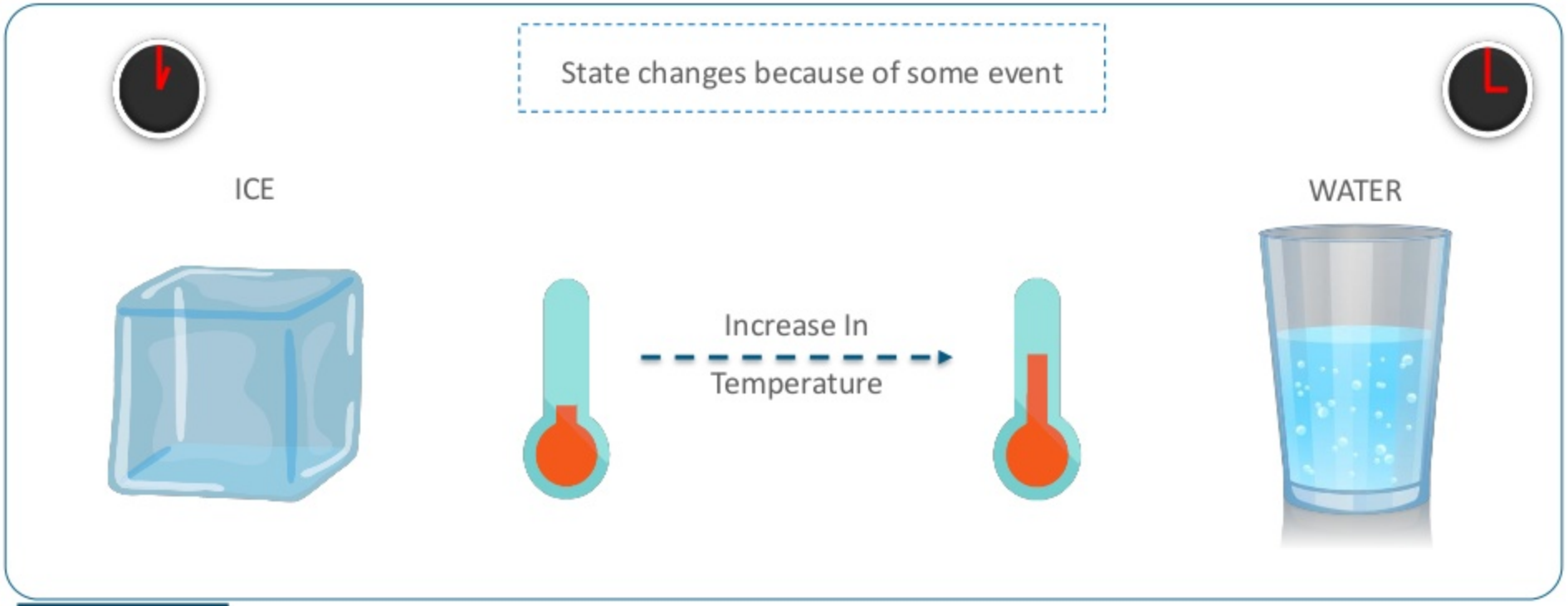
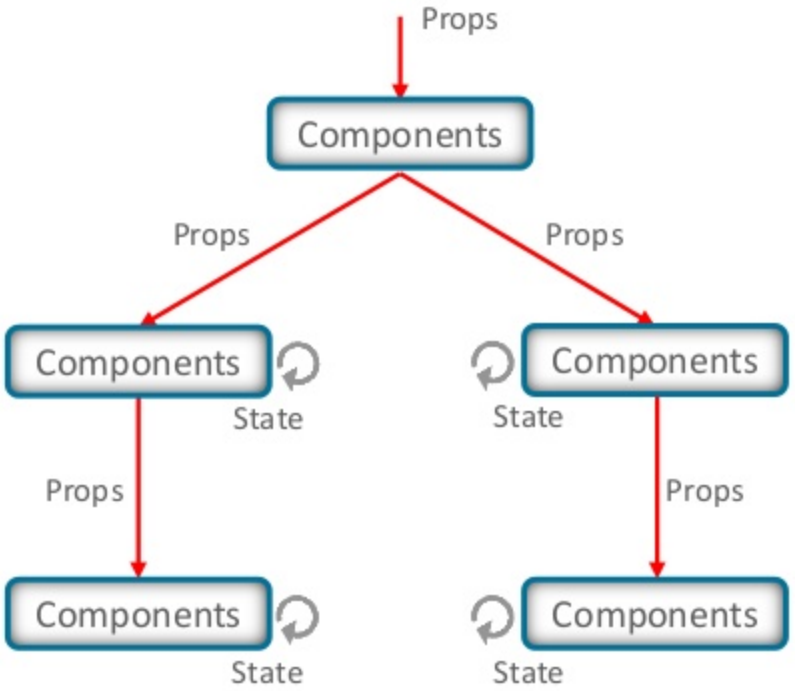
State

Components can change, so to keep track of updates over the time we use state



State

1. Unlike Props, component States are mutable
2. Objects which control components rendering and behavior
3. Core of React Components
4. Must be kept simple



State

Component

Stateless

Dumb Components

Stateful

Smart Components

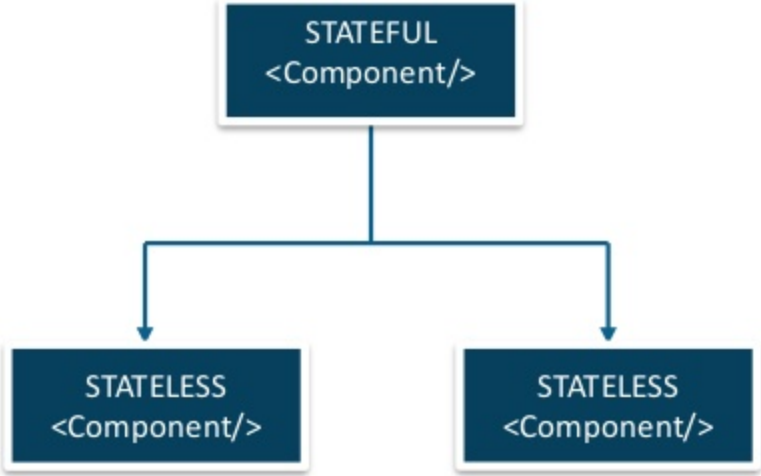
State

Stateless

- Calculates states internal state of components
- Contains no knowledge of past, current and possible future state changes

Stateful

- Core which stores information about components state in memory
- Contains knowledge of past, current and possible future state changes



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Flow Of Stateless & Stateful Components

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Flow Of Stateless & Stateful Components

ES6

Parent Component

```
class MyApp extends React.Component {
    constructor(props) {
        super(props);

        this.state = { isLoggedIn: false }
    }

    receiveClick() {

        this.setState({ isLoggedIn: !this.state.isLoggedIn });
    }
```

Setting Initial State

Changing State

Flow Of Stateless & Stateful Components

ES6

```
render() {
     return(
         <div>
         <h1>Hello.. I am Stateful Parent Component</h1><br/>
         <p>I monitor if my user is logged in or not!!</p> <br/>
         <p>Let's see what is your status : <h2><i>{this.state.isLoggedIn ?
          'You Are Logged In' : 'Not Logged In'}</i></h2></p><br/>
         <h2>Hi, I am Stateless Child Component</h2>
         <p>I am a Logging Button</p><br/>
         <p><b>I don't maintain state but I tell parent component if user clicks me
         </b></p><br/>
   <MyButton click={this.receiveClick.bind(this)} isLoggedIn= {this.state.isLoggedIn}/>
             </div>
        );
    }
}
```

Passing Props To Child Component

Flow Of Stateless & Stateful Components

ES6

Child Component

Receiving Props From Parent Component

```
const MyButton = (props) => {
    return(
        <div>
            <button onClick={() => props.click()}>
                Click TO  ---> { props.isLoggedIn ? 'Log Out' : 'Log In'}
            </button>
        </div>
    );
};

ReactDOM.render(
    <MyApp />,
    document.getElementById('content')
);
```

Flow Of Stateless & Stateful Components

Component Lifecycle

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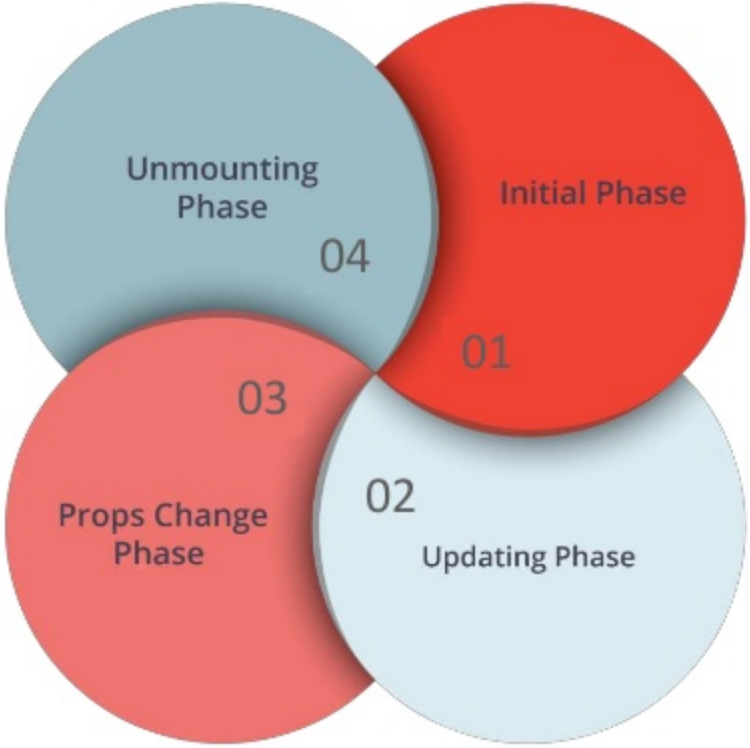
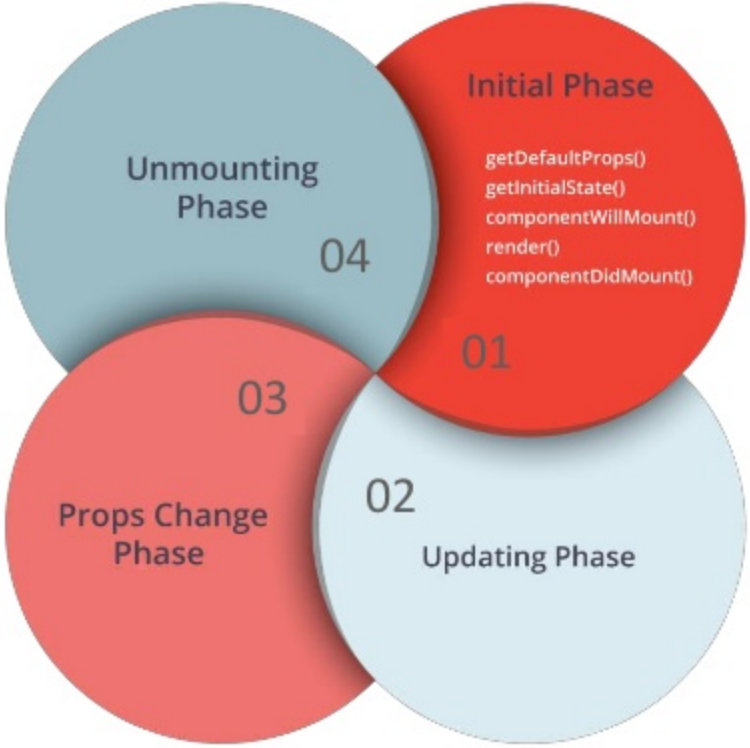
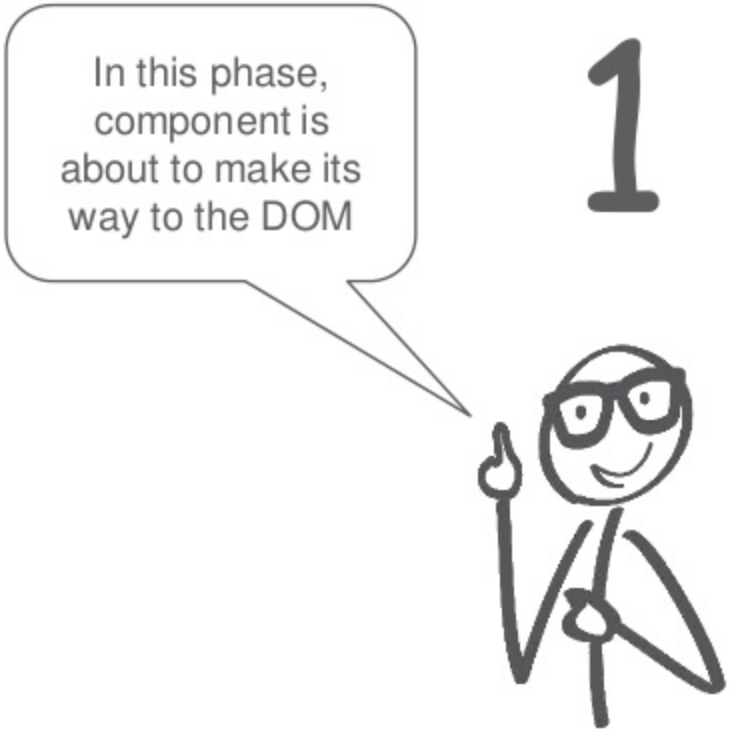
Lifecycle Phases



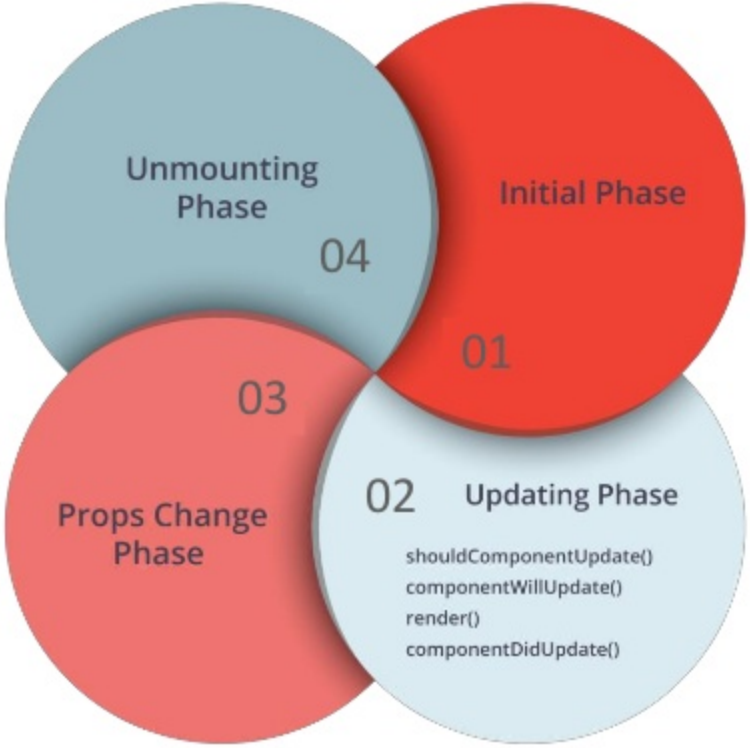
- Lifecycle methods notifies when certain stage of the lifecycle occurs
- Code can be added to them to perform various tasks
- Provides a better control over each phase

Lifecycle Phases

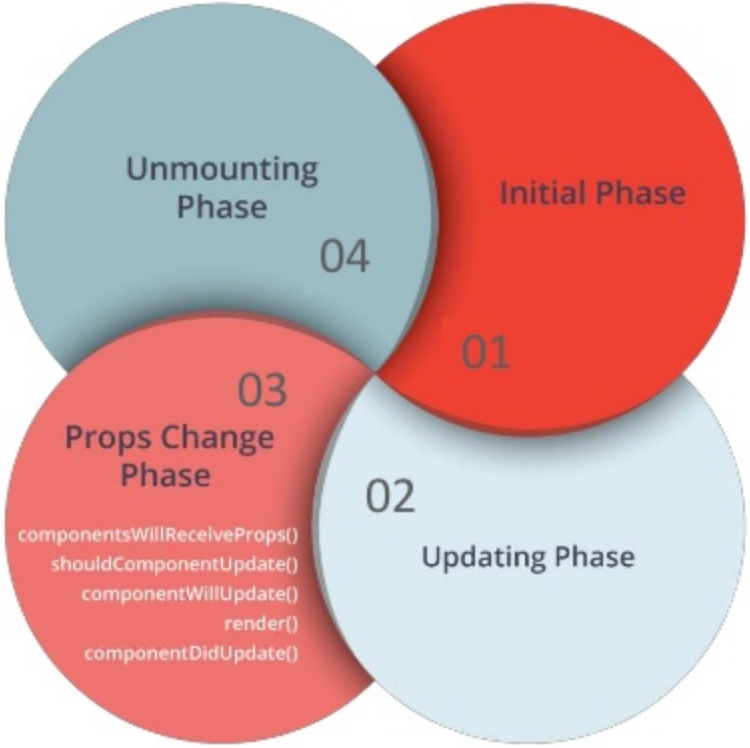




Lifecycle Phases



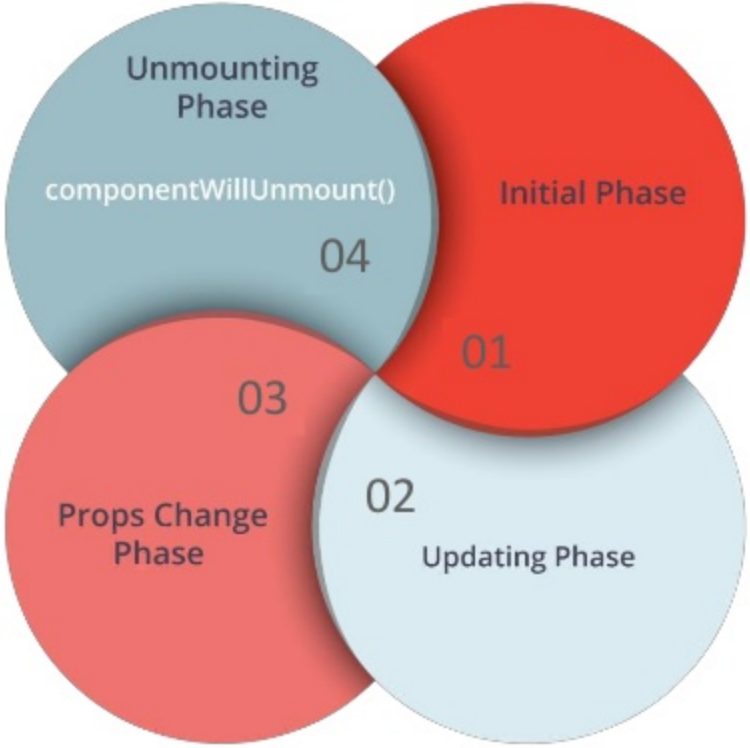
Lifecycle Phases



In this phase, component can update & re-render when a **prop** change occurs

3

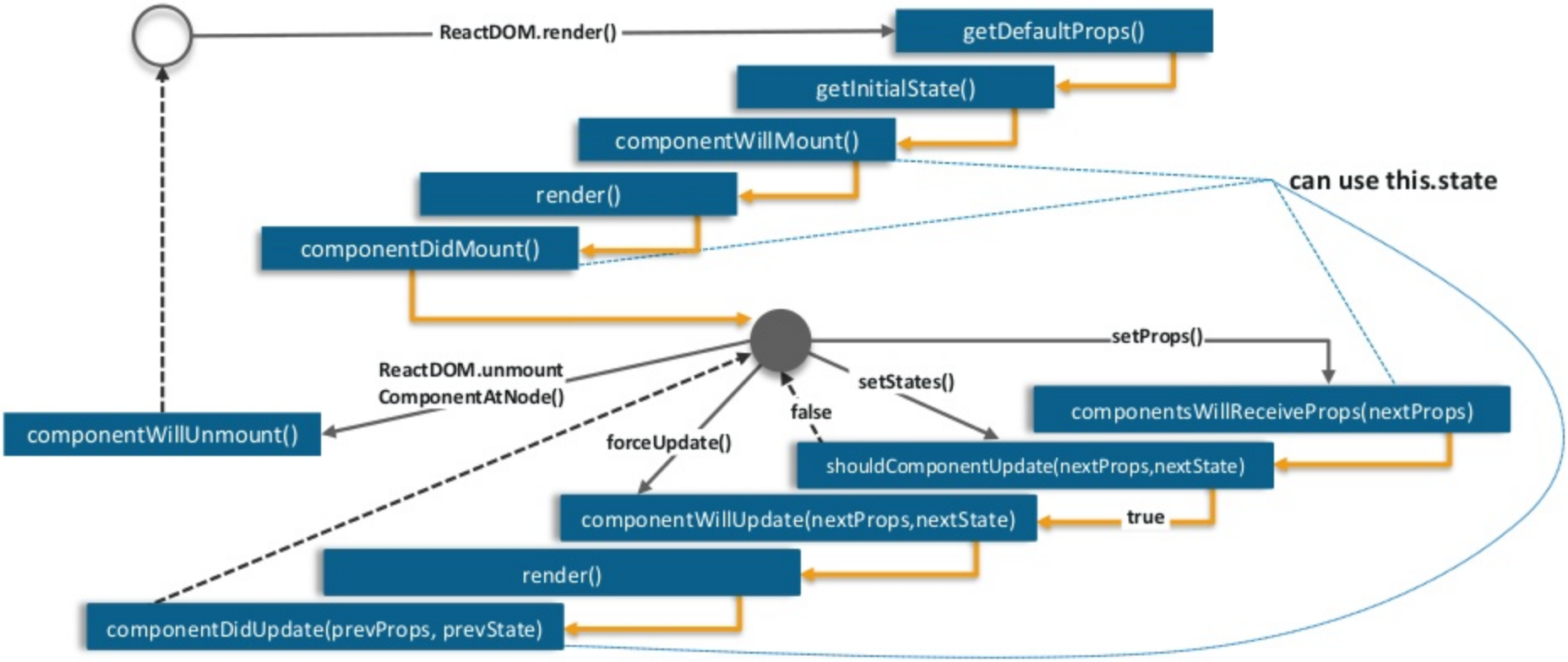
Lifecycle Phases



In this phase, the component is destroyed and removed from DOM

4

Component Lifecycle In A Glance



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