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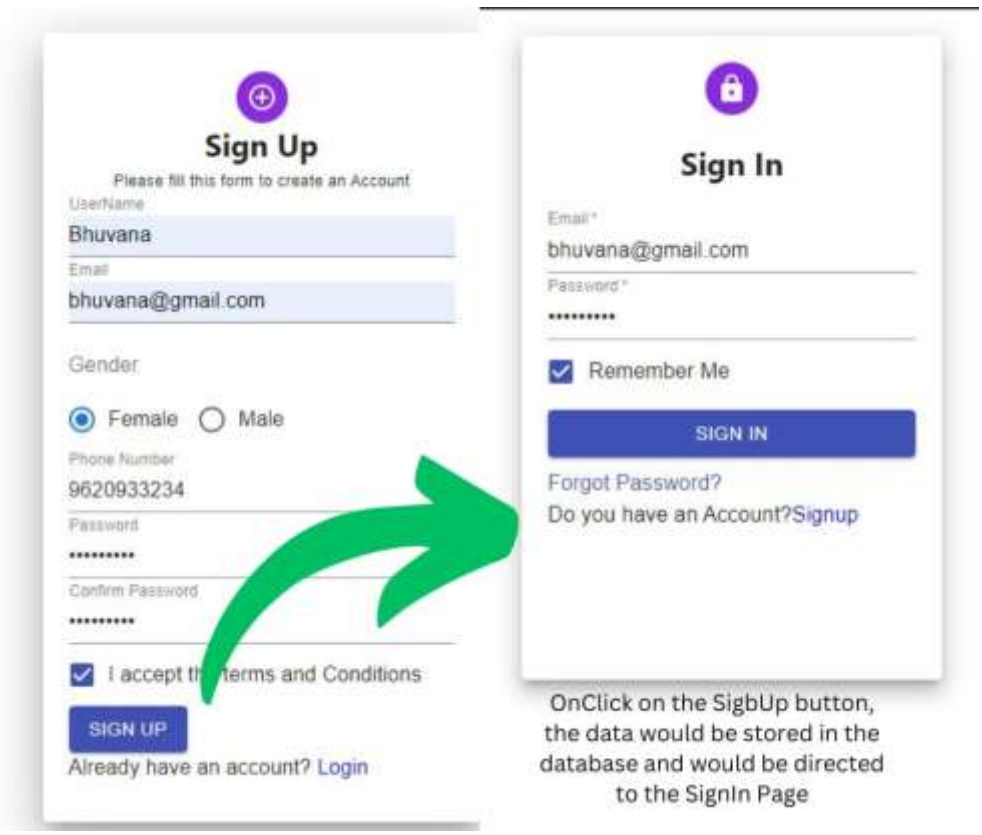
Date: 14/04/2024,
Title: Hospital Management

SIGN UP AND THE SIGN IN PAGE



AND IF I TRY TO SIGN-UP WITH THE SIGNED-UP EMAIL:

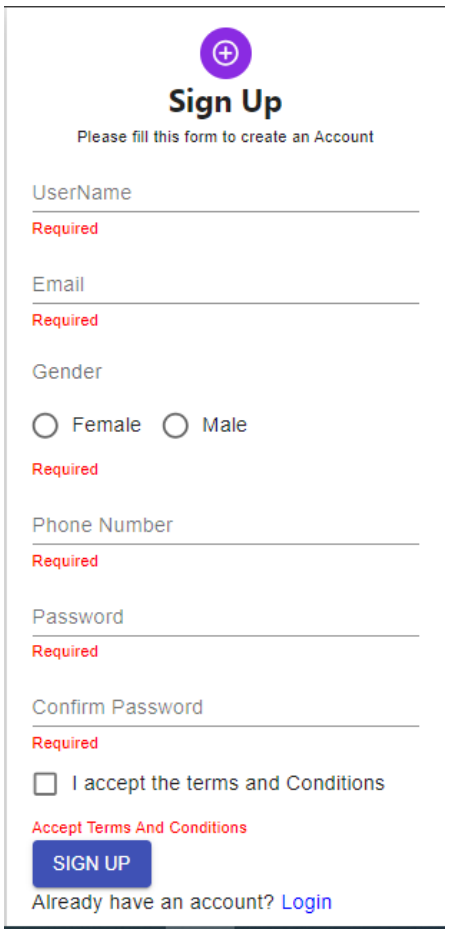
Upon succesfull Signing In, it will be directed to the Dashboard. And all the Form Validation's are done using Formik and Yup.

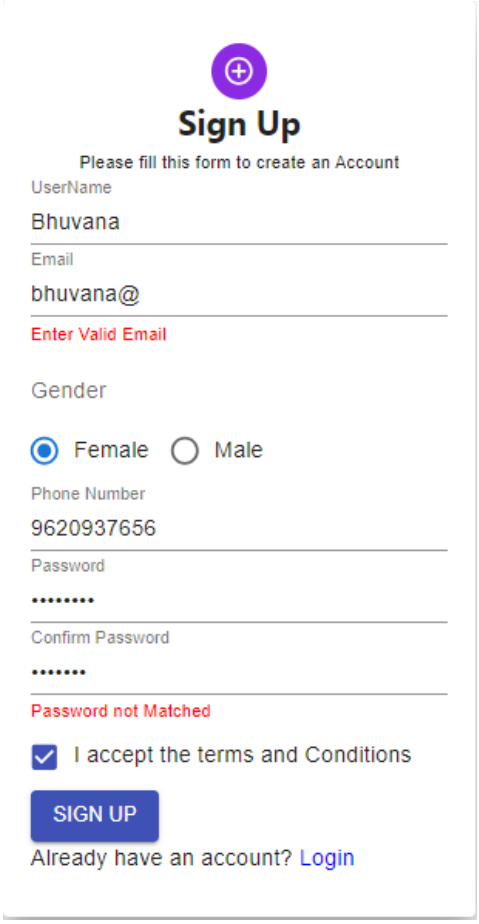
FORMIK AND YUP:

Formik is a React library for managing form state and submission, simplifying form handling by abstracting away complexities.

Yup: Yup is a JavaScript schema builder for value parsing and validation, providing a fluent API for defining validation rules and ensuring data integrity.

FORMIK'S VALIDATION:





AT THE FRONTEND:

```
    const validationSchema = Yup.object().shape({
        username: Yup.string().min(3, "It's Too Short").required("Required"),
        email: Yup.string().email("Enter Valid Email").required("Required"),
        gender: Yup.string().oneOf(["male", "female"], "Required").required("Required"),
        phoneNumber: Yup.number().typeError("Enter Valid Phone
Number").required("Required"),
        password: Yup.string()
            .min(8, "Password Minimum Length should be 8")
            .matches(/^(?=.*[!@#$%^&*])/, "Password must contain at least one special
character")
            .required("Required"),
        confirmpassword: Yup.string().oneOf([Yup.ref('password')], "Password not
Matched").required("Required"),
        termsAndConditions: Yup.boolean().oneOf([true], "Accept Terms And Conditions") //
Updated for boolean type
    }
```

CRUD OPERTIONS (FOR DOCTOR'S PAGE)

CREATE OPERATION

As soon as you enter the Doctor's data in the form, the data gets stored in the database and gets updated in the Table


```
_id: ObjectId('6616b82a6b60213ae2c87775')
name : "Akshay"
department : "Surgeon"
gender : "Male"
experience : "15"
city : "Mysore"
country : "India"
specialization : "Orthopedic"
patientsServed : "3000"
doctoravailable : true
createdAt : 1712764970046
updatedAt : 1712764970046
```


AT THE BACKEND:

MODEL DEFINITION:

```
module.exports = {
  attributes: {
    name: { type: 'string', required: true },
    department: { type: 'string', required: true },
    experience: { type: 'string', required: true },
    gender: { type: 'string', required: true },
    city: { type: 'string', required: true },
    country: { type: 'string', required: true },
    specialization: { type: 'string', required: true },
    patientsServed: { type: 'string', required: true },
    doctoravailable: { type: 'boolean', defaultsTo: false },

  }
};
```

CONFIGURE ROUTE:

```
'POST /create': 'DoctorController.create',
```

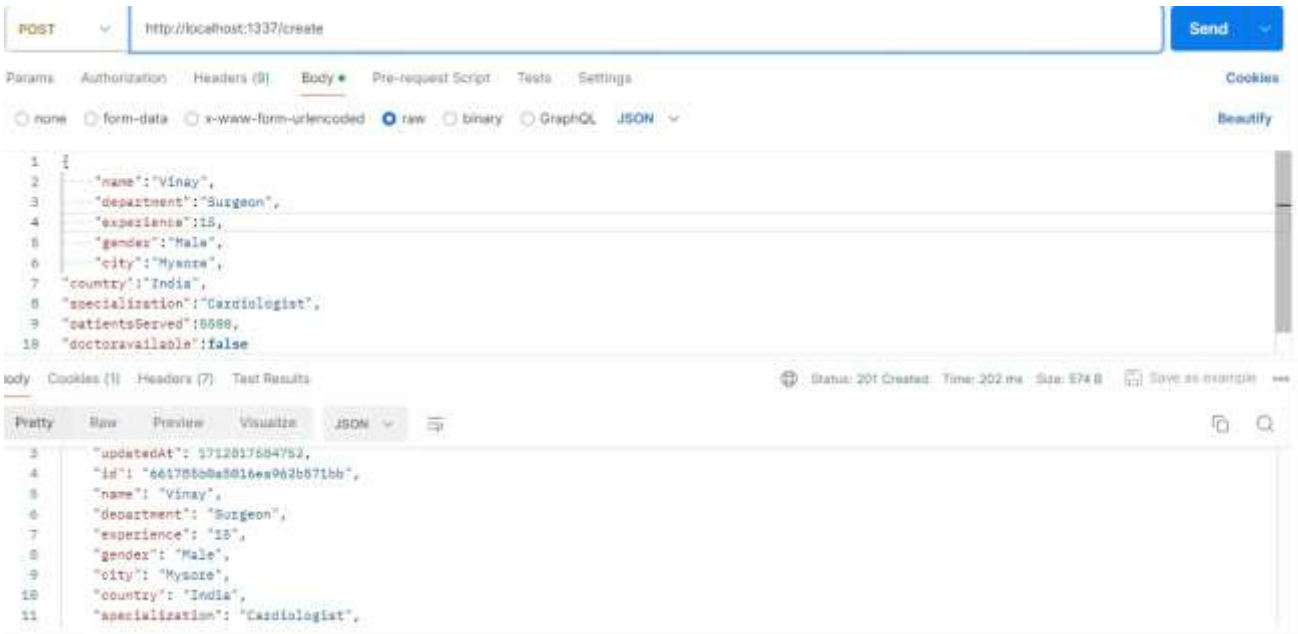
BACKEND CONTROLLER'S LOGIC:

```
async create(req, res) {
      try {
        const doctor = await Doctor.create(req.body).fetch();
        return res.status(201).json(doctor);
      } catch (error) {
        return res.status(500).json({ error: 'Server Error' });
      }
    },
```

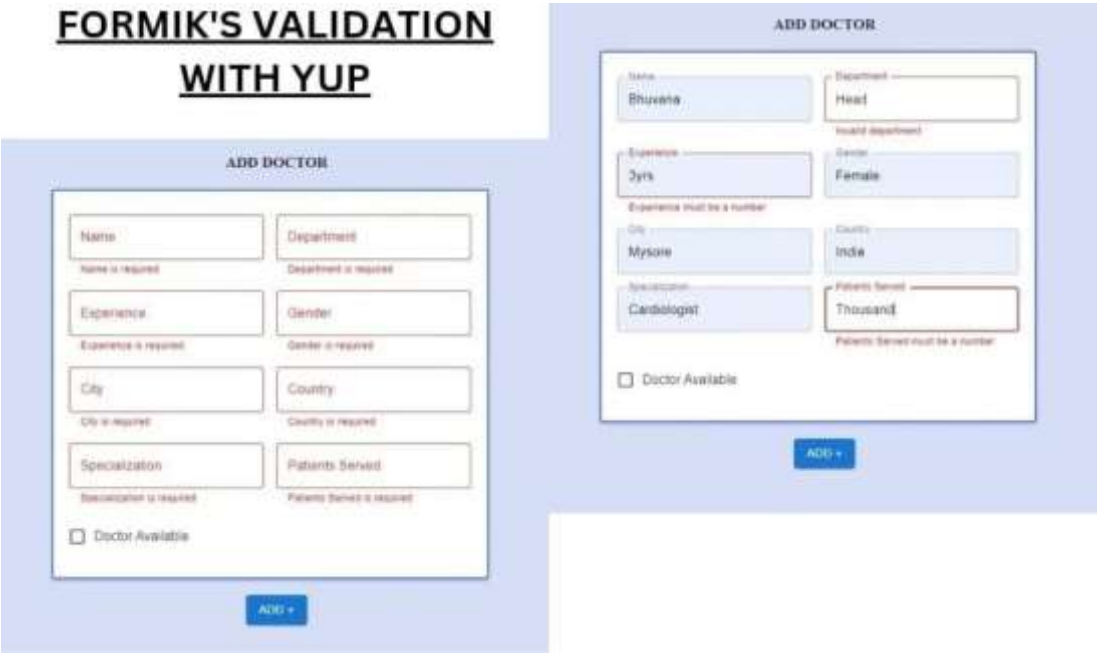
FRONTEND LOGIC:

```
const handleAddSubmit = async (data) => {
    console.log('Adding new doctor:', data);
    try {
      const response = await axios.post('http://localhost:1337/create', data);
      console.log('New doctor added:', response.data);
      setDoctors(prevDoctors => [...prevDoctors, response.data]);
      setIsPopoverOpen(true);
      setTimeout(() => setIsPopoverOpen(false), 2000);
      toggleDrawer();
    } catch (error) {
      console.error('Error adding doctor:', error);
    }
  };
```

TESTING THROUGH POSTMAN



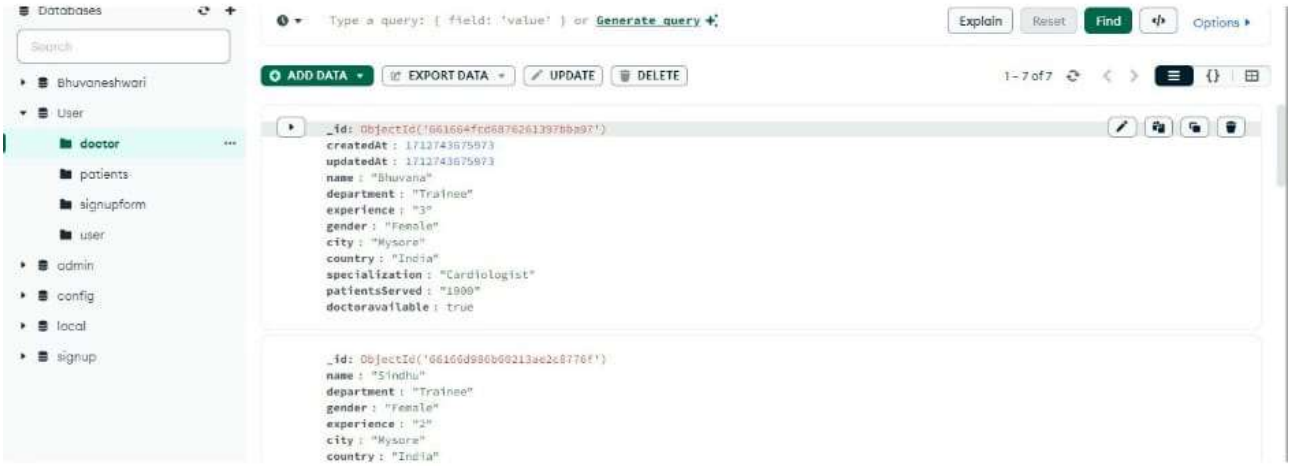
FORMIK'S VALIDATION WITH YUP




```
const validationSchema = Yup.object().shape({
  name: Yup.string().required('Name is required'),
  department: Yup.string()
    .required('Department is required')
  experience: Yup.number().typeError('Experience must be a number').required('Experience
is required'),
  city: Yup.string().required('City is required'),
  country: Yup.string().required('Country is required'),
  specialization: Yup.string().required('Specialization is required'),
  patientsServed: Yup.number().typeError('Patients Served must be a
number').required('Patients Served is required'),
});
```

READ OPERATION

The data will be fetched from the database and will be displayed in the table through GET Method



AT THE BACKEND:

CONFIGURE ROUTE:

```
'GET /doctors': 'DoctorController.doctors',
```

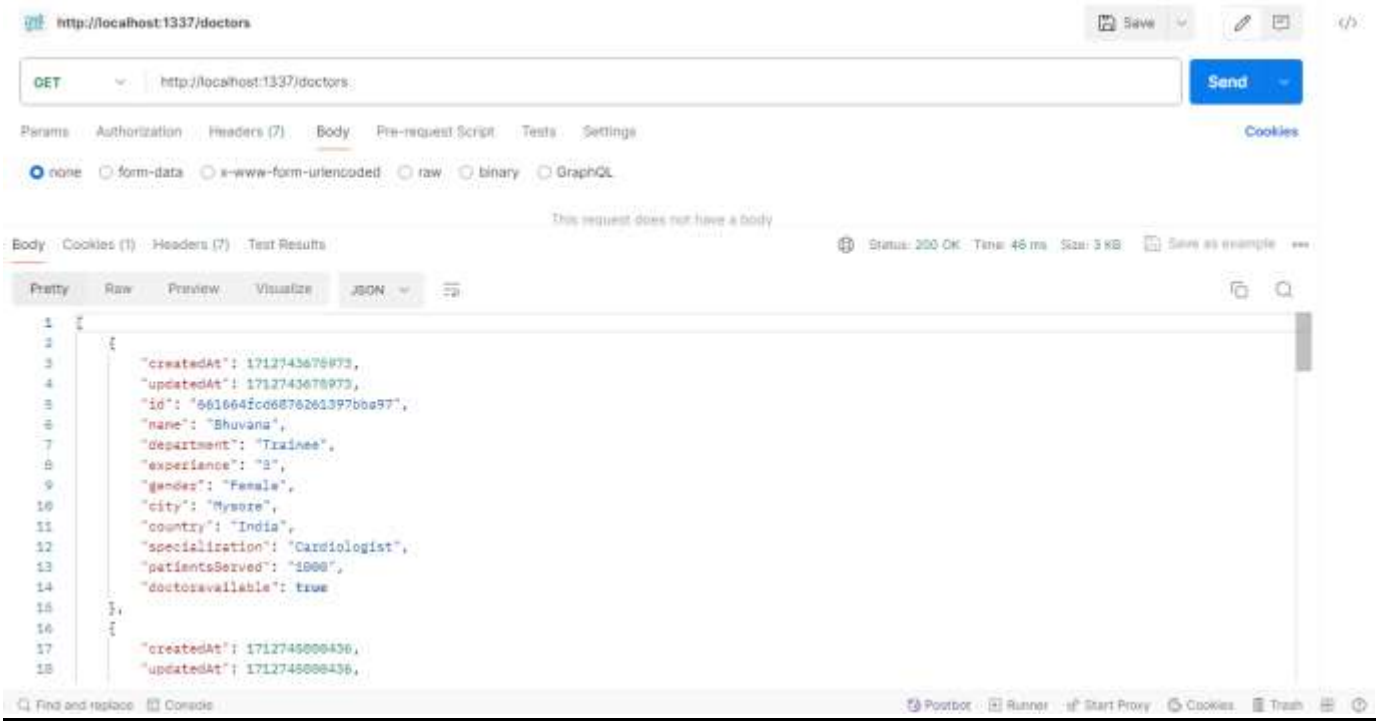
BACKEND CONTROLLER'S LOGIC:

```
async doctors(req, res) {
    try {
      // Fetch doctors data from the database (e.g., using a model)
      const doctors = await Doctor.find(); // Assuming Doctor is your model

      // Send the fetched data as a response
      return res.json(doctors);
    } catch (error) {
      // Handle errors
      console.error('Error fetching doctors:', error);
      return res.status(500).json({ error: 'Server Error' });
    }
  },
```

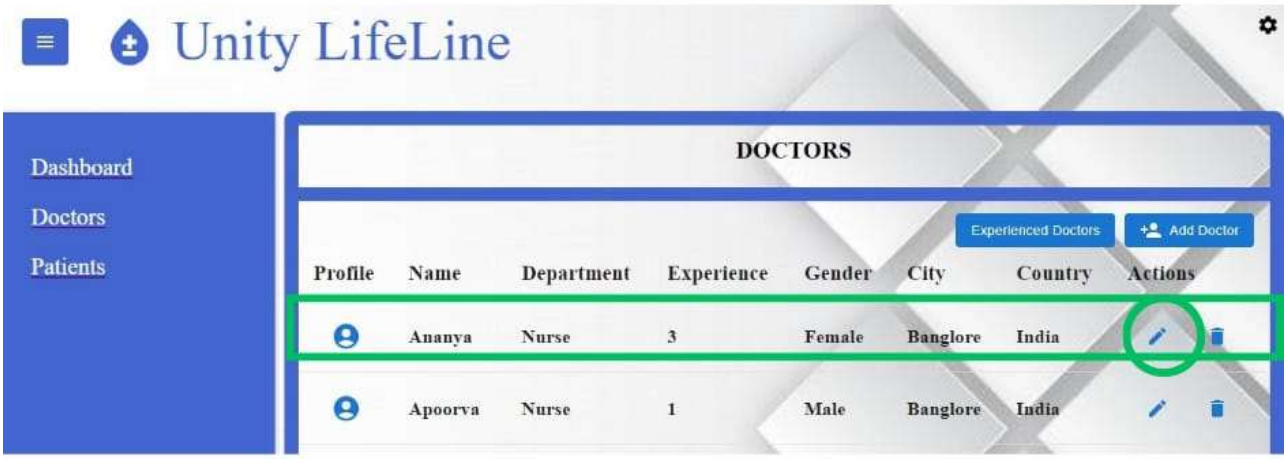
FRONTEND LOGIC:

```
const fetchData = async () => {
    try {
      // Make GET request to your backend API endpoint to fetch doctors data
      const response = await axios.get('http://localhost:1337/doctors');
      setDoctors(response.data); // Set the fetched data to the state
    } catch (error) {
      console.error('Error fetching data:', error);
    }
  };
```

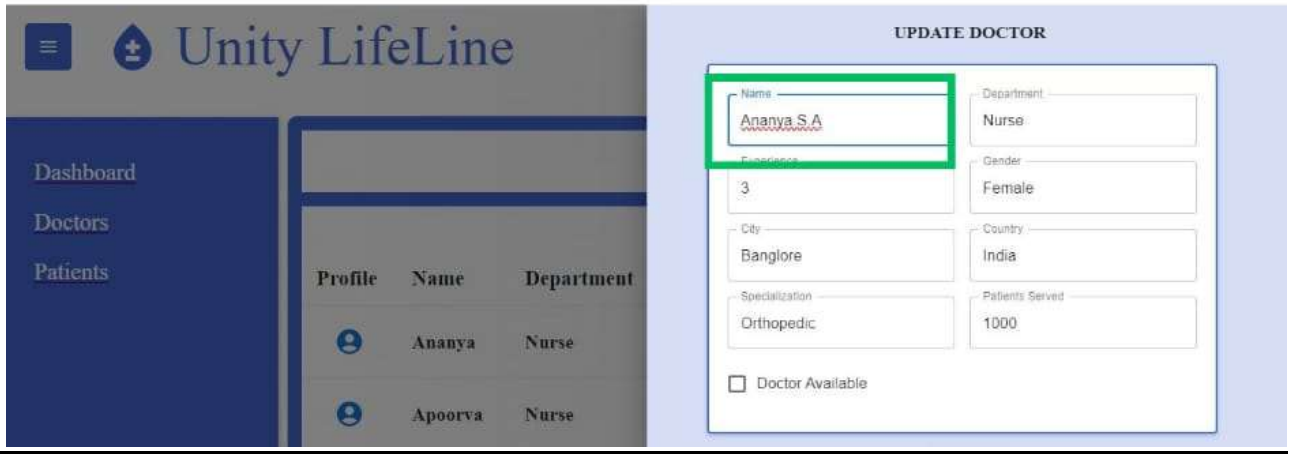
TESTING THROUGH POSTMAN:



UPDATE OPERATION



Updating Name Ananya to Ananya S A



Before

```
_id: ObjectId('6618f9c75714e35cebd742c7')
createdAt : 1712912839081
updatedAt : 1712912839081
name : "Ananya"
department : "Nurse"
experience : "3"
gender : "Female"
city : "Banglore"
country : "India"
specialization : "Orthopedic"
patientsServed : "1000"
doctoravailable : true
```

After

```
_id: ObjectId('6618f9c75714e35cebd742c7')
createdAt : 1712912839081
updatedAt : 1712912839081
name : "Ananya.S.A"
department : "Nurse"
experience : "3"
gender : "Female"
city : "Banglore"
country : "India"
specialization : "Orthopedic"
patientsServed : "1000"
doctoravailable : true
```

AT THE BACKEND:

CONFIGURE ROUTE:

```
  'PUT /update/:id': 'DoctorController.update',
```

CONTROLLER'S LOGIC:

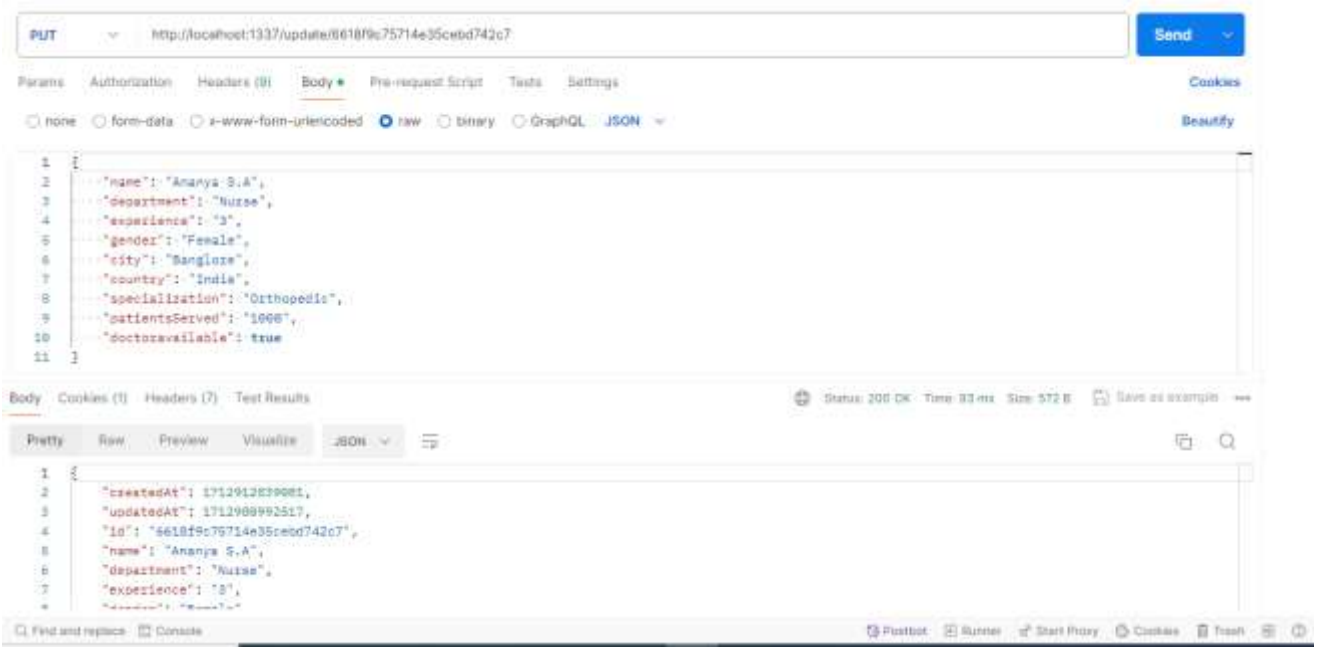
```
     async update(req, res) {
        const doctorId = req.param('id');
        const newData = req.allParams();
        try {
          const updatedDoctor = await Doctor.updateOne({ id: doctorId }).set(newData);
          if (!updatedDoctor) {
            return res.notFound('Doctor not found.');
          }
          return res.ok(updatedDoctor);
        } catch (error) {
          return res.serverError(error);
        }
      },
```

AT THE FRONTEND:

```
const handleUpdateSubmit = async (data) => {
    try {
      console.log('Editing doctor:', editingDoctor);
      console.log('Updated data:', data);

      // If editingDoctor exists, it means we're updating an existing doctor
      const updatedDoctor = { ...editingDoctor, ...data };

      // Make PUT request to backend API to update the doctor
      await axios.put(`http://localhost:1337/update/${editingDoctor.id}`, updatedDoctor);
```

```
    // Update the doctor object in the state with the new data
    setDoctors(prevDoctors =>
      prevDoctors.map(doctor =>
        doctor.id === editingDoctor.id ? updatedDoctor : doctor
      )
    );
    setIsUpdateSuccessOpen(true);

    toggleDrawer(); // Close the drawer after submission
  } catch (error) {
    console.error('Error updating doctor:', error);
    // Handle error gracefully (e.g., display error message)
  }
};
```

TESTING THROUGH POSTMAN:



DELETE OPERATION

OnClick on the Delete icon, a prompt appears stating "Are you sure you want to delete this doctor", If yes, the doctor gets deleted both at the frontend and backend

---

AT THE BACKEND:

CONFIGURE ROUTE:

```
  'DELETE /deleteDoctor/:id':'DoctorController.deleteDoctor',
```

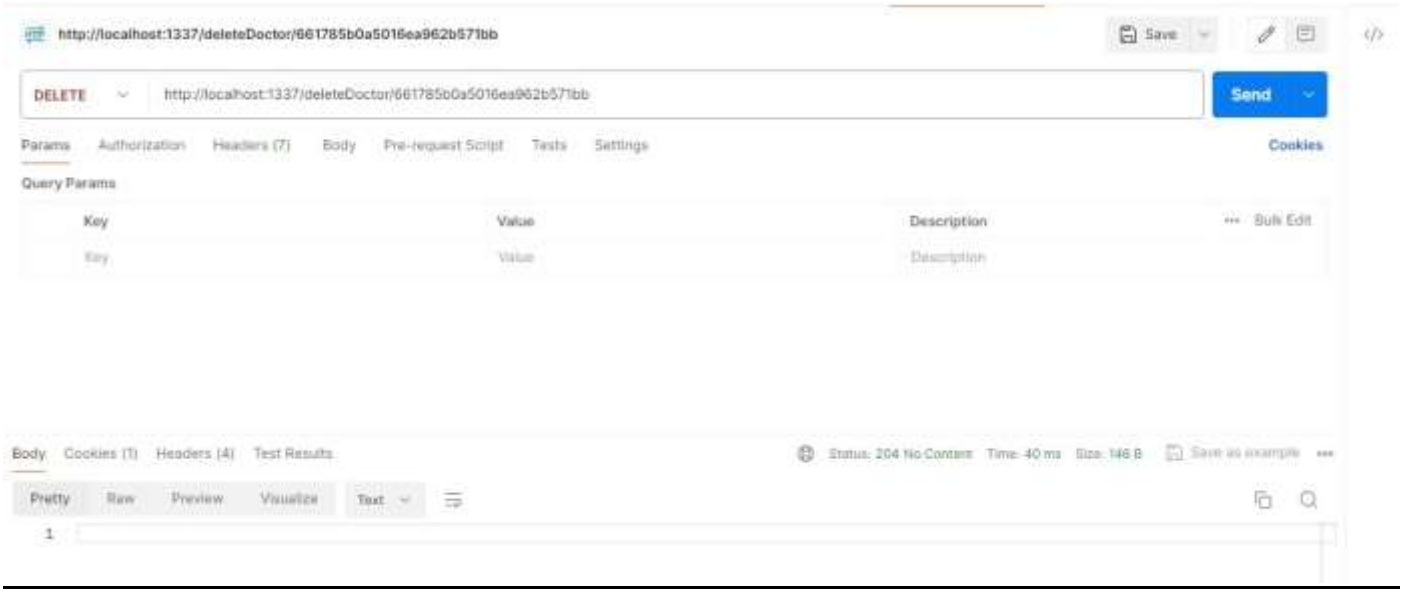
BACKEND CONTROLLER'S LOGIC:

```
async deleteDoctor(req, res) {
        const { id } = req.params;
        try {
          // Find the doctor by ID and delete it
          const deletedDoctor = await Doctor.destroyOne({ id });
          if (!deletedDoctor) {
            return res.status(404).json({ error: 'Doctor not found' });
          }
          res.status(204).end(); // Respond with 204 No Content on successful deletion
        } catch (error) {
          console.error('Error deleting doctor:', error);
          res.status(500).json({ error: 'Server Error' });
        }
      }
```

FRONTEND LOGIC:

```
const handleDeleteClick = async (id) => {
  console.log('Deleting doctor with ID:', id); // Add this line
  try {

    // Make DELETE request to backend API to delete the doctor
    await axios.delete(`http://localhost:1337/deleteDoctor/${id}`);
    // Update the doctors state by filtering out the deleted doctor
    setDoctors(doctors.filter((doctor) => doctor.id !== id));
  } catch (error) {
    console.error('Error deleting doctor:', error);
  }
};
```

TESTING THROUGH POSTMAN:



CHECKING DOCTOR'S AVAILABILITY

Dr. Vinay is available for his patients, and onMouseover of his profile, it shows that Vinay is Available


```
_id: ObjectId('661785b0a5016ea962b571bb')
createdAt : 1712817584752
updatedAt : 1712817584752
name : "Vinay"
department : "Surgeon"
experience : "15"
gender : "Male"
city : "Mysore"
country : "India"
specialization : "Cardiologist"
patientsServed : "5500"
doctoravailable : true
```


Apoorva not available for her patients, and onMouseover of his profile, it shows that she is not Available


```
_id: ObjectId('6618f9fd5714e35cebd742c8')
createdAt : 1712912893961
updatedAt : 1712912893961
name : "Apoorva"
department : "Nurse"
experience : "1"
gender : "Male"
city : "Banglore"
country : "India"
specialization : "Orthopedic"
patientsServed : "100"
doctoravailable : false
```


AT THE BACKEND:

CONFIGURE ROUTE:

```
'GET
/doctors/fetchDoctorAvailability/:doctorId':'DoctorController.fetchDoctorAvailability',
```

CONTROLLER'S LOGIC:

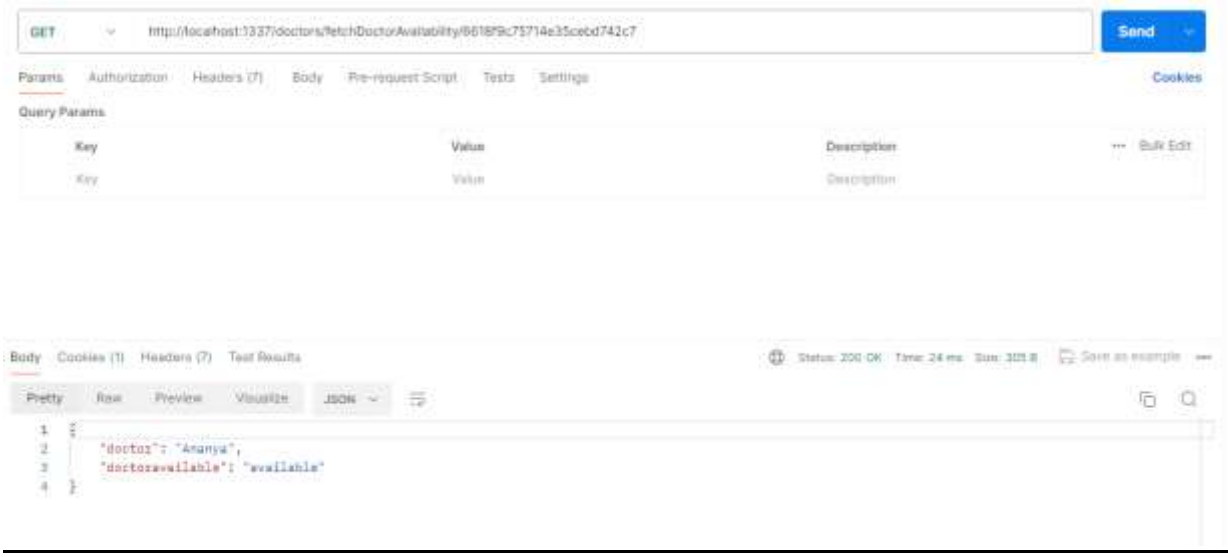
```
async fetchDoctorAvailability(req, res) {
      try {
        const doctorId = req.params.doctorId; // Extract doctor ID from request params
        const doctor = await Doctor.findOne({ id: doctorId }); // Find doctor by ID

        if (!doctor) {
          return res.notFound('Doctor not found');
        }

        const availabilityStatus = doctor.doctoravailable ? 'available' : 'not available';
        return res.json({
          doctor: doctor.name, // Assuming 'name' attribute represents the doctor's name
          doctoravailable: availabilityStatus
        });
      } catch (error) {
        console.error('Error fetching doctor availability:', error);
        return res.serverError('Internal server error');
      }
    },
```

FRONTEND LOGIC:

```
const fetchDoctorAvailability = async (doctorId) => {
    try {
      const response = await
axios.get(`http://localhost:1337/doctors/fetchDoctorAvailability/${doctorId}`);
      const doctorData = response.data;
      console.log(doctorData);
      let status;
      if (doctorData.doctoravailable===='available') {
        status = 'available';
      } else {
        status = 'not available';
      }
            console.log(status);
      setAvailability(`${doctorData.doctor} is ${status}`);
    } catch (error) {
      console.error('Error fetching doctor availability:', error);
```

```
    setAvailability('Error fetching availability');
  }
};
```

TESTING THROUGH POSTMAN:



VIEW DOCTOR DETAILS

OnClick on the particular doctor 's profile, that particular doctor 's profile would be showed which includes his/her Name, Specialization In, Number of Patients Served And his/her Experience

FRONTEND LOGIC:

```
const handleProfileClick = async (id) => {
  try {

    const response = await axios.get(`http://localhost:1337/doctors/${id}`);
    const doctorData = response.data;
    handleDialogOpen(doctorData);
  } catch (error) {
    console.error('Error fetching doctor details:', error);
  }
};
```

EXPERIENCED DOCTORS

OnClick on the Experienced Doctor 's Button, only those doctors who have experience of more than 10 years would be displayed

AT THE BACKEND:

CONFIGURE ROUTE:

```
'GET /doctors/fetchExperiencedDoctors': 'DoctorController.fetchExperiencedDoctors',
```

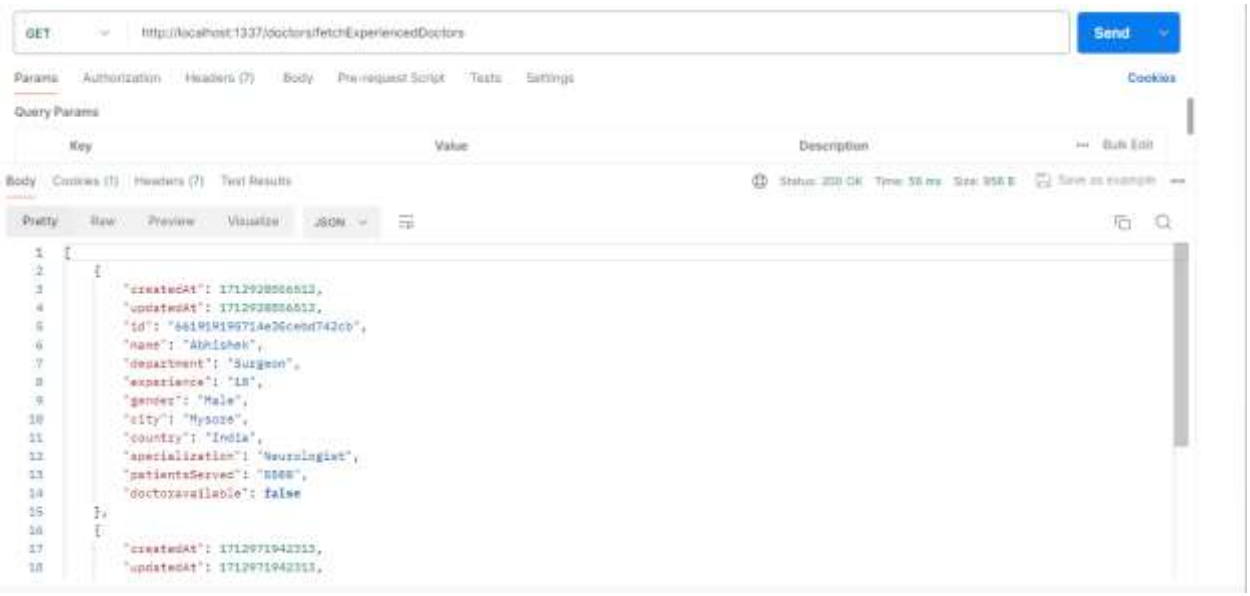
CONTROLLER'S LOGIC:

```
  async fetchExperiencedDoctors(req, res) {
    try {
      const doctors = await Doctor.find();
      const experiencedDoctors = doctors.filter(doctor => doctor.experience >= 10);

      return res.json(experiencedDoctors);
    } catch (error) {
      console.error('Error fetching experienced doctors:', error);
      return res.serverError('Internal server error'); // Handle error gracefully
    }
  },
```

AT THE FRONTEND:

```
  const fetchExperiencedDoctors = async () => {
    try {
      // Make a GET request to your backend API endpoint to fetch experienced doctors
      const response = await
axios.get('http://localhost:1337/doctors/fetchExperiencedDoctors');
      setDoctors(response.data); // Update the doctors state with the fetched experienced
doctors
    } catch (error) {
      console.error('Error fetching experienced doctors:', error);
    }
  };
```

TESTING THROUGH POSTMAN:



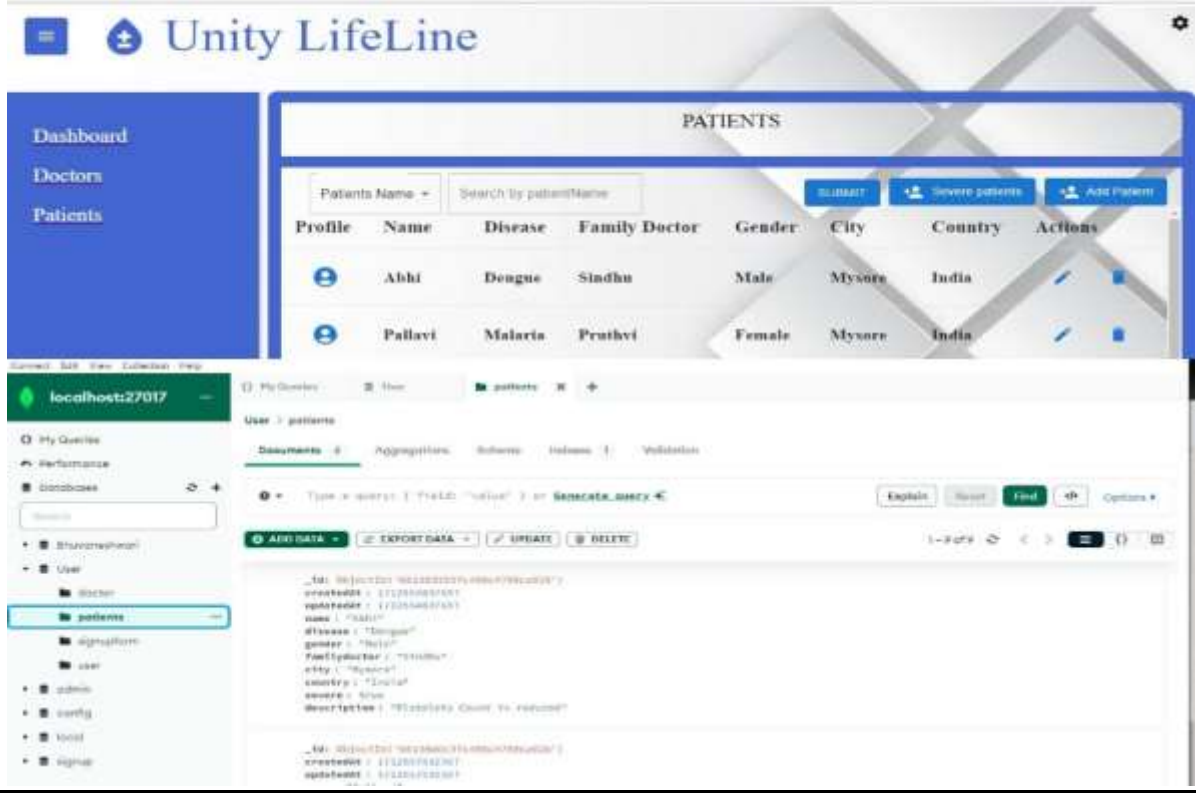
CRUD OPERTIONS (FOR PATIENT'S PAGE)

CREATE OPERATION

As soon as you enter the Patients data in the form, the data gets stored in the database and gets updated in the Table

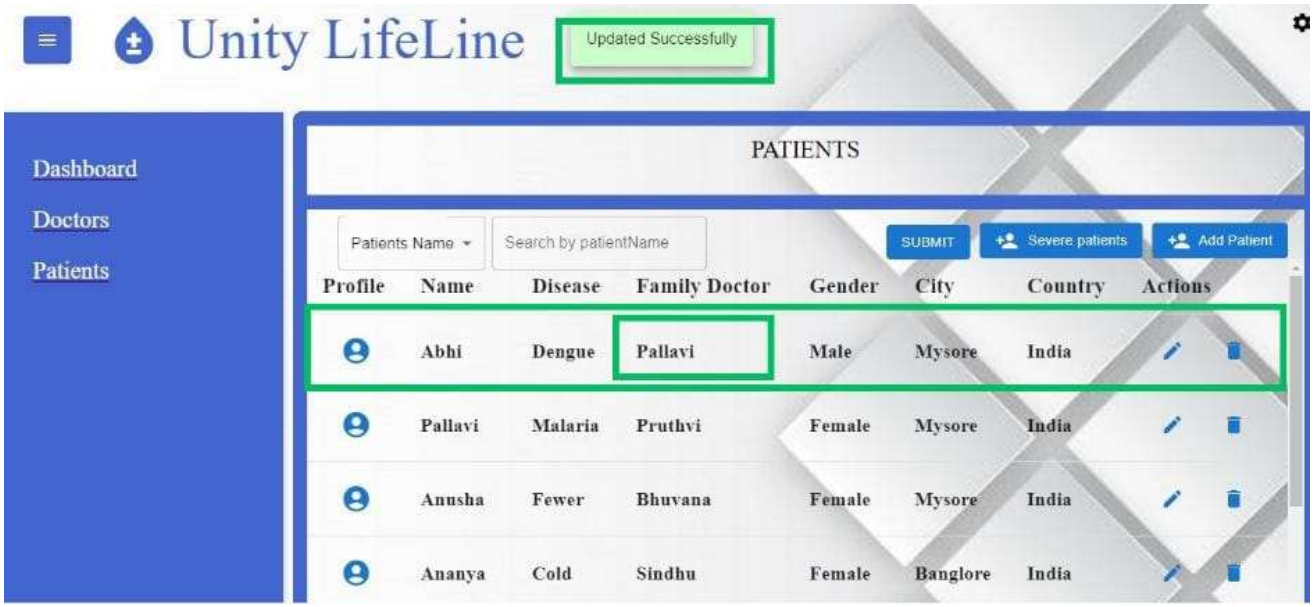

```
_id: ObjectId('661a111e94dd66377ddc9a5c')
name : "Sandhya"
disease : "Malaria"
gender : "Female"
familydoctor : "Shanthi"
city : "Banglore"
country : "India"
description : "Sweating, Pain in abdomen and muscles, Chills,F
severe : true
createdAt : 1712984350580
updatedAt : 1712984358580
```


READ OPERATION

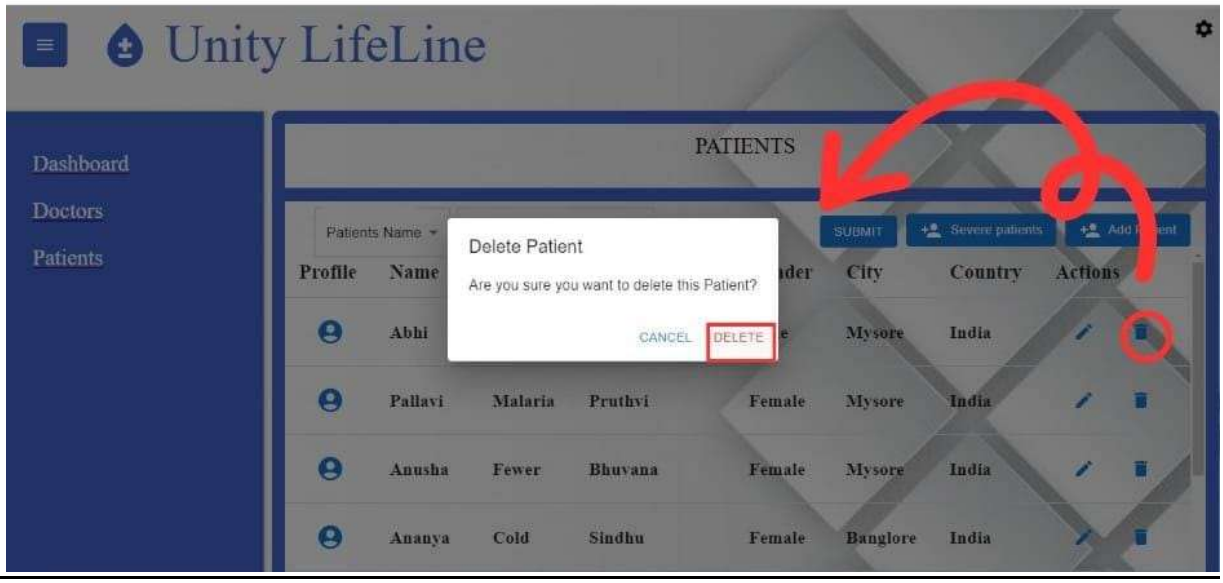


UPDATE OPERATION

Updating Family Doctor of Patient Abhi from Sindhu to Pallavi

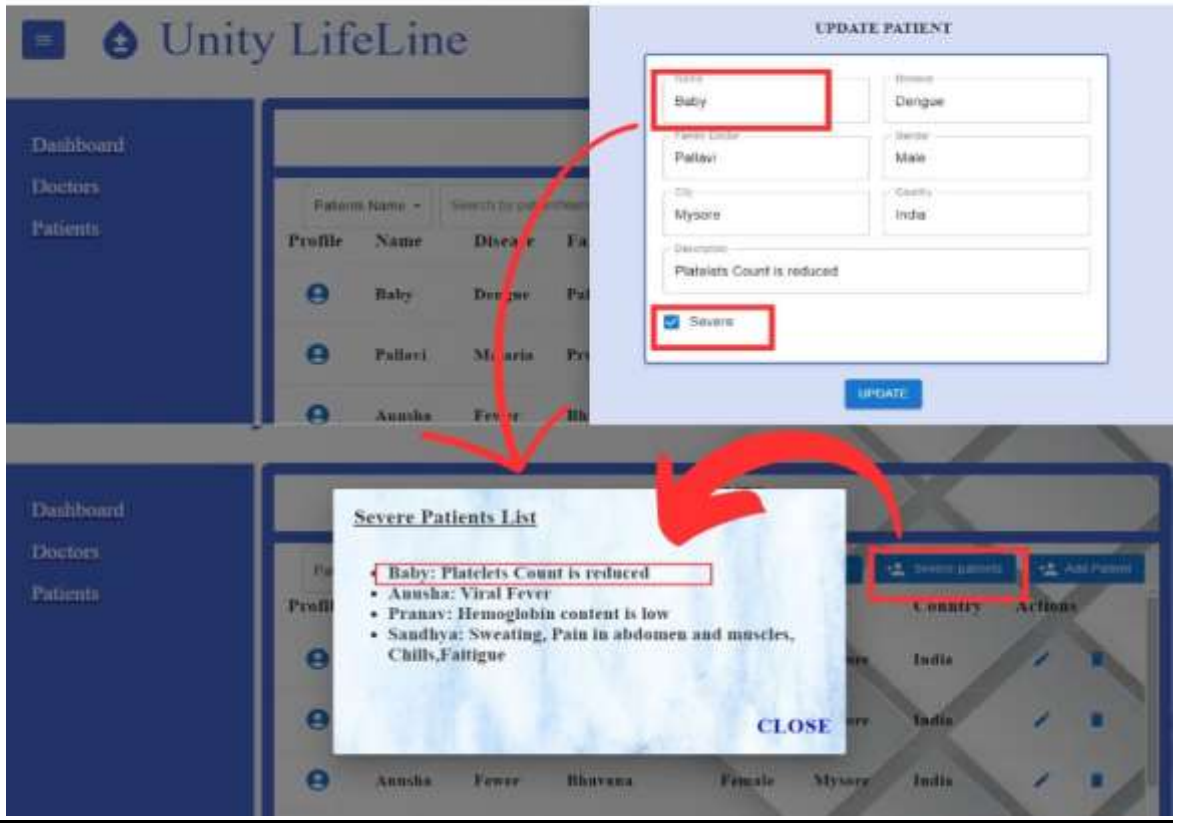


DELETE OPERATION



The backend and frontend logic remains consistent between the doctor's page and the patient's page. The CRUD operations logic remains unchanged.

SEVERE PATIENTS LIST



AT THE BACKEND:

CONFIGURE ROUTE:

```
  'GET /patients/getSeverePatients' :'PatientsController.getSeverePatients',
```

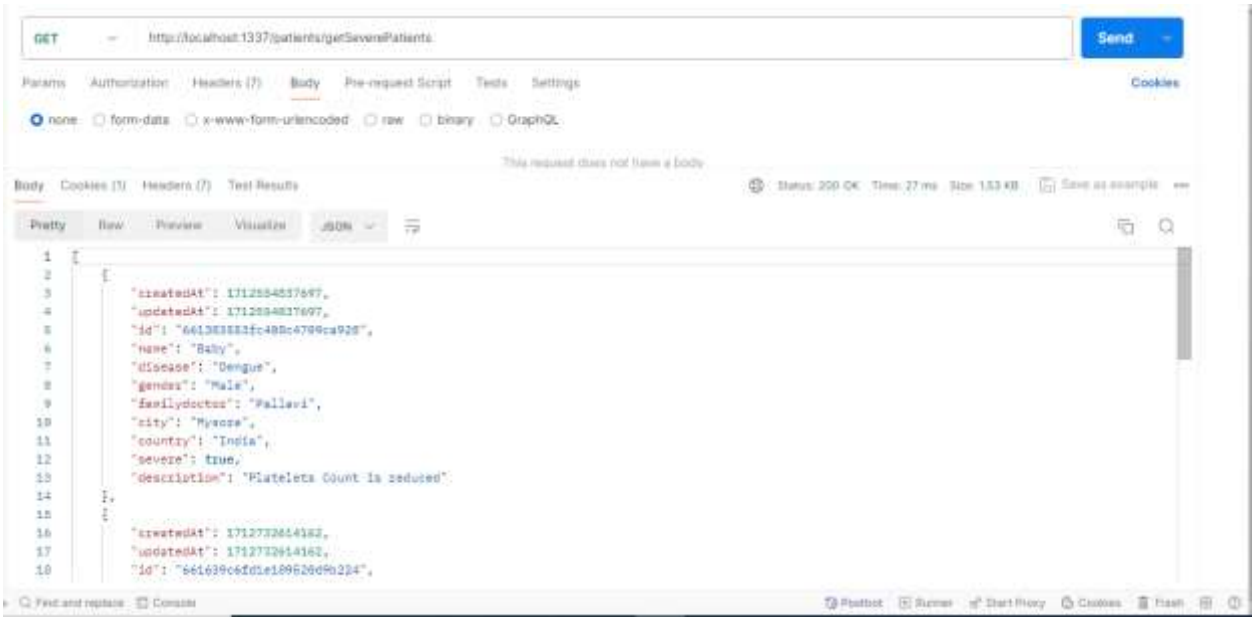
CONTROLLER'S LOGIC:

```
      async getSeverePatients(req, res) {
        try {
          const severePatients = await Patients.find({ severe: true }); // Assuming
isSevere is a field indicating severity
          return res.json(severePatients);
        } catch (error) {
          return res.serverError(error);
        }
      },
```

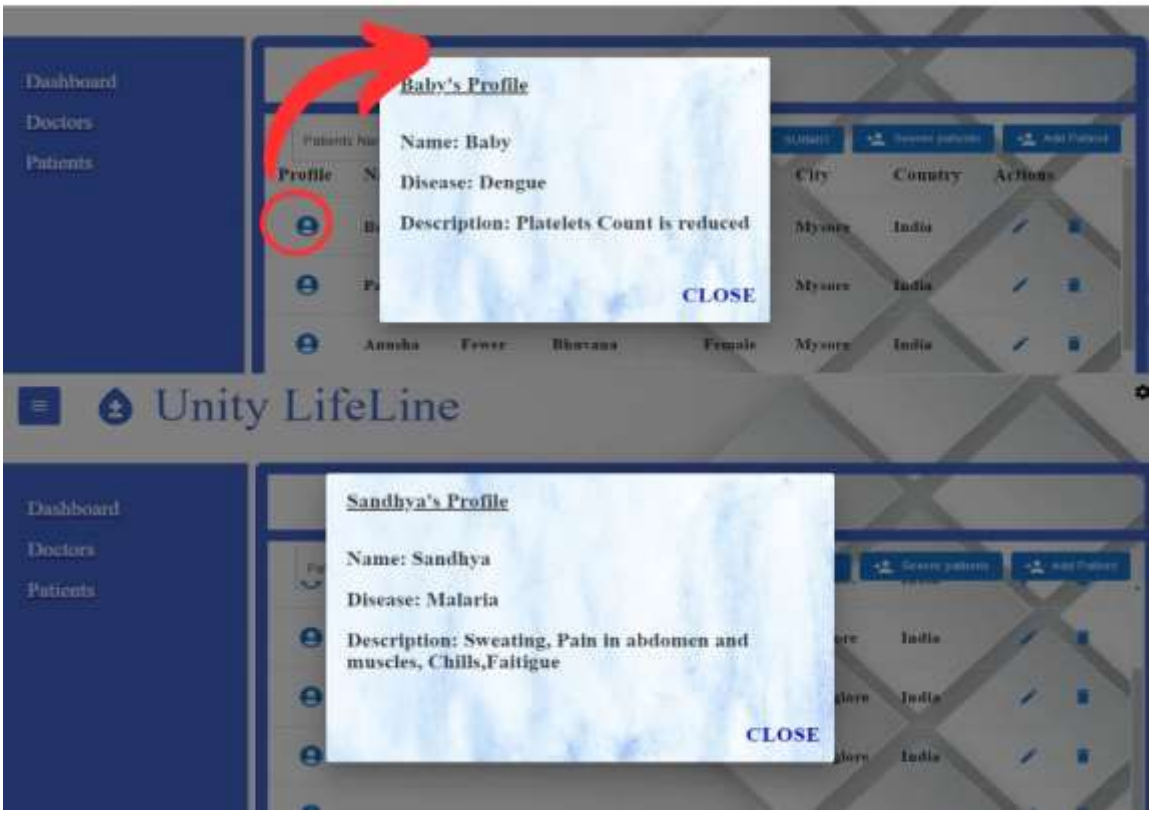
FRONTEND LOGIC:

```
  const handleSeverePatientsClick = async () => {
    try {
      // Make GET request to your backend API endpoint to fetch severe patients
      const response = await
axios.get('http://localhost:1337/patients/getSeverePatients');
      setShowSeverePopup(true); // Show the severe condition popup with severe patients
data
      setSeverePatients(response.data); // Set severe patients data
    } catch (error) {
      console.error('Error fetching severe patients:', error);
    }
  };
```

TESTING THROUGH POSTMAN:



VIEW PATIENT'S DETAILS



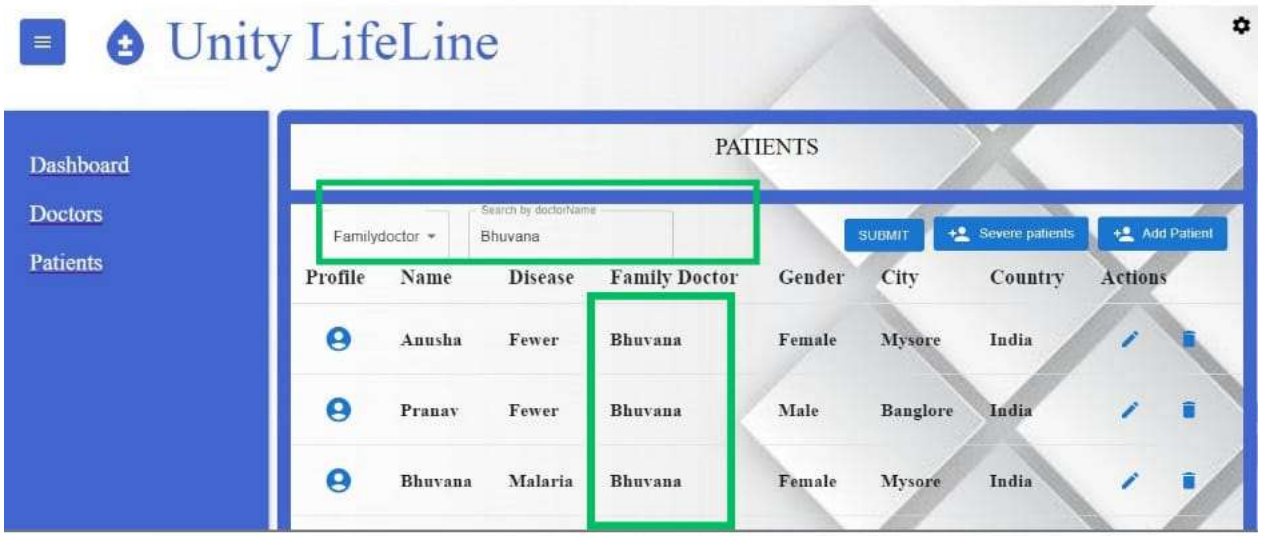
On Click on Particular Patient's Profile, the details of the Patient will be displayed.

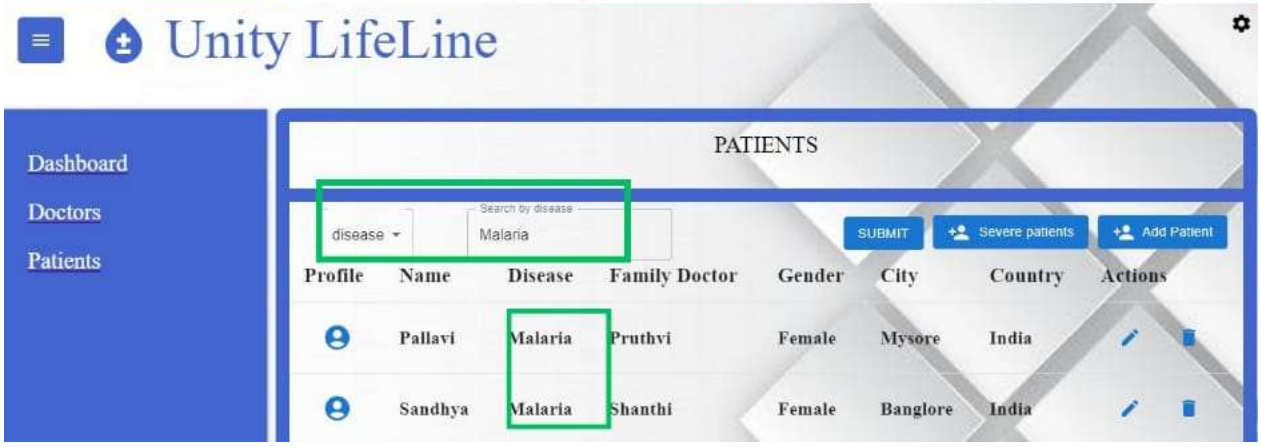
AT THE FRONTEND:

```
const handleProfileClick = async (patient) => {
  setSelectedPatient(patient);
};
```

```
Dialog open={!!selectedPatient} onClose={handleCloseProfileDialog}>
 <DialogContent>
   {selectedPatient && (
     <>
       <p>{`Name: ${selectedPatient.name}`}</p>
       <p>{`Disease: ${selectedPatient.disease}`}</p>
       <p>{`Description: ${selectedPatient.description}`}</p>
     </>
   )}
  </DialogContent>
</Dialog>
```

FILTERING DETAILS





The Patient's data would be filtered out based on our Requirements. If you want list all the Patients who would be treated by the Family Doctor Bhuvana that would be listed.

The same filtering is possible with respect to the disease and the name of the Patient's as well.

AT THE BACKEND:

CONFIGURE ROUTES:

```
  'GET /patients/getByFilter': 'PatientsController.getByFilter'
```

CONTROLLER'S LOGIC:

```
async getByFilter(req, res) {
      try {
        const filterType = req.query.filterType; // Extract the filter type from query
parameters
        let filterValue = req.query.filterValue; // Extract the filter value from query
parameters
```

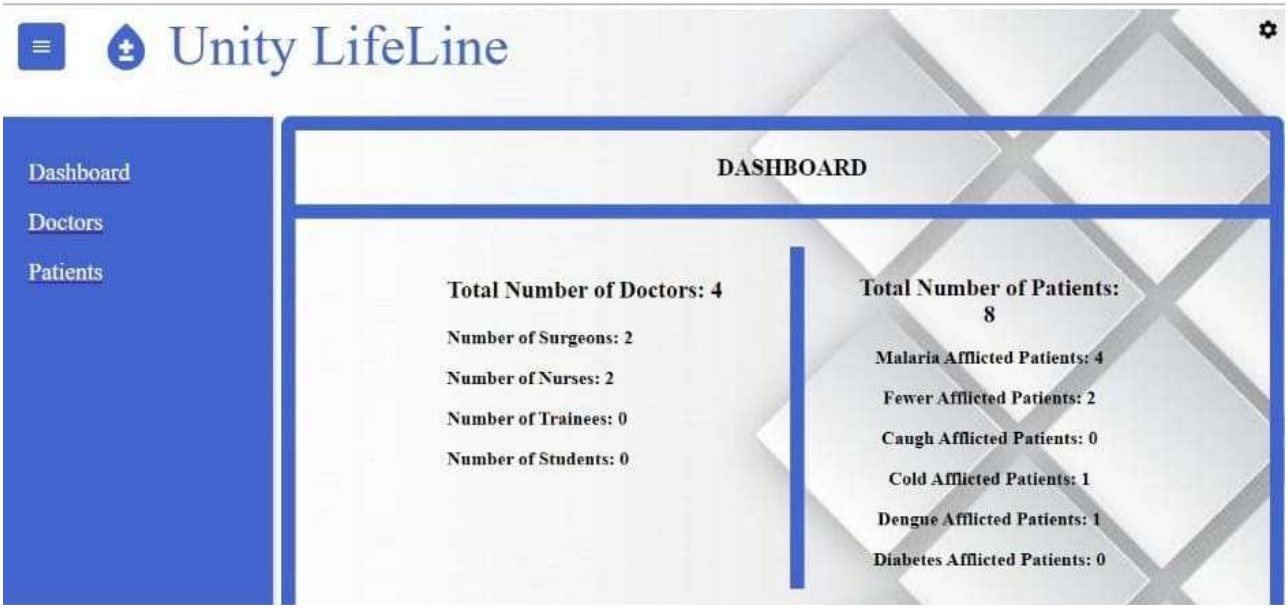
```
        // Determine the field based on the filter type
        let filterField;
        switch (filterType) {
          case 'doctorName':
            filterField = 'familydoctor';
            break;
          case 'patientName':
            filterField = 'name';
            break;
          case 'disease':
            filterField = 'disease';
            break;
          default:
            return res.badRequest('Invalid filter type');
        }

        // Query the database to find patients based on the specified filter
        const patients = await Patients.find({ [filterField]: filterValue });

        // Return the list of filtered patients
        return res.ok(patients);
      } catch (error) {
        return res.serverError(error);
      }
    },
```

AT THE FRONTEND:

```
  const handleSubmitFilter = async () => {
    try {
      const endpoint = 'getByFilter';
      let queryParams = '';

      // Check if filterValue is not empty before adding it to queryParams
      if (filterValue) {
        queryParams = `filterType=${filterType}&filterValue=${filterValue}`;
      }

      const response = await
axios.get(`http://localhost:1337/patients/${endpoint}?${queryParams}`);
      setpatients(response.data);

    } catch (error) {
      console.error('Error fetching patients by filter:', error);
    }
};
```

DASHBOARD

The dashboard displays the total number of Doctors and Patients available which is calculated at their respective pages



AT THE BACKEND:

CONFIGURE ROUTES:

```
  'GET /doctors/getCountByDepartment': 'DoctorController.getCountByDepartment',
  'GET /patients/getCountByDisease': 'PatientsController.getCountByDisease',
```

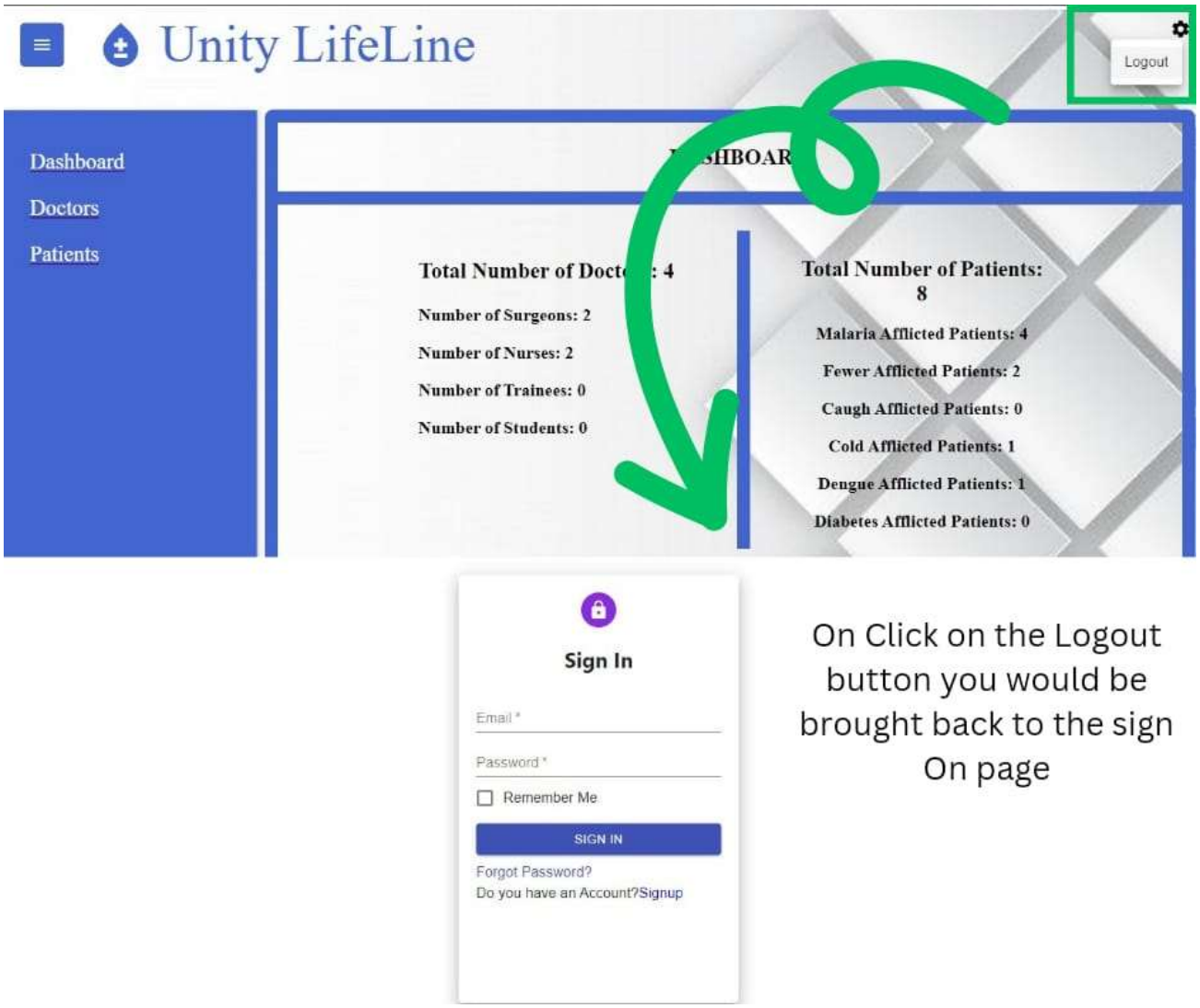
CONTROLLER'S LOGIC:

```
//FOR DOCTOR:
 getCountByDepartment :async function(req, res) {
      const { department } = req.query;
      try {
        const count = await Doctor.count({ department });
        res.json({ count });
      } catch (error) {
        console.error('Error fetching count by department:', error);
        res.status(500).json({ error: 'Internal server error' });
      }
    },
```

```
//FOR PATIENT'S
getCountByDisease :async function(req, res) {
        const { disease } = req.query;
        try {
          const count = await Patients.count({ disease});
          res.json({ count });
        } catch (error) {
          console.error('Error fetching count by department:', error);
```

```
        res.status(500).json({ error: 'Internal server error' });
      }
    },
```

Now, at the top right corner when you click on logout, you would be directed to the Sign In page.



On Click on the Logout button you would be brought back to the sign On page

-Thank you