**SWE 642 Extra credit – 1**

**React**

**Group Members:**

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3. **Survey Form page development:**

* This project has a front page which holds two links which navigates to the survey form and the list of students. The survey form holds the form which can be filled out and then the list contains all the details of the students who took survey and each record can be updated or deleted.
* The survey form is designed using React. First we need to install react using npx command **‘npx create-react-app surveyForm’.**
* Installing bootstrap using **‘npm install react-bootstrap bootstrap’.**
* The UI is written in a function which then renders the form.
* We use hooks to manage the state. useState and useEffect hooks.
* useState allows to declare a state variable. We can use setState method for class component.
* useEffect hook allows us to perform functional components.
* To access the backend we use fetch. The fetch function takes one argument which is the url from springboot and returns a promise that gives a response to that request.
* It is an asynchronous operation where we use async and await syntax. Then the response is stored and used in storing the value when the input is changed.
* We create methods such as handleInputMethods which updates the state and the input values of the form elements.
* In the handleSubmit method, we perform form validations and sending the data.
* The default server is 3000.

1. **Database development:**

* We have used MySQL for database storage. First wee need to install MySQL server. We have used MySQL Workbench to write the commands.
* In MySQL Workbench we need to create a connection with the MySQL server credentials and then we have created a database called ‘SWE642\_StudentSurvey’. In this database we create a ‘students’ table.
* All the necessary fields are created in the database.
* The default port is 3306

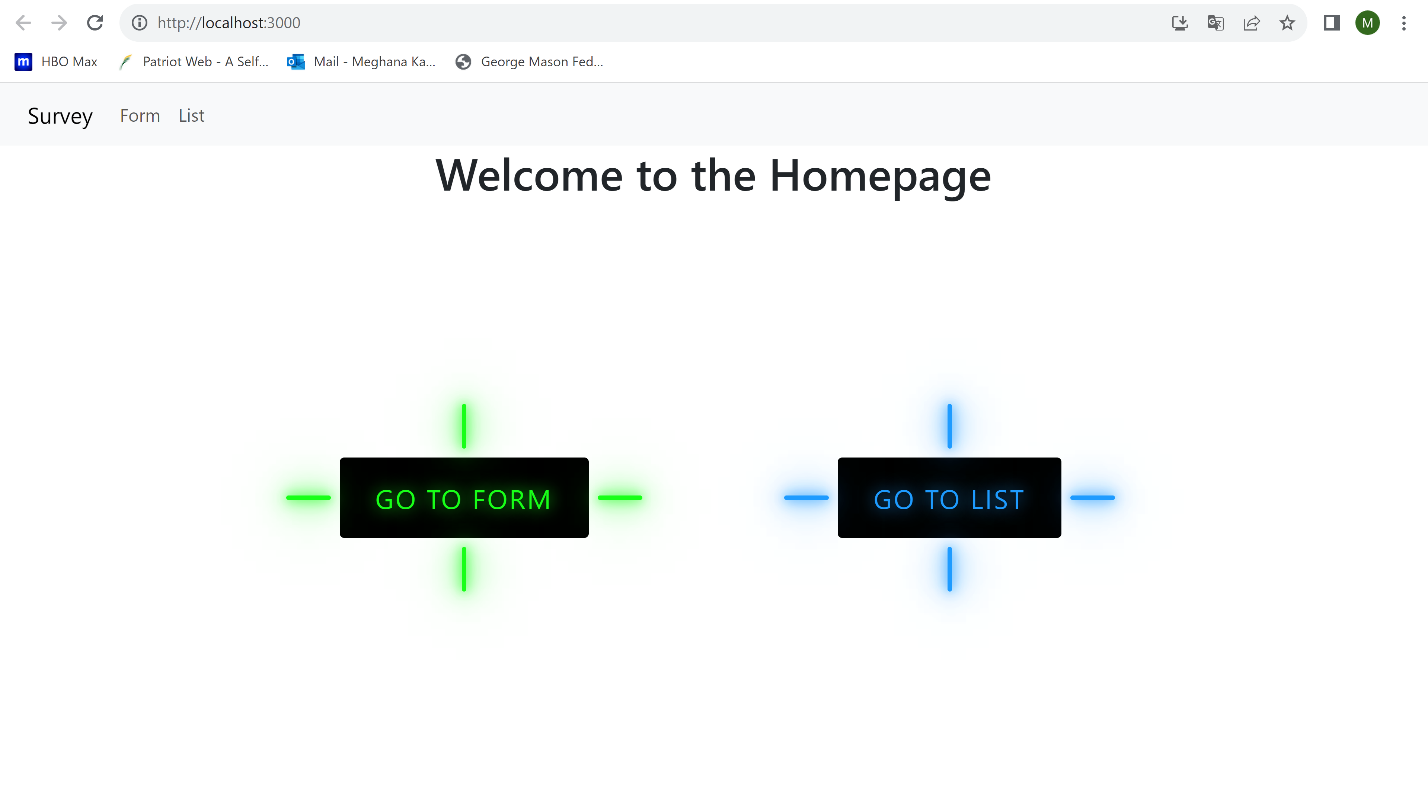
1. **SpringBoot Application:**

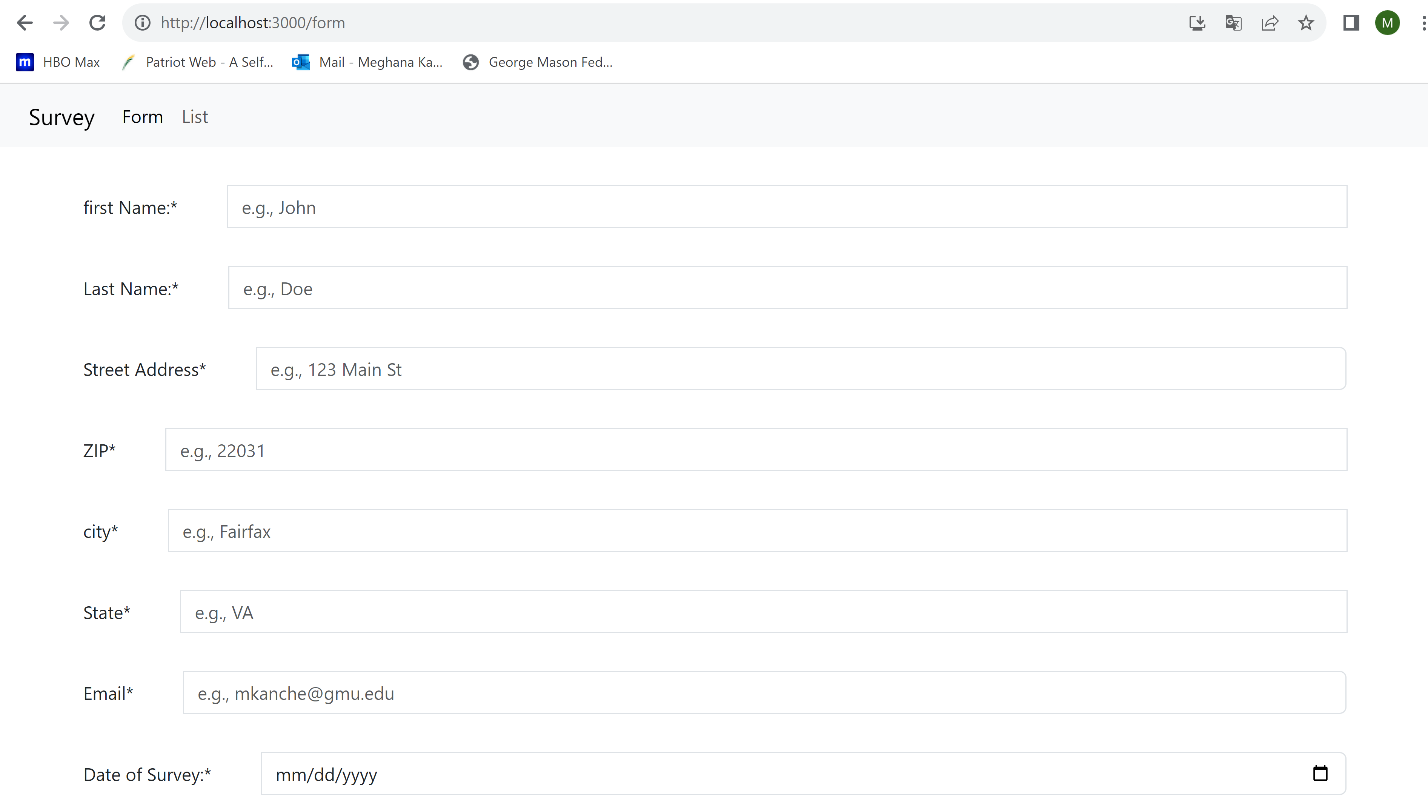
* Firstly, we create a spring boot application using start.spring.io.
* Where we mention java as language, project as maven and for dependencies we choose spring data JPA, Spring WEB and MySQL driver.
* Once done we get the zip file, we extract it and do changes according to our project.
* Firstly, we need to mention the spring.datasource.url as the sql server link which is jdbc:mysql://localhost:3306/SWE642\_StudentSurvey.
* Then we mention the username and password of the sql server.
* Firstly, we have created a StudentData class which holds the variables which holds all the field of the database. And we name the class as ‘@entity’.
* Then we create a StudentRepository which extends JPARepository.
* Then we create StudentService which implements all the CRUD methods saveStudents, getAllStudents, getStudentById, updateStudent and deleteStudent.
* We create a studentController which uses the ‘@RestController’ and ‘@RequestMapping(“/surveyform”)’.
* We have use GetMapping, PutMapping, DeleteMapping, and PostMapping, annotations.
* Once these are implemented, we can access the server using <http://localhost:8080/surveyform> url.
* We need to run the springboot application for the server to run and then we can execute the angular project accessing the url.

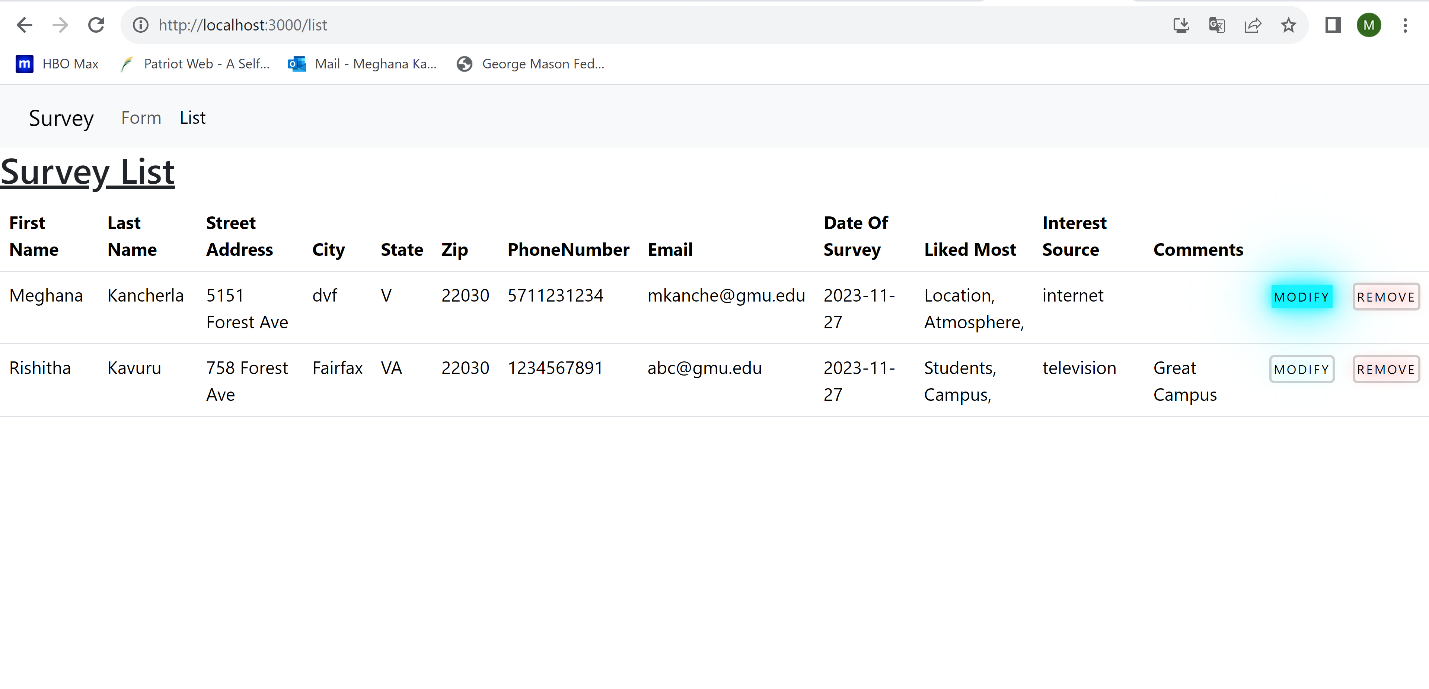
1. **Creating a connection between spring boot and react:**

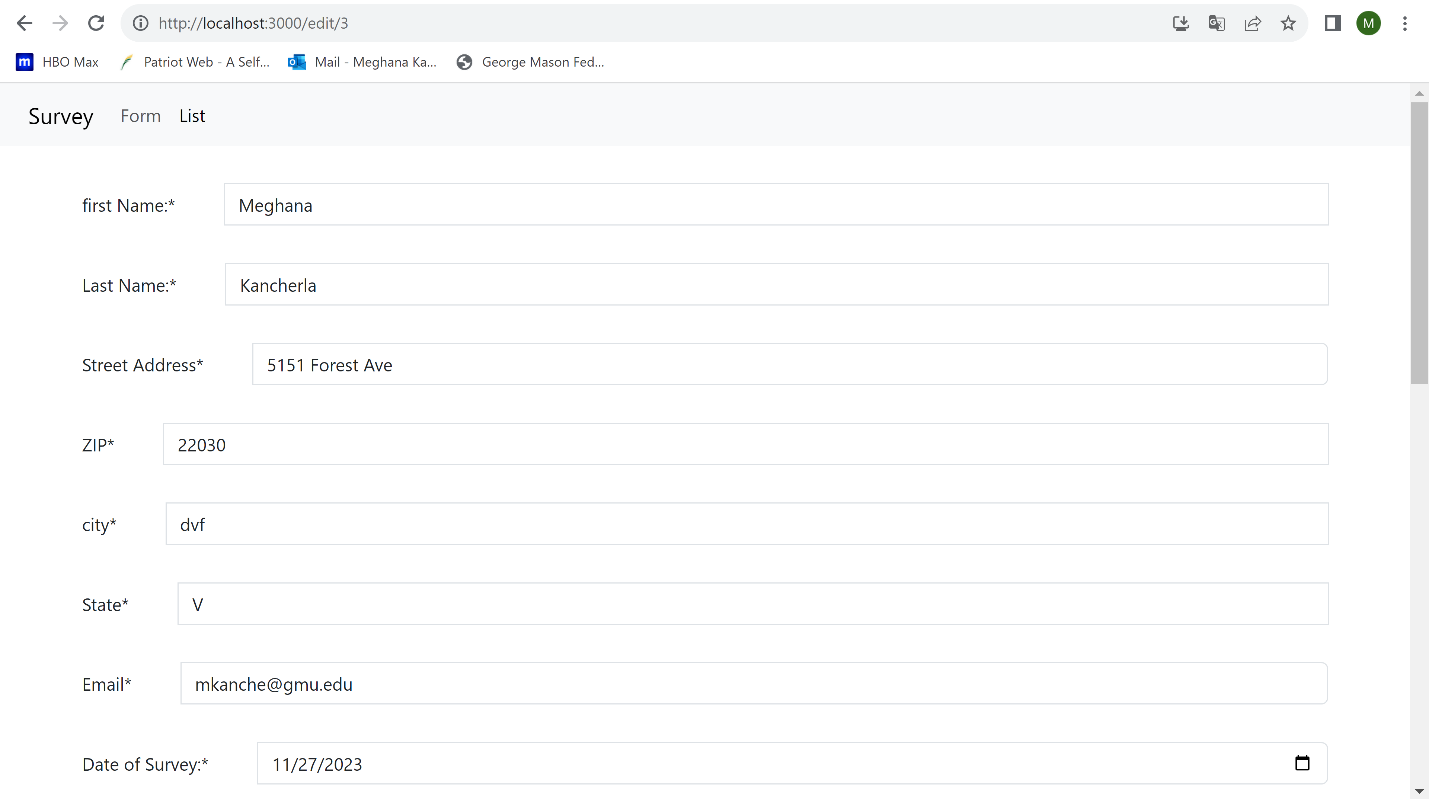
* To connect react and spring boot, we need to mention the above connection url in react using fetch, which is ‘http://localhost:8080/surveyform’.
* The CRUD operations in the services class the springBoot methods using the url.
* Hence, once the connection is successful, the values from react are sent in json format to the springboot which then maps it to the StudenData class and performs the necessary operation.

**Output Screenshots:**

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