React

Nikolas Vourlakis · Nikos Kampitakis · Stavros Bastakis

WHO WE ARE

Nikolas Vourlakis
Software Engineer
webtrails.gr
gr.linkedin.com/in/
nikolas-vourlakis

Nikos Kampitakis
CEO
webtrails.gr
gr.linkedin.com/in/
kabitakis

Stavros Bastakis
Web Developer
webtrails.gr
gr.linkedin.com/in/
bastakis

REACT VS
ANGULAR

NOT

WHAT IS REACT?

▸ "Declarative lib which keeps the DOM in sync with your data"

▸ What, not How

▸ It is the VIEW only!

BACKGROUND

▸ Backed by Facebook

▸ Open-sourced in May 2013

▸ Used on Facebook since 2011 => Battle-tested

▸ Heavily used on:

  ▸ Facebook: likes, comments, notifications, page Insights, chat messages

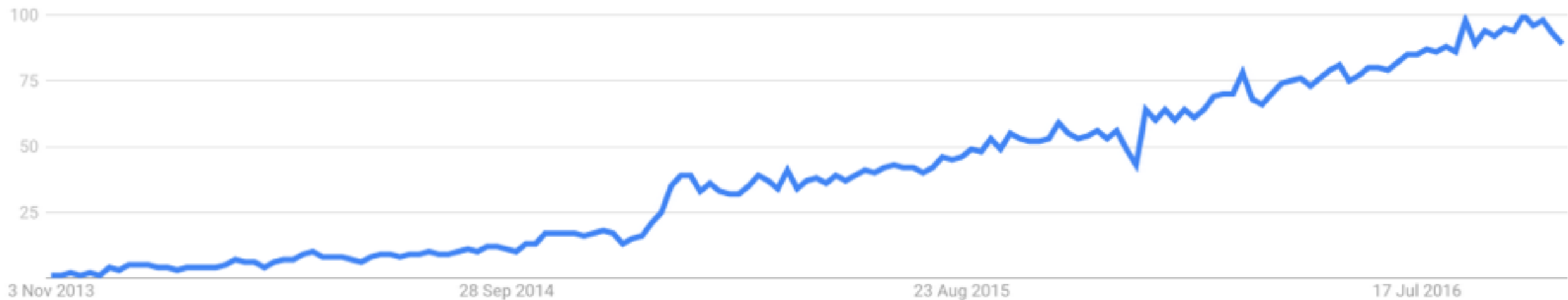 ▸ Instagram and WhatsApp web apps built completely in React

MORE SUPPORTERS

IT'S GETTING INTERESTING

Interest over time

👁 Watch ▾   3,763   ★ Unstar   53,528   ⑂ Fork   9,472
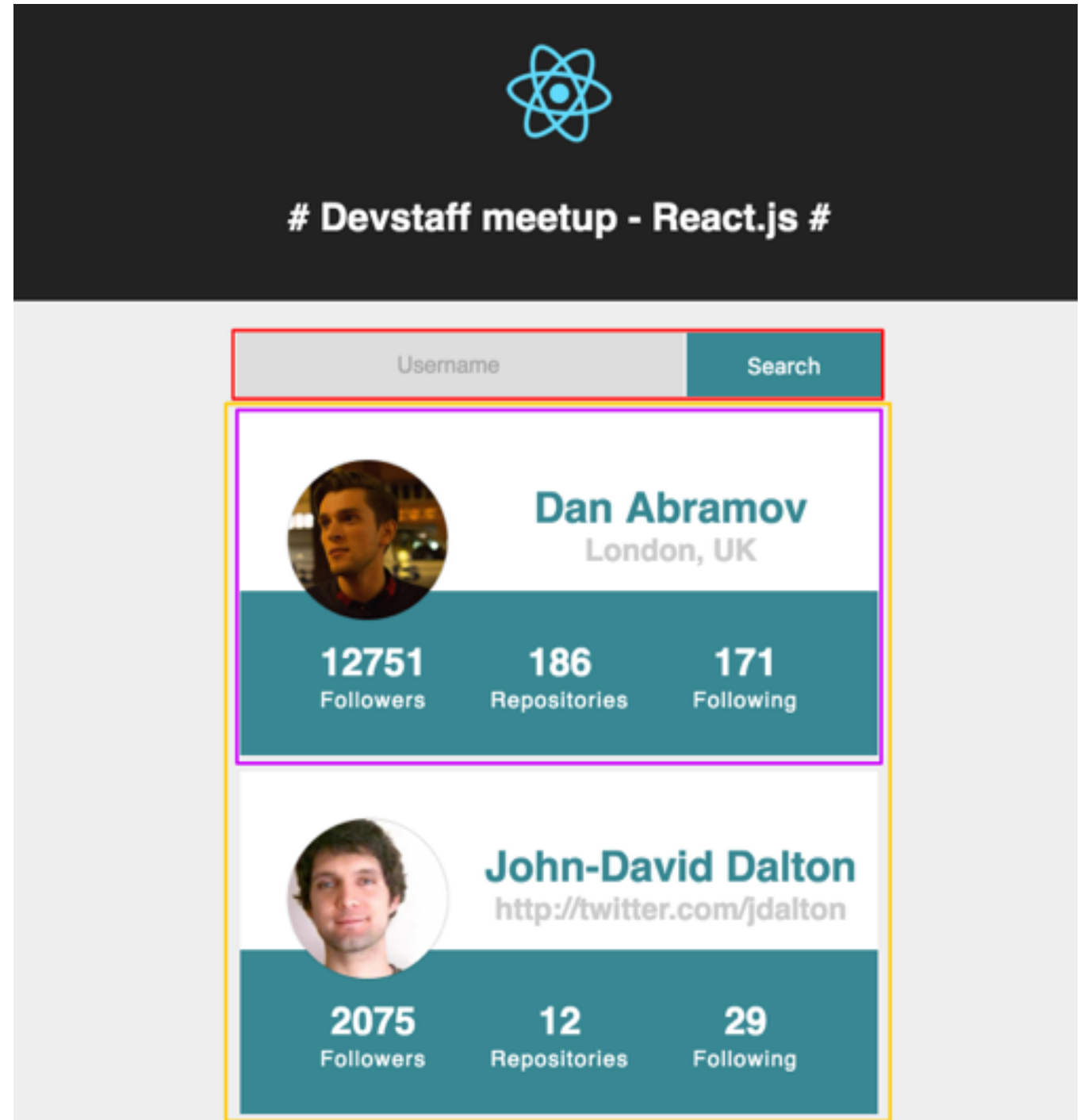
HANDS-ON SESSION

REACT GITHUB PROFILES

WHAT WE ARE BUILDING

COMPONENTS

‣ Search

‣ Profile

‣ Profile List

Find the final example here:
github.com/devstaff-crete/react-github-profiles

HOW TO START

▸ A lot of boilerplate projects but…

▸ Create-react-app is just what you need to get started

  ▸ Officially supported way to create single-page React applications

  ▸ https://github.com/facebookincubator/create-react-app

PROJECT GENERATION

▸ npm install -g create-react-app

▸ cd /to/project/root/folder

▸ create-react-app react-github-profiles

▸ cd react-github-profiles

▸ npm install

▸ npm start

INITIAL PROJECT STRUCTURE

▸ react-github-profiles/

    ▸ README.md

    ▸ node_modules/

    ▸ package.json

    ▸ .gitignore

    ▸ public/

        ▸ favicon.ico

        ▸ index.html

    ▸ src/

        ▸ App.css

        ▸ App.js

        ▸ App.test.js

        ▸ index.css

        ▸ index.js

        ▸ logo.svg

RENDERING INTO THE DOM

```html
<div id="root"></div>
```

```jsx
ReactDOM.render(
    <App />,
    document.getElementById('root')
);
```

JSX

▸ JS extension

▸ It's not a template language

▸ Can render to anything you like (html, mobile native UI)

▸ JSX compiles to javascript

▸ Handles various staff for you

   ▸ Prevents injection attacks

   ▸ Updates only what is needed

```
<h1 className='intro'>Hello, world!</h1>
// Translates to:
React.createElement( 'h1', {className: 'intro'}, 'Hello, world!');
```

REACT ELEMENTS

▸ The smallest building blocks of React

▸ Unlike browser DOM elements, React elements are plain objects

▸ Elements are what components are made of

```
const element = <h1>Hello, world</h1>;
```

FUNCTIONAL COMPONENTS

▸ Simplest way to define a component - just a javascript function

▸ Accepts a props object argument and returns a React component

```
function Welcome(props) {
  return <h1>Hello, {props.name}</h1>;
}
```

CLASS COMPONENTS

```
class Welcome extends React.Component {
  render() {
    return <h1>Hello, {this.props.name}</h1>;
  }
}
```

THINGS TO NOTICE!

▸ Remember! Its JSX not Html

▸ Why className?

▸ All custom component names must start with a capital letter

▸ Don't forget to export

PROFILE COMPONENT

Dan Abramov
London, UK

12751
Followers

186
Repositories

171
Following

LET'S REFACTOR THE PROFILE COMPONENT

Dan Abramov
London, UK

12751
Followers

186
Repositories

171
Following

PROPS

▸ A way to pass data in React components

▸ Read-only

```javascript
function Welcome(props) {
  return <h1>Hello, {props.name}</h1>;
}
const element = <Welcome name="George" />;
```

TYPE CHECKING PROPS

▸ Development only mode

▸ Examples

```
PropTypes.object
PropTypes.array
PropTypes.bool
PropTypes.number.isRequired
PropTypes.shape({
  Name: PropTypes.string,
  Age: PropTypes.number,
})
PropTypes.arrayOf(PropTypes.string)
PropTypes.oneOf(['one', 'two', 'three'])
```

EXTRACT PROFILEINFO COMPONENT
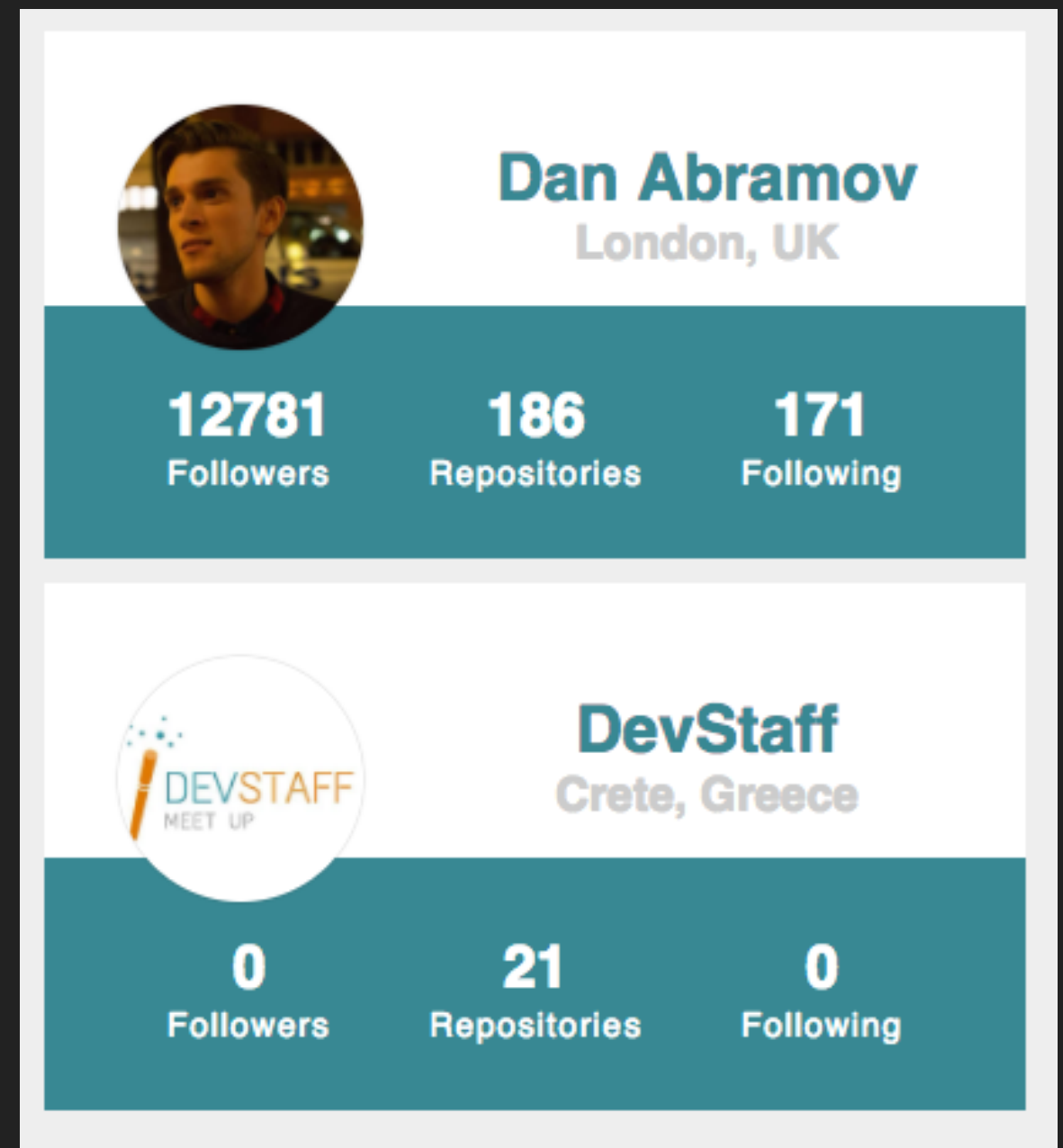
PROFILELIST COMPONENT

▸ Move data to App component

▸ Iterate data and create profiles dynamically

▸ Notice! Unique "key" attribute

STATE

▸ Only in Class components

▸ Should be initialised in the constructor method

▸ Is changed with setState() function

COMPONENT LIFECYCLE

‣ <u>Mounting</u>: These methods are called when an instance of a component is being created and inserted into the DOM:

  ‣ constructor()

  ‣ componentWillMount()

  ‣ render()

  ‣ componentDidMount()

‣ <u>Updating</u>: An update can be caused by changes to props or state. These methods are called when a component is being re-rendered:

  ‣ componentWillReceiveProps()

  ‣ shouldComponentUpdate()

  ‣ componentWillUpdate()

  ‣ render()

  ‣ componentDidUpdate()

‣ <u>Unmounting</u>: This method is called when a component is being removed from the DOM:

  ‣ componentWillUnmount()

SEARCH COMPONENT

Username   Search

PASSING FUNCTIONS AS PROPS

▸ Defined in the parent App component

▸ Will be populated and executed by the child Search component

▸ Necessary to pass data from child to parent

SUPPORTED EVENTS

▸ onKeyDown

▸ onFocus

▸ onChange

▸ onSubmit

▸ onClick

▸ onMouseEnter

▸ onScroll

▸ ...

DOM AND VIRTUAL DOM

▸ React Only Updates What's Necessary!

```
function tick() {
  const element = (
    <div>
      <h1>Hello, world!</h1>
      <h2>It is {new Date().toLocaleTimeString()}.</h2>
    </div>
  );
  ReactDOM.render(
    element,
    document.getElementById('root')
  );
}
setInterval(tick, 1000);
```

Hello, world!

It is 12:26:46 PM.

| Console | Sources | Network | Timeline |

```
▼<div id="root">
  ▼<div data-reactroot>
      <h1>Hello, world!</h1>
    ▼<h2>
        <!-- react-text: 4 -->
        "It is "
        <!-- /react-text -->
        <!-- react-text: 5 -->
        "12:26:46 PM"
        <!-- /react-text -->
        <!-- react-text: 6 -->
        "."
        <!-- /react-text -->
      </h2>
    </div>
</div>
```
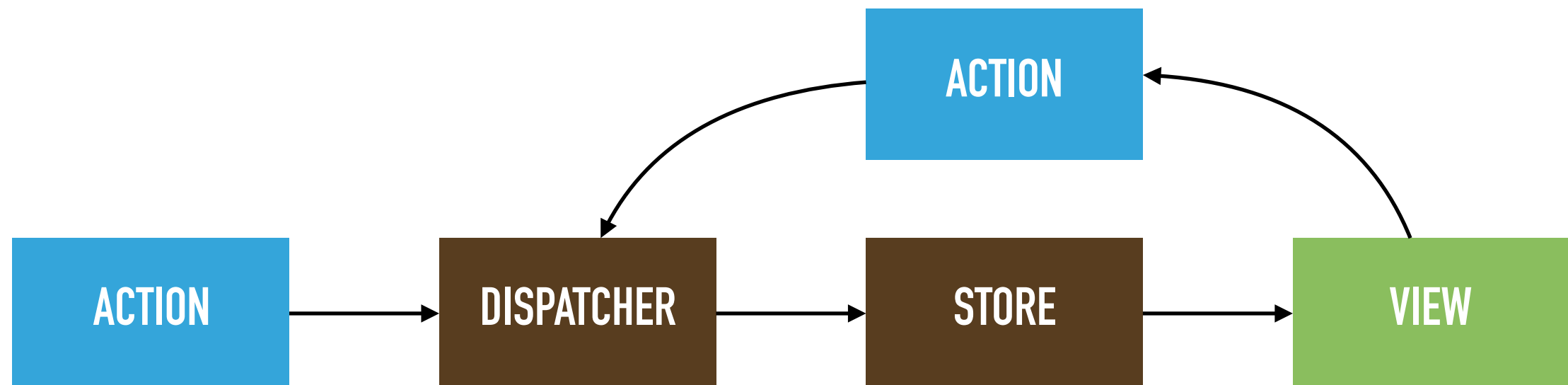
REACT ECOSYSTEM

TOOLING

APPLICATION STATE – REDUX

OTHER USEFUL MODULES

▸ React-router

▸ Immutability: Immutable.js, seamless-immutable

▸ CSS: Autoprefixer, react-css-modules, classnames

▸ Testing: Mocha, Jest, Enzyme

BROWSER DEV TOOLS

▸ React Developer Tools:
https://chrome.google.com/webstore/detail/react-developer-tools/fmkadmapgofadopljbjfkapdkoienihi

▸ Redux Developer Tools:
https://chrome.google.com/webstore/detail/redux-devtools/lmhkpmbekcpmknklioeibfkpmmfibljd?hl=en

INFLUENCERS

React is fast-moving. Keep up with the updates!

▸ @jordwalke: React creator

▸ @dan_abramov: Redux creator

▸ @ryanflorence: React router creator

▸ @mjackson: React router creator

▸ @sebmarkbage

▸ @ken_wheeler

THANK YOU!