Let`s do simple react application!

Preparing:

Install Node.js. You could download it here: https://nodejs.org/en/

Hop into whichever folder you want to store your projects, and run the following command to install a new React project

```
npx create-react-app hello-world-app
```
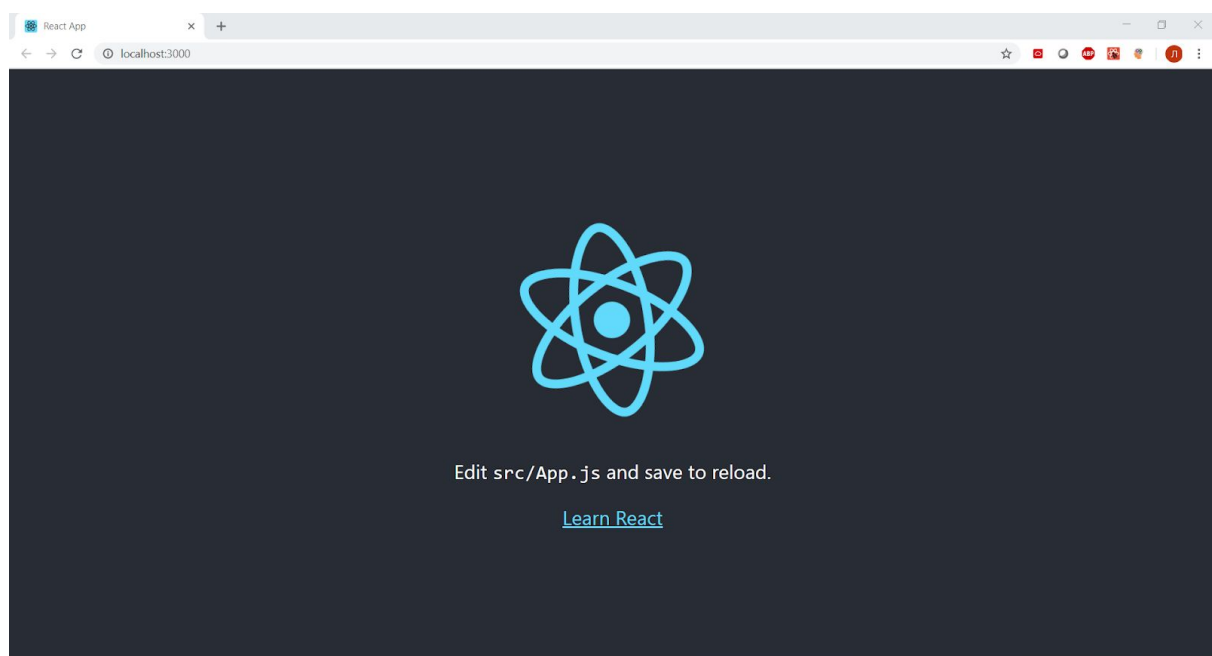
It will take a minute or two and once completed, you can now hop into the new project folder by typing:

```
cd hello-world-app
```

Then execute this command to run a development server

```
npm start
```

As a result the page should be opened on localhost:3000 in a browser :

After creation

Your project structure should look like this:

```
my-app/
  README.md
  node_modules/
  package.json
  public/
    index.html
    favicon.ico
  src/
    App.css
    App.js
    App.test.js
    index.css
    index.js
    logo.svg
```

For the project to build, these files must exist with exact filenames:
- public/index.html is the page template;
- src/index.js is the JavaScript entry point.

You can delete or rename the other files.

You may create subdirectories inside **src**.

Only files inside **public** can be used from public/index.html.

Components

Let`s create new folder `components` inside src directory.

Navigation bar

Into components create folder `navigation-bar` and create files
navigation-bar.jsx and **styles.scss** into it.

To use Sass, first install node-sass:

```
npm install node-sass --save
```

Visit **navigation-bar/styles.scss** and paste the following contents:

```scss
header {
 background: #7700FF;

 .logo {
   font-weight: bold;
 }

 nav {
   justify-self: right;

   ul {
     list-style-type: none;
     margin: 0;
     padding: 0;

     li {
       float: left;

       a {
         padding: 1.5em;
         text-transform: uppercase;
         font-size: .8em;

         &:hover {
           background: #8E2BFF;
         }
       }
     }
   }
 }
}
```

Then visit **navigation-bar/navigation-bar.jsx** and paste the following contents:

```jsx
import React from 'react';
import styles from './styles.scss';

class NavigationBar extends React.Component {
```

```
    render() {
        return (
            <header>
                <div className="container">
                    <a href="/" className="logo">Playground</a>

                    <div className="nav">
                        <ul>
                            <li><a href="/">Home</a></li>
                            <li><a href="/about">About</a></li>
                            <li><a href="/contract">Contact us</a></li>
                        </ul>
                    </div>
                </div>
            </header>
        )
    }
}

export default NavigationBar;
```

NavigationBar is a class component which renders header for our page.
We have here only static content with imported styles.

Main App

Then we should add our navigation component to our default main
component if our application App.js. Index.js called it and set into
index.html. And add styles to our App component:

App.scss

```
@import url(
'https://fonts.googleapis.com/css?family=Montserrat:400,700' );
body , html {
  height : 100% ;
  margin : 0 auto;
}
body {
  font-family : 'Montserrat' ;
  font-size : 18px ;
```

```
}
a {
 text-decoration : none;
}
section {
 width : 80% ;
 margin : 0 auto;
 padding : 2em ;
}
```

App.js

```
import React from 'react';
import './App.scss';
import NavigationBar from "./components/navigation-bar/navigation-bar";

function App() {
    return (
        <div>
            <NavigationBar/>
        </div>
    );
}


export default App;
```

Now we could check our navigation bar:

But we don`t have content! Let`s add it!

Routing

Firstly we should install new dependency

```
npm install --save react-router-dom
```

Add components with content:

components/home/Home.jsx

```
import React from 'react';

export default class Home extends React.Component {
    render() {
        return (
            <h1>Home content is here</h1>
        )
    }
}
```

components/about/About.jsx

```
import React from 'react';

export default class About extends React.Component {
    render() {
        return (
            <h1>About content is here</h1>
        )
    }
}
```

components/contact/Contact.jsx

```
import React from 'react';

export default class Contact extends React.Component {
    render() {
        return (
```

```
            <h1>Contact content is here</h1>
        )
    }
}
```

We installed react-router-dom library and now we can use it.
BrowserRouter is a component from that library which implements
Router interface and uses the HTML5 history API to keep your UI in sync
with the URL.
Route binds url path with component which we want to render. Attribute
'exact' means that we show component with it just now.
Add BrowserRouter and add Route childrens into it:

App.js

```
import React from 'react';
import {BrowserRouter, Route} from 'react-router-dom';
import './App.scss';
import NavigationBar from "./components/navigation-bar/navigation-bar";
import Home from "./components/home/home";
import About from "./components/about/about";
import Contact from "./components/contact/contact";

function App() {
    return (
        <div>
            <NavigationBar/>
            <BrowserRouter>
                <Route exact path="/" component={Home}/>
                <Route path="/about" component={About}/>
                <Route path="/contact" component={Contact}/>
            </BrowserRouter>
        </div>
    );
}

export default App;
```

Run your application and check that routing is working:

Get Request

Go back into Home component.

Firstly add constructor and set 'data' to state:

```
constructor(props) {
    super(props);
    this.state = {
        data: []
    };
}
```

Then add simple get request using fetch into componentDidMount() function and set new data from json to state:

```
componentDidMount() {
    fetch('https://reqres.in/api/users')
        .then(response => response.json())
        .then(json => this.setState({ data: json.data }));
}
```

Add new scss styles file:

components/home/styles.scss

```scss
.ul {
 list-style-type: none;
 margin: 0;
 padding: 0;

 .li {
   background: rgb(238, 238, 238);
```

```scss
      padding: 2em;
      border-radius: 4px;
      margin-bottom: 7px;
      display: grid;
      grid-template-columns: 60px auto;

      p {
        font-weight: bold;
        margin-left: 20px;
      }

      img {
        border-radius: 50%;
        width: 100%;
      }
    }
  }
}
.container {
    width : 80% ;
    margin : 0 auto;
    padding : 1.3em ;
}
```

And last that we have to do - render new information from data:
components/home/Home.jsx

```jsx
import React from 'react';
import styles from './styles.scss';

export default class Home extends React.Component {

  constructor(props) {
      super(props);
      this.state = {
          data: []
      };
  }

  componentDidMount() {
      fetch('https://reqres.in/api/users')
          .then(response => response.json())
          .then(json => this.setState({ data: json.data }));
  }
```

```
    render() {
        return (
            <div className="container">
                <h1>Users</h1>
                <div className="ul">
                    {this.state.data.map(item => (
                        <div className="li" key={item.id}>
                            <img src={item.avatar}/>
                            <p>{item.first_name} {item.last_name}</p>
                        </div>
                    ))}
                </div>
            </div>
        )
    }
}
```

Disclaimer: You can see that here some styles are as classes, not tags. The reason is conflicts with styles from navigation component because I tried to use the same styles as in angular application. But react has his own features, as example css modules. That is own inclusive styles for each component. Please google it and use approach with css modules in future.

Now I can see table of students. And you?)

Useful links

1. Create react app doc
   https://create-react-app.dev/docs/getting-started/
2. React app using next.js (tutorial)
   https://nextjs.org/learn/basics/getting-started
3. SAP on React
   https://www.kirupa.com/react/creating_single_page_app_react_using_react_router.htm