

Its time to React.js

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Agenda

- Hello World
- React fundamentals – What is happening behind the scenes
- Live Coding – Building “Stock Price Viewer”
- Q & A

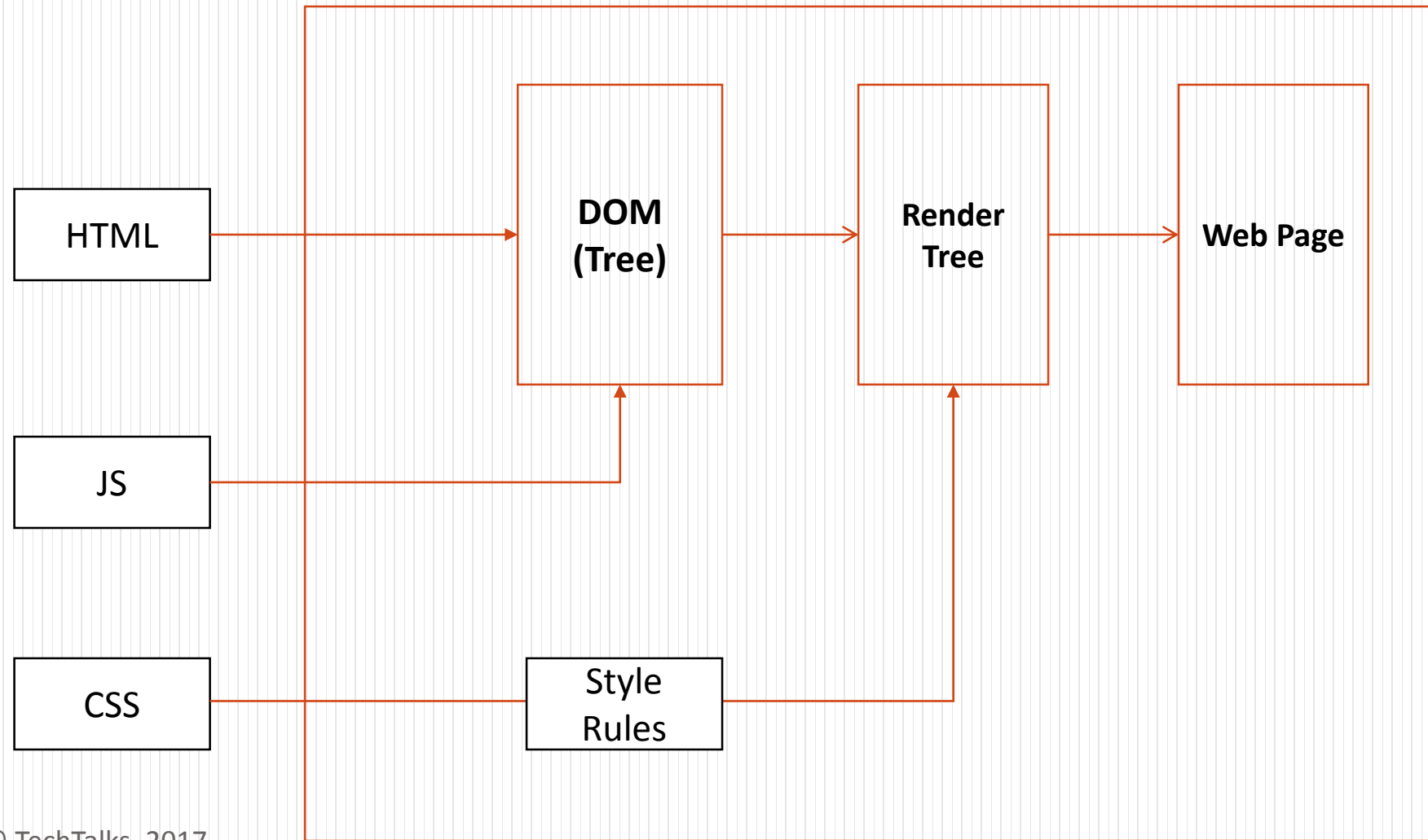
React Intro

- React is declarative, efficient and flexible JavaScript library for building user interfaces.
- React was created by Jordan Walke from Facebook. Originally used in newsfeed and then in Instagram.com
- Open Sourced in May 2013.
- Highest number of stars(57,773) in “Github Front-end JavaScript frameworks” followed by Angular.
- Some of the big names using react are NETFLIX, PAYPAL, AIRBNB, UBER, KHAN ACADEMY.... (Source libscore.com)

Hello World!

Without React.js

What browser does behind the scenes



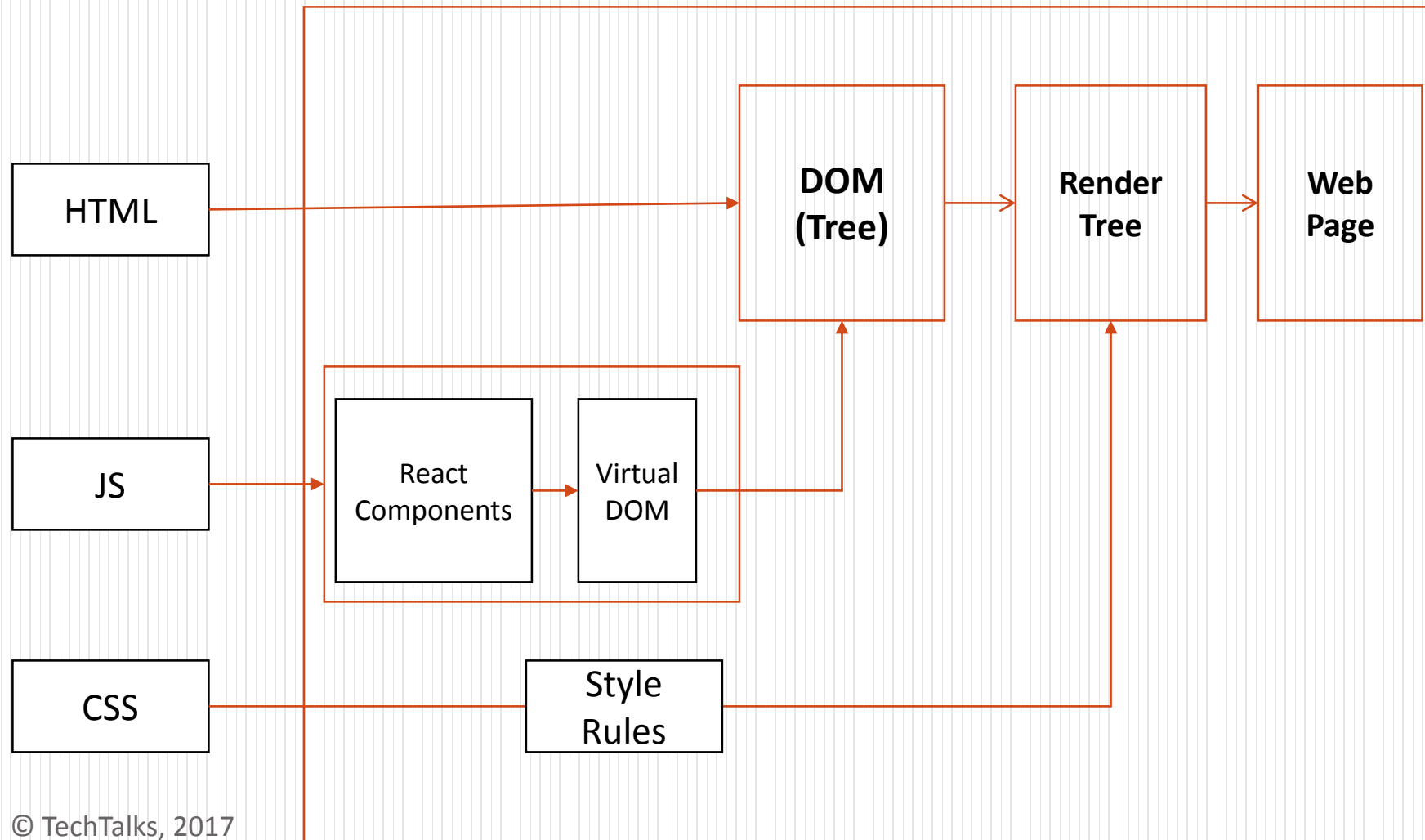
Things to note

- DOM and JavaScript are different
- Accessing DOM from JavaScript is slow
- Too many DOM updates may slow down your app

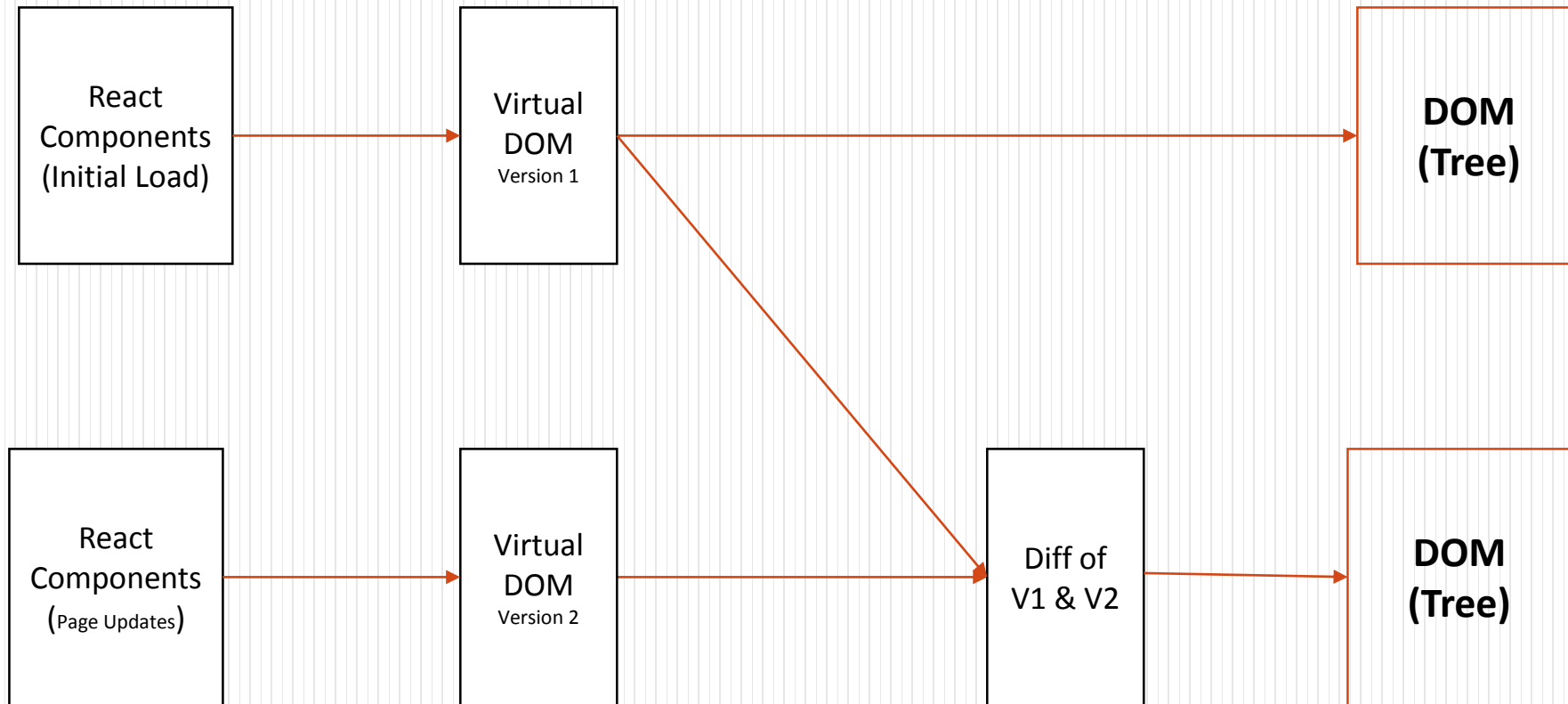
Hello World!

The React.js way

Behind the scene



Virtual DOM Comparison



Why React?

- Build Reusable Components (Not templates)
- Reactive Updates (React auto updates UI when data changes.)
- Performance (Virtual DOM)
- Testability

Build Reusable Components, Not templates

Reduce Coupling and Increase Cohesion

- **Coupling:**

Coupling is the degree of interdependence between software modules.

- **Cohesion:**

Cohesion refers to the degree to which the elements of a module belong together. Thus, cohesion measures the strength of relationship between pieces of functionality within a given module.

React Components

- ❑ React Components follows
“Reduce Coupling, increase Cohesion”.
- ❑ React Components encapsulates
 - ✓ Data
 - ✓ View
 - ✓ Logic
- ❑ Component can contain other child components.

```
import React from 'react';

export default class HelloWorld extends React.Component {
  constructor(props) {
    super(props);
    this.state = {name: ""};
    this.setName = this.setName.bind(this);
  }

  setName(event) {
    this.setState({name: event.target.value});
  }

  render() {
    return <div>
      Name <input type="text" onChange={this.setName} />
      <h1>Welcome Mr {this.state.name}</h1></div>;
    }
}
```

Reactive Updates

- When data changes, react auto updates UI in the most efficient and performant way.
- React supports one way data flow instead of two way binding.
- When state changes, react re-renders the component. Also does a diff of current render with previous render and applies only the minimal set of changes to actual DOM.

Virtual DOM

- React creates Virtual DOM by rendering component and its children.
- It is a JavaScript object unlike real DOM.
- Working with VDOM is faster than actual DOM
- React patches the updates from VDOM to real DOM.

Testability

- React forces us to build everything as components.
- Components are easy to unit test

```
import React from 'react';
import { shallow } from 'enzyme';
import sinon from 'sinon';

import MyComponent from './MyComponent';
import Foo from './Foo';

describe('<MyComponent />', () => {
  it('renders three <Foo /> components', () => {
    const wrapper = shallow(<MyComponent />);
    expect(wrapper.find(Foo)).toHaveLength(3);
  });

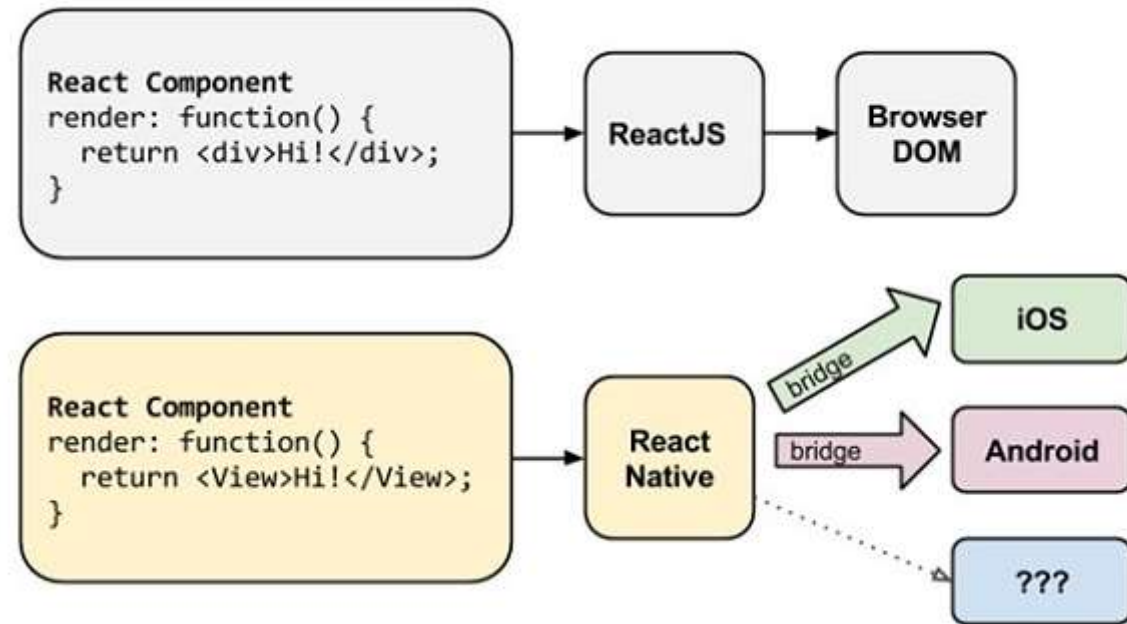
  it('renders an .icon-star', () => {
    const wrapper = shallow(<MyComponent />);
    expect(wrapper.find('.icon-star')).toHaveLength(1);
  });
});
```

Live Coding – Stock Price Viewer

- <https://github.com/jnoorul/tech-talk-stock-viewer>



Way forward – React Native (Cross Platform Mobile Apps)



For further info

- React official site <https://facebook.github.io/react/>
- Why React? <https://facebook.github.io/react/blog/2013/06/05/why-react.html>
- NETFLIX- Crafting a high performance TV user interface using React
<http://techblog.netflix.com/2017/01/crafting-high-performance-tv-user.html>
- Source Code <https://github.com/jnoorul/tech-talk-stock-viewer>



THANK YOU