Front-End Development

React

#1 Learn Once, Write Anywhere

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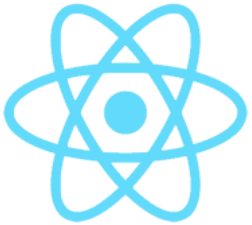

React

- React is a declarative, efficient, and flexible JavaScript library for building dynamic user interfaces.
- React is maintained by Facebook, Instagram & lot of developers community around the globe (it's open source!)
- More informations: *https://reactjs.org*

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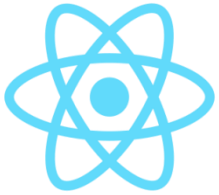

Advantages

- Design simple declarative views for each state in an application.
- Encapsulated components.
- Dynamics properties & state.
- Light & faster virtual DOM.
- Independent of the rest of application.
- Can render on client or server.

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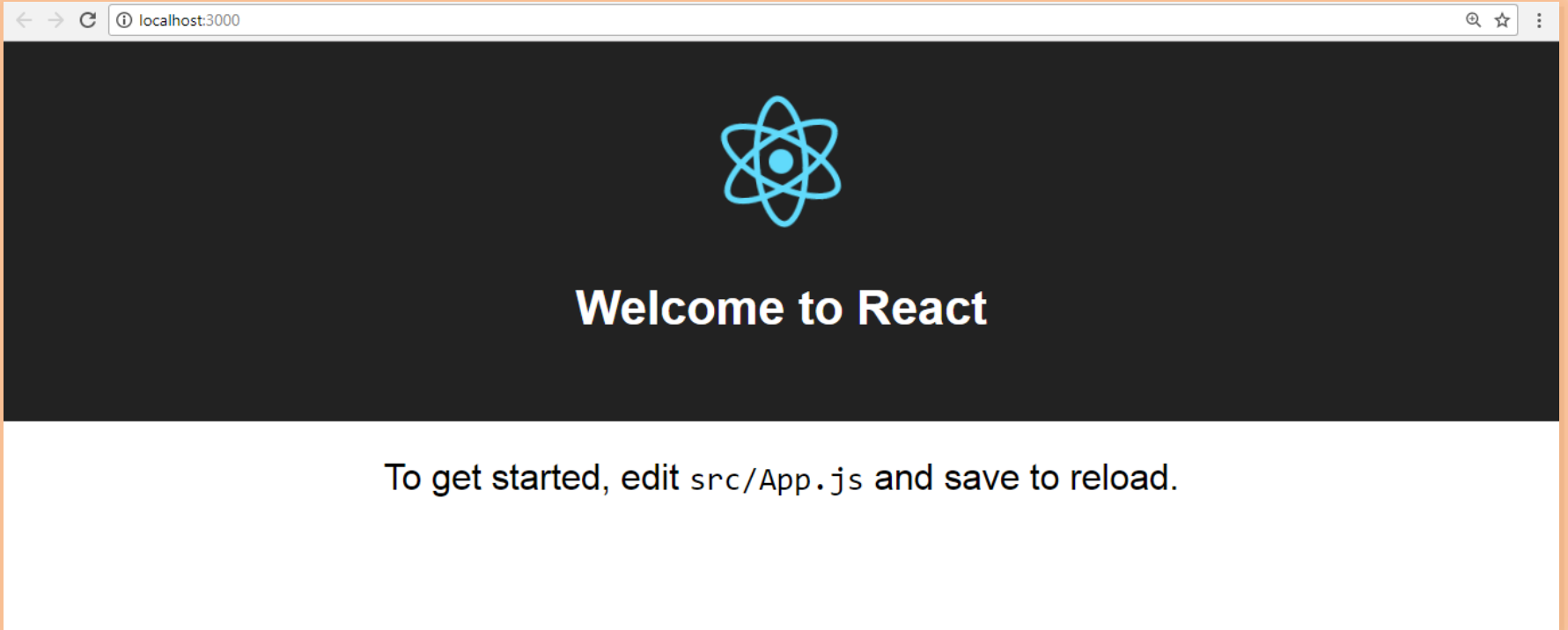
Setup

- Open terminal, on project directory type:

```
$ npm install -g create-react-app
$ create-react-app <namaProject>
$ cd <namaProject>
$ npm start
```



Take a look!

public/index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width,
    initial-scale=1, shrink-to-fit=no">
    <meta name="theme-color" content="#000000">
    <link rel="manifest" href="%PUBLIC_URL%/
    manifest.json">
    <link rel="shortcut icon" href="%PUBLIC_URL%/
    favicon.ico">
        <title>React App</title>
</head>
<body>
    <noscript>
        You need to enable JavaScript to run this app.
    </noscript>
    <div id="root"></div>
</body>
</html>
```

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Take a look!

src/index.js

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

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

registerServiceWorker();
```

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Take a look!

src/App.js

```
import React, { Component } from 'react';
import logo from './logo.svg';
import './App.css';

class App extends Component {
  render() {
    return (
      <div className="App">
        <header className="App-header">
        <img src={logo} className="App-logo" alt="logo" />
        <h1 className="App-title">Welcome to React</h1>
        </header>
          <p className="App-intro">
            To get started, edit <code>src/App.js</code>
            and save to reload.
          </p>
      </div>
    );
  }
}

export default App;
```

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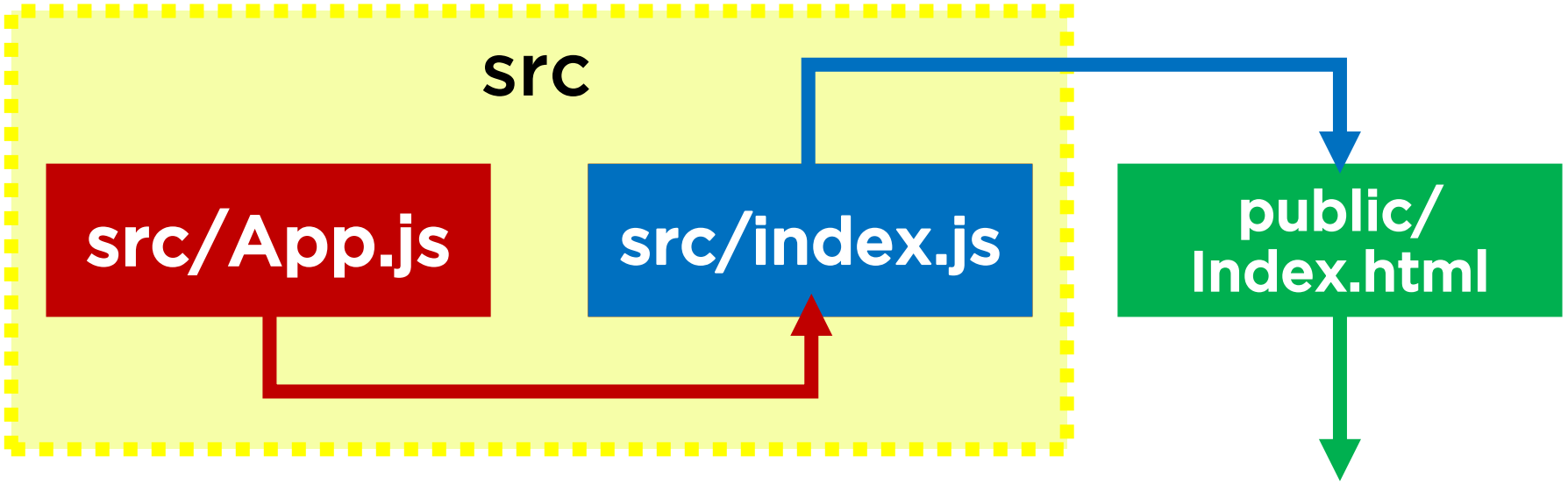
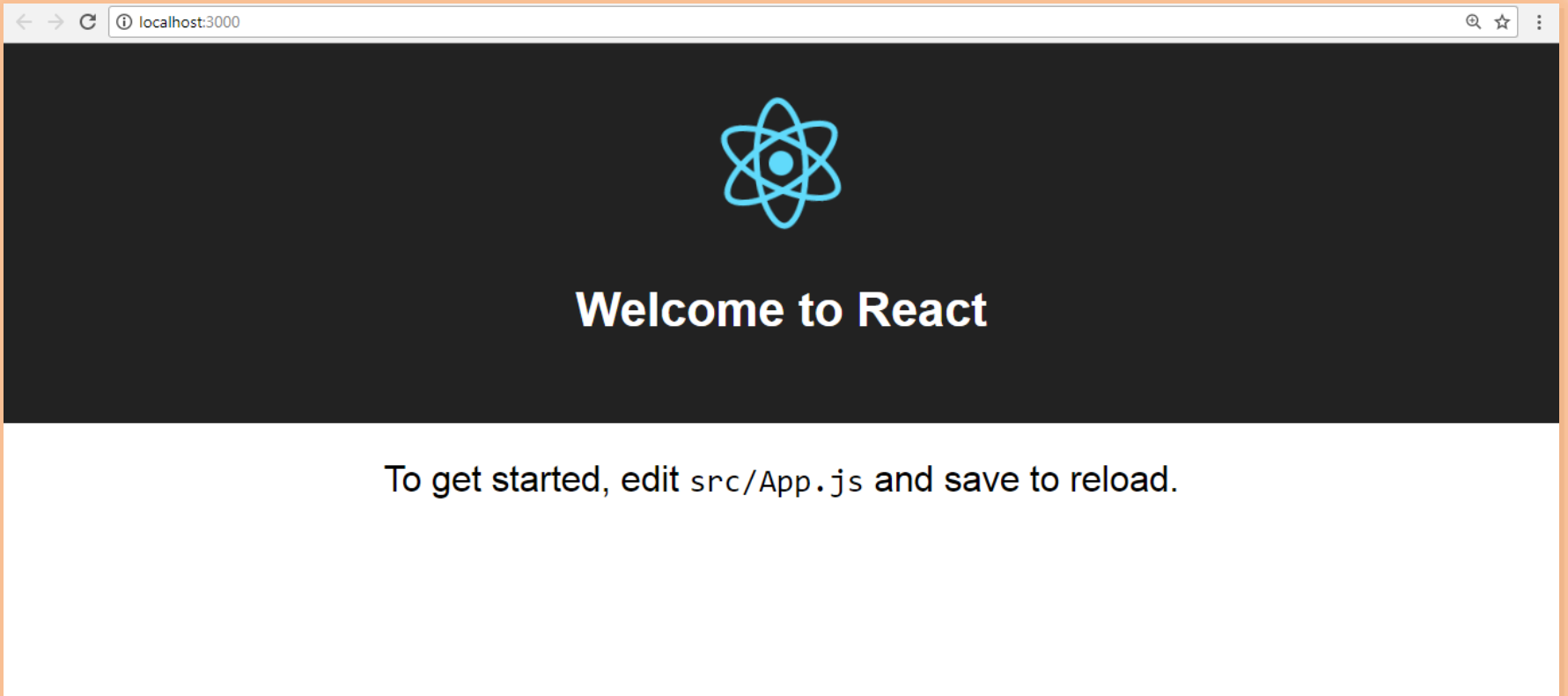

src
src/App.js
src/index.js
public/
Index.html

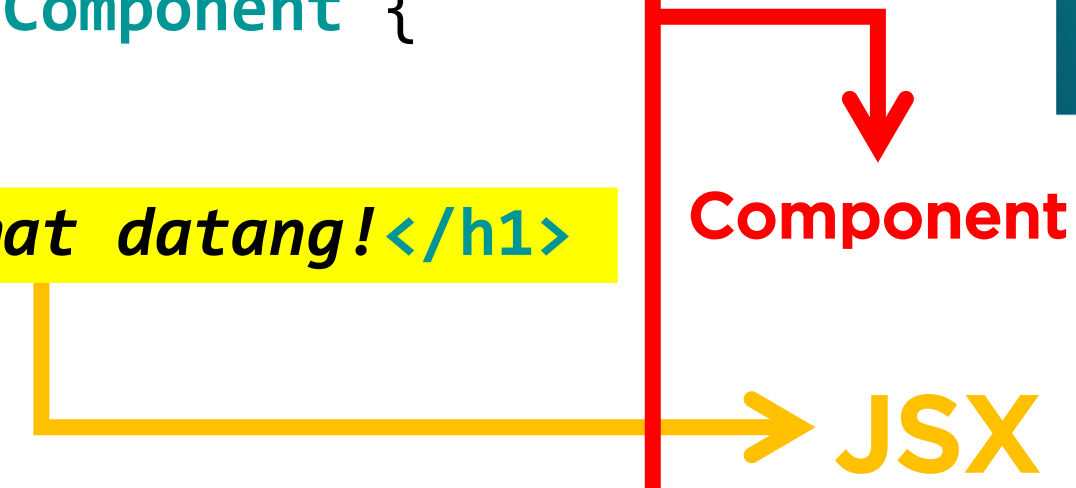

localhost:3000
Welcome to React
To get started, edit src/App.js and save to reload.

src/App.js
Components

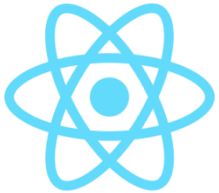
```
import React, { Component } from 'react';

class App extends Component {
    render() {
        return (
            <h1>Selamat datang!</h1>
        );
    }
}

export default App;
```

src/App.js
Components

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

class App extends Component {
    render() {
        return (
            <h1>Selamat datang!</h1>
        );
    }
}

export default App;
```



- JSX is an XML/HTML-like syntax used by React that extends ECMAScript so that XML/HTML-like text can co-exist with JavaScript/React code.



JSX

- JSX is a syntax extension to JavaScript, that produces React “elements”.
- React doesn’t require using JSX, but most people find it helpful as a visual aid when working with UI inside the JavaScript code.

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- Return render on a Component must be only **one tag parent!**

src/App.js
Components

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

class App extends Component {
    render() {
        return (
            <div>
                <h1>Selamat datang!</h1>
                <h1>Apa kabar?</h1>
            </div>
        );
    }
}
export default App;
```

src/App.js
JSX Insert var

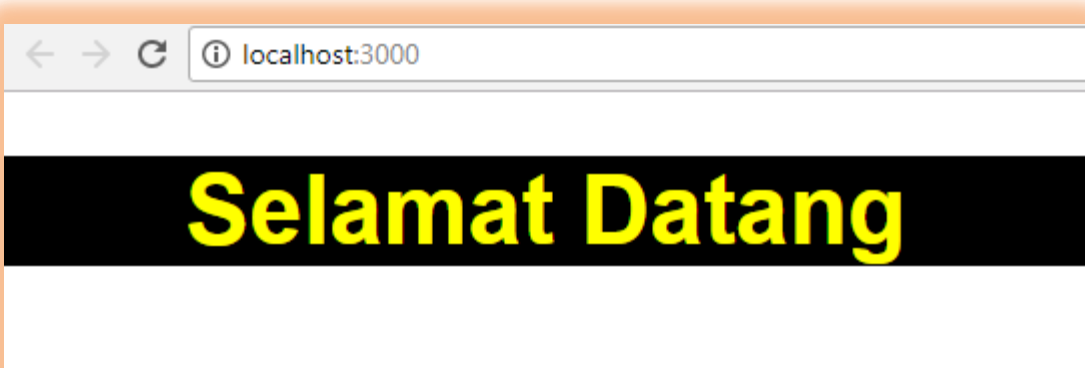
```
import React, { Component } from 'react';

class App extends Component {
    render() {
        var nama = 'Andi';
        return (
            <h1>Selamat datang {nama} !</h1>
        );
    }
}

export default App;
```

src/App.js
JSX Inline CSS #1

```
import React, { Component } from 'react';
class App extends Component {
  render() {
    var styles = {
      color:'yellow',
      background:'black',
    };
    return (
      <div style={styles}>
        <center>
          <h1>Selamat Datang</h1>
        </center>
      </div>
    );
  }
}
export default App;
```

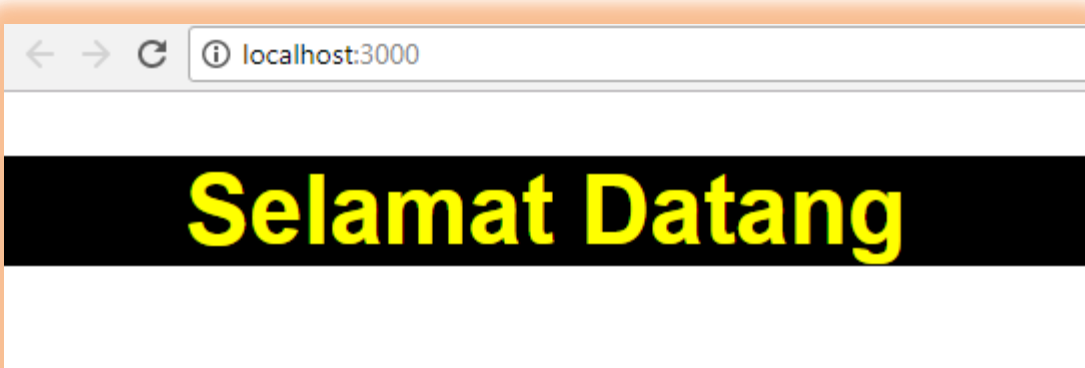


src/App.js
JSX Inline CSS #2

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

class App extends Component {
 render() {
  return (
   <div style={{color:'yellow',background:'black'}}>
    <center>
     <h1>Selamat Datang</h1>
    </center>
   </div>
  );
 }
}

export default App;
```



src/App.js
JSX Insert function

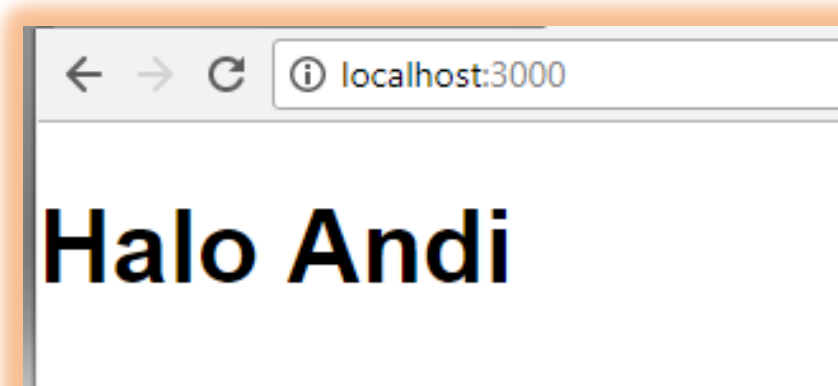
```
import React, { Component } from 'react';

class App extends Component {
    hitung(x){
        return x*x;
    };
    render() {
        return (
            <h1>Hasil = {this.hitung(5)}</h1>
        );
    }
}

export default App;
```

src/App.js
JSX constructor

```
import React, { Component } from 'react';
class App extends Component {
    constructor(){
        super();
        this.nama = 'Andi';
    }
    render() {
        return (
            <h1>Halo {this.nama}</h1>
        );
    }
}
export default App;
```



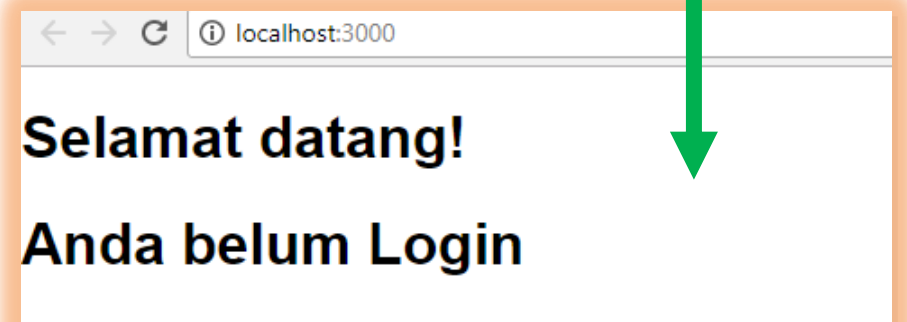
src/App.js

Embedding Expressions

```
import React, { Component } from 'react';
class App extends Component {
render() {
    function namaFull(id) {
        return id.nama + ' ' + id.marga;
    }
    const id = {
        nama: 'Andi',
        marga: 'Hasibuan'
    };
    return (
        <h1>Halo {namaFull(id)}</h1>
    );
    }
}
export default App;
```

src/App.js
Conditional Rendering

```
import React, { Component } from 'react';
class App extends Component {
   render() {
      function login(x) {
         const udahLogIn = x;
         if (udahLogIn) {
            return 'Anda sudah Login';
         }
         return 'Anda belum Login';
         }
      return (
         <div>
            <h1>Selamat datang!</h1>
            <h1>{login(false)}</h1>
         </div>
      );
   }
}
export default App;
```



src/App.js

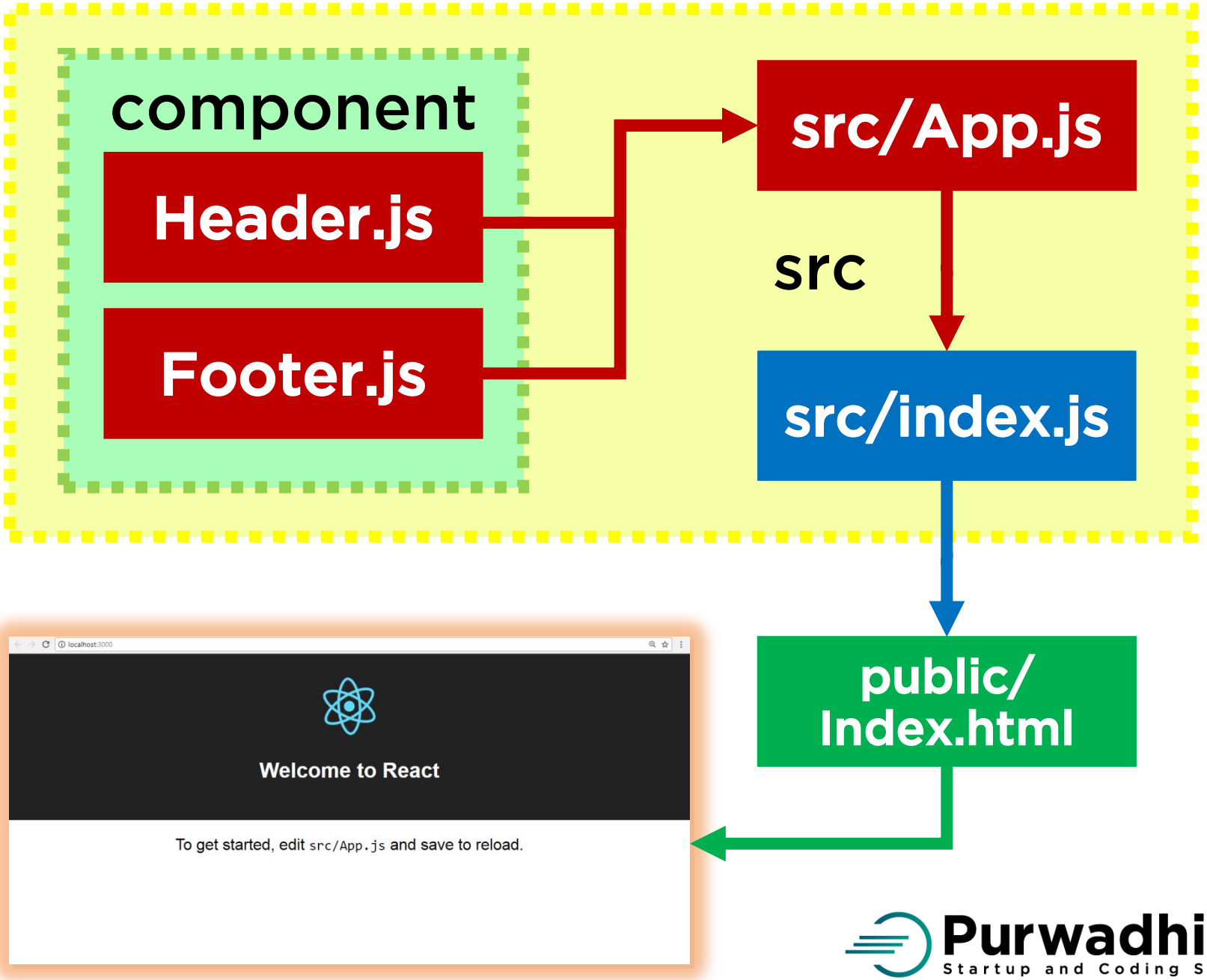
Rendering Multiple Components

```
import React, { Component } from 'react';
class App extends Component {
    render() {
        const siswa = ['Andi','Budi','Caca'];
        const listSiswa = siswa.map((siswa) =>
            <li>{siswa}</li>
    );
    return (
     <div>
        <h1>Daftar Siswa:</h1>
        <ul><h1>{listSiswa}</h1>
        </ul>
     </div>
     );
    }
}
export default App;
```

Keys help React identify which items have changed, are added, or are removed. Keys should be given to the elements inside the array to give the elements a stable identity.

src/App.js
Keys

```
import React, { Component } from 'react';
class App extends Component {
    render() {
      const siswa = ['Andi','Budi','Caca'];
      const listSiswa = siswa.map((siswa, index)=>
          <li key={index}>{siswa}</li>
    );
    return (
      <div>
          <h1>Daftar Siswa:</h1>
          <h1>{listSiswa}</h1>
      </div>
      );
    }
}
export default App;
```


component
Header.js
Footer.js
src/App.js
src
src/index.js
public/
Index.html
localhost:3000
Welcome to React
To get started, edit src/App.js and save to reload.
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src/component/Header.js

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

class Header extends Component {
  render() {
    return (
      <div>
        <ul>
          <li>Beranda</li>
          <li>Tentang</li>
          <li>Kontak</li>
        </ul>
      </div>
    );
  }
}
export default Header;
```

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src/component/Footer.js

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

class Footer extends Component {
  render() {
    return (
      <div>
        <h4>Buatan saya @ 2018</h4>
      </div>
    );
  }
}
export default Footer;
```

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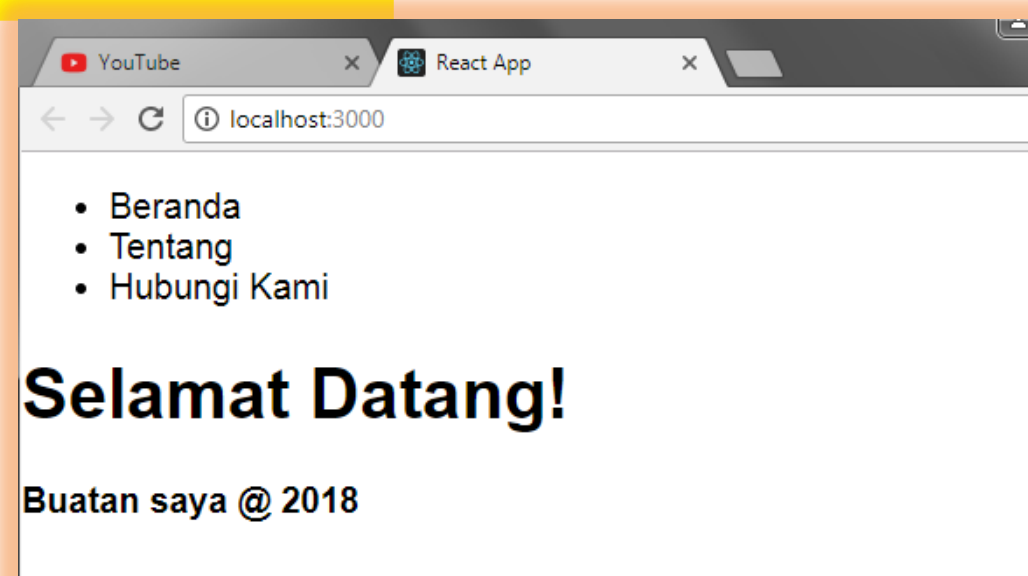
```
import React, { Component } from 'react';
import Header from './component/Header';
import Footer from './component/Footer';

class App extends Component {
  render() {
    return (
      <div>
        <Header />
        <h1>Selamat Datang!</h1>
        <Footer />
      </div>
    );
  }
}
export default App;
```

src/App.js