React Navigation

Friday, March 25, 2022 5:15 PM

- React core library DOESN'T have any built-in feature to navigate between screens
- We need to download and install an additional library to for building a complex SPA.

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

- A react router for web application

Setting up your Routes

```
import {BrowserRouter, Routes, Route,Navigate} from 'react-router-dom';
```

Important Elements

1. Router

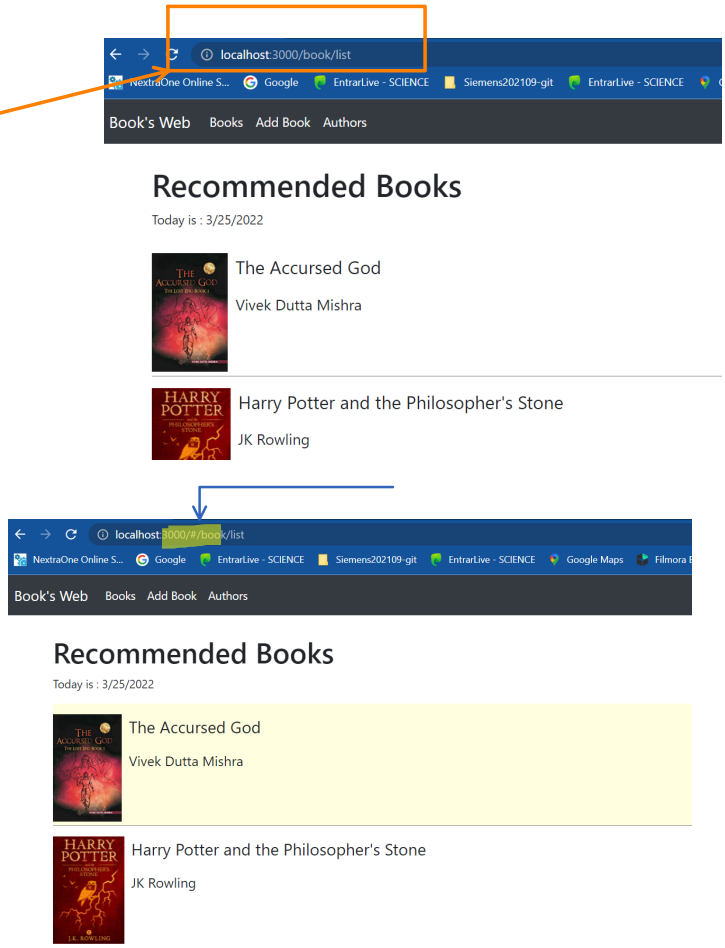
- A Router is the root component of React Routing
- All routing elements must be child of Router
- Router decides the url format
- There are two popular router

Browser Router

- Creates standard route by merging root url and path name
- They look great
- **They need additional support on server**

HashRouter

- They add a # between root url and path
- Doesn't look that great
- Need no additional support on server



2. Routes

- A collection of Route
- Acts as a switch statement for various routes

3. Route

- Each route with a path and element

- Acts as case of a switch-case

4. Navigate

- A component that can send you to a different route
- Redirect

```
return (
    <div>
        <AppHeader title="Book's Web"  />
        <Router>

        <div className='screen'>
            <Routes>
                <Route path="/book/list" element={<BookListScreen/>} />
                <Route path="/book/add" element={<BookAddScreen/>} />
                <Route path="/book/info/:isbn" element={<BookDetailsScreen/>}  />
                <Route path="/user/login" element={<UserLoginScreen/>} />
                <Route path="/user/register" element={<UserRegistrationScreen/>} />

                <Route path="/" element={<Navigate to="/book/list" />} />

                <Route path="*" element={<NotFoundScreen/>} />
            </Routes>
        </div>

        </Router>
        <AppFooter/>
    </div>
);
```

- Each Route includes
  - Path
    - Added to the URL
  - Element
    - A react component to display
- Path with variable
  - Here :isbn represents a variable
  - Actual url can include any value for this variable
- Navigate can take me to different path
- Catch all path
  - It is like default statement in switch-case
- Any path that doesn't anything above matches this one
- Make sure it is the last path
  - It matches everything

Updating the Navigation Link

- We can use standard "a" tag to move between screens
- But it is not recommended
- A normal 'a' tag is handled by the browser
- The browser directly sends request to the server
- It requires a round trip to the server
- Actually this link should be handled by the react framework in browser itself
- This is a internal link for client side
- Server may not even have the link ready

Recommendation — use Link component

- Link component is like "a" tag
- But it is handled internally by react
- The request may not always go to server
  - If current page is not downloaded it may go
- It gives more responsive design

Important

- Link can't be used outside router
- To Use Link in header, the Header component must also become child of Router

```
<Router>
    <AppHeader title="Book's Web" />
    <div className='screen'>
        <Routes>
            <Route path="/book/list" element={<BookListScreen />}
            <Route path="/book/add" element={<BookAddScreen />} /
            <Route path="/book/info/:isbn" element={<BookDetails
            <Route path="/user/login" element={<UserLoginScreen /
            <Route path="/user/register" element={<UserRegistrat

            <Route path="/" element={<Navigate to="/book/list" />

            <Route path="*" element={<NotFoundScreen />} />
        </Routes>
    </div>
    <AppFooter />
</Router>
```