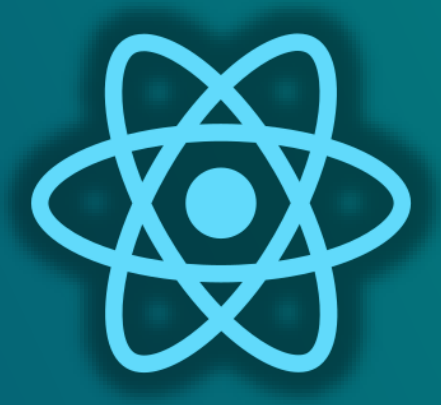
Front-End Development



React & Redux

Components direct access

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Redux

- Redux is a predictable state container for any JavaScript apps. It gives every components *direct access* to the data they need.
- Redux evolves the ideas of Flux, but avoids its complexity by taking cues from Elm.
- Installation
  (for React project, use 2 standard packages)

```
$ npm install redux react-redux --save
```

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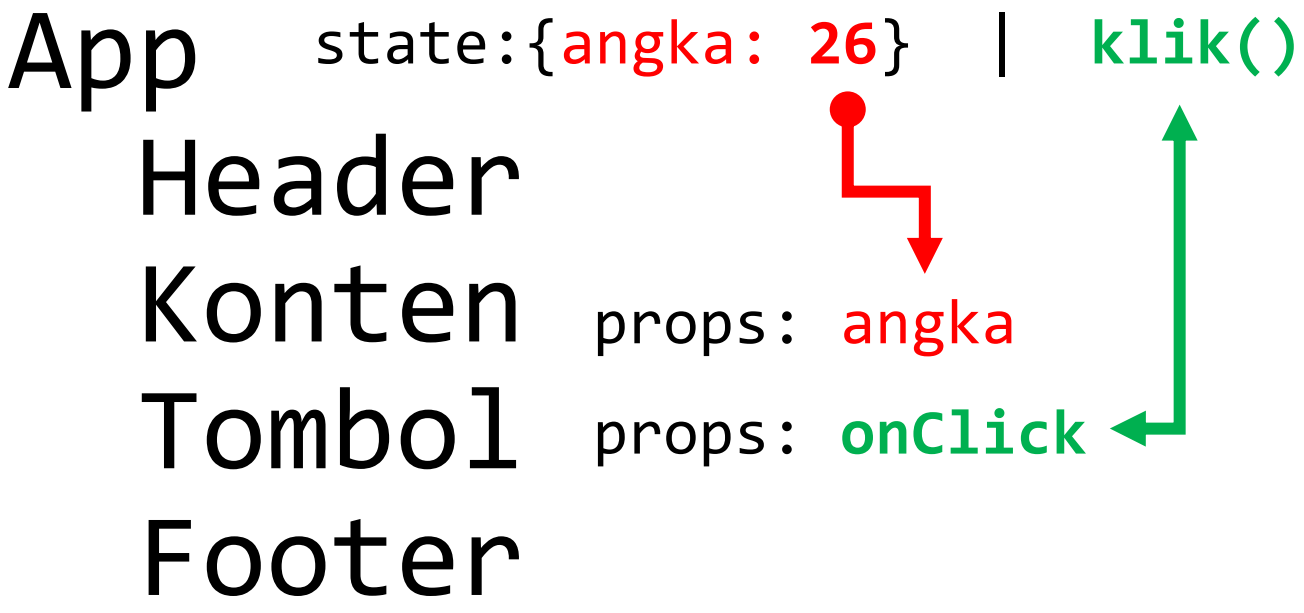
Why Should We Use Redux?

- In React (one way data flow), data is passed down the component tree via props & through a callback function to come back up the tree.



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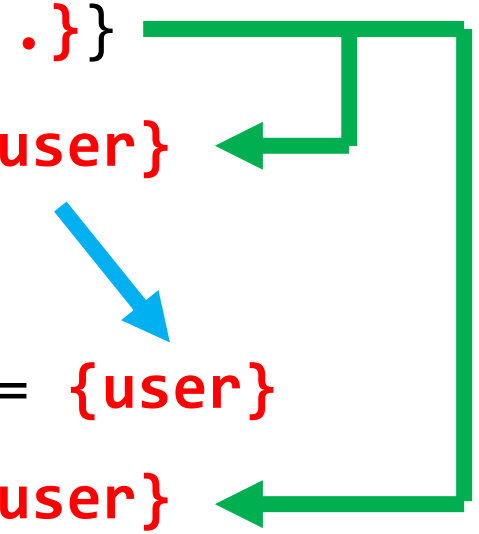
Why Should We Use Redux?

App state:{user: {...}}

- ★ Header user = {user}
  - Navbar
  - Foto1 user = {user}
- ★ Konten user = {user}
  - Sidebar
  - Foto2 user = {user}
- ★ Tombol
- ★ Footer



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Why Should We Use Redux?

- Getting data down like on the previous slide, is quite wasting time. More than that, it's not a good software design.
- Intermediate components in the chain (on this case: Header & Konten) must accept & pass along props that they don't care about.
- It would be nice if the components that didn't need the data didn't have to see it at all.
- This is the problem that Redux solves. It gives components direct access to the data needed.

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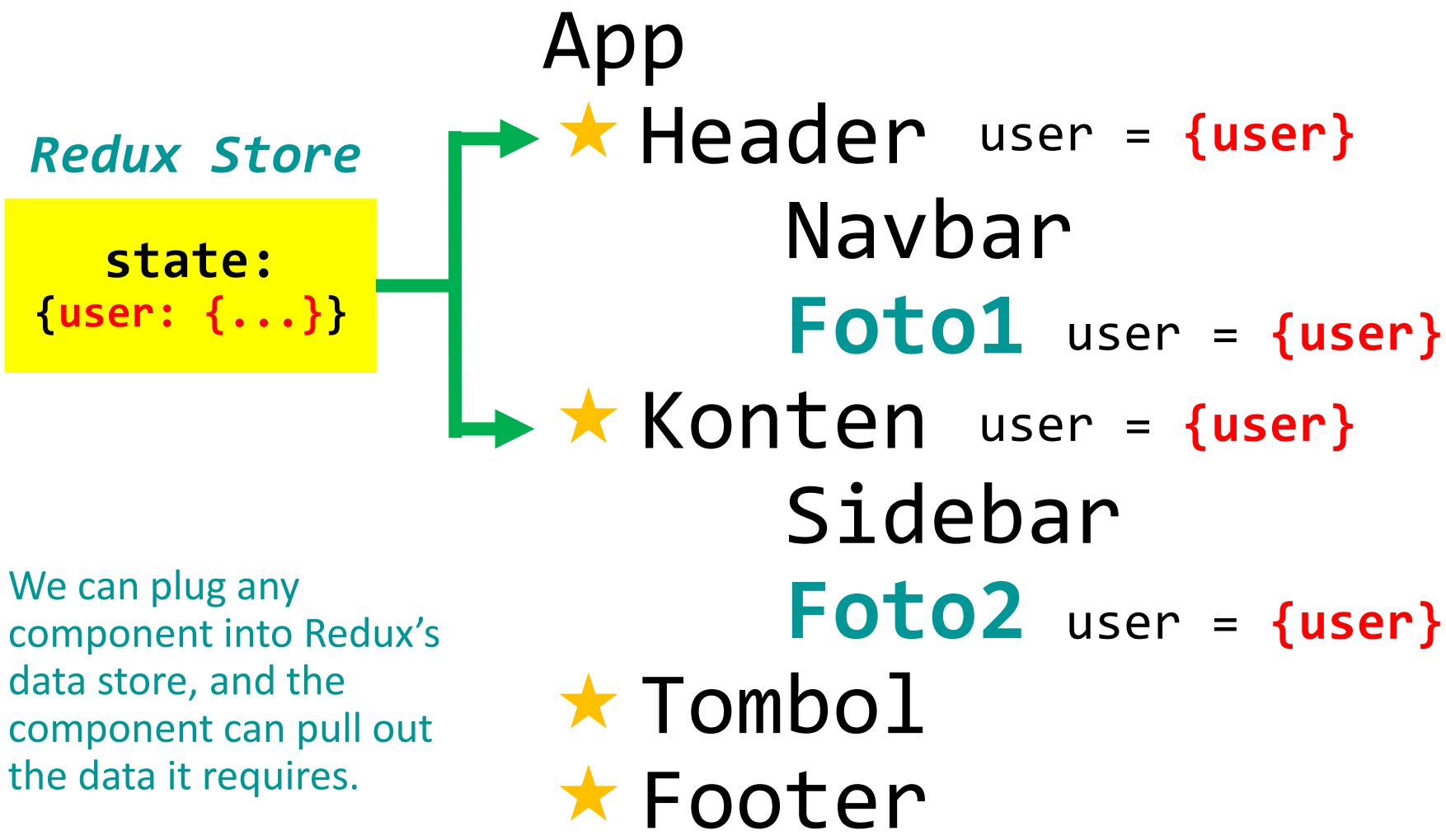
Why Should We Use Redux?



We can plug any component into Redux's data store, and the component can pull out the data it requires.

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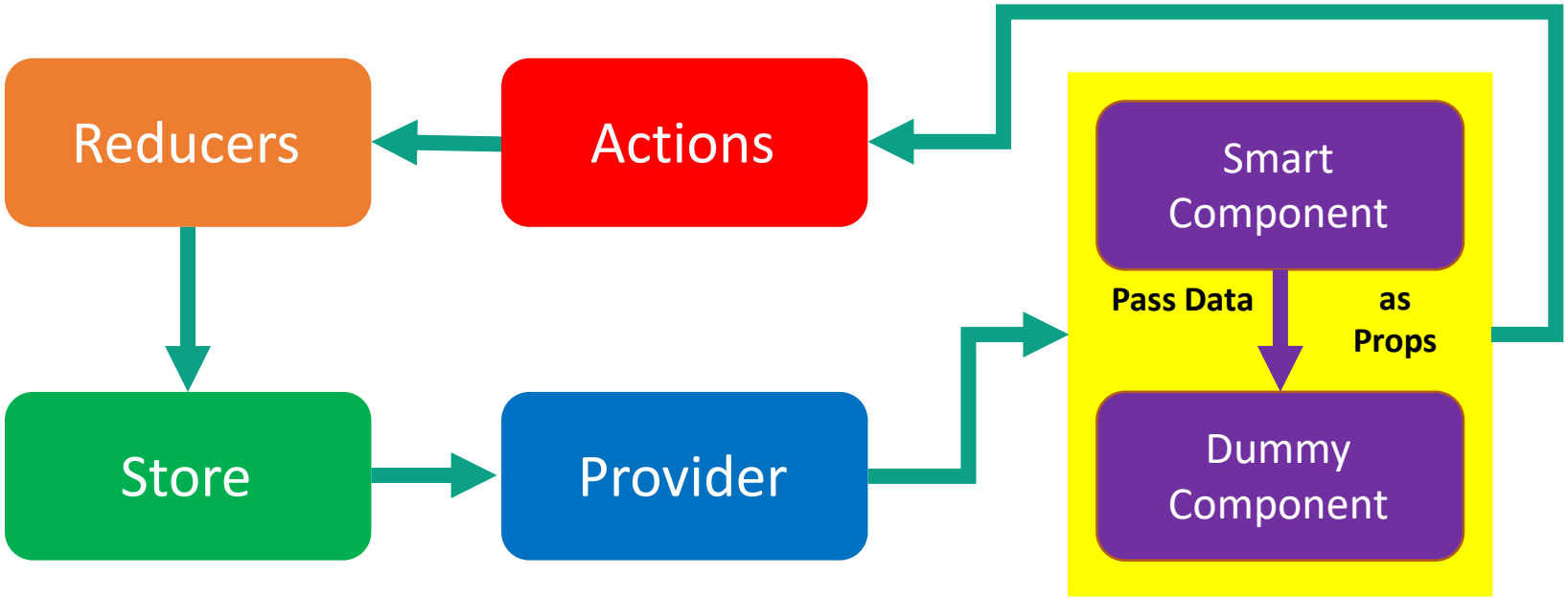
Basic Schema

- Install

  $ npm install redux react-redux --save



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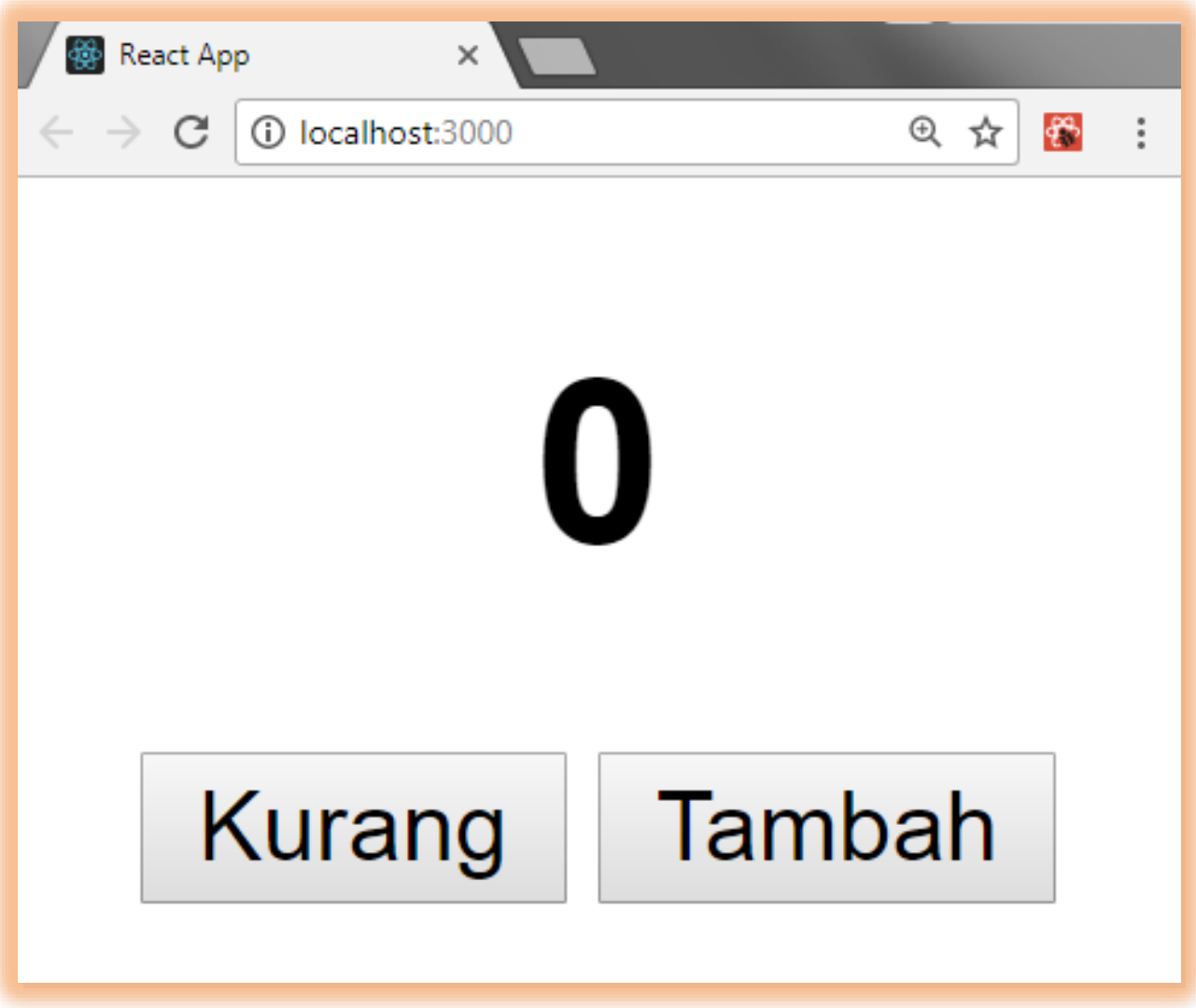

Create without Redux!

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src/App.js

#1 Basic Template

```
import React, { Component } from 'react';

class App extends Component {
state = { count: 0 }

increment = () => {
this.setState({
count: this.state.count + 1
});
}

decrement = () => {
this.setState({
count: this.state.count - 1
});
}
```

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src/App.js

#1 Basic Template

```
render(){
return (
<div>
<center>
<h1>{this.state.count}</h1>
<div>
<button onClick = {this.decrement}>Kurang
</button>
<span> </span>
<button onClick = {this.increment}>Tambah
</button>
</div>
</center>
</div>
);
}
}

export default App;
```

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src/index.js

#2 Basic template

```
import React from 'react';
import ReactDOM from 'react-dom';

import App from './App';

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

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How to Use Redux On React Project

“let’s code step by step”

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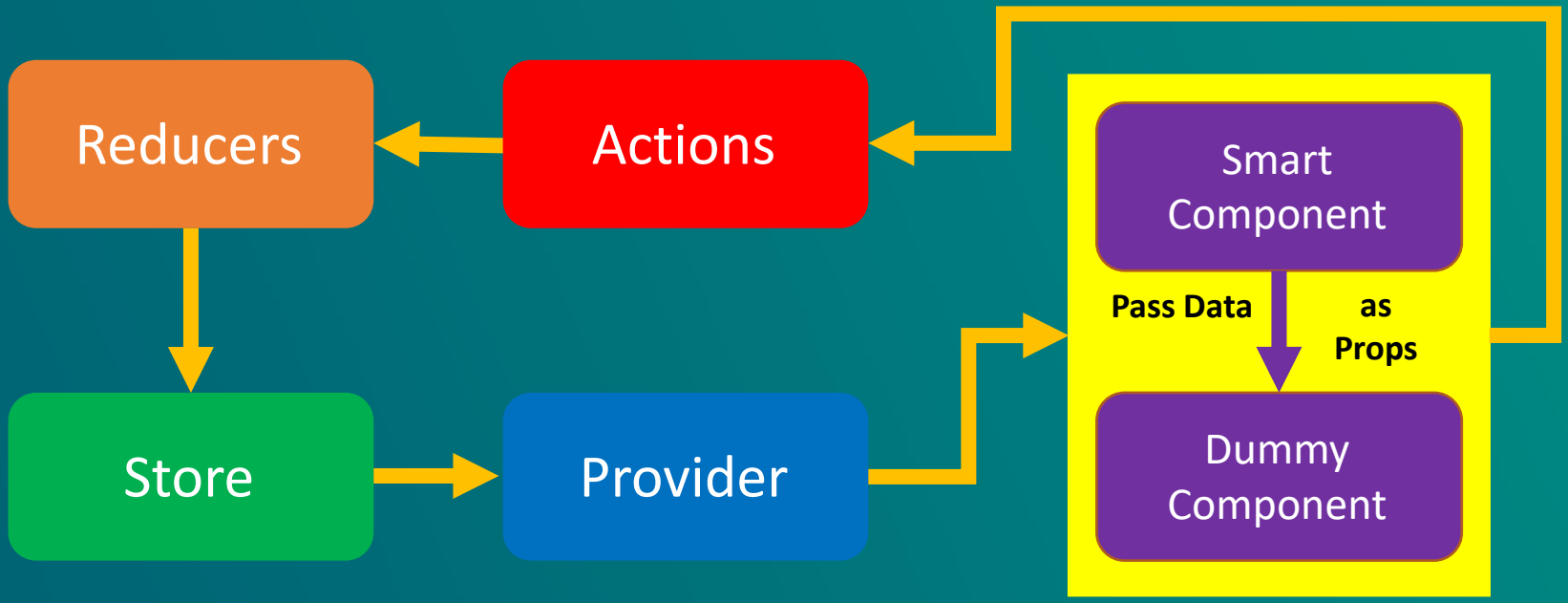
Remember this schema!

$ npm install redux react-redux --save



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src/App.js

#1a Import Connect Redux
#1b Delete setState on Func

```
import React, { Component } from 'react';
import { connect } from 'react-redux';

class App extends Component {
state = { count: 0 }

increment = () => {
// fill in later
}

decrement = () => {
// fill in later
}
```

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src/App.js

#1c Insert this.props

#1d Connect to Redux

```
render(){
return (
 <div>
   <center>
     <h1>{this.props.count}</h1>
     <div>
       <button onClick = {this.decrement}>Kurang</button>
       <span> </span>
       <button onClick = {this.increment}>Tambah</button>
     </div>
  </center>
 </div>
);
}
}

function mapStateToProps(state){
  return {
    count: state.count
  };
}

export default connect(mapStateToProps)(App)
```

src/index.js

#2 Provide a Store

```
import React from 'react';
import ReactDOM from 'react-dom';
import App from './App';

import { Provider } from 'react-redux';

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

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src/index.js

#3 Create a Store

```
import React from 'react';
import ReactDOM from 'react-dom';
import App from './App';

import { Provider } from 'react-redux';

import { createStore } from 'redux';

const store = createStore();

ReactDOM.render(
<Provider store={store}>
<App />
</Provider>, document.getElementById('root'));
```

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src/index.js

#4 Create a Reducer

```
import React from 'react';
import ReactDOM from 'react-dom';
import App from './App';

import { Provider } from 'react-redux';
import { createStore } from 'redux';

function reducer(){
  return {
    count: 42
  };
}

const store = createStore(reducer);

ReactDOM.render(
<Provider store={store}>
<App />
</Provider>, document.getElementById('root'));
```

src/index.js

#5 State and Action Param

```
import React from 'react';
import ReactDOM from 'react-dom';
import App from './App';

import { Provider } from 'react-redux';
import { createStore } from 'redux';

const initialState = {
  count: 0
};

function reducer(state=initialState, action){
  return state;
}

const store = createStore(reducer);

ReactDOM.render(
<Provider store={store}>
<App />
</Provider>, document.getElementById('root'));
```

src/index.js

#6 Insert Action

```
. . . . . .

function reducer(state=initialState, action){
  switch(action.type){
    case 'INCREMENT':
      return {
      count: state.count + 1
    };
    case 'DECREMENT':
      return {
      count: state.count - 1
    };
    default:
      return state;
    }
  }

. . . . . .
```

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src/App.js

#7 Dispatch Action

```
. . . . . .

class App extends Component {
state = { count: 0 }

increment = () => {
this.props.dispatch({type:'INCREMENT'});
}

decrement = () => {
this.props.dispatch({type:'DECREMENT'});
}

render(){

. . . . . .
```

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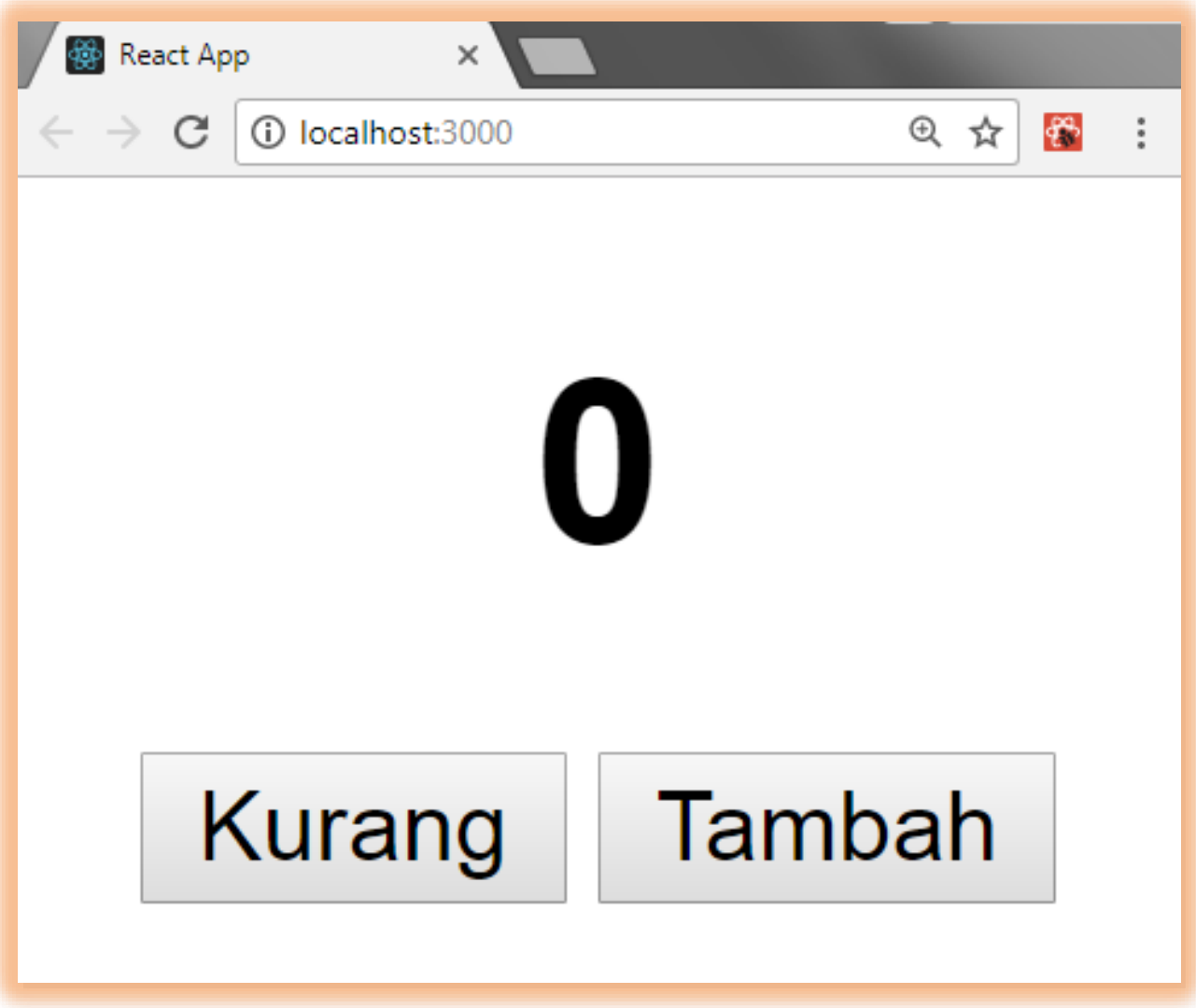

Redux's in da house!

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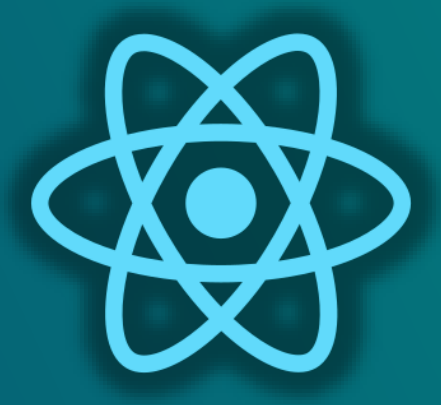
Front-End Development



React & Redux

Components direct access

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