

React JS

Routing, HTTP Request,
File processing,
Authentication



React JS

- ☒ Routing Introduction
- ☐ HTTP Request
- ☐ File Processing
- ☐ Authentication
- ☐ Private Routes
- ☐ Implementation OAuth dengan Google

Apa itu React Router?

Library routing untuk React yang memungkinkan pengguna untuk menangani navigasi dan pembaruan tampilan di dalam aplikasi web React dengan mudah.



Beberapa hal yang bisa dipelajari dari react router:

- **Routing**
- **Navigation**
- **Nested Routing**

Instalasi react-router-dom



```
npm i react-router-dom
```

Contoh implementasi

```
import React from 'react';
import { BrowserRouter as Router, Switch, Route, Link } from 'react-router-dom';

const Home = () => {
  return <h1>Home</h1>;
};

const About = () => {
  return <h1>About</h1>;
};

const Contact = () => {
  return <h1>Contact</h1>;
};
```

```
import { BrowserRouter as Router, Routes, Route, Link } from 'react-router-dom';

function Home() {
  return (
    <div>
      <h1>Welcome to my app!</h1>
      <p>Click on the links above to navigate.</p>
    </div>
  );
}

function About() {
  return (
    <div>
      <h1>About me</h1>
      <p>I'm a web developer.</p>
    </div>
  );
}

function Contact() {
  return (
    <div>
      <h1>Contact me</h1>
      <p>You can reach me at example@example.com.</p>
    </div>
  );
}

function App() {
  return (
    <Router>
      <nav>
        <ul>
          <li><Link to="/">Home</Link></li>
          <li><Link to="/about">About</Link></li>
          <li><Link to="/contact">Contact</Link></li>
        </ul>
      </nav>

      <Routes>
        <Route path="/" element={<Home />} />
        <Route path="/about" element={<About />} />
        <Route path="/contact" element={<Contact />} />
      </Routes>
    </Router>
  );
}

export default App
```

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HTTP Request

React Router sendiri tidak secara langsung berhubungan dengan HTTP request. Namun, biasanya dalam aplikasi React yang kompleks, React Router akan digunakan bersama dengan HTTP request untuk mengambil atau mengirim data dari atau ke server.

Instalasi axios



```
npm i  
axios
```

Contoh implementasi



```
import React, { useState, useEffect } from 'react';  
import { useParams } from 'react-router-dom';  
import axios from 'axios';
```

```
const User = () => {
  const { id } = useParams();
  const [userData, setUserData] = useState(null);

  useEffect(() => {
    const getUserData = async () => {
      try {
        const response = await axios.get(`https://example.com/users/${id}`);
        setUserData(response.data);
      } catch (error) {
        console.error(error);
      }
    };

    getUserData();
  }, [id]);

  return (
    <div>
      {userData ? (
        <div>
          <h2>{userData.name}</h2>
          <p>{userData.email}</p>
        </div>
      ) : (
        <p>Loading user data...</p>
      )}
    </div>
  );
};

export default User;
```

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File Processing

React Router sendiri tidak secara langsung berkaitan dengan file processing, namun kita bisa menggunakan React Router untuk menavigasi ke halaman upload file

```
import React from 'react';
import { BrowserRouter as Router, Switch, Route } from 'react-router-dom';
import Home from './pages/Home';
import Upload from './pages/Upload';

function App() {
  return (
    <Router>
      <Switch>
        <Route exact path="/" component={Home} />
        <Route exact path="/upload" component={Upload} />
      </Switch>
    </Router>
  );
}

export default App;
```

menentukan dua Routing yang sesuai dengan halaman Home dan Upload

```
import React, { useCallback } from 'react';
import { useDropzone } from 'react-dropzone';

const Upload = () => {
  const onDrop = useCallback(acceptedFiles => {
    // proses file yang diunggah di sini
    console.log(acceptedFiles);
  }, []);

  const { getRootProps, getInputProps, isDragActive } = useDropzone({ onDrop });
  return (
    <div {...getRootProps()}>
      <input {...getInputProps()} />
      {isDragActive ? (
        <p>Drop the files here ...</p>
      ) : (
        <p>Drag 'n' drop some files here, or click to select files</p>
      )}
    </div>
  );
};

export default Upload;
```

menggunakan useDropzone dari react-dropzone untuk menentukan fungsi yang dijalankan saat file diunggah, dan menghubungkannya dengan elemen input

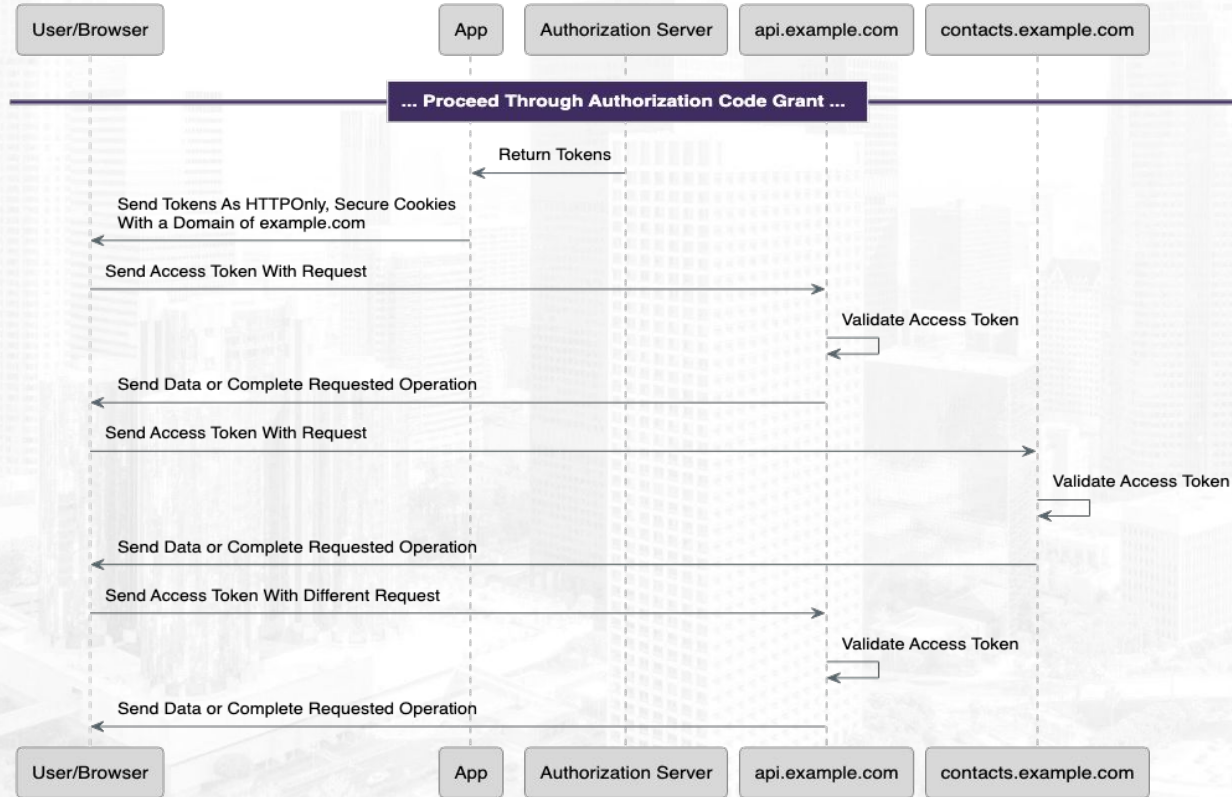
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Authentication

React Router dapat digunakan untuk mengatur navigasi pada aplikasi web yang memiliki fitur autentikasi, seperti halaman login dan halaman dashboard, dll.

Authentication adalah proses untuk memastikan identitas pengguna yang ingin mengakses suatu sistem atau aplikasi. Dalam konteks aplikasi web, authentication biasanya dilakukan dengan cara meminta pengguna untuk memasukkan username dan password yang sudah terdaftar.



```
import React, { useState } from 'react';
import { BrowserRouter as Router, Switch, Route, Redirect } from 'react-router-dom';
import Login from './pages/Login';
import Dashboard from './pages/Dashboard';

function App() {
  const [isAuthenticated, setIsAuthenticated] = useState(false);

  const handleLogin = () => {
    setIsAuthenticated(true);
  };

  const handleLogout = () => {
    setIsAuthenticated(false);
  };

  return (
    <Router>
      <Switch>
        <Route exact path="/login">
          {isAuthenticated ? (
            <Redirect to="/dashboard" />
          ) : (
            <Login handleLogin={handleLogin} />
          )}
        </Route>
        <Route path="/dashboard">
          {isAuthenticated ? (
            <Dashboard handleLogout={handleLogout} />
          ) : (
            <Redirect to="/login" />
          )}
        </Route>
      </Switch>
    </Router>
  );
}

export default App;
```

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Private Routes

React Router juga dapat digunakan untuk membuat halaman private yang hanya dapat diakses oleh pengguna yang sudah login atau ter-otentikasi.



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

const PrivateRoute = ({ children, isAuthenticated, ...rest }) =>
{ return (
  <Route {...rest}>
    {isAuthenticated ? (
      children
    ) : (
      <Redirect to={{ pathname: '/login' }} />
    )}
  </Route>
);
};

export default PrivateRoute;
```

```

import React, { useState } from 'react';
import { BrowserRouter as Router, Switch, Route, Redirect } from 'react-router-dom';
import Login from './pages/Login';
import Dashboard from './pages/Dashboard';
import PrivateRoute from './components/PrivateRoute';

function App() {
  const [isAuthenticated, setIsAuthenticated] = useState(false);

  const handleLogin = () => {
    setIsAuthenticated(true);
  };

  const handleLogout = () => {
    setIsAuthenticated(false);
  };

  return (
    <Router>
      <Switch>
        <Route exact path="/login">
          {isAuthenticated ? (
            <Redirect to="/dashboard" />
          ) : (
            <Login handleLogin={handleLogin} />
          )}
        </Route>
        <PrivateRoute path="/dashboard" isAuthenticated={isAuthenticated}>
          <Dashboard handleLogout={handleLogout} />
        </PrivateRoute>
      </Switch>
    </Router>
  );
}

export default App;

```

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Implementation OAuth dengan Google

React Router juga bisa di integrasikan dengan Google OAuth untuk hal otentikasi

Instalasi react google login



```
npm i @react-oauth/google
```


Contoh implementasi



```
import React, { useState, useEffect } from 'react';  
import { BrowserRouter as Router, Switch, Route, Link, useHistory } from 'react-router-dom';  
import { GoogleLogin, GoogleLogout } from '@react-oauth/google';  
  
const CLIENT_ID = '<your-google-client-id>;
```



```
function Home() {  
  return <h2>Home</h2>;  
}
```

```
function Dashboard() {  
  return  
<h2>Dashboard</h2>;  
}
```

```
function App() {
  const [isLoggedIn, setIsLoggedIn] = useState(false);
  const history = useHistory();

  useEffect(() => {
    // Check if user is already logged in
    const token = localStorage.getItem('token');
    if (token) {
      setIsLoggedIn(true);
    }
  }, []);

  const onSuccess = (response) => {
    // Store token in local storage
    localStorage.setItem('token',
response.isLoggedIn);

    // Navigate to dashboard
    history.push('/dashboard');
  };

  const onFailure = (response) => {
    console.error(response);
  };

  const onLogoutSuccess = () => {
    // Remove token from local storage
    localStorage.removeItem('token');
    setIsLoggedIn(false);

    // Navigate to login page
    history.push('/');
  };

  return (
    <Router>
      ...
    </Router>
  );
}

export default App;
```

```

function App() {
  ...

  return (
    <Router>
      <div>
        <nav>
          <ul>
            <li>
              <Link to="/">Home</Link>
            </li>
            <li>
              <Link to="/dashboard">Dashboard</Link>
            </li>
          </ul>
          {isLoggedIn ? (
            <GoogleLogout
              clientId={CLIENT_ID}
              buttonText="Logout"
              onSuccess={onLogoutSuccess}
            </>
          ) : (
            <GoogleLogin
              clientId={CLIENT_ID}
              buttonText="Login"
              onSuccess={onSuccess}
              onFailure={onFailure}
              cookiePolicy={'single_host_origin'}
              responseType="code,token"
              isSignedIn={true}
            </>
          )}
        </nav>
        <Switch>
          <Route path="/dashboard">
            {isLoggedIn ? <Dashboard /> : <Redirect to="/" />}
          </Route>
          <Route path="/">
            <Home />
          </Route>
        </Switch>
      </div>
    </Router>
  );
}

export default App;

```

Reference material

1. <https://fusionauth.io/learn/expert-advice/oauth/oauth-token-storage>
2. <https://blog.webdevsimplified.com/2022-07/react-router/>



Thank you