WHAT I LEARNED DURING THE PAST MONTH

AGENDA

- Overview of React
- React-Redux
- React Loadable
- Caching using Service Worker
- Server Side Rendering in React
- React-Router

REACT OVERVIEW

- React → makes creating interactive UI painless, by building components that have states and props

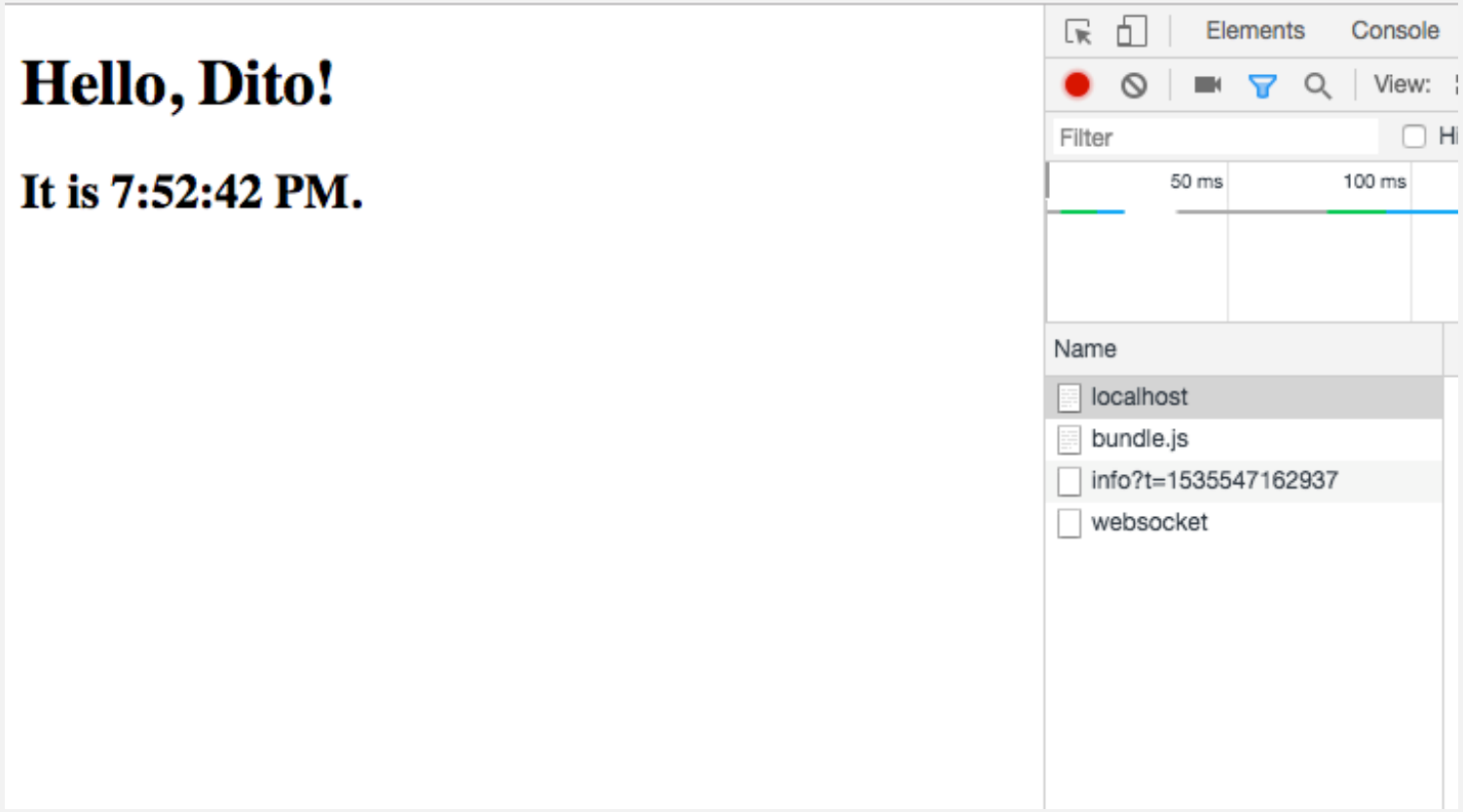
```
import React from 'react';
import ReactDOM from 'react-dom';
import Clock from './Clock';

ReactDOM.render(
    <Clock name="Dito"/>,
    document.getElementById('root')
);
```

index.js

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

class Clock extends Component {
  constructor(props) {
    super(props);
    this.state = {date: new Date()};
  }

  render() {
    return (
      <div>
        <h1>Hello, {this.props.name}!</h1>
        <h2>It is {this.state.date.toLocaleTimeString()}.</h2>
      </div>
    );
  }
}

export default Clock;
```

Clock.js

For further reference: https://reactjs.org/

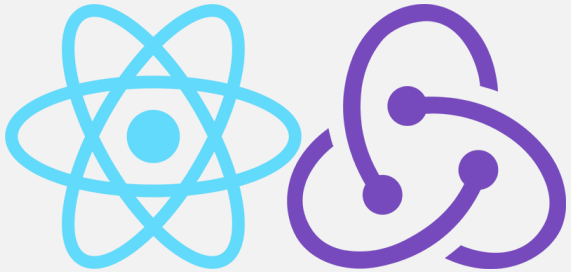


This example can be found on:

https://github.com/albertusandito-olx/simple-react-app

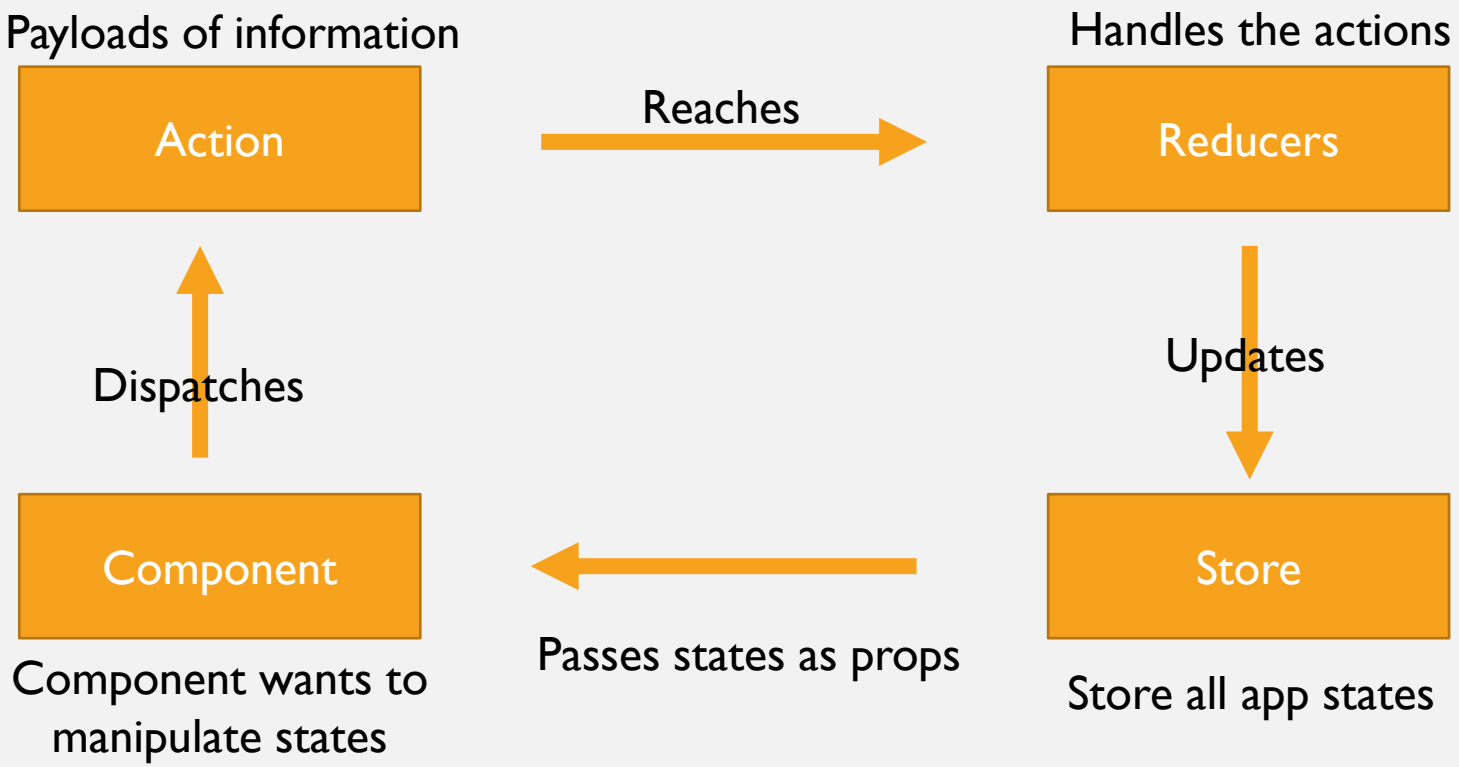
REACT-REDUX

- React app contains many states → **messy and difficult to manage**
- + With Redux, **state management is easy**!
- Only need one STORE to keep all of the states
- Redux uses ACTIONS to update the states, and REDUCER to handle the actions and connect to the store



For further reference: https://redux.js.org/basics

REDUX FLOWCHART



REACT LOADABLE

- React app's bundle is often so big, especially *Single Page Application* (SPA) → slow things down
- React-Loadable code-splits the app into several chunks.
- By using dynamic import, it only loads the components when needed.
- + Advantage? Faster! Lighten up the initial load!

For further reference: https://github.com/jamiebuilds/react-loadable

CACHING USING SERVICE WORKER

- Caching → Providing offline support!
- Caching is all done in the Service Worker
- Files are cached in the Cache Storage in Browser
- What to cache? App Shell!
- Multiple strategies to cache: I used network with cache fallback

For further reference: https://developers.google.com/web/ilt/pwa/caching-files-with-service-worker

REACT SERVER-SIDE RENDERING

- Normal React: send blank HTML to client → render on client
- React SSR: render on server → send full HTML to client
- Using Node and Express
- Pros:
  - + Could improve the SEO
  - + Displaying content to user faster
- Cons:
  - - More work for the server
  - - Can't be used with other languages other than Node (with Babel transpiler)

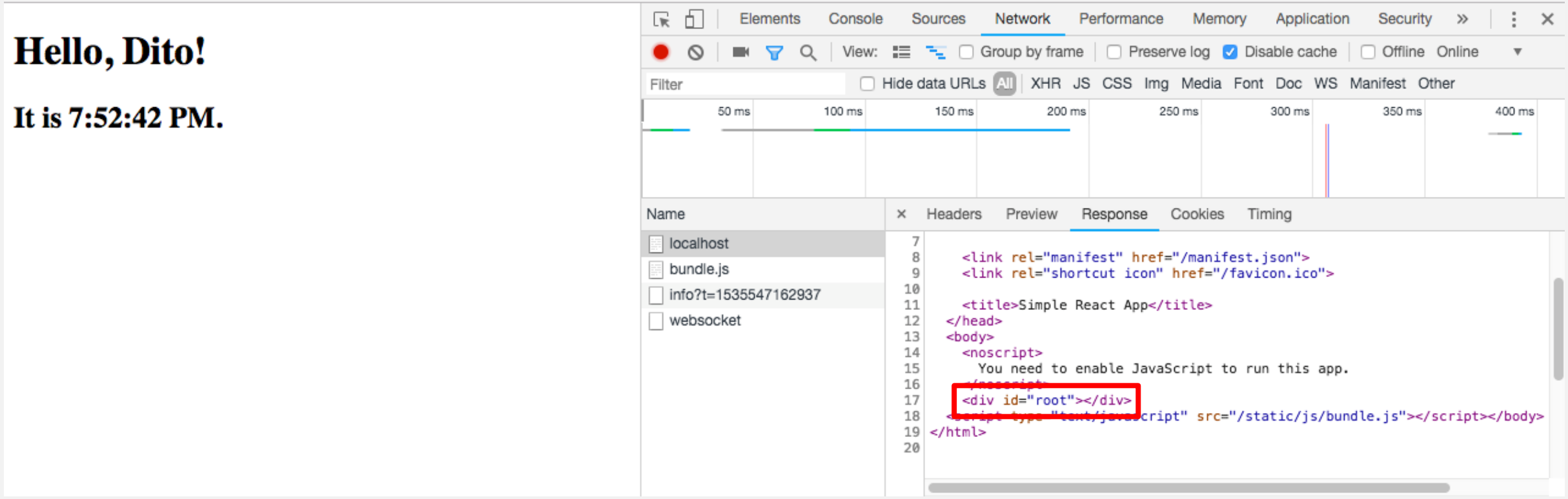
For further reference: https://naspers.udemy.com/server-side-rendering-with-react-and-redux/learn/v4/content

GITHUB REPO LINK

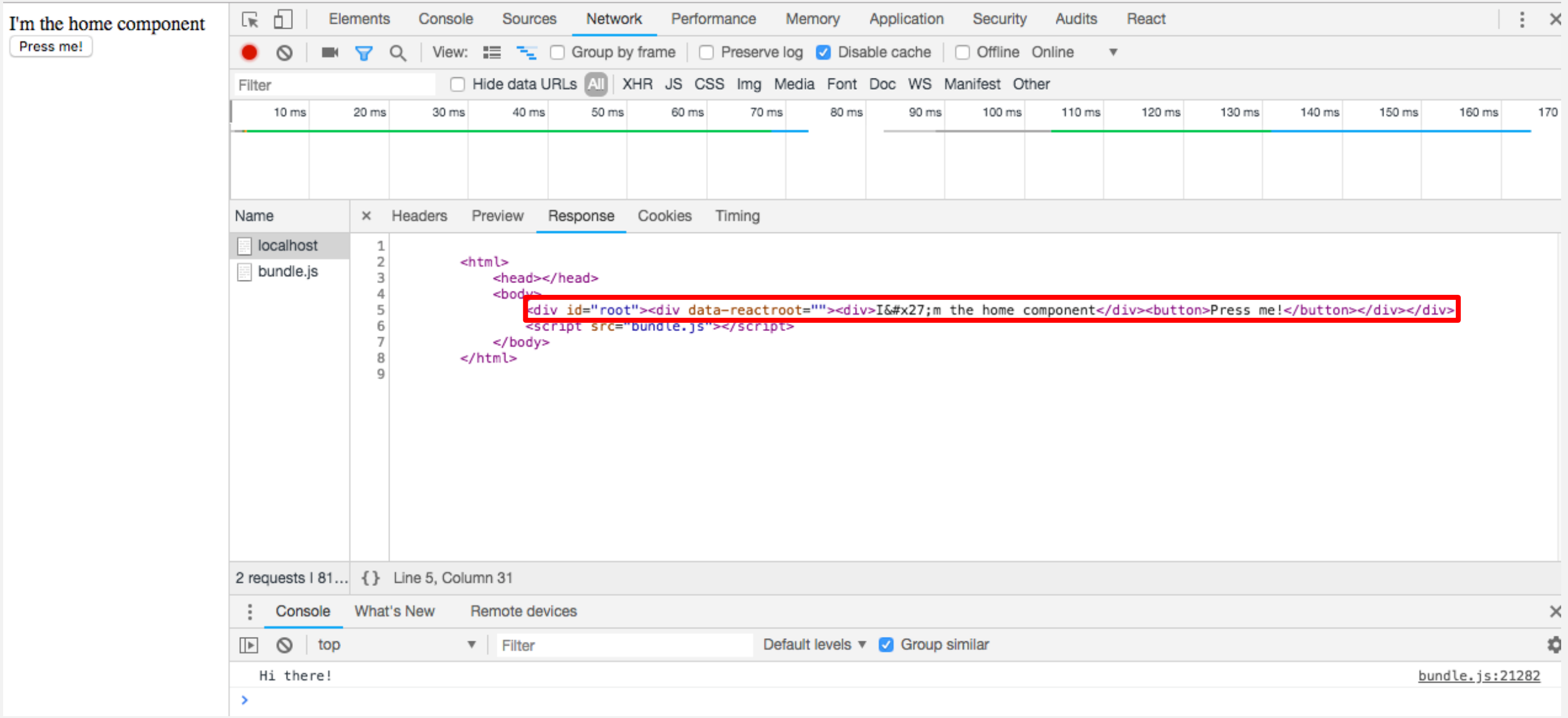
The following example can be found on:

https://github.com/albertusandito-olx/react-ssr-example

NORMAL REACT



REACT SERVER-SIDE RENDERING



SERVER – index.js

```
import path from 'path';
import fs from 'fs';

import express from 'express';
import React from 'react';
import { renderToString } from 'react-dom/server';
import Home from './client/components/Home';

const app = express();

app.use(express.static('public'));

app.get('/', (req, res) => {
    const content = renderToString(<Home />);

    const indexFile = path.resolve('./public/index.html');
    fs.readFile(indexFile, 'utf8', (data) => {
        return res.send(
            data.replace('<div id="root"></div>', `<div id="root">${content}</div>`)
        );
    });
});

app.listen(3000, () => {
    console.log('Listening on port 3000.');
});
```

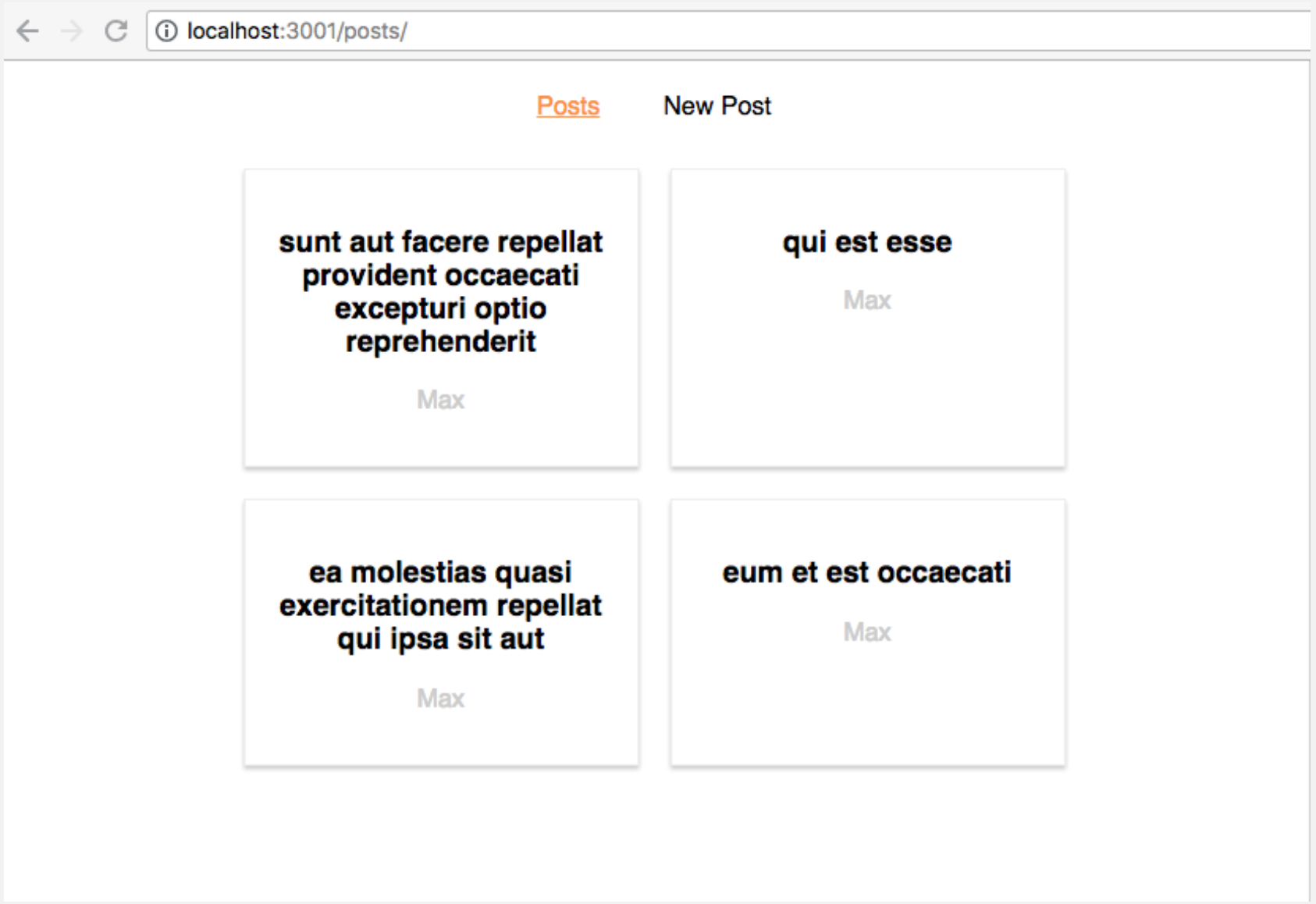
CLIENT – client.js

```
// Startup point for the client side application

import React from 'react';
import ReactDOM from 'react-dom';
import Home from './components/Home';

ReactDOM.hydrate(<Home />, document.querySelector('#root'));
```

REACT-ROUTER

- Beneficial for SPA → gives Multi-Page-Feeling
- Navigating in SPA ≠ go to new page → the views load within the same page
- + the URL can be updated, reflecting the views
- + user can use the browser's back and forward buttons
- + easy to handle nested views because it's component based

For further reference: https://reacttraining.com/react-router/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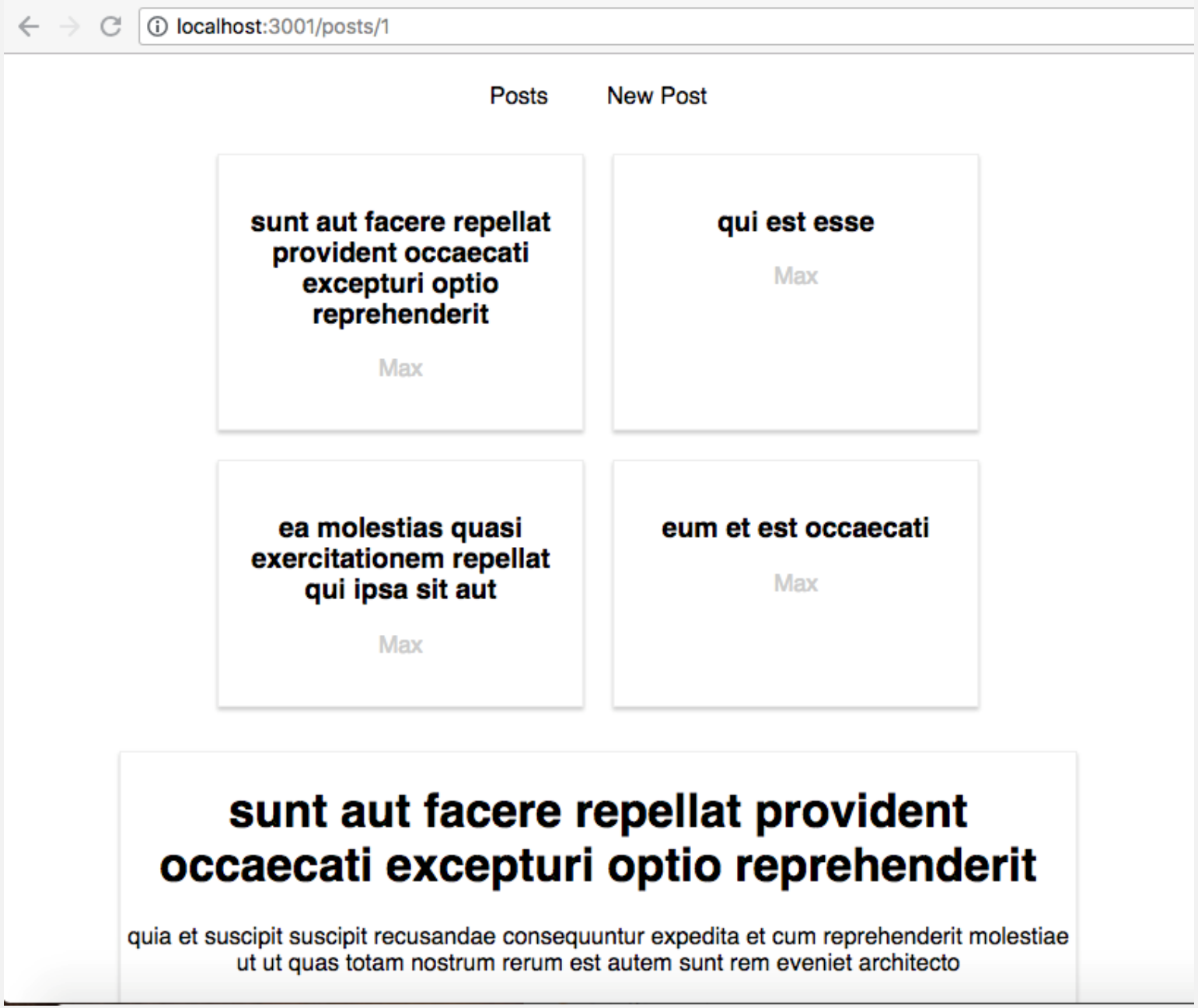
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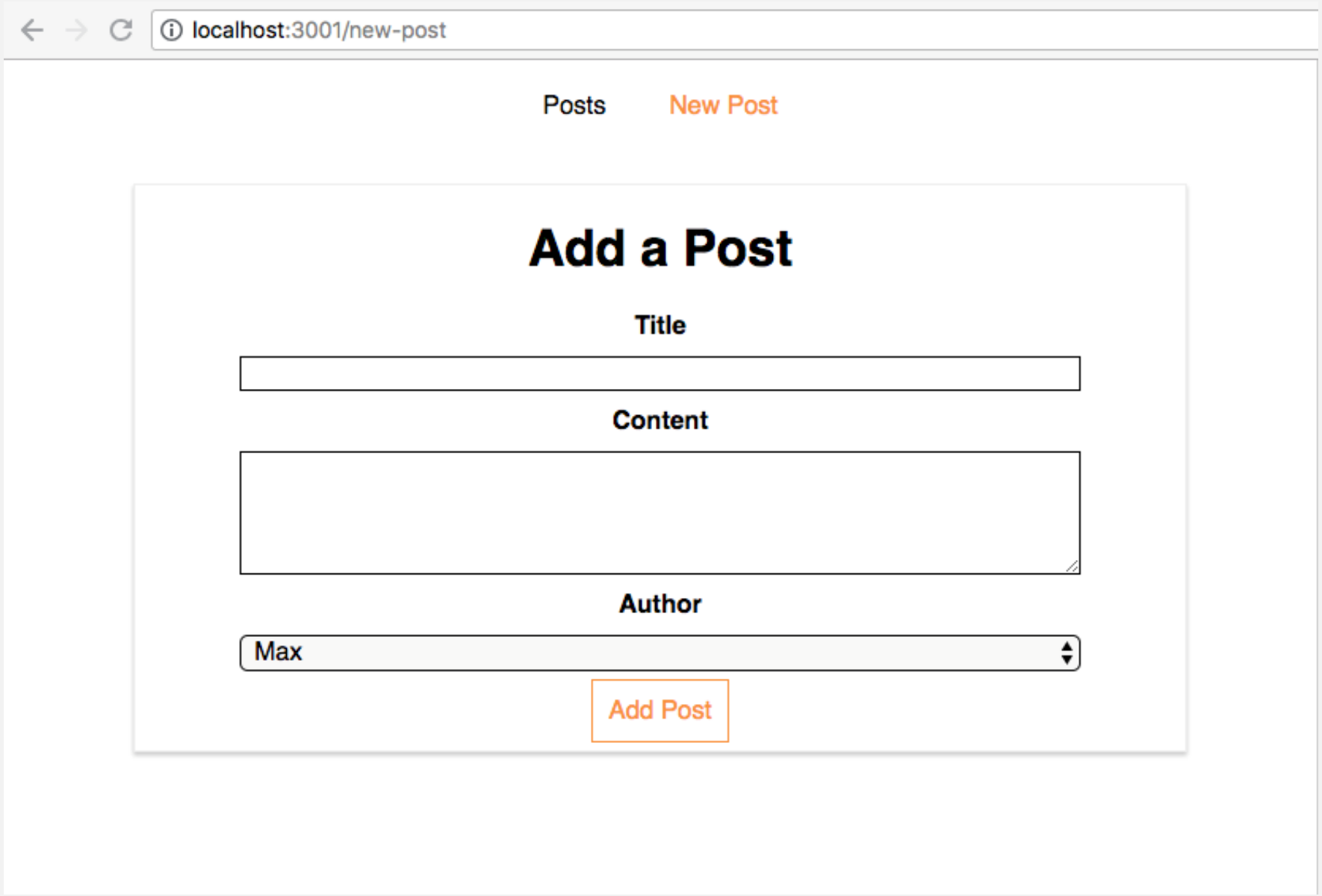

The page isn't reloaded!!!

App.js

```
import React, { Component } from 'react';
import { BrowserRouter } from 'react-router-dom';

import Blog from './containers/Blog/Blog';

class App extends Component {
  render() {
    return (
        <BrowserRouter>
          <div className="App">
            <Blog />
          </div>
        </BrowserRouter>
    );
  }
}

export default App;
```

Blog.js

```
import React, { Component } from 'react';
import { Route, NavLink, Switch, Redirect } from 'react-router-dom';

import './Blog.css';
import Posts from './Posts/Posts';
import NewPost from './NewPost/NewPost';

class Blog extends Component {
    state = {
        auth: true
    }

    render () {
        return (
            <div className="Blog">
                <header>
                    <nav>
                        <ul>
                            <li><NavLink
                                to="/posts/"
                                exact
                                activeClassName="my-active"
                                activeStyle={{
                                    color: '#fa923f',
                                    textDecoration: 'underline'
                                }}>Posts</NavLink></li>
                            <li><NavLink to="/new-post">New Post</NavLink></li>
                        </ul>
                    </nav>
                </header>
```

Blog.js

```
                    <Switch>
                        {this.state.auth ? <Route path="/new-post" component={NewPost} /> : null}
                        <Route path="/posts" component={Posts} />
                        <Redirect from="/" to="/posts" />
                    </Switch>
                </div>
            );
        }
}

export default Blog;
```

Posts.js

```
render () {
    let posts = <p style={{textAlign: 'center'}}>Something went wrong!</p>;
    if (!this.state.error) {
        posts = this.state.posts.map(post => {
            return (
                <Link to={'/posts/' + post.id} key={post.id} >
                    <Post
                    key={post.id}
                    title={post.title}
                    author={post.author}
                    />
                </Link>
            );
        });
    }

    return (
        <div>
            <section className="Posts">
                    {posts}
            </section>
            <Route path={this.props.match.url + '/:id'} exact component={FullPost} />
        </div>

    );
};
```

THANK YOU.
ANY QUESTIONS?