Tommy Las Z23517623 Tommy-Las
April 10th 2022 Github Repository
Full Stack Web Development COT4930
Homework #6 – Part 2

Part 1:

For the first part, I had to copy the student server from HW5 into a folder called 'backend' in HW6. I used the same student server from HW5.

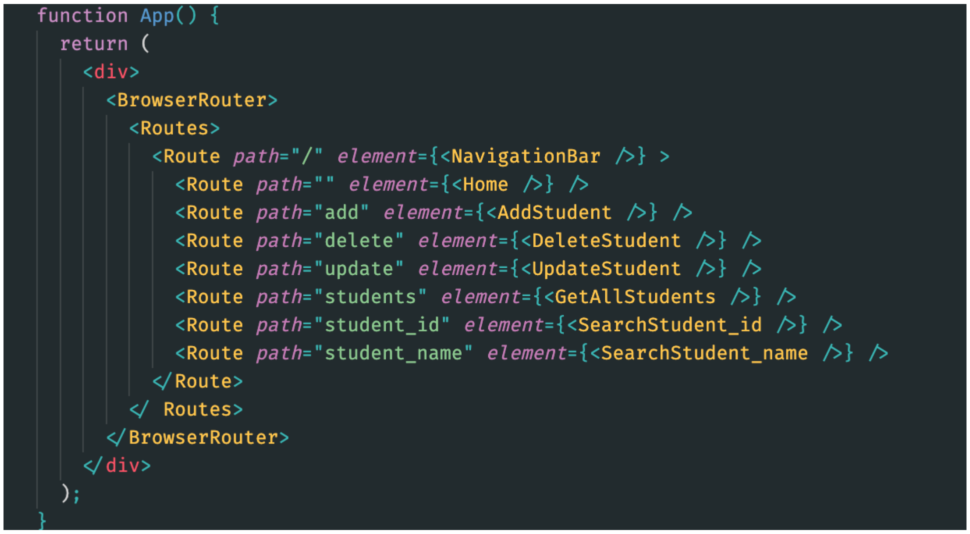
Part 2:

First, I'm going to mention that most of the frontend was created using Bootstrap. I installed a Bootstrap package using npm install react-bootstrap, that has bootstrap components. For example, if you want to add a bootstrap container for example, you would use <Container> (here you add other elements) </Container>. Bootrsap with react is very easy to use.

Also, to send the HTTP Requests, for this homework I used the axios which is a is a promise-based HTTP Client for node.js. It is way easier to use than AJAX or Fetch in my opinion. You first install it using npm install axios. Then you can use either axios.get() or axios.put() or axios.post() or axios.delete() for each request. In the first parameter you include the address to send the request, in this case 'http://localhost:5678/students', the second parameter you include any parameters that you want to send if needed. Then you must use .then and .catch. In .then you include what you want to perform in case the request is successful. In .catch you include what you want to do in case of an error.

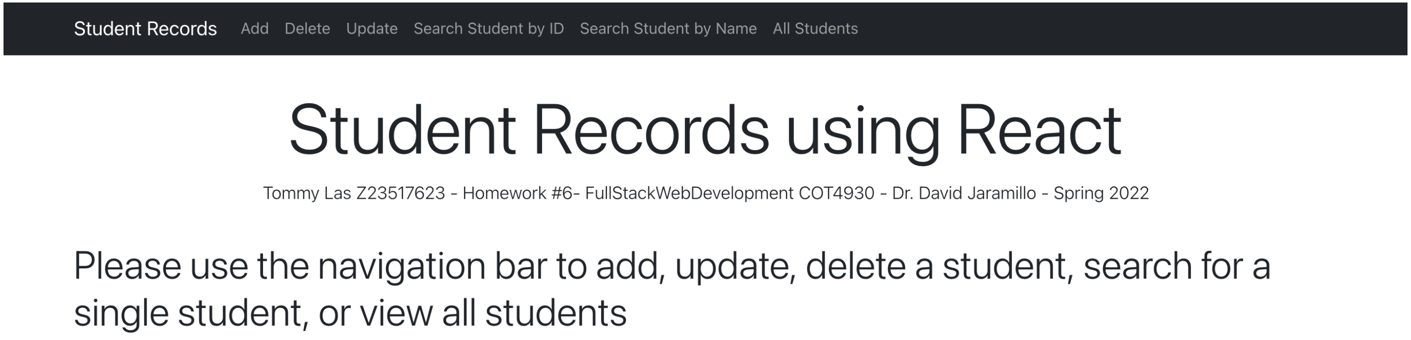
First, you need to start the server using node studentserver.js in the backend folder. Then I run npm start in the frontend folder.

This is my home page, instead of having a button or a list that sends you to each page, I implemented a navigation bar on top of the screen, which makes it more user friendly. The navigation bar will appear in all pages, so you can have access to all pages. The navigation bar is implemented using the React Route, which I think it was the hardest React material to learn for me. I implemented the Routes in the App.js. For example, the route with path ‘add’ will take you to the component <AddStudent />. I did this with all the other components.



```
function App() {
  return (
    <div>
      <BrowserRouter>
        <Routes>
          <Route path="/" element={<NavigationBar />} >
            <Route path="" element={<Home />} />
            <Route path="add" element={<AddStudent />} />
            <Route path="delete" element={<DeleteStudent />} />
            <Route path="update" element={<UpdateStudent />} />
            <Route path="students" element={<GetAllStudents />} />
            <Route path="student_id" element={<SearchStudent_id />} />
            <Route path="student_name" element={<SearchStudent_name />} />
          </Route>
        </ Routes>
      </BrowserRouter>
    </div>
  );
}
```

Homepage:

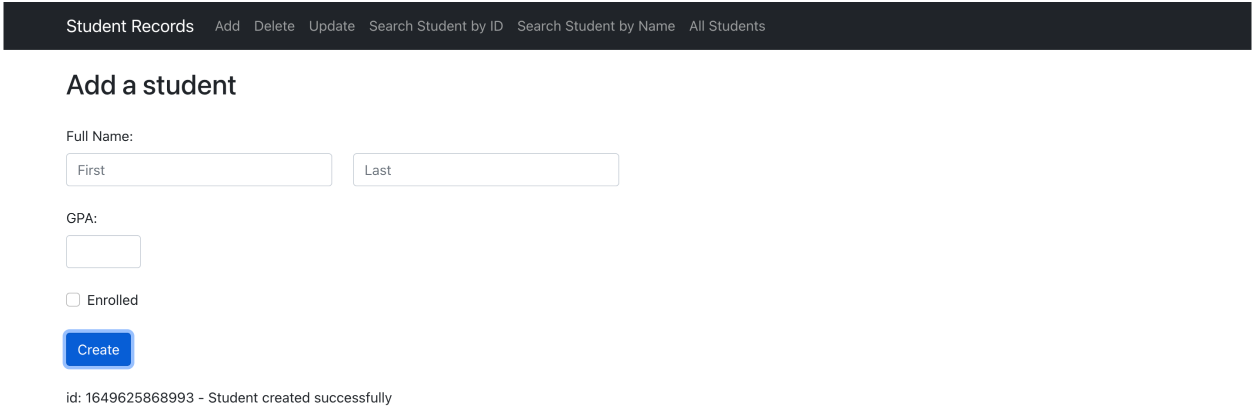


Student Records using React

Tommy Las Z23517623 - Homework #6- FullStackWebDevelopment COT4930 - Dr. David Jaramillo - Spring 2022

Please use the navigation bar to add, update, delete a student, search for a single student, or view all students

Add student to the database:
This is my page to add a student to the database. The form was made using Bootstrap. On the bottom it shows either an error message or a success message. In this case is a success message and you can see that all the input fields were cleared since the request was successful. Each input field is controlled using the useState hook. The message on the bottom is also controlled using the useState hook.



Add a student

Full Name:

First

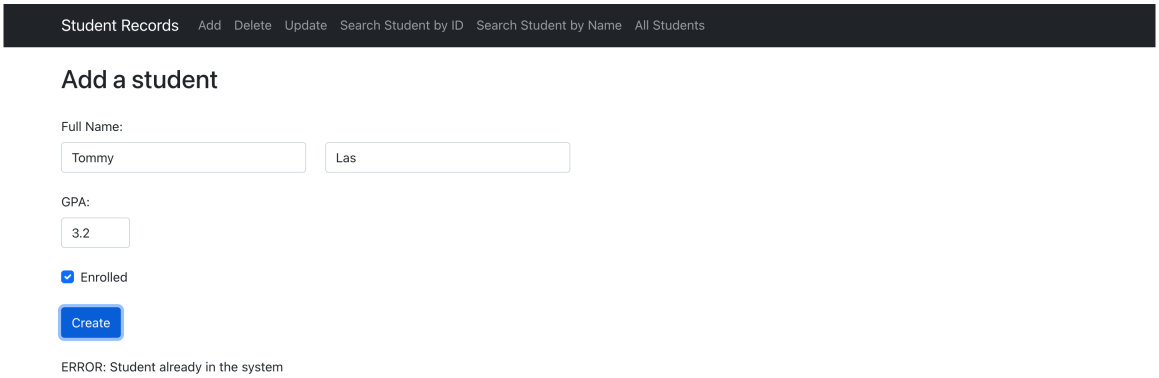
Last

GPA:

□ Enrolled

id: 1649625868993 - Student created successfully

In this case, the user is already in the system, so the inputs field were not cleared. Also, it shows the error in the bottom.



Add a student

Full Name:

Tommy

Las

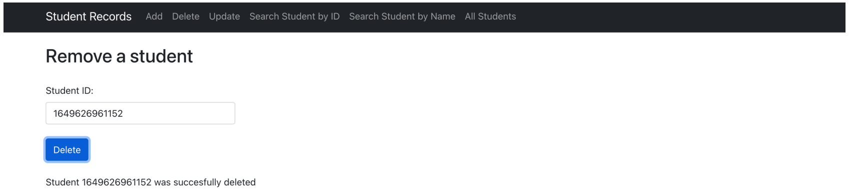
GPA:

3.2

☑ Enrolled

ERROR: Student already in the system

Delete student from the database:
I used the useState hook to handle the input of the student ID. I used axios.delete(‘http://localhost:5678/students’ + id).



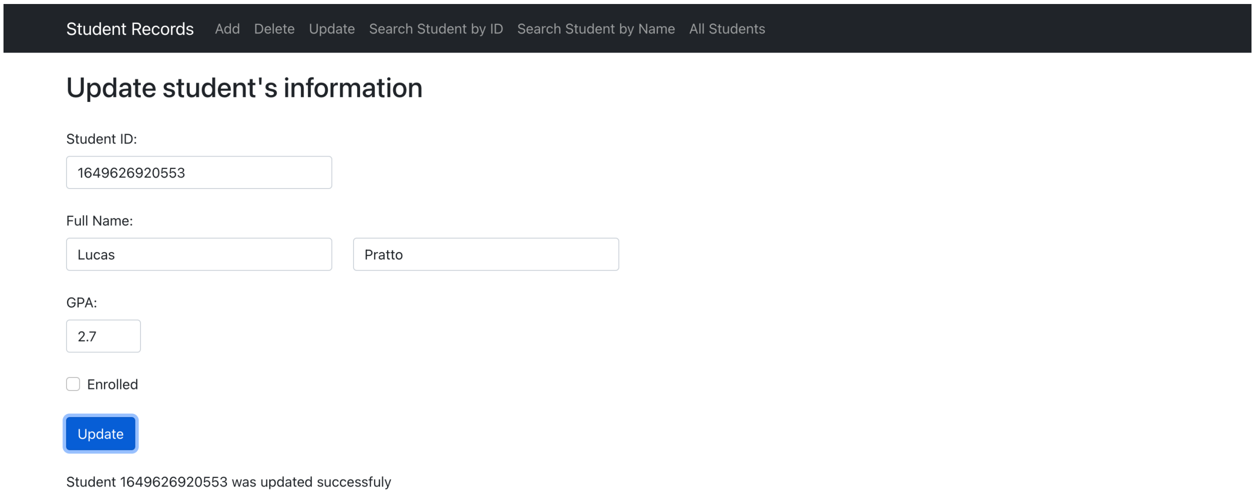
Remove a student

Student ID:

1649626961152

Student 1649626961152 was succesfully deleted

Update student’s information:
I used the useState hook to control all input fields. I used axios.put(‘http://localhost:5678/students’ + id, params) where params is an object with the values needed to be changed.



Update student's information

Student ID:

1649626920553

Full Name:

Lucas

Pratto

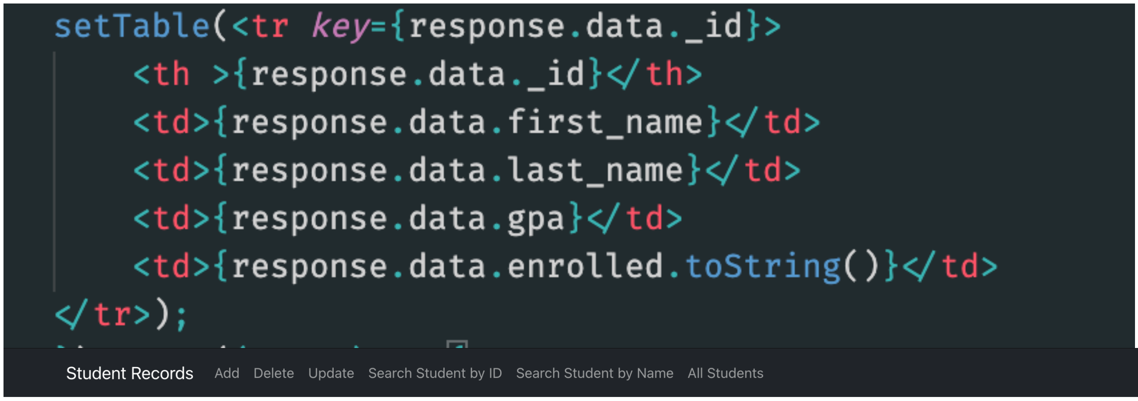
GPA:

2.7

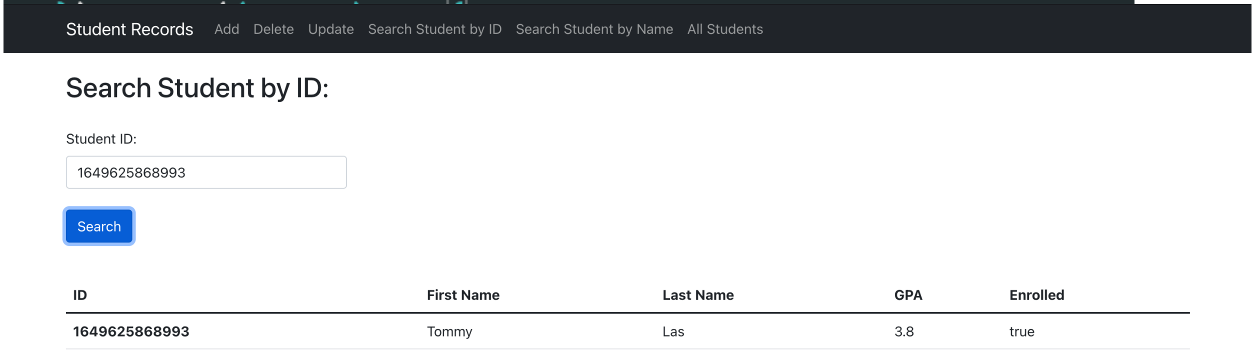
□ Enrolled

Student 1649626920553 was updated successfuly

Search student by id:
The value of the input field is controlled using the useState hook.
The table on the bottom to show the student was made using bootstrap. I created an empty table first, but it won't show nothing until the table variable is updated with the student that was searched. If no student is found, it will show an error message, and no table is shown.
When a student is found, I use setTable to set the variable to a table row:



```
setTable(<tr key={response.data._id}>
    <th >{response.data._id}</th>
    <td>{response.data.first_name}</td>
    <td>{response.data.last_name}</td>
    <td>{response.data.gpa}</td>
    <td>{response.data.enrolled.toString()}</td>
</tr>);
```



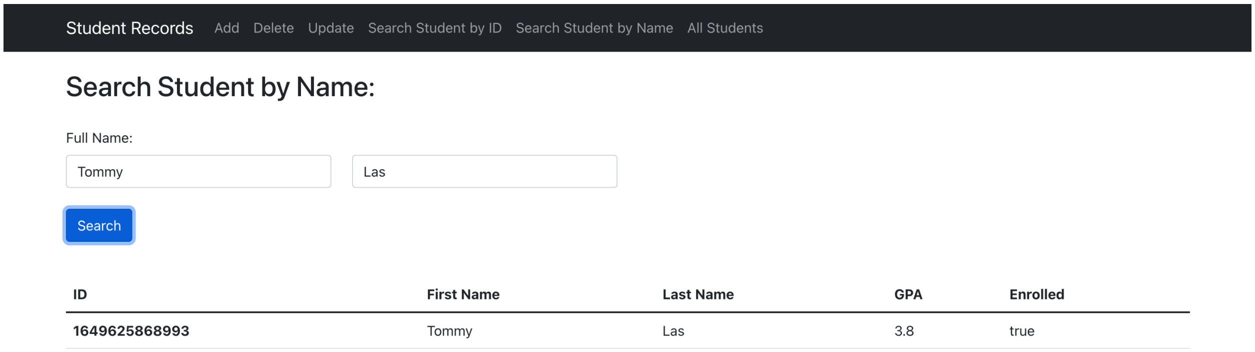
Search Student by ID:

Student ID: 1649625868993

ID	First Name	Last Name	GPA	Enrolled
1649625868993	Tommy	Las	3.8	true

Search student by full name:

I used the useState hook to control the first name and last name input. The user information is show on a table the same way as searching a student by student id. On the first place, I wanted to have only one page for searching with id and searching by name, but I couldn’t come up with a way to have both components (search by id, search by name) in one single component.



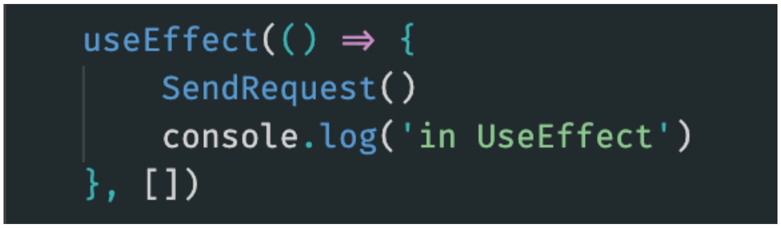
Search Student by Name:

Full Name: Tommy Las

ID	First Name	Last Name	GPA	Enrolled
1649625868993	Tommy	Las	3.8	true

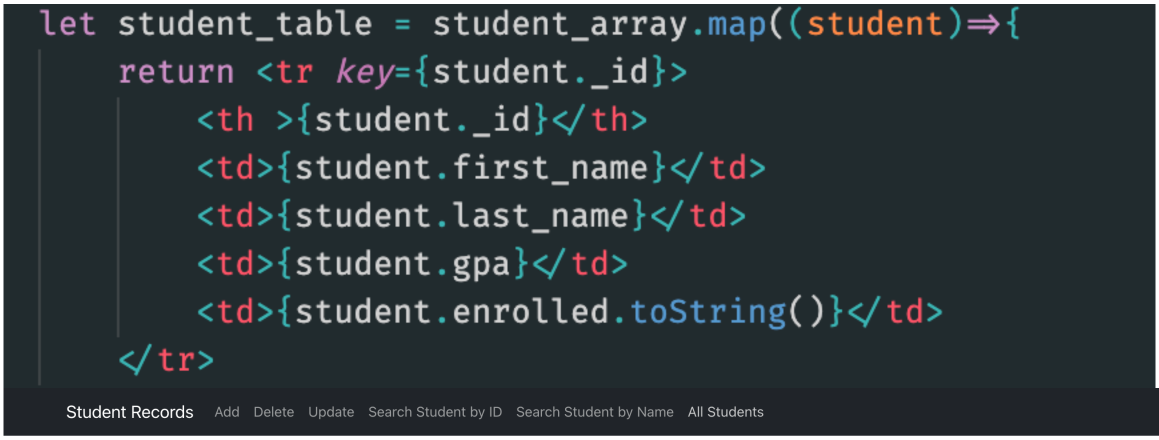
Displaying all students:

The table with all the students loads as soon as you open the page. This is done using the useEffect hook, which is going to run the sendRequest function on the first render. The empty brackets mean to run it on the first render

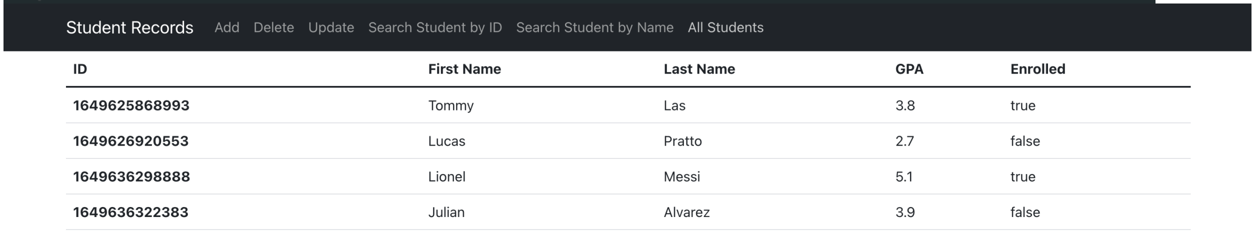


```
useEffect(() => {
    SendRequest()
    console.log('in UseEffect')
}, [])
```

I created an empty table first that will hold all the values. If the database is empty, it will show an empty table. If the request is successful, the server is going to respond with an array of all the student objects. I use the .map method to convert all of the elements the student array into table row elements. Then using the setTable() I would change the state to the array and it would display all students in the table.



```
let student_table = student_array.map((student)=>{
    return <tr key={student._id}>
        <th >{student._id}</th>
        <td>{student.first_name}</td>
        <td>{student.last_name}</td>
        <td>{student.gpa}</td>
        <td>{student.enrolled.toString()}</td>
    </tr>
```



ID	First Name	Last Name	GPA	Enrolled
1649625868993	Tommy	Las	3.8	true
1649626920553	Lucas	Pratto	2.7	false
1649636298888	Lionel	Messi	5.1	true
1649636322383	Julian	Alvarez	3.9	false