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*Full Stack Developments - LAB 6*

*React-app : Use React components to build interactive interfaces.*

**Problem**:

In this assignment, you will demonstrate your proficiency in using React components to build interactive user interfaces. You will create a web application that incorporates various React components to deliver a dynamic and engaging user experience.

* Set up a new React project using Create React App or any preferred method.
* Ensure that your project structure is organized and follows best practices for React development.
* Design and create multiple React components to represent different parts of your application's user interface.
* Implement reusable components to enhance code modularity and maintainability.
* Apply CSS or a CSS framework (e.g., Bootstrap, Material-UI) to style your components and
* enhance the visual presentation of your application.
* Aim for a clean and aesthetically pleasing design while prioritizing usability and accessibility.
* Implement interactive features such as forms, buttons, navigation menus, and any other elements that enhance user engagement.

Design a registration form for a website and implement JavaScript event handling to ensure proper validation of user input. Your form should include the following fields: First Name, Last Name, Email, and Password.

### Installation of React App:

To install a new React app, you can use create-react-app which is a convenient tool for setting up React projects. You can install it globally using npm with the following command:

npm install -g create-react-app

Once installed, you can create a new React app by running:

npx create-react-app my-app

Replace my-app with the name you want for your project. After the project is created, you can navigate into its directory and start working on your React application.

**HTML Tags used:**

1. **<form>: Defines an HTML form for user input. It can contain input elements like text fields, checkboxes, radio buttons, submit buttons, and more.**

<form *id*="validationForm">

    .

    .

    .

</form>

1. **<input type="button”> :** **Defines a clickable button that can trigger JavaScript functions**

<input *type*="button" *value*="Activate Textboxes" *onclick*="activateTextboxes()" >

1. **<input type="submit”>: Defines a submit button for submitting form data to a server.**

<input *type*="submit" *value*="Submit" *onclick*="submitForm(event)">

1. **<div> is a generic container element used to group and structure content on a webpage.**

<div *class*="container">

    <!-- Content goes here -->

</div>

**Code:**

**App.js**

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

*import* LandingPage *from* './components/LandingPage';

*import* Signup *from* './components/Signup';

*import* Login *from* './components/Login';

*import* Navbar *from* './components/navbar';

*import* Home *from* './components/Home';

function App() {

*return* (

    <div *className*="App">

        <Router>

            <Navbar />

            <Routes>

                <Route *path*="/signup" *element*={<Signup />} />

                <Route *path*='/login' *element*={<Login />} />

            </Routes>

        </Router>

    </div>

  );

}

*export* *default* App;

**Login.js**

*import* React *from* 'react'

*import* '../styles/Login.css'

function Login() {

*return* (

    <div *className*='body'>

        <form *className*='form'>

            <label *for*='label'>User Id</label>

            <input *type*='text' *id*='userid' *name*='userid' *placeholder*='Enter User Id' *required*></input>

            <br></br>

            <label *for*='label'>Password</label>

            <input *type*='password' *id*='password' *name*='password' *placeholder*='Enter Password' *required*></input>

            <br></br>

            <input *type*='submit' *value*='Log In'></input>

        </form>

    </div>

  )

}

*export* *default* Login

**Navbar.js**

*import* React *from* 'react'

*import* logo *from* "../assests/sitlogo.jpg"

*import* { Link } *from* 'react-router-dom';

*import* '../styles/navbar.css'

function Navbar() {

*return* (

    <div *className*='navbar'>

        <div *className*='navbar\_\_left'>

            <img *src*={logo} *alt*='logo' />

        </div>

        <div *className*='navbar\_\_right'>

            <Link *to*="/">Home</Link>

            <Link *to*="/login">Login</Link>

            <Link *to*="/signup">Sign Up</Link>

        </div>

    </div>

  )

}

*export* *default* Navbar

**Signup.js**

*import* React *from* 'react'

*import* '../styles/Signup.css'

function Signup() {

*return* (

        <div *className*='body'>

            <form *className*='signup'>

                <label *for*='label'>User Id</label>

                <input *type*='text' *id*='userid' *name*='userid' *required*></input>

                <label *for*='label'>Password</label>

                <input *type*='password' *id*='password' *name*='password' *required*></input>

                <label *for*='label'>Confirm Password</label>

                <input *type*='password' *id*='cpassword' *name*='cpassword' *required*></input>

                <label *for*='label'>Name</label>

                <input *type*='text' *id*='name' *name*='name' *required*></input>

                <label *for*='label'>Email</label>

                <input *type*='email' *id*='email' *name*='email' *required*></input>

                <label *for*='label'>Country</label>

                <select *id*='country' *name*='country' *required*>

                    <option *value*='Bangladesh'>Bangladesh</option>

                    <option *value*='India'>India</option>

                    <option *value*='Pakistan'>Pakistan</option>

                    <option *value*='Sri Lanka'>Sri Lanka</option>

                </select>

                <input *type*='submit' *name*='Registration' *value*='Sign Up'></input>

            </form>

        </div>

    )

}

*export* *default* Signup

**CSS:**

**Login.css**

*.body*{

    font-family: Arial, Helvetica, sans-serif;

    display: flex;

    justify-content: center;

    align-items: center;

    height: 100vh ;

    background-color: #f9f9f9;

}

form{

    max-width: 400px;

    width: 100%;

    background-color: #fff;

    padding: 20px;

    box-shadow: 0 0 10px 0 rgba(0,0,0,.5);

    border-radius: 8px;

}

label{

    display: block;

    margin-bottom: 8px;

    font-weight:bold ;

}

input,select{

    width: 100%;

    padding: 8px;

    border-radius: 4px;

    margin-bottom: 5px;

    border: 1px solid #ccc;

    box-sizing: border-box;

}

input[*type*=submit]{

    background-color: #45a049;

    color: white;

    margin-top: 10px;

}

input[*type*=submit]*:hover*{

    background-color: green;

    color: white;

}

input[*type*=radio]{

    margin-right: 5px;

}

*.group* {

    display: flex;

    gap: 10px;

}

**Navbar.css**

*.navbar*{

    width: 100%;

    height: 100%;

    background-color: black;

    display: flex;

    flex-direction: row;

}

*.navbar* *.navbar\_\_left*{

    flex : 50%;

    height: 100%;

    display: flex;

    align-items: center;

    padding-left: 20px;

}

*.navbar* *.navbar\_\_left* img{

    width: 70px;

    height: 70px;

}

*.navbar* *.navbar\_\_right*{

    flex : 50%;

    height: 100%;

    display: flex;

    justify-content: flex-end;

    padding-left: 20px;

}

*.navbar*  a{

    color: white;

    margin: 20px;

}

**Signup.css**

*.body*{

    font-family: Arial, Helvetica, sans-serif;

    display: flex;

    justify-content: center;

    align-items: center;

    height: 100vh ;

    background-color: #f9f9f9;

}

form{

    max-width: 400px;

    width: 100%;

    background-color: #fff;

    padding: 400px;

    box-shadow: 0 0 10px 0 rgba(0,0,0,.5);

    border-radius: 8px;

}

label{

    display: block;

    margin-bottom: 8px;

    font-weight:bold ;

}

input,select{

    width: 100%;

    padding: 8px;

    border-radius: 4px;

    margin-bottom: 5px;

    border: 1px solid #ccc;

    box-sizing: border-box;

}

input[*type*=submit]{

    background-color: #45a049;

    color: white;

    margin-top: 10px;

}

input[*type*=submit]*:hover*{

    background-color: green;

    color: white;

}

input[*type*=radio]{

    margin-right: 5px;

}

*.group* {

    display: flex;

    gap: 10px;

}

**Explanation of Js Code:**

### App.js:

This file serves as the main entry point of the React application. It sets up routing using react-router-dom, defining routes for different components. Here’s a brief explanation:

* **Import Statements**: Import necessary components and routing functionalities.
* **App Function**: Defines the main App component which wraps the entire application.
* **Router Setup**: Utilizes BrowserRouter to establish routing functionality.
* **Routes**: Defines different routes using <Routes> and <Route> components, mapping URLs to corresponding components.

### Login.js and Signup.js:

These files contain React components representing the login and signup forms, respectively. They define form elements like input fields and submit buttons. Here’s a brief explanation for both:

* **Component Function**: Defines a functional component for the login/signup form.
* **Form Structure**: Includes HTML form elements like labels, inputs, and submit buttons.
* **Styling**: Applies CSS classes to style the form elements.
* **Export**: Exports the component for use in other parts of the application.

### Navbar.js:

This file contains the navigation bar component for the application. It displays links to different pages of the application. Here’s an explanation:

* **Component Function**: Defines a functional component for the navigation bar.
* **Navigation Links**: Uses <Link> component from react-router-dom to create links to different pages.
* **Styling**: Applies CSS classes to style the navigation bar.
* **Export**: Exports the component for use in other parts of the application.

### CSS Files:

These files contain CSS styles for the corresponding components. They define styles for elements like forms, labels, inputs, and navigation bars.

**Output:**

A screenshot of a computer

Description automatically generated

**A screenshot of a computer

Description automatically generated**