React, Flux, and Realtime RSVPs

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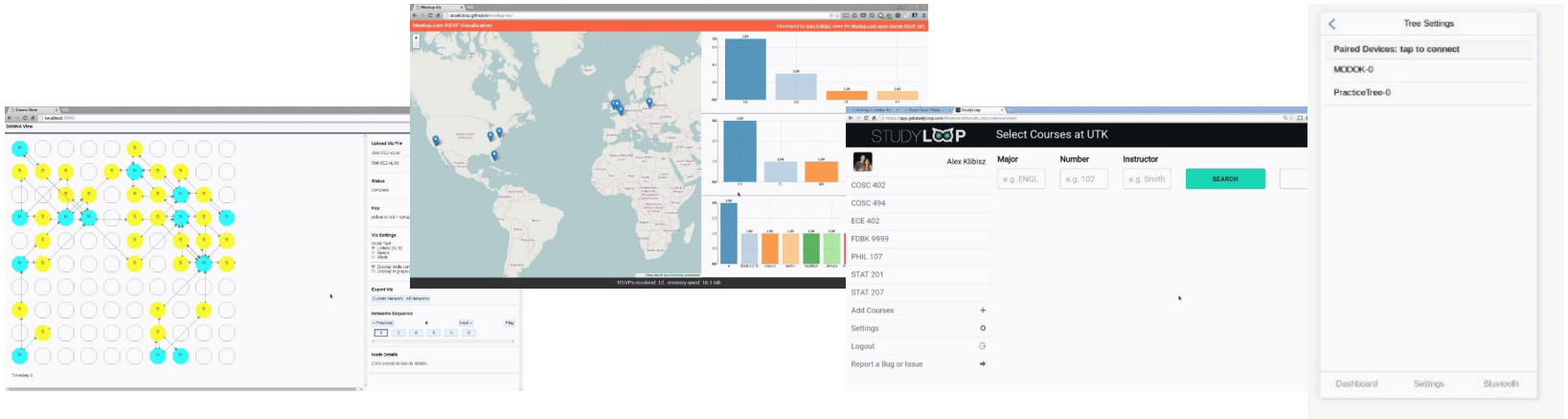
Alex Klibisz (*Kleebeesh*)

- Senior at UT, Computer Science
- Web development background
- Node.js, Angular, Knockout, jQuery, Cordova, since late 2014.
- Started using React September 2015.



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6. Build it!

React

- Library for component-based views
- Rendering, updating, handling interactions in components
- Often used with multiple other tools

React (example)

Component is given props

```
<UserList users={[ “Simon”, “Alvin”, “Theo” ]}/>
```

Component declares what to display

```
render() {
  var listItems = this.props.users.map(function(user) {
    return <li>{user}</li>;
  });
  return <ul>{listItems}</ul>;
}
```

React renders component

- Simon
- Alvin
- Theo

Component re-rendered automatically on changes.

```
<UserList users={[ "Sam", "Alex", "Chris" ]}/>
```

- Sam
- Alex
- Chris

Why’s that helpful

1. Treat components as functions.
2. Re-use and compose components.
3. Render to a virtual DOM, React applies minimal change to real DOM.
4. Node.js-style modules and npm for dependencies.
5. Render on the server (good for SEO, social sharing, etc.)

Flux

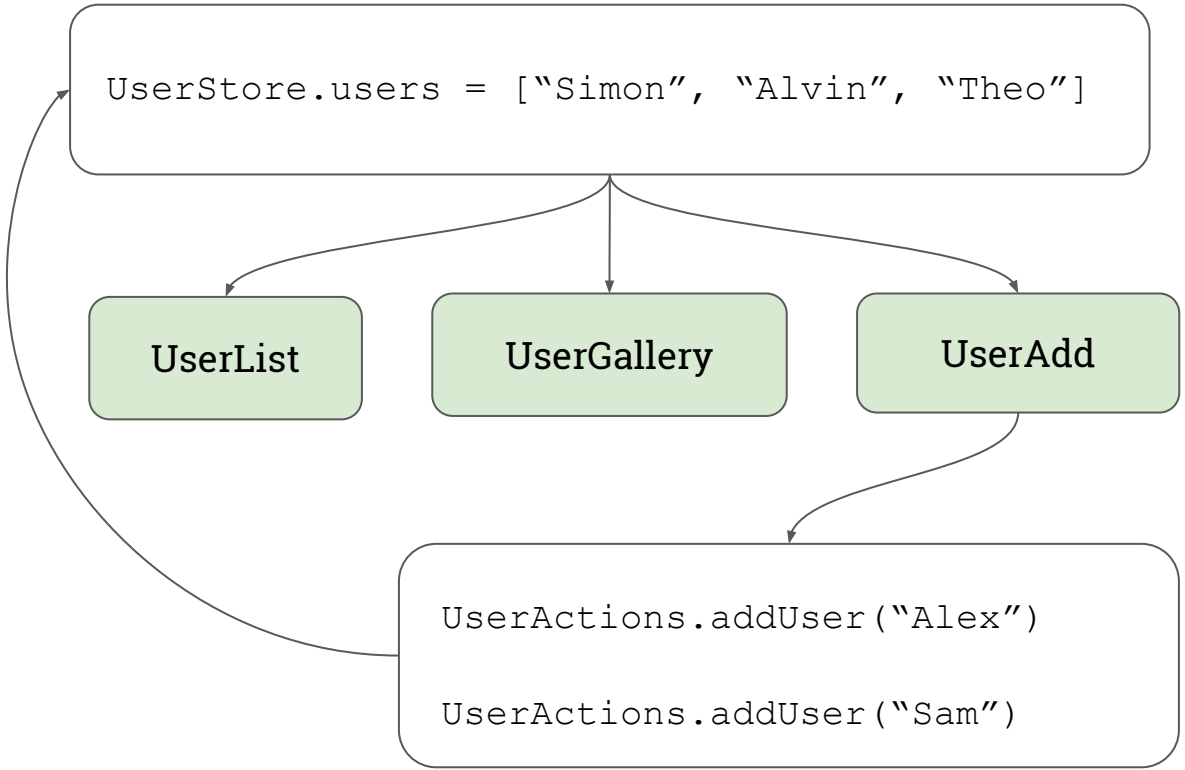
- Pattern for maintaining data in your app
- Many implementations (Alt, Redux, Reflux, etc.)
- Stores: store the data
- Actions: update the data
- Components: subscribe to updates

Flux (example)

Stores contain shared data.

Components subscribe to stores.

Components update stores via actions.

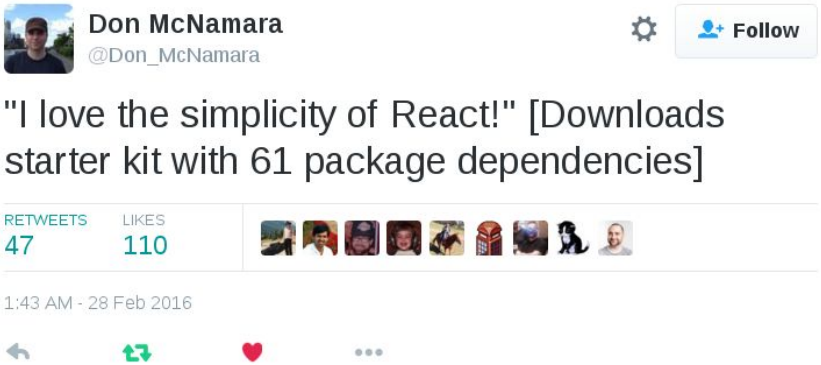


Why’s that helpful

1. Source of truth for your application’s state.
2. Easy to sync data across components.

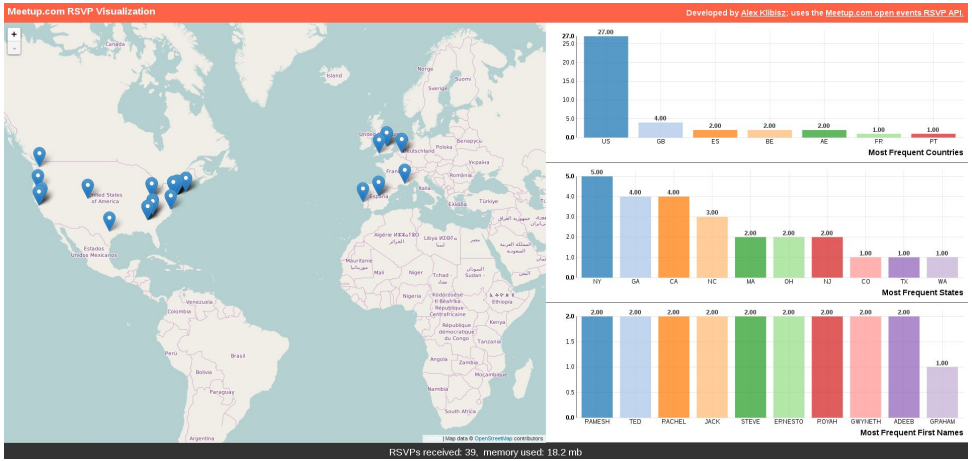
Confusion is Normal

1. Build systems (Webpack, Browserify, etc.)
2. ES6, ES7 is the norm
3. Careful with “boilerplates” and “starter projects”
4. Plenty of online banter



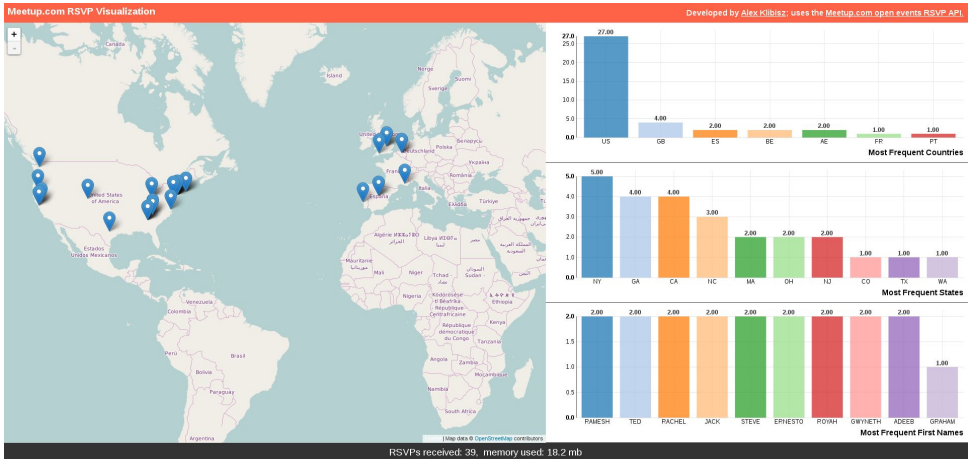
What are we building?

- Real-time RSVPs from Meetup.com over a websocket.
- Bar charts using NVD3
- World map with pins using Leaflet

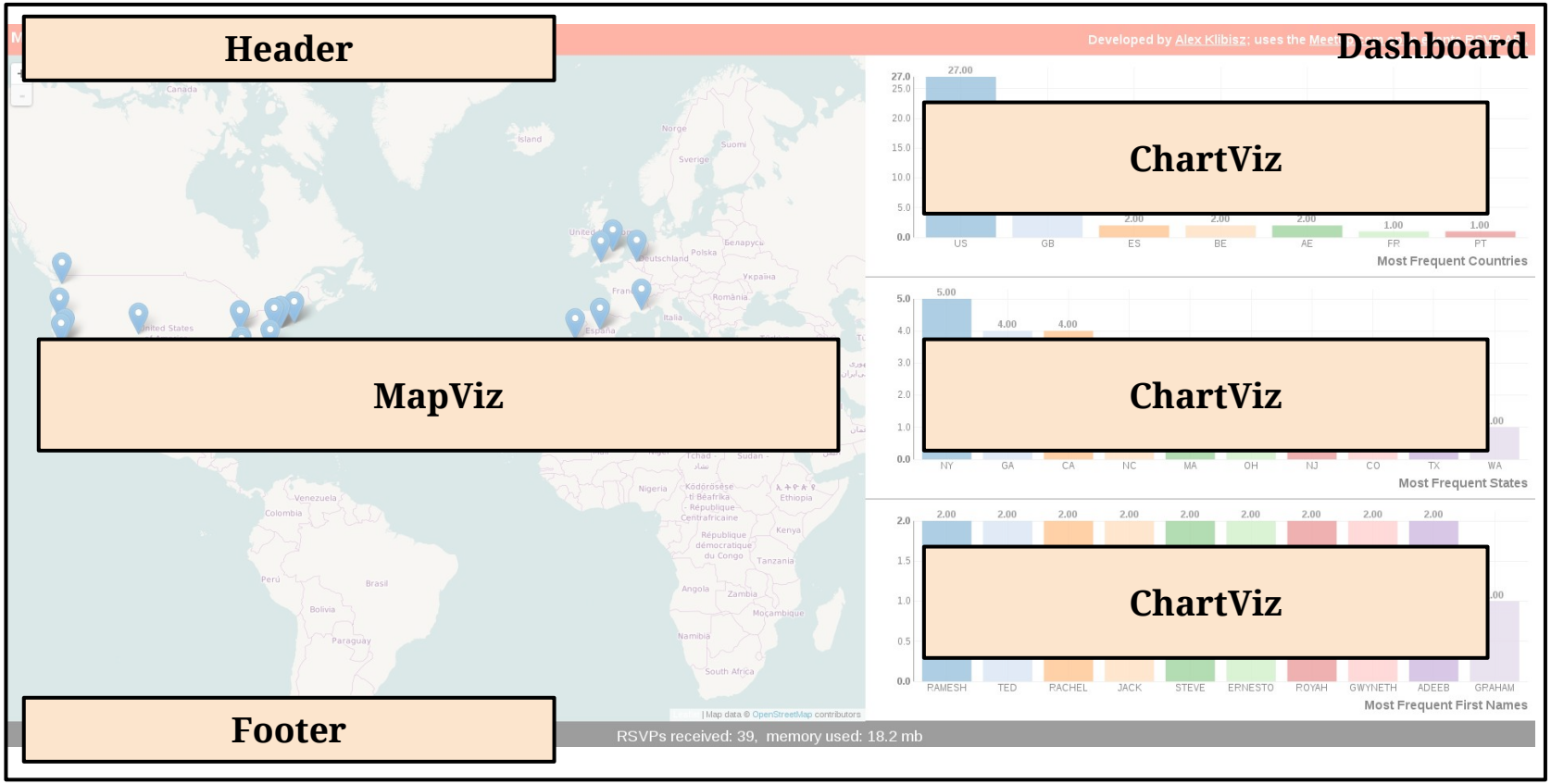


Why React and Flux?

1. Re-usable components
2. Re-rendering in real-time
3. Single source of data, multiple components



Strategy: Component Structure



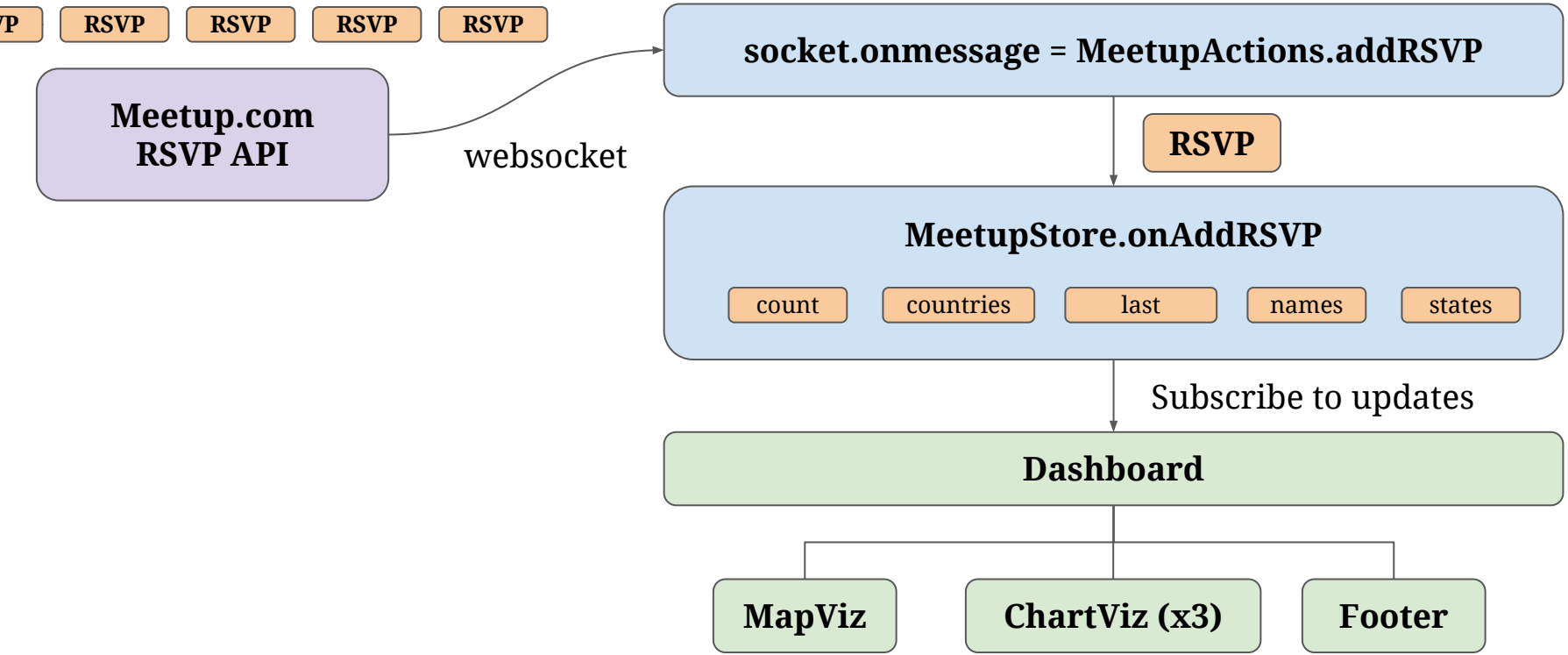
Strategy: Component APIs

```
<ChartViz vizID='barchart-countries'
  chartName='Most Frequent Countries'
  dataValues={{'USA': 5, 'CA': 4}}
  barCount={10}/>

<MapViz last={{lat: 123, lon: 123, ...}} />

<Footer count={999}/>
```

Strategy: Data Flow



Code time…

VoteForAlex.xyz

1. Exploring AWS Lambda and Serverless Architectures
2. Firebase: architecting beyond the chat app

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