ReactJS

Software System Development

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@SaiAnirudhK1

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@mnwsth · 19h

Graduating from a PhD program in 4 years

9 11 304

Palki Sharma liked

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@francis_abban · 10h

Am I the only one who misses @palkisu on @WIONews these days? When is she coming back on Gravitas Plus?

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Deepak Sen

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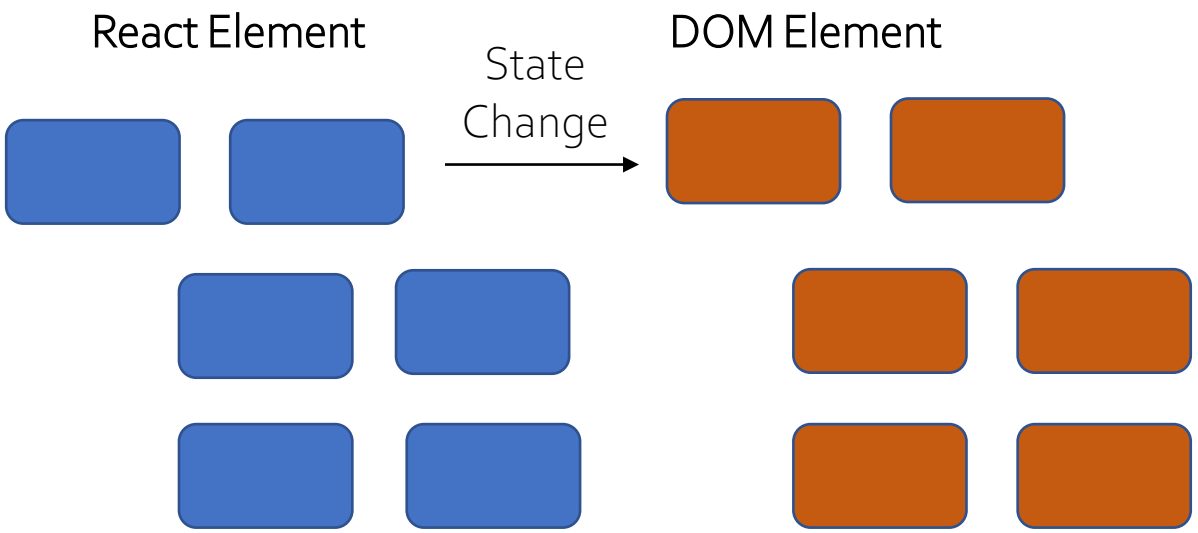
Messages

```
Class Tweet {
        state = { } ;
        render() {
        }
}
```

→ React Element



Node package manager

```
~sudo npm  -i -g create-react-app@1.5.2
```

Visual Studio Code Plugin

ReactSimpleSnippets – Bruke Holland
Prettier – Code formatter – Esben Peterson

```
const element = document.querySelector();
element.classList.add();
element.addEventListener ();
```

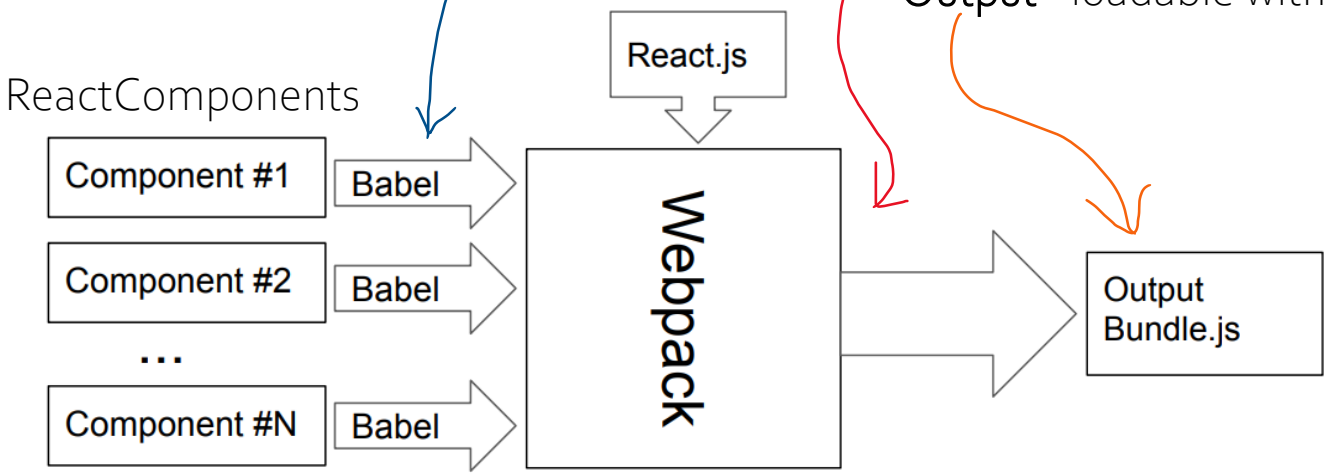
//React to update the State Change of DOM rather updating DOM

```
<!doctype html>
<html>
 <head>
 <title>SSD Example</title>
 </head>
 <body>
 <div id="reactapp"></div>
 <script src="./webpackOutput/reactApp.bundle.js"></script>
 </body>
</html>
```

ReactJS applications come as a JavaScript blob that will use the DOM interface to write the view into the div.

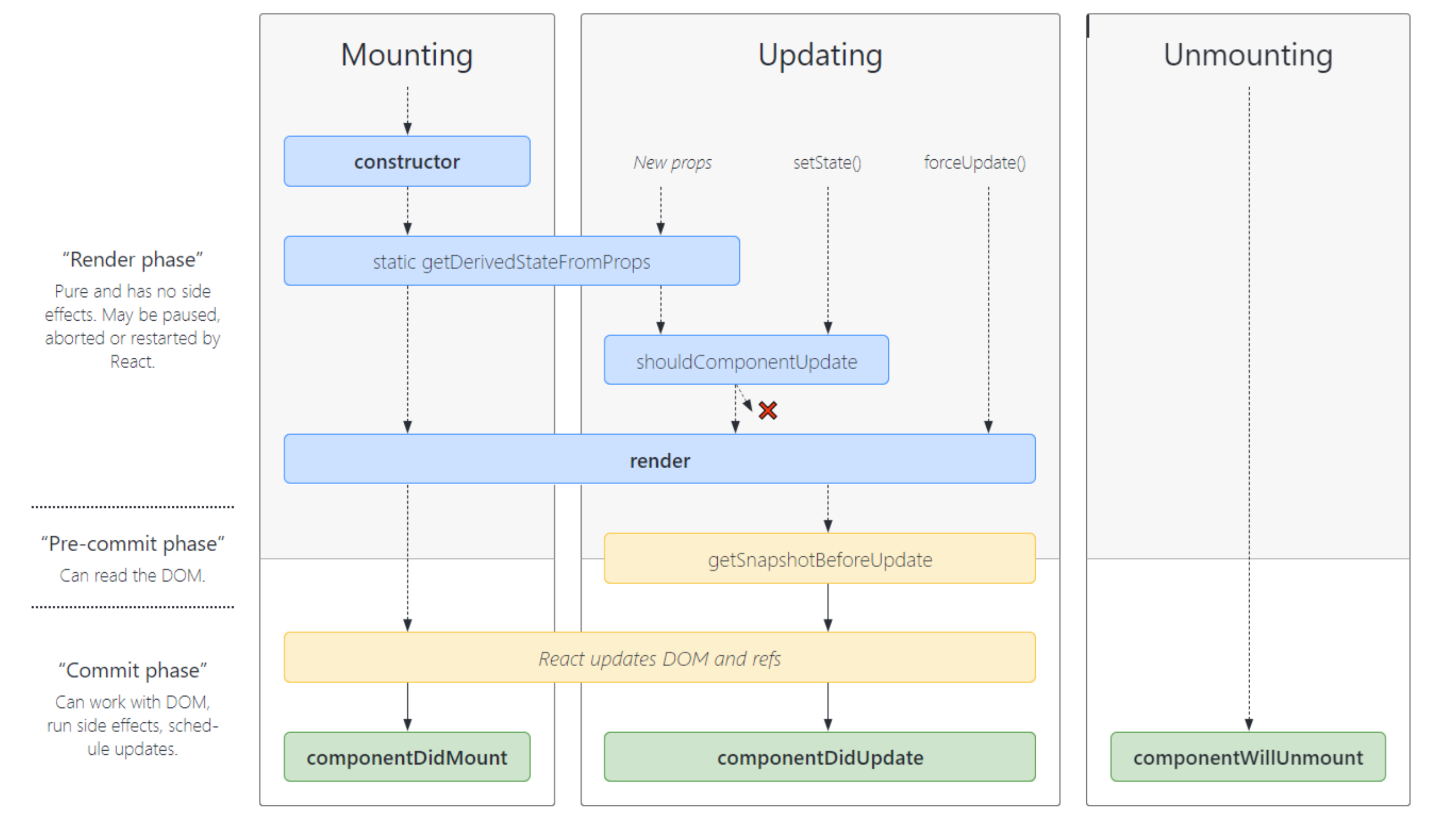
JSX – JavaScript XML

Babel - Transpile language features (e.g. ECMAScript, JSX) to basic JavaScript
Webpack - Bundle modules and resources (CSS, images)
Output - loadable with single script tag in any browser



ReactJS Tool Chain

```
Class Tweet {
        state = { } ;
        render() {
        }
}
```


Mounting
Updating
Unmounting
constructor
New props
setState()
forceUpdate()
static getDerivedStateFromProps
shouldComponentUpdate
render
getSnapshotBeforeUpdate
React updates DOM and refs
componentDidMount
componentDidUpdate
componentWillUnmount
"Render phase"
Pure and has no side effects. May be paused, aborted or restarted by React.
"Pre-commit phase"
Can read the DOM.
"Commit phase"
Can work with DOM, run side effects, schedule updates.

Component

Components are self-contained reusable building blocks of web application.

React components are basically just idempotent functions (same input produces same output) i.e. F(f(x)) = f(x)

They describe your UI at any point in time, just like a server-rendered app.

Created using React.createClass()
The only required method is render()
Inserted into DOM
using React.renderComponent()

```
var React = require('react'),
  SimpleView = React.createClass({
    render: function () {
      return <h1><strong>Example
1:</strong> A simple component</h1>;
    }
  });

React.renderComponent(SimpleView(
),
document.getElementById('example'))
;
```

Props

Passed down to component from parent component and represents data for the component. It is accessed via this.props

```
render: function() {

  var someProp = 'bar';
  console.log('component render()', this.props);

  return <div>
    <AnotherComponent foo={someProp} model={this.props.model} />
  </div>;
}
```

State

Represents internal state of the component.

Accessed via this.state

When a component's state data changes, the rendered markup will be updated by re-invoking render() method

```
render: function() {
    return <h3>Click count:
        <span className='label label-default'>{this.state.clicks}</span>
    </h3>;
}
```

JSX

XML-like syntax for generating component's HTML

Easier to read and understand large DOM trees

Translates to plain JavaScript using react-tools

```
/** @jsx React.DOM */

render: function () {
  return <div>
    <h2>
      <strong>Example 4:</strong>  React App
    </h2>
  </div>;
}

/** regular DOM */

render: function () {
  return React.DOM.div(null,
    React.DOM.h2(null, React.DOM.strong(null, "Example 4:"), " React App")
  );
}
```

Virtual DOM

- The virtual DOM is used for efficient re-rendering of the DOM
- React aims to re-render the virtual tree only when the state changes
- Uses 2 virtual trees (new and previous) to find differences and batch update real DOM
- Observes data changes (setState) and does dirty-checking to know when to re-render component
- Whenever possible, does not update entire component in real DOM - only computes a patch operation that updates part of the DOM