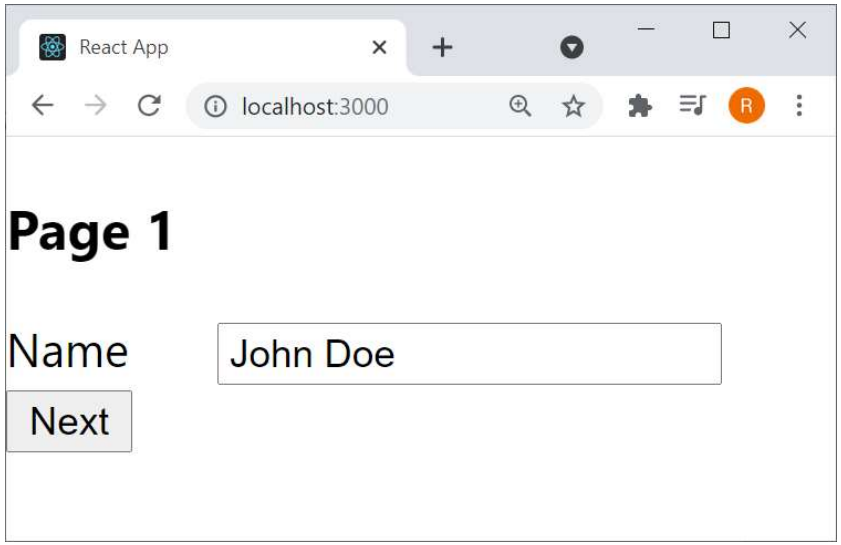
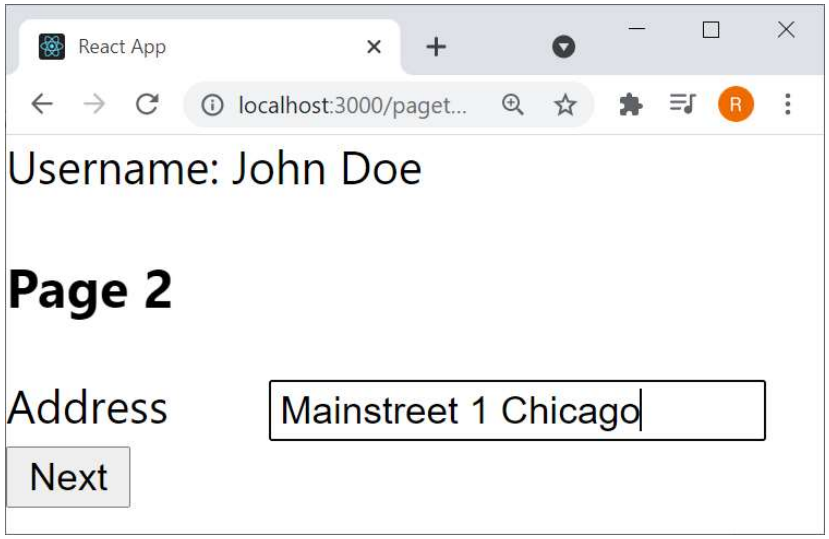
Lesson 11

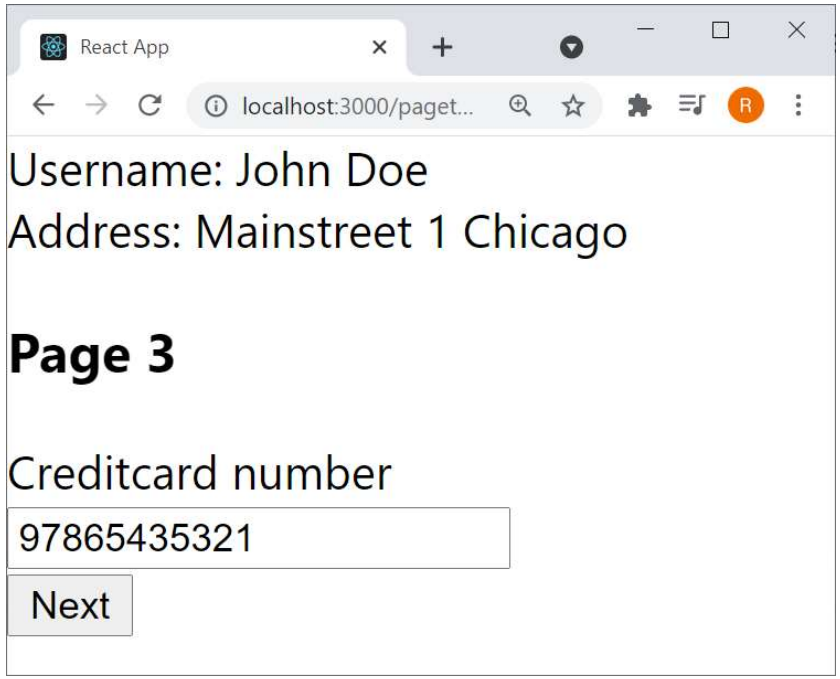
REACT OBJECTS AND LISTS

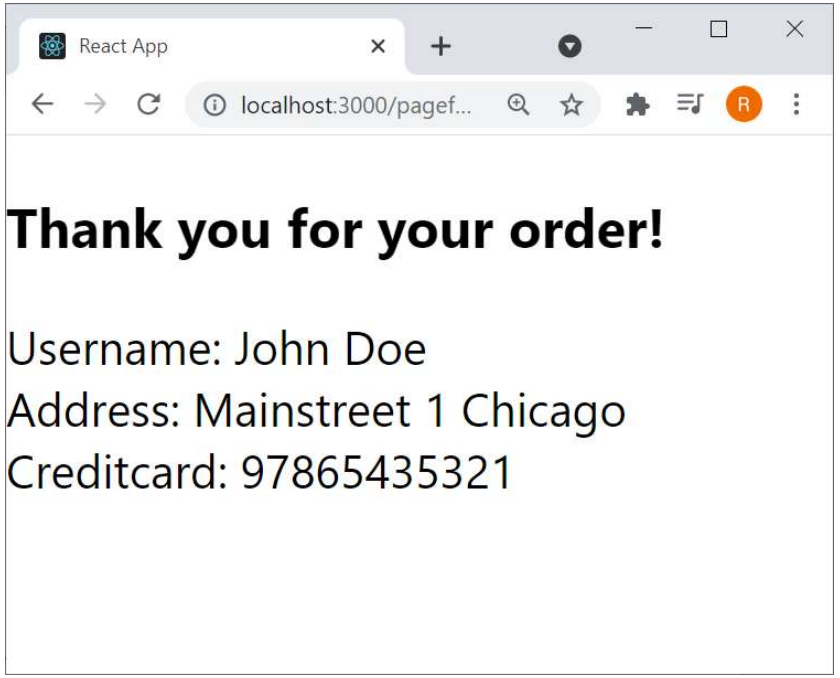
WORKING WITH STATE OBJECTS

Routing with state







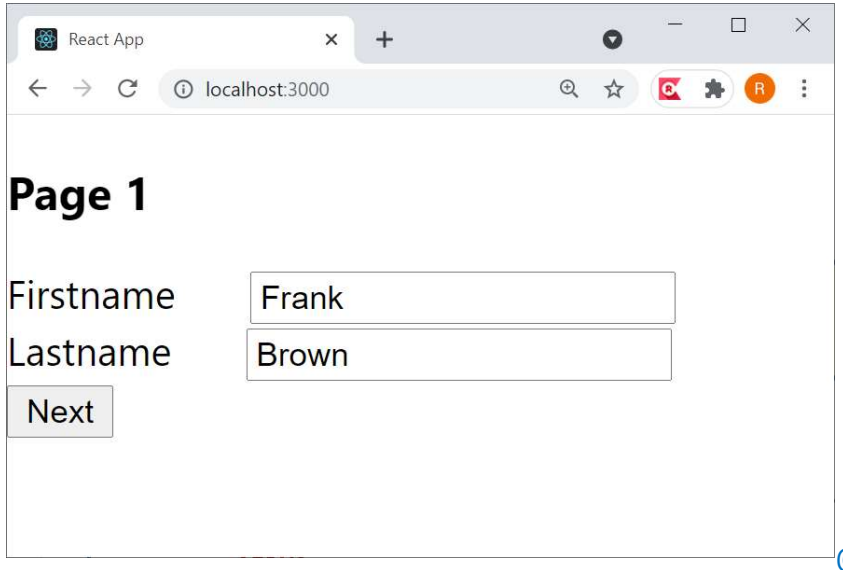


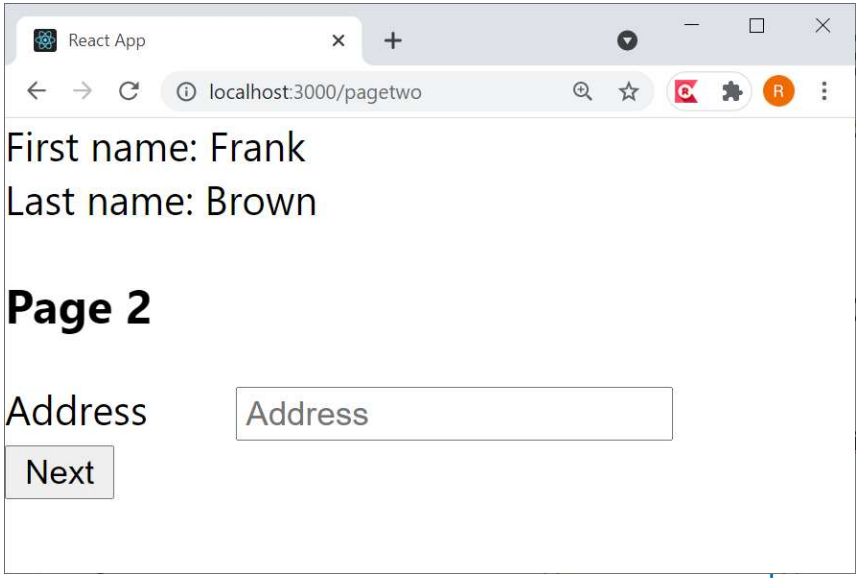
State values: pageone.js

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

export const Pageone = (props) => {
  const [firstname, setFirstname] = useState("");
  const [lastname, setLastname] = useState("");

  const handleOnSubmit = () => {
    props.history.push("/pagetwo", {firstname:firstname, lastname : lastname});
  }
```

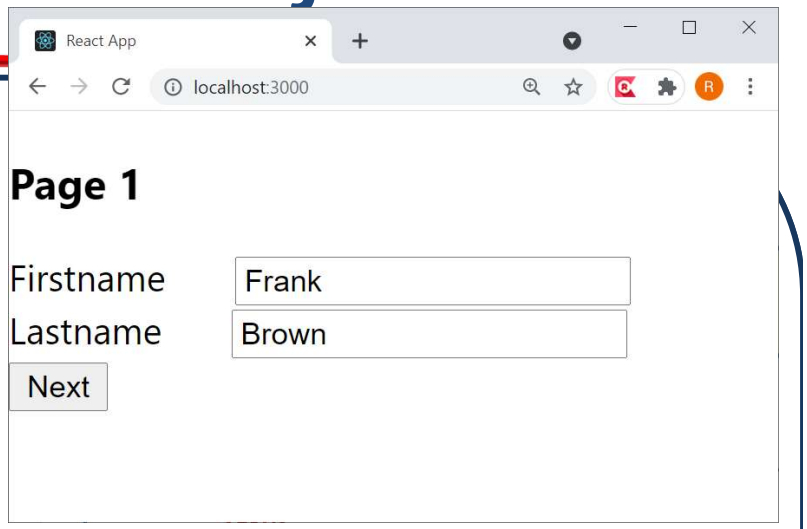
What if we have many form fields?

Pass all state values





State values: pageone.js




```
let page1 = (
<form>
  <h3>Page 1</h3>
  <div>
    First name
      <input
      type="text"
      placeholder="First name"
      value={firstname}
      onChange={e => setFirstname(e.target.value)} />
  </div>
  <div>
    Last name
      <input
      type="text"
      placeholder="Last name"
      value={lastname}
      onChange={e => setLastname(e.target.value)} />
  </div>
  <button onClick={handleOnSubmit}>Next</button>
</form>
);
return page1;
}
```

value

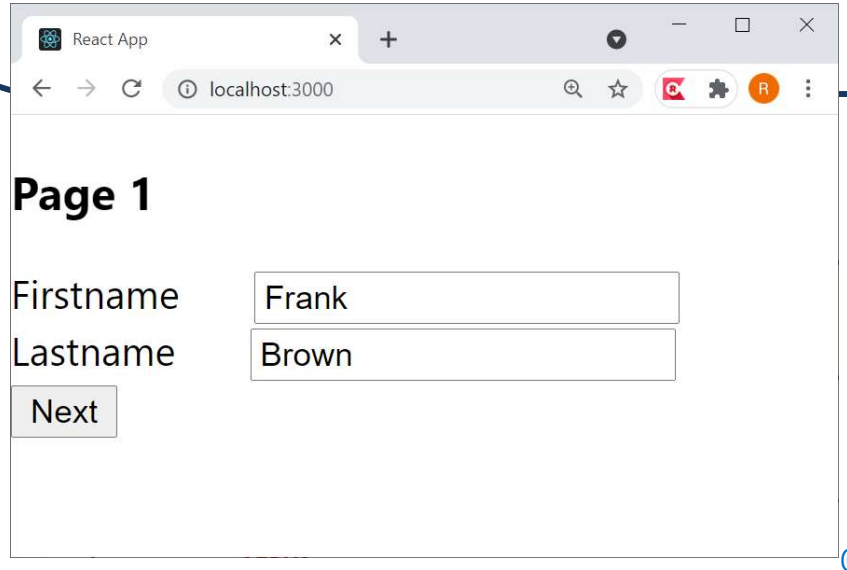
Set the value

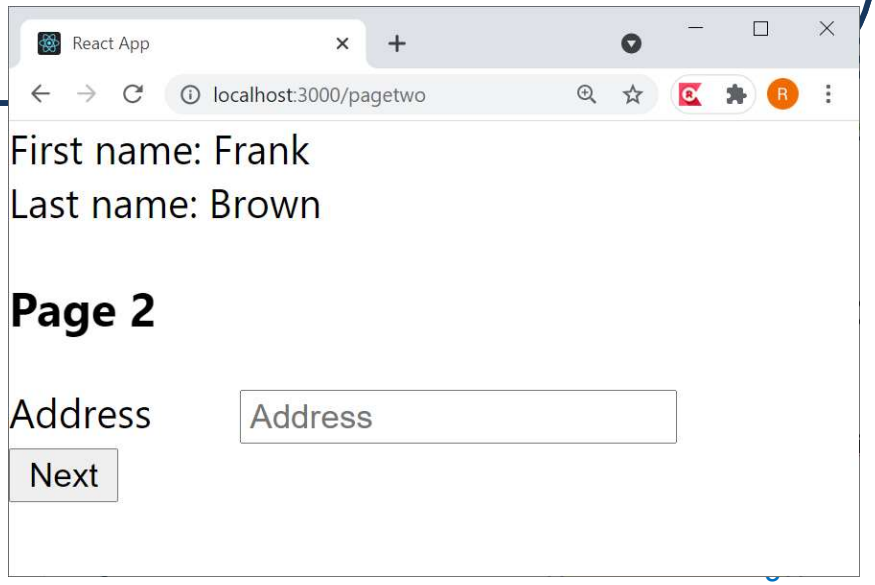
State objects: pageone.js

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

export const Pageone = (props) => {
  const [user, setUser] = useState({
    firstname: "",
    lastname: "",
    address: "",
    creditcard: ""
  })

  const handleOnSubmit = () => {
    props.history.push("/pagetwo", {user :user});
  }
```

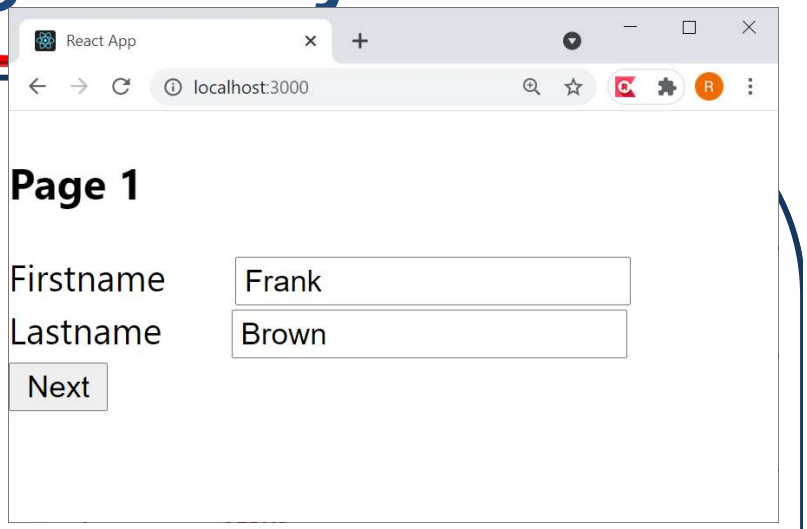
user is an object

Pass the whole object to the next page





State objects: pageone.js

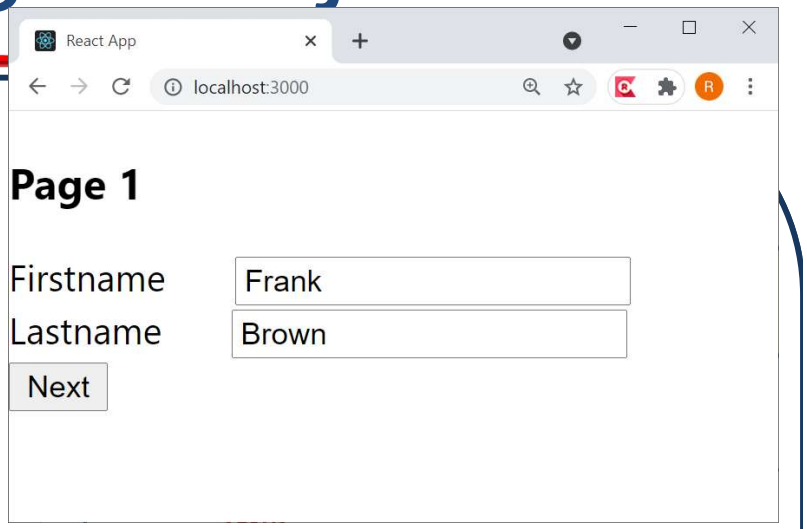



```
let page1 = (
 <form>
   <h3>Page 1</h3>
   <div>
     Firstname
       <input
       type="text"
       placeholder="First name"
       name="firstname"
       onChange={e => setUser({...user,[e.target.name]: e.target.value })} />
   </div>
   <div>
     Lastname
       <input
       type="text"
       placeholder="Last name"
       name="lastname"
       onChange={e => setUser({...user,[e.target.name]: e.target.value,})} />
   </div>
   <button onClick={handleOnSubmit}>Next</button>
 </form>

);
return page1;
}
```

name

Update user object, leave all fields as is but update the field firstname with the value “Frank”

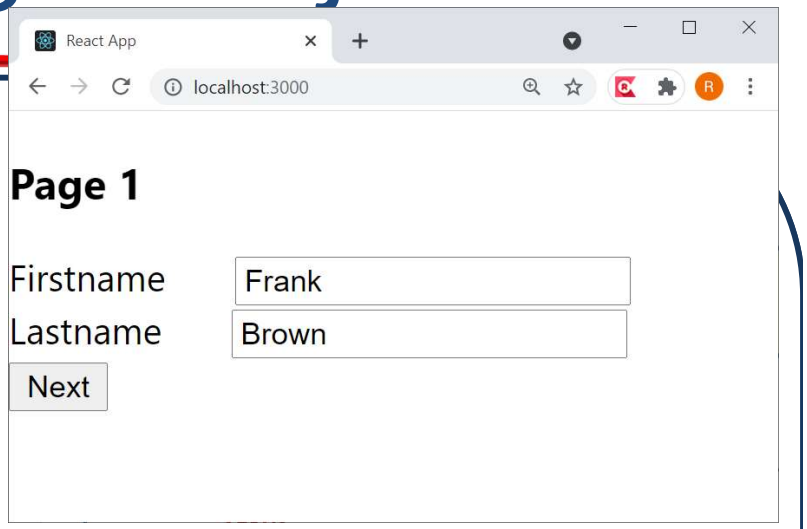
State objects: pageone.js




```
let page1 = (
 <form>
   <h3>Page 1</h3>
   <div>
     Firstname
       <input
       type="text"
       placeholder="First name"
       name="firstname"
       onChange={e => setUser({...user,[e.target.name]: e.target.value })} />
   </div>
   <div>
     Lastname
       <input
       type="text"
       placeholder="Last name"
       name="lastname"
       onChange={e => setUser({...user,[e.target.name]: e.target.value,})} />
   </div>
   <button onClick={handleOnSubmit}>Next</button>
 </form>

);
return page1;
}
```

Same method

State objects: pageone.js




```
let page1 = (
 <form>
   <h3>Page 1</h3>
   <div>
     Firstname
       <input
       type="text"
       placeholder="First name"
       name="firstname"
       onChange={e => setUser({...user,[e.target.name]: e.target.value })} />
   </div>
   <div>
     Lastname
       <input
       type="text"
       placeholder="Last name"
       name="lastname"
       onChange={e => setUser({...user,[e.target.name]: e.target.value,})} />
   </div>
   <button onClick={handleOnSubmit}>Next</button>
 </form>

);
return page1;
}
```

Same method

State objects: pageone.js

```
const [user, setUser] = useState({
  firstname: "",
  lastname: "",
  address: "",
  creditcard: ""
})
…
const handleFieldChange = (e) => {
 setUser({...user,[e.target.name]: e.target.value });
}
let page1 = (
    …
    <div>
      Firstname
        <input
        …
        name="firstname"
        onChange={handleFieldChange} />
    </div>
    <div>
      Lastname
        <input
        …
        name="lastname"
        onChange={handleFieldChange} />
    </div>
```

Define function

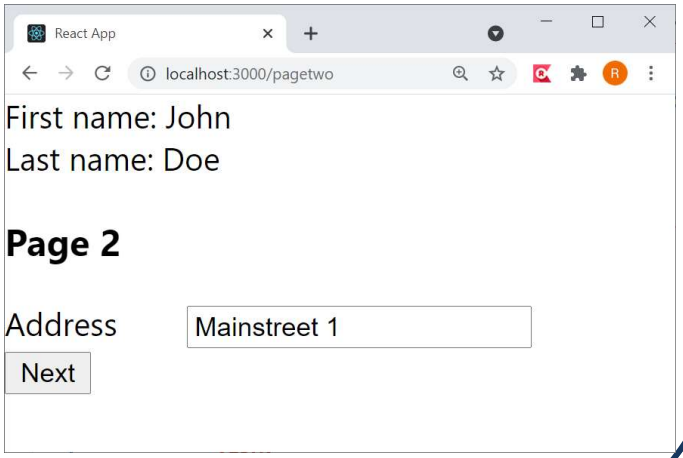
Call function

Call function

State objects: pagetwo.js

```
export const Pagetwo = (props) => {
  const [user, setUser] = useState(props.location.state.user);
  const handleOnSubmit = () => {
    props.history.push("/pagethree", {user :user});
  }
  const handleFieldChange = (e) => {
    setUser({...user,[e.target.name]: e.target.value });
   }
  let page2 = (
    <div>
      <div>First name: {user.firstname}</div>
      <div>Last name: {user.lastname}</div>
      <form>
        <h3>Page 2</h3>
        <div>
          Address
           <input
            type="text"
            placeholder="Address"
            name="address"
            onChange={handleFieldChange} />
        </div>
        <button onClick={handleOnSubmit}>Next</button>
      </form>
    </div>
  );
  return page2;
```

Create a local user object based on the state of the passed user object



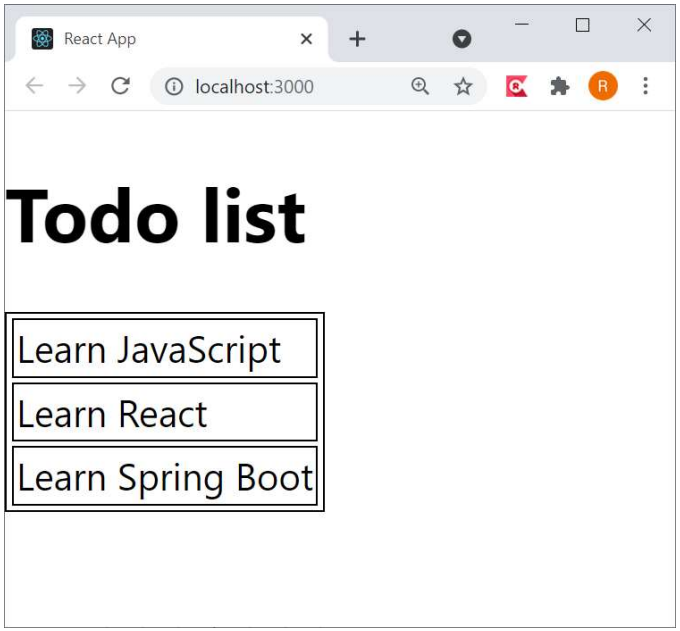
WORKING WITH LISTS

List of strings

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

export const ToDoList = () => {

  const todoList = [
    'Learn JavaScript',
    'Learn React',
    'Learn Spring Boot',
  ];

  return (
    <div>
      <h1>Todo list</h1>
      <table>
        <tbody>
          {todoList.map(item => (
            <tr key={item}>
              <td>{item}</td>
            </tr>
          ))}
        </tbody>
      </table>
    </div>
  );
};
```

Map expects a unique key

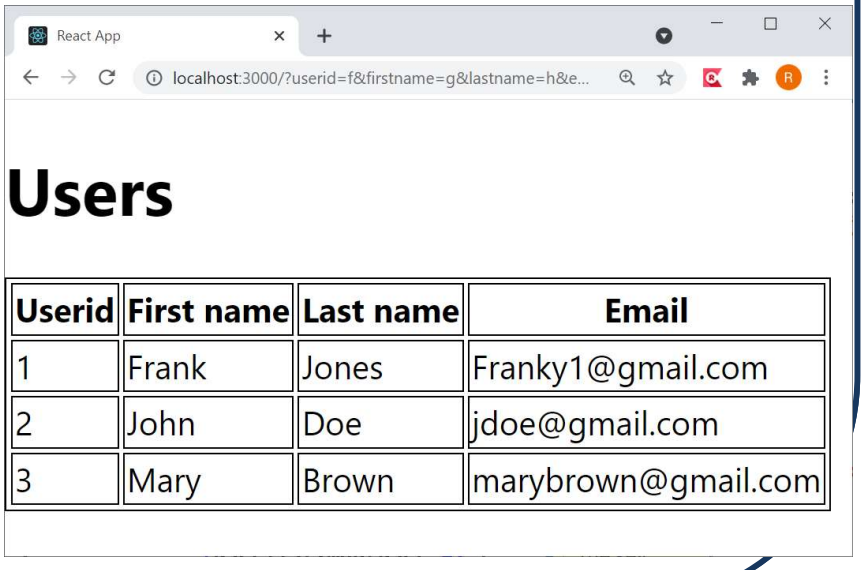
item is the key



List of users

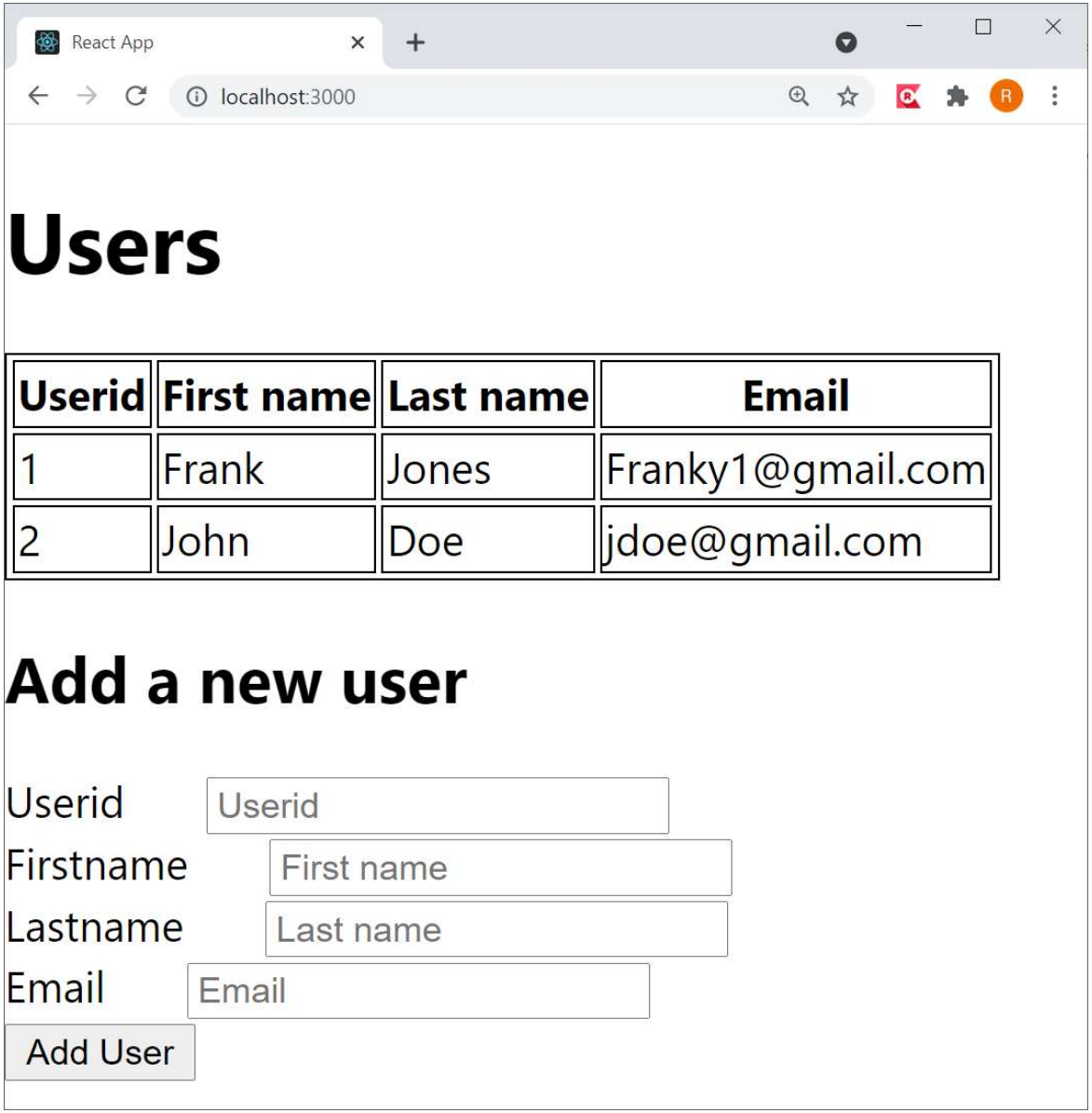
```
export const UsersList = () => {
  const initialList = [
  { userid: "1", firstname: "Frank", lastname: "Jones", email: "Franky1@gmail.com" },
  { userid: "2", firstname: "John", lastname: "Doe", email: "jdoe@gmail.com" },
  { userid: "3", firstname: "Mary", lastname: "Brown", email: "marybrown@gmail.com" }
  ];
  const [userlist, setUserlist] = useState(initialList);
  return (
    <div>
      <h1>Users</h1>
      <table>
        <thead>
          <tr><th>Userid</th><th>First name</th><th>Last name</th><th>Email</th></tr>
        </thead>
        <tbody>
          {userlist.map(user => (
            <tr key={user.userid}>
              <td>{user.userid}</td>
              <td>{user.firstname}</td>
              <td>{user.lastname}</td>
              <td>{user.email}</td>
            </tr>
          ))}
        </tbody>
      </table>
    </div>
```

Userid is the key



MODIFY THE LIST IN THE SAME PAGE

Add to a list of objects



UsersList.js(1/4)

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

export const UsersList = () => {
  const cleanuser = { userid: "", firstname: "", lastname: "", email: "" };
  const [user, setUser] = useState(cleanuser);
  const initialList = [
    { userid: "1", firstname: "Frank", lastname: "Jones", email: "Franky1@gmail.com" },
    { userid: "2", firstname: "John", lastname: "Doe", email: "jdoe@gmail.com" },
  ];
  const [userlist, setUserlist] = useState(initialList);

  const handleSubmit = (e) => {
    if (user) {
      setUserlist(userlist.concat(user)); //add user to the list
    }
    //clear user
    setUser(cleanuser);
    //prevent POST request
    e.preventDefault();
  }

  const handleFieldChange = (e) => {
    setUser({ ...user, [e.target.name]: e.target.value });
  }
```

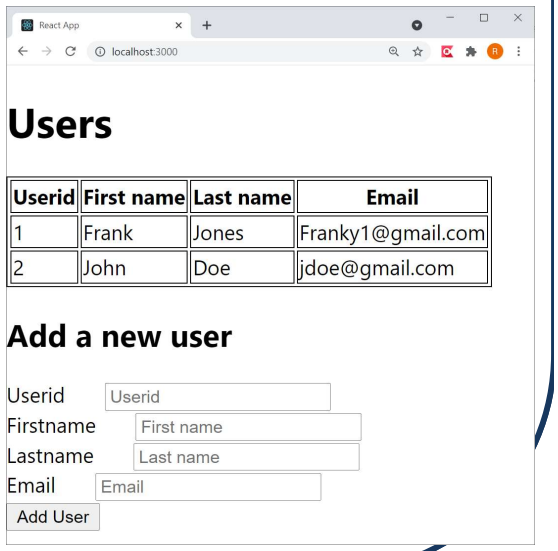
One users

List of users

Called when you click the “Add user” button

Do not send a POST request

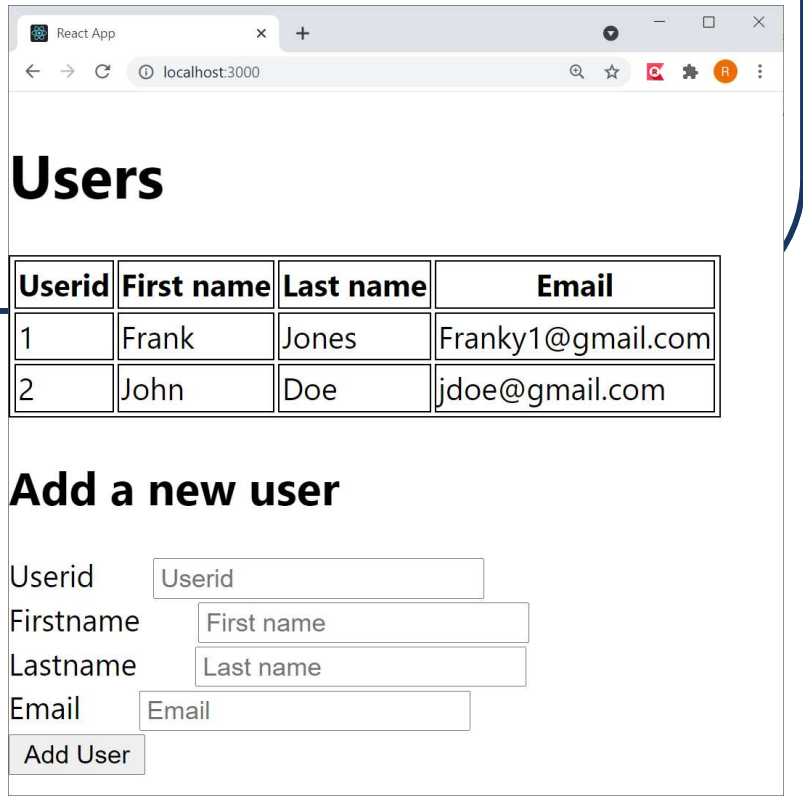
Called when you change one of the form fields



UsersList.js(2/4)

```
return (
  <div>
    <h1>Users</h1>

    <table>
      <tr><th>Userid</th><th>First name</th><th>Last name</th><th>Email</th></tr>
      {userlist.map(user => (
        <tr><td>{user.userid}</td>
          <td>{user.firstname}</td>
          <td>{user.lastname}</td>
          <td>{user.email}</td></tr>
      ))}
    </table>
```

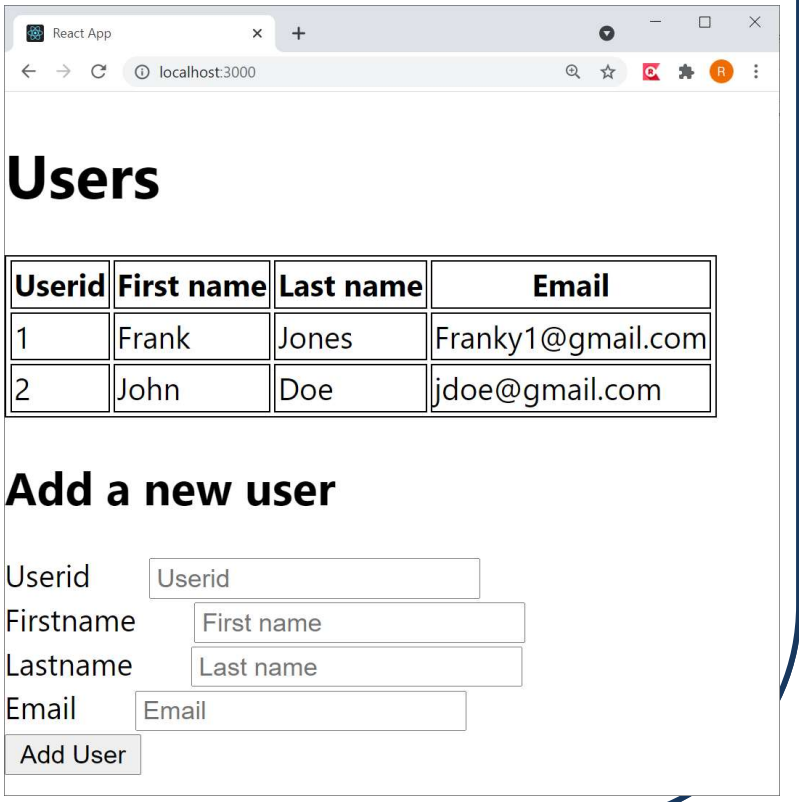
Show table of users



UsersList.js(3/4)

```
<p><h2>Add a new user</h2></p>
<form onSubmit={handleSubmit}>
  <div>
    Userid
    <input
      type="text"
      placeholder="Userid"
      name="userid"
      value={user.userid}
      onChange={handleFieldChange} />
  </div>
  <div>
    Firstname
    <input
      type="text"
      placeholder="First name"
      name="firstname"
      value={user.firstname}
      onChange={handleFieldChange} />
  </div>
```

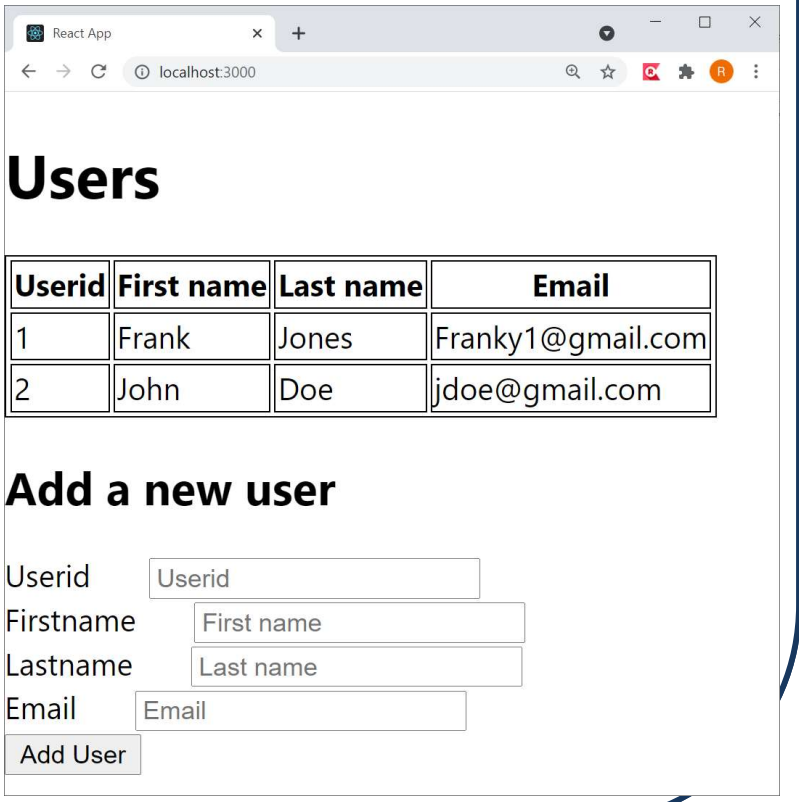
Call handleSubmit when you click the “Add user” button



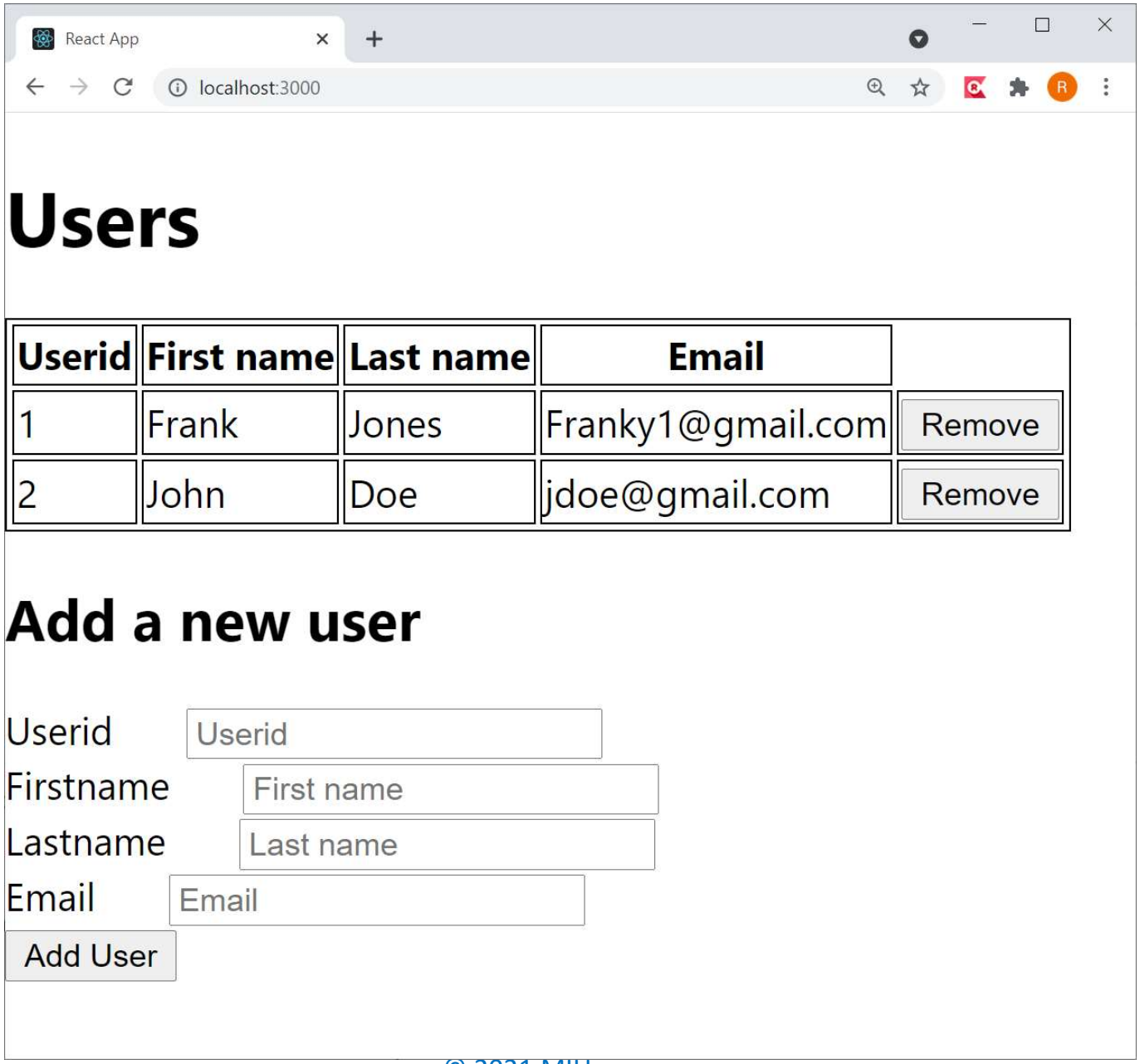
UsersList.js(4/4)

```
        <div>
          Lastname
          <input
            type="text"
            placeholder="Last name"
            name="lastname"
            value={user.lastname}
            onChange={handleFieldChange} />
        </div>
        <div>
          Email
          <input
            type="text"
            placeholder="Email"
            name="email"
            value={user.email}
            onChange={handleFieldChange} />
        </div>
        <button type="submit">Add User</button>
      </form>
    </div>
  );
};
```

Submit button



Remove from a list of objects



UsersList.js

```
const removeUser = (e) => {
    const newUserlist = userlist.filter((user) => user.userid !== e.target.value);
    setUserlist(newUserlist);
  }
```

Create a new list and filter out the user to be removed

```
      <table>
        <tr><th>Userid</th><th>First name</th><th>Last name</th><th>Email</th></tr>
        {userlist.map(user => (
          <tr><td>{user.userid}</td>
            <td>{user.firstname}</td>
            <td>{user.lastname}</td>
            <td>{user.email}</td>
            <td><button onClick={removeUser} value={user.userid} >Remove</button></td>
            </tr>
        ))}
      </table>
```

Add button to the table

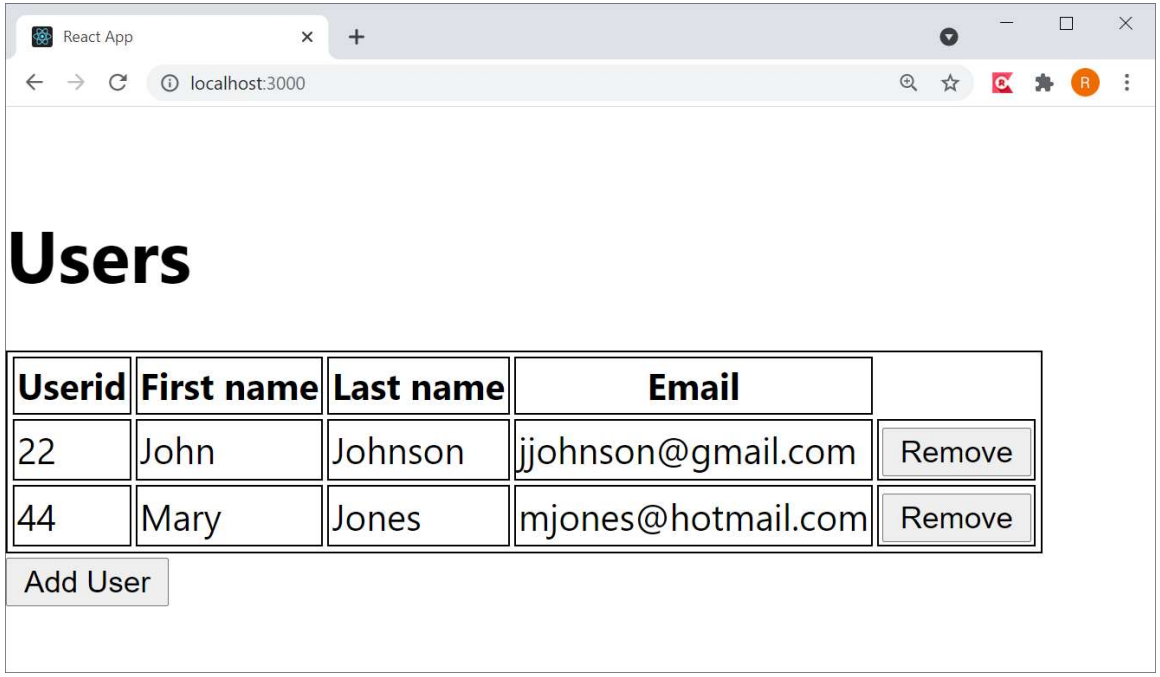
Call removeUser function when clicked

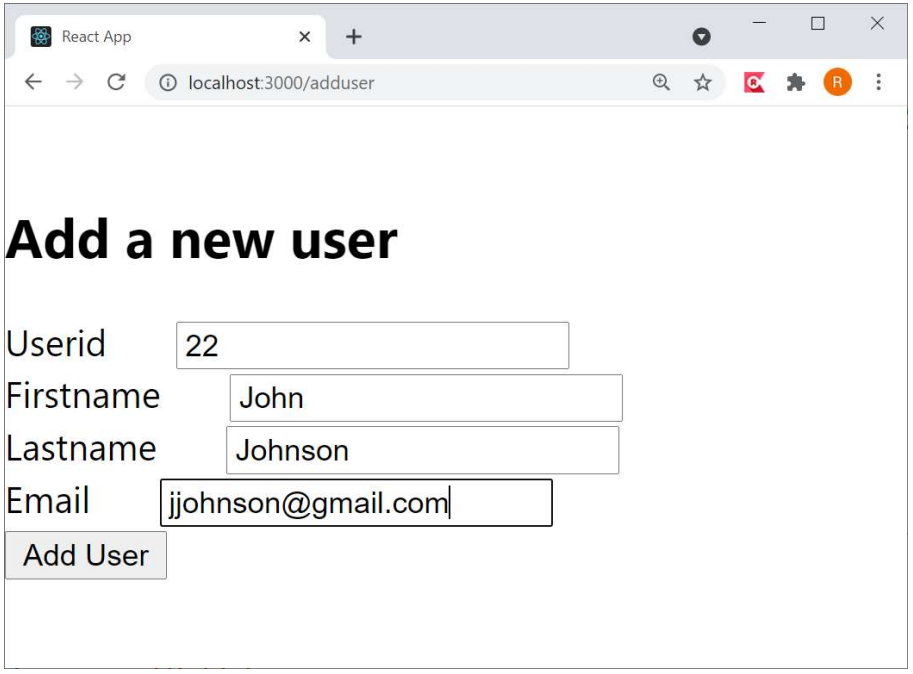
Pass userid as value in event

Userid	First name	Last name	Email	
1	Frank	Jones	Franky1@gmail.com	Remove
2	John	Doe	jdoe@gmail.com	Remove

MODIFY THE LIST IN SEPARATE PAGES

Add to a list of objects





App.js(1/2)

```
import './App.css';
import { BrowserRouter, Routes, Route } from 'react-router-dom';
import { UsersList } from './UsersList';
import { AddUser } from './AddUser';
import React, { useState } from 'react';

function App() {

  const initialList = [
   { userid: "1", firstname: "Frank", lastname: "Jones", email: "Franky1@gmail.com" },
   { userid: "2", firstname: "John", lastname: "Doe", email: "jdoe@gmail.com" },
   { userid: "3", firstname: "Mary", lastname: "Brown", email: "marybrown@gmail.com" },
  ];
  const [userlist, setUserlist] = useState(initialList);

  const onAddUser = (user) => {
    setUserlist(userlist.concat(user)) ;
  }

  const onRemoveUser = (userid) => {
    setUserlist(userlist.filter((user) => user.userid !== userid)) ;
  }
```

List of users is in the top component

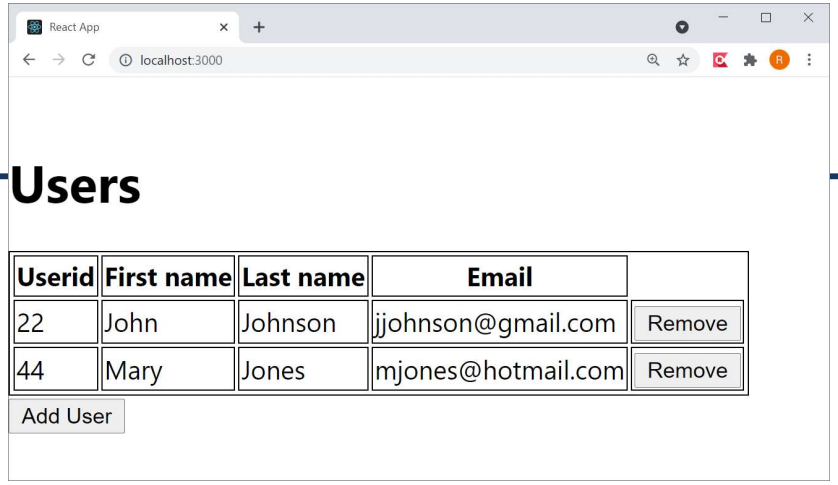
Methods to modify the list of users in the top component

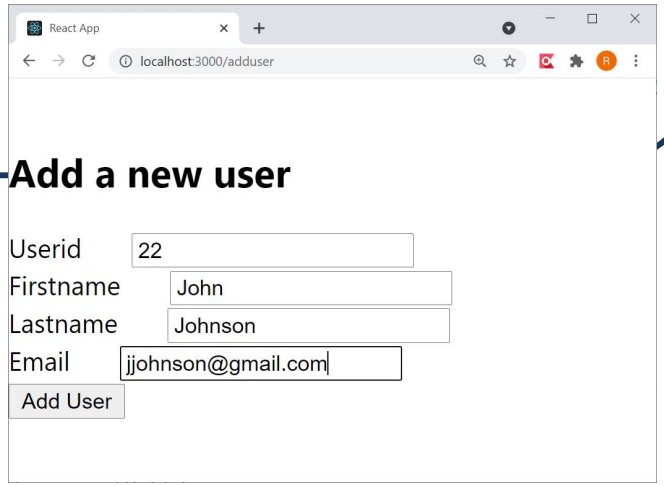
App.js

```
  return (
    <div >
      <BrowserRouter>
        <Routes>
          <Route exact path="/" element={<UsersList userlist={userlist}
removeUserFunction={onRemoveUser}/>} />
          <Route path="/adduser" element={<AddUser addUserFunction={onAddUser}/>} />
        </Routes>
      </BrowserRouter>
    </div>

  );
}

export default App;
```

Pass **userlist** and **onRemoveUser** function to the child component

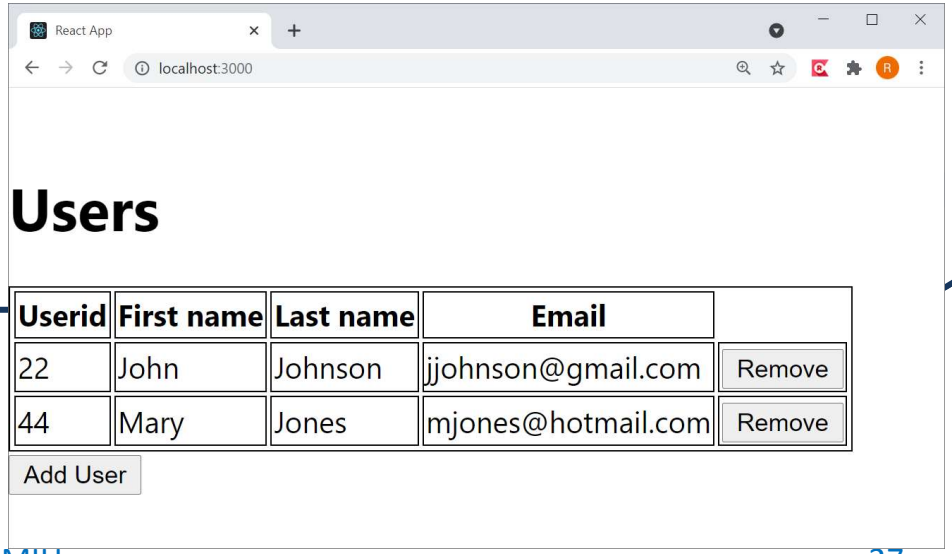
Pass **onAddUser** function to the child component





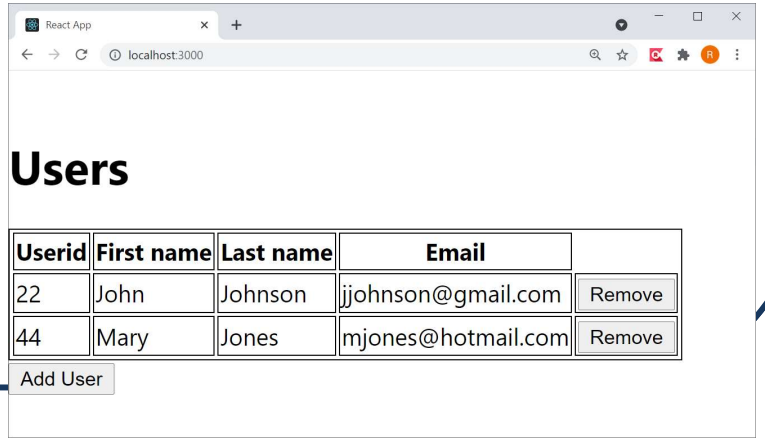
UsersList.js(1/2)

```
import React from 'react';
import { useNavigate } from 'react-router-dom';

export const UsersList = ({userlist, removeUserFunction}) => {
  const navigate = useNavigate();

  const handleAddUser = () => {
    navigate('/adduser');
  }

  const removeUser = (e) => {
    removeUserFunction(e.target.value);
  }
```



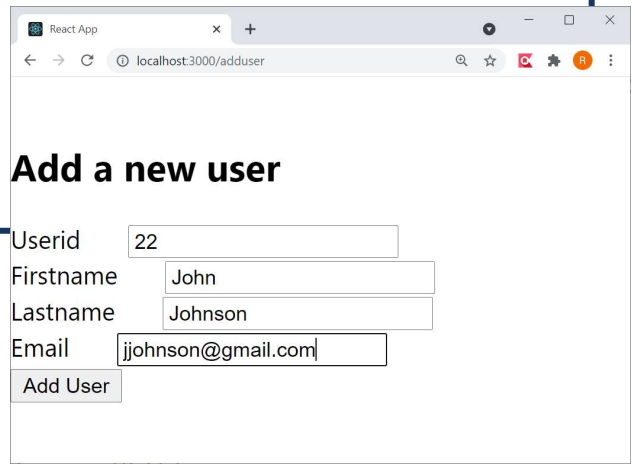
UsersList.js(1/2)

```
  return (
    <div>
      <h1>Users</h1>
      <table>
        <thead><tr><th>Userid</th><th>First name</th><th>Last name</th><th>Email</th>
         </tr></thead>
        <tbody>
          {userlist.map(user => (
            <tr key={user.userid}>
              <td>{user.userid}</td>
              <td>{user.firstname}</td>
              <td>{user.lastname}</td>
              <td>{user.email}</td>
              <td><button onClick={removeUser} value={user.userid} >Remove</button></td
>
            </tr>
          ))}
        </tbody>
      </table>
      <button onClick={handleAddUser}>Add User</button>
    </div>
  );
};
```



AddUser.js(1/2)

```
import React, { useState } from 'react';
import { useNavigate } from 'react-router-dom';

export const AddUser = ({addUserFunction}) => {
  const navigate = useNavigate();
  const cleanuser = { userid: "", firstname: "", lastname: "", email: "" };
  const [user, setUser] = useState(cleanuser);


  const handleSubmit = (e) => {
    e.preventDefault();
    addUserFunction(user);
    navigate('/');
  }

  const handleFieldChange = (e) => {
    setUser({ ...user, [e.target.name]: e.target.value });
  }
```



AddUser.js(2/2)

```
return (
    <div>
      <h2>Add a new user</h2>
      <form onSubmit={handleSubmit}>
        <div>
          Userid
          <input
            type="text"
            placeholder="Userid"
            name="userid"
            value={user.userid}
            onChange={handleFieldChange} />
        </div>
          …
        <button type="submit">Add User</button>
      </form>
    </div>
  );
};
```