

**University of British Columbia**  
**Department of Computer Science**

CPSC 304 S1 2019

Group Project - Implementation of a Relational Database

<b>Project Title:</b>	Booking a Doctor Appointment for Patients
<b>Project Milestone:</b>	Complete Files

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above.

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia.

## Short description

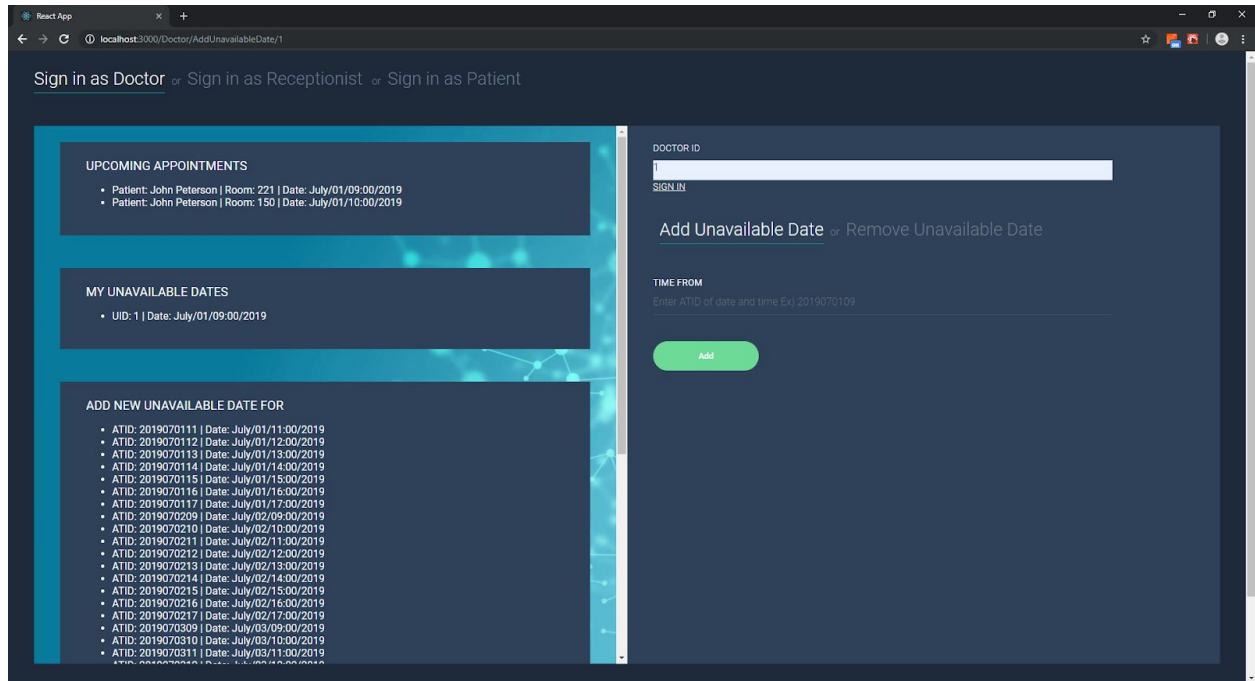
Our application allows 3 different types of users, doctors, receptionists, and patients, to manage their tasks in a hospital-like environment for a specific period of time (in our case, its from July 1<sup>st</sup> 9:00am of 2019 to July 5<sup>th</sup> 5:00pm of 2019). Doctors are able to see their schedule and manage their vacation time, Receptionists are able to register doctors and patients, as well as see the overall schedule of their own patients and other information that provides the general overview of the hospital. Lastly, patients are able to book an appointment and manage their personal information.

## What has changed

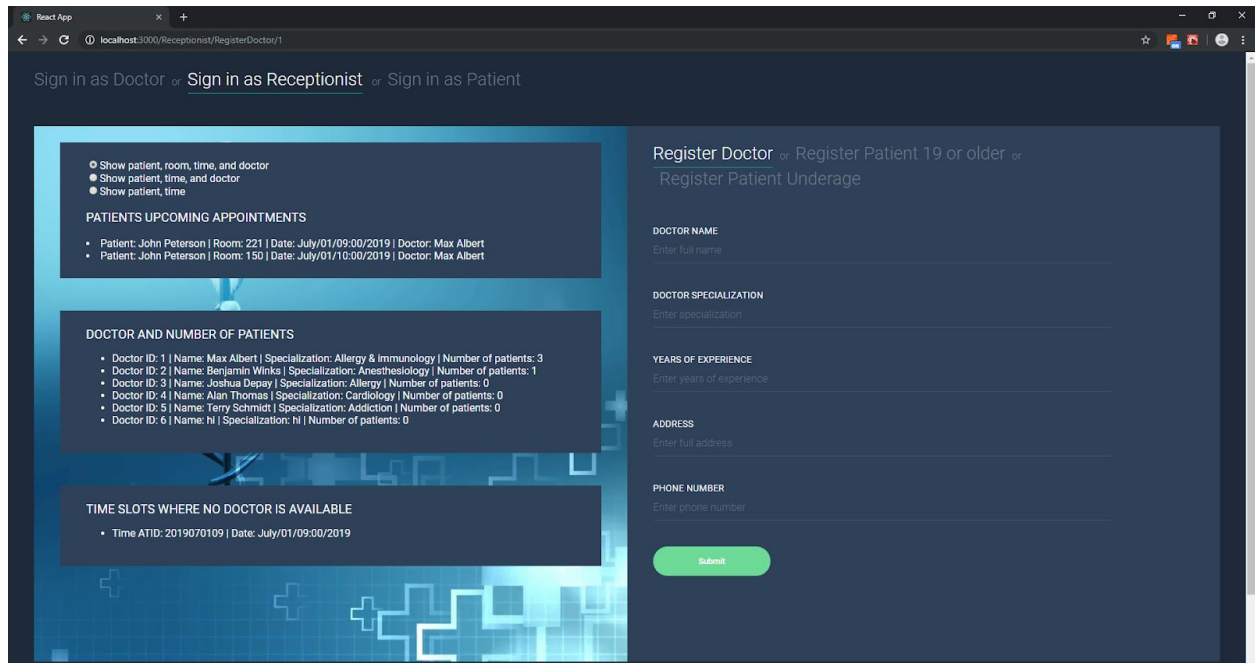
1. Patients could make appointments with many doctor -> only one doctor  
MySQL has a function to auto\_increment IDs and while it was easy to insert tuples, we had a hard time trying to insert, then retrieve that particular ID using a single statement. Making patients to have only one assigned doctor easier since the doctor's ID could be stored as an attribute of patients
2. two patient tables (< 19, >= 19) -> one patient table  
Similar reason as above, referencing to super-class with patientID was challenging, so we combined the two tables
3. patient references Guardian by guardianID -> contact number  
Similar reason as above, patient references guardian by contact number
4. created a new table called AllTime  
We created this table to calculate available times/ unavailable times etc.. it does not reference anything and its not referenced by any other tables.

## Screenshots

### Doctor Interface



### Receptionist Interface



# Patient Interface

React App

localhost:3000/Patient/BookAppointment/1

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

MY APPOINTMENTS

- Doctor: Max Albert | Date: July/01/09:00/2019 | Room: 221
- Doctor: Max Albert | Date: July/01/10:00/2019 | Room: 150

CONTACT US

- Receptionist: Ellen Baker | Contact: 778-122-4857

YOUR AND DOCTOR'S AVAILABLE TIME

- ATID: 2019070111 | Date: July/01/11:00/2019
- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019
- ATID: 2019070212 | Date: July/02/12:00/2019
- ATID: 2019070213 | Date: July/02/13:00/2019
- ATID: 2019070214 | Date: July/02/14:00/2019
- ATID: 2019070215 | Date: July/02/15:00/2019
- ATID: 2019070216 | Date: July/02/16:00/2019
- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019

PATIENT ID

1

SIGN IN

Book a New Appointment or Update Personal Information

TIME FROM

Enter ATID of date and time Ex) 2019070109

ADD

Result after selecting different doctors using a doctor id (DID)

Queries: SELECT

React App

localhost:3000/Doctor/AddUnavailableDate/1

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

UPCOMING APPOINTMENTS

- Patient: John Peterson | Room: 221 | Date: July/01/09:00/2019
- Patient: John Peterson | Room: 150 | Date: July/01/10:00/2019

MY UNAVAILABLE DATES

ADD NEW UNAVAILABLE DATE FOR

- ATID: 2019070111 | Date: July/01/11:00/2019
- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019
- ATID: 2019070212 | Date: July/02/12:00/2019
- ATID: 2019070213 | Date: July/02/13:00/2019
- ATID: 2019070214 | Date: July/02/14:00/2019
- ATID: 2019070215 | Date: July/02/15:00/2019
- ATID: 2019070216 | Date: July/02/16:00/2019
- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019

DOCTOR ID

1

SIGN IN

Add Unavailable Date or Remove Unavailable Date

TIME FROM

Enter ATID of date and time Ex) 2019070109

Add

React App

localhost:3000/Doctor/AddUnavailableDate/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

UPCOMING APPOINTMENTS

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019

MY UNAVAILABLE DATES

ADD NEW UNAVAILABLE DATE FOR

- ATID: 2019070111 | Date: July/01/11:00/2019
- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019
- ATID: 2019070212 | Date: July/02/12:00/2019
- ATID: 2019070213 | Date: July/02/13:00/2019
- ATID: 2019070214 | Date: July/02/14:00/2019
- ATID: 2019070215 | Date: July/02/15:00/2019
- ATID: 2019070216 | Date: July/02/16:00/2019
- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019
- ATID: 2019070312 | Date: July/03/12:00/2019

DOCTOR ID

2

SIGN IN

Add Unavailable Date or Remove Unavailable Date

TIME FROM

Enter ATID of date and time Ex) 2019070109

Add

Result after inserting a new unavailable date

Queries: INSERT

React App

localhost:3000/Doctor/AddUnavailableDate/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

UPCOMING APPOINTMENTS

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019

MY UNAVAILABLE DATES

- UID: 2 | Date: July/01/09:00/2019

ADD NEW UNAVAILABLE DATE FOR

- ATID: 2019070111 | Date: July/01/11:00/2019
- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019
- ATID: 2019070212 | Date: July/02/12:00/2019
- ATID: 2019070213 | Date: July/02/13:00/2019
- ATID: 2019070214 | Date: July/02/14:00/2019
- ATID: 2019070215 | Date: July/02/15:00/2019
- ATID: 2019070216 | Date: July/02/16:00/2019
- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019
- ATID: 2019070312 | Date: July/03/12:00/2019

DOCTOR ID

2

SIGN IN

Add Unavailable Date or Remove Unavailable Date

TIME FROM

2019070111|

Add

React App

localhost:3000/Doctor/AddUnavailableDate/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

UPCOMING APPOINTMENTS

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019

MY UNAVAILABLE DATES

- UID: 2 | Date: July/01/09:00/2019
- UID: 8 | Date: July/01/11:00/2019

ADD NEW UNAVAILABLE DATE FOR

- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019
- ATID: 2019070212 | Date: July/02/12:00/2019
- ATID: 2019070213 | Date: July/02/13:00/2019
- ATID: 2019070214 | Date: July/02/14:00/2019
- ATID: 2019070215 | Date: July/02/15:00/2019
- ATID: 2019070216 | Date: July/02/16:00/2019
- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019
- ATID: 2019070312 | Date: July/03/12:00/2019

DOCTOR ID

2

SIGN IN

Add Unavailable Date or Remove Unavailable Date

TIME FROM

Enter ATID of date and time Ex) 2019070109

Add

Result after removing an unavailable date

Queries: DELETE

React App

localhost:3000/Doctor/RemoveUnavailableDate/2

[Sign in as Doctor](#) or [Sign in as Receptionist](#) or [Sign in as Patient](#)

UPCOMING APPOINTMENTS

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019

MY UNAVAILABLE DATES

ADD NEW UNAVAILABLE DATE FOR

DOCTOR ID

2

[SIGN IN](#)

Add Unavailable Date or Remove Unavailable Date

TIME ID

2

Remove

- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019
- ATID: 2019070212 | Date: July/02/12:00/2019
- ATID: 2019070213 | Date: July/02/13:00/2019
- ATID: 2019070214 | Date: July/02/14:00/2019
- ATID: 2019070215 | Date: July/02/15:00/2019
- ATID: 2019070216 | Date: July/02/16:00/2019
- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019
- ATID: 2019070312 | Date: July/03/12:00/2019

React App

localhost:3000/Doctor/AddUnavailableDate/2

[Sign in as Doctor](#) or [Sign in as Receptionist](#) or [Sign in as Patient](#)

UPCOMING APPOINTMENTS

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019

MY UNAVAILABLE DATES

ADD NEW UNAVAILABLE DATE FOR

DOCTOR ID

2

[SIGN IN](#)

Add Unavailable Date or Remove Unavailable Date

TIME FROM

Enter ATID of date and time Ex) 2019070109

Add

- ATID: 2019070109 | Date: July/01/09:00/2019
- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
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- ATID: 2019070217 | Date: July/02/17:00/2019
- ATID: 2019070309 | Date: July/03/09:00/2019
- ATID: 2019070310 | Date: July/03/10:00/2019
- ATID: 2019070311 | Date: July/03/11:00/2019
- ATID: 2019070312 | Date: July/03/12:00/2019



Result after inserting a new doctor

Queries: INSERT

React App

localhost:3000/Receptionist/RegisterDoctor/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

- Show patient, room, time, and doctor
- Show patient, time, and doctor
- Show patient, time

PATIENTS UPCOMING APPOINTMENTS

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019 | Doctor: Benjamin Winks

DOCTOR AND NUMBER OF PATIENTS

- Doctor ID: 1 | Name: Max Albert | Specialization: Allergy & immunology | Number of patients: 1
- Doctor ID: 2 | Name: Benjamin Winks | Specialization: Anesthesiology | Number of patients: 4
- Doctor ID: 3 | Name: Joshua Depay | Specialization: Allergy | Number of patients: 2
- Doctor ID: 4 | Name: Alan Thomas | Specialization: Cardiology | Number of patients: 1
- Doctor ID: 5 | Name: Terry Schmidt | Specialization: Addiction | Number of patients: 1

TIME SLOTS WHERE NO DOCTOR IS AVAILABLE

- Time ATID: 2019070109 | Date:

Register Doctor or Register Patient 19 or older or Register Patient Underage

DOCTOR NAME  
Jose Hernandez

DOCTOR SPECIALIZATION  
Cardiology

YEARS OF EXPERIENCE  
4

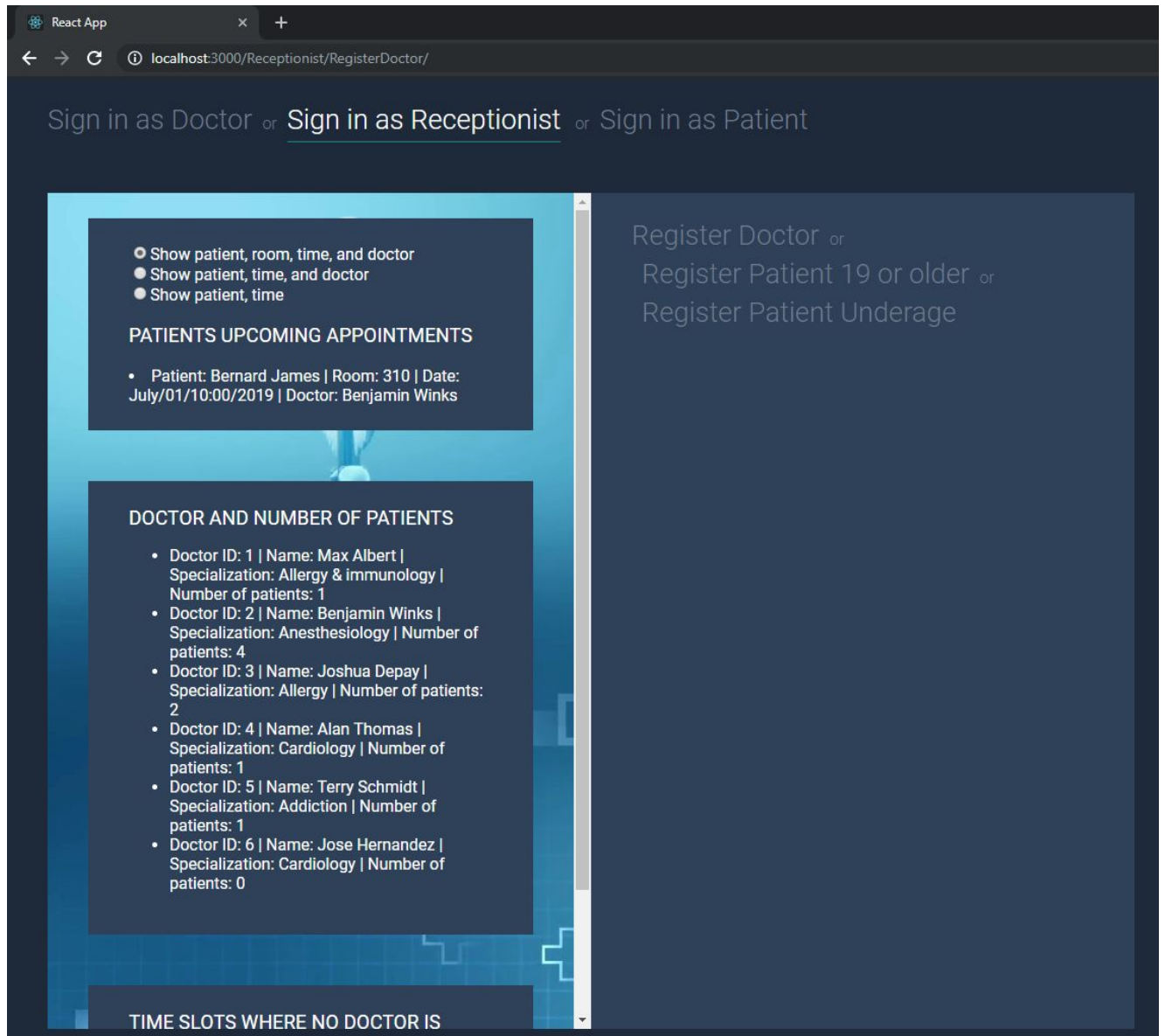
ADDRESS  
1563 Grandville Blvd.

PHONE NUMBER  
6047859810

Submit

(Before)





(After)

Result after inserting new patient

Queries: INSERT

React App x React App x +

localhost:3000/Receptionist/RegisterPatient/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

▼ Show patient, time

**PATIENTS UPCOMING APPOINTMENTS**

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019 | Doctor: Benjamin Winks

**DOCTOR AND NUMBER OF PATIENTS**

- Doctor ID: 1 | Name: Max Albert | Specialization: Allergy & immunology | Number of patients: 1
- Doctor ID: 2 | Name: Benjamin Winks | Specialization: Anesthesiology | Number of patients: 1
- Doctor ID: 3 | Name: Joshua Depay | Specialization: Allergy | Number of patients: 1
- Doctor ID: 4 | Name: Alan Thomas | Specialization: Cardiology | Number of patients: 1
- Doctor ID: 5 | Name: Terry Schmidt | Specialization: Addiction | Number of patients: 1

**TIME SLOTS WHERE NO DOCTOR IS AVAILABLE**

- Time ATID: 2019070109 | Date: July/01/09:00/2019

Register Doctor or

Register Patient 19 or older or

Register Patient Underage

PATIENT NAME

Lois Smith

ADDRESS

1563 Arbutus Rd.

PHONE NUMBER

60451615610

BIRTHDATE

June 19, 1985

INSURANCE NUMBER

1561546164516

INSURANCE COVER

50000

DOCTOR ID

5|

(Before)

React App

React App

localhost:3000/Receptionist/RegisterPatientYoung/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

☐ Show patient, room, time, and doctor

☐ Show patient, time, and doctor

☐ Show patient, time

PATIENTS UPCOMING APPOINTMENTS

• Patient: Bernard James | Room: 310 | Date: July/01/10.00/2019 | Doctor: Benjamin Winks

DOCTOR AND NUMBER OF PATIENTS

• Doctor ID: 1 | Name: Max Albert | Specialization: Allergy & immunology | Number of patients: 1

• Doctor ID: 2 | Name: Benjamin Winks | Specialization: Anesthesiology | Number of patients: 1

• Doctor ID: 3 | Name: Joshua Depay | Specialization: Allergy | Number of patients: 1

• Doctor ID: 4 | Name: Alan Thomas | Specialization: Cardiology | Number of patients: 2

• Doctor ID: 5 | Name: Terry Schmidt | Specialization: Addiction | Number of patients: 2

TIME SLOTS WHERE NO DOCTOR IS AVAILABLE

ADDRESS

Enter full address

PHONE NUMBER

Enter phone number

BITHDATE

Enter birthdate

GUARDIAN NAME

Enter full name

GUARDIAN WORK ADDRESS

Enter full address

GUARDIAN PHONE NUMBER

Enter phone number

GUARDIAN BITHDATE

Enter birthdate

DOCTOR ID

Enter doctor's id

(After)

Result after inserting new appointment

Queries: INSERT

The screenshot shows a web application running in a browser. The browser's address bar displays 'localhost:3000/Patient/BookAppointment/1'. The application has a dark blue header with three links: 'Sign in as Doctor', 'Sign in as Receptionist', and 'Sign in as Patient' (which is underlined). The main content area is divided into two columns. The left column has a light blue background and contains three sections: 'MY APPOINTMENTS' with one appointment for Doctor Max Albert on July 01/10:00/2019 in Room 221; 'CONTACT US' with contact information for Receptionist Ellen Baker; and 'YOUR AND DOCTOR'S AVAILABLE TIME' with a list of 12 available time slots (ATID: 2019070111 to 2019070210). The right column has a dark blue background and contains a form for booking a new appointment. It includes a 'PATIENT ID' field with the value '1' and a 'SIGN IN' link. Below this are two links: 'Book a New Appointment' (underlined) and 'Update Personal Information'. There is a 'TIME FROM' field with the value '2019070111|'. At the bottom of the right column is a green 'Add' button.

React App

localhost:3000/Patient/BookAppointment/1

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

**MY APPOINTMENTS**

- Doctor: Max Albert | Date: July/01/10:00/2019 | Room: 221

**CONTACT US**

- Receptionist: Ellen Baker | Contact: 778-122-4857

**YOUR AND DOCTOR'S AVAILABLE TIME**

- ATID: 2019070111 | Date: July/01/11:00/2019
- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019

PATIENT ID  
1

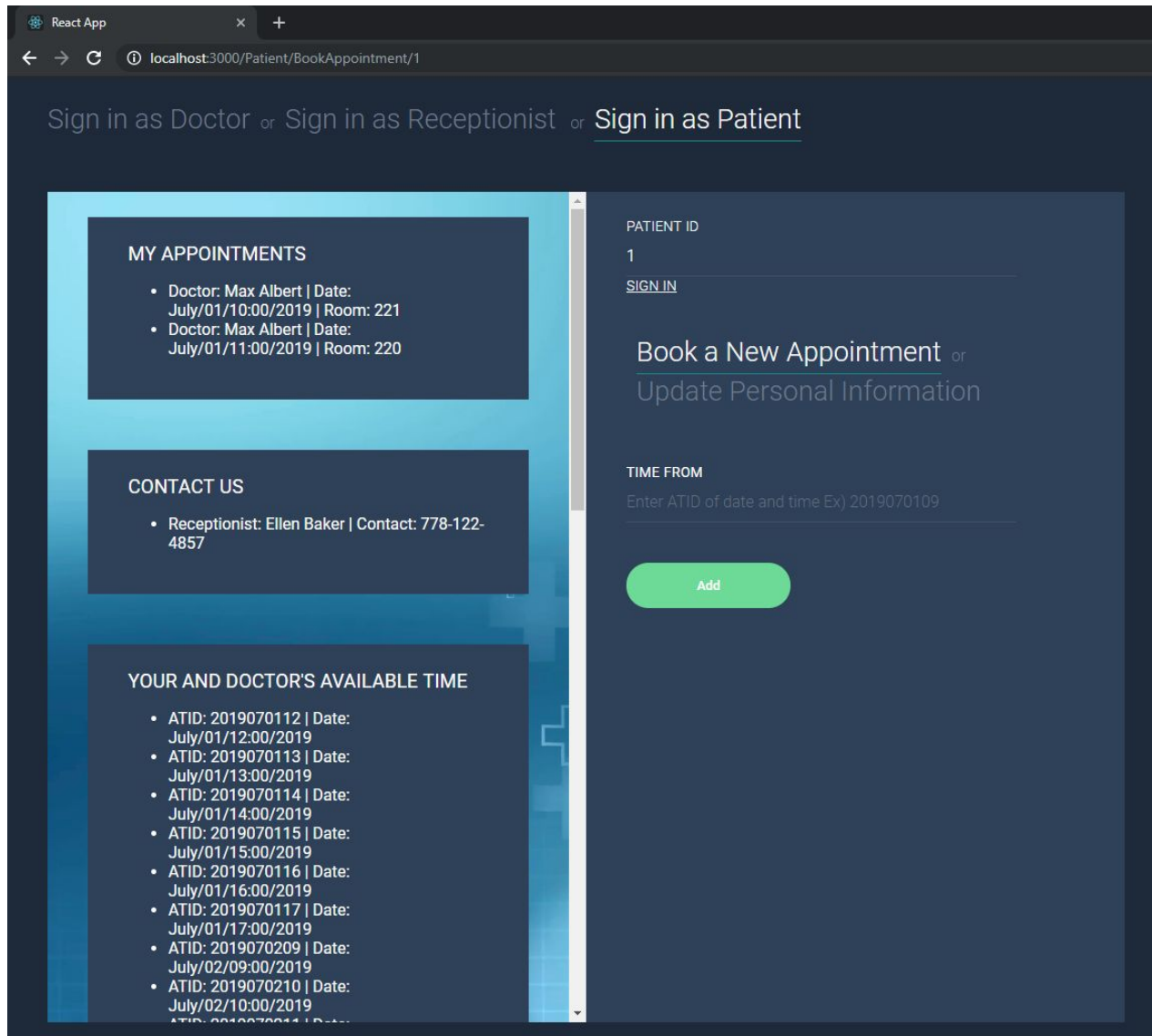
SIGN IN

Book a New Appointment or  
Update Personal Information

TIME FROM  
2019070111|

Add

(Before)



(After)

## Result after updating patient information

The screenshot shows a web application interface for a patient's profile. The browser address bar indicates the URL is `localhost:3000/Patient/UpdatePersonalInformation/1`. The page has a dark blue header with navigation links: "Sign in as Doctor", "Sign in as Receptionist", and "Sign in as Patient" (which is underlined). The main content area is divided into two columns. The left column has a light blue background and contains three sections: "MY APPOINTMENTS" with two entries for Doctor Max Albert, "CONTACT US" with contact info for Ellen Baker, and "YOUR AND DOCTOR'S AVAILABLE TIME" with a list of appointment slots. The right column has a dark blue background and contains form fields for "PATIENT ID" (value: 1), "SIGN IN", "Book a New Appointment or Update Personal Information" (with "Update Personal Information" underlined), "UPDATE NAME" (value: John Griffin), "UPDATE ADDRESS" (value: 5120 Georgia Street Vancouver), "UPDATE PHONE NUMBER" (value: 778-243-1109), and a green "Update" button.

React App

localhost:3000/Patient/UpdatePersonalInformation/1

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

**MY APPOINTMENTS**

- Doctor: Max Albert | Date: July/01/10:00/2019 | Room: 221
- Doctor: Max Albert | Date: July/01/11:00/2019 | Room: 220

**CONTACT US**

- Receptionist: Ellen Baker | Contact: 778-122-4857

**YOUR AND DOCTOR'S AVAILABLE TIME**

- ATID: 2019070112 | Date: July/01/12:00/2019
- ATID: 2019070113 | Date: July/01/13:00/2019
- ATID: 2019070114 | Date: July/01/14:00/2019
- ATID: 2019070115 | Date: July/01/15:00/2019
- ATID: 2019070116 | Date: July/01/16:00/2019
- ATID: 2019070117 | Date: July/01/17:00/2019
- ATID: 2019070209 | Date: July/02/09:00/2019
- ATID: 2019070210 | Date: July/02/10:00/2019
- ATID: 2019070211 | Date: July/02/11:00/2019

PATIENT ID  
1

SIGN IN

Book a New Appointment or Update Personal Information

UPDATE NAME  
John Griffin

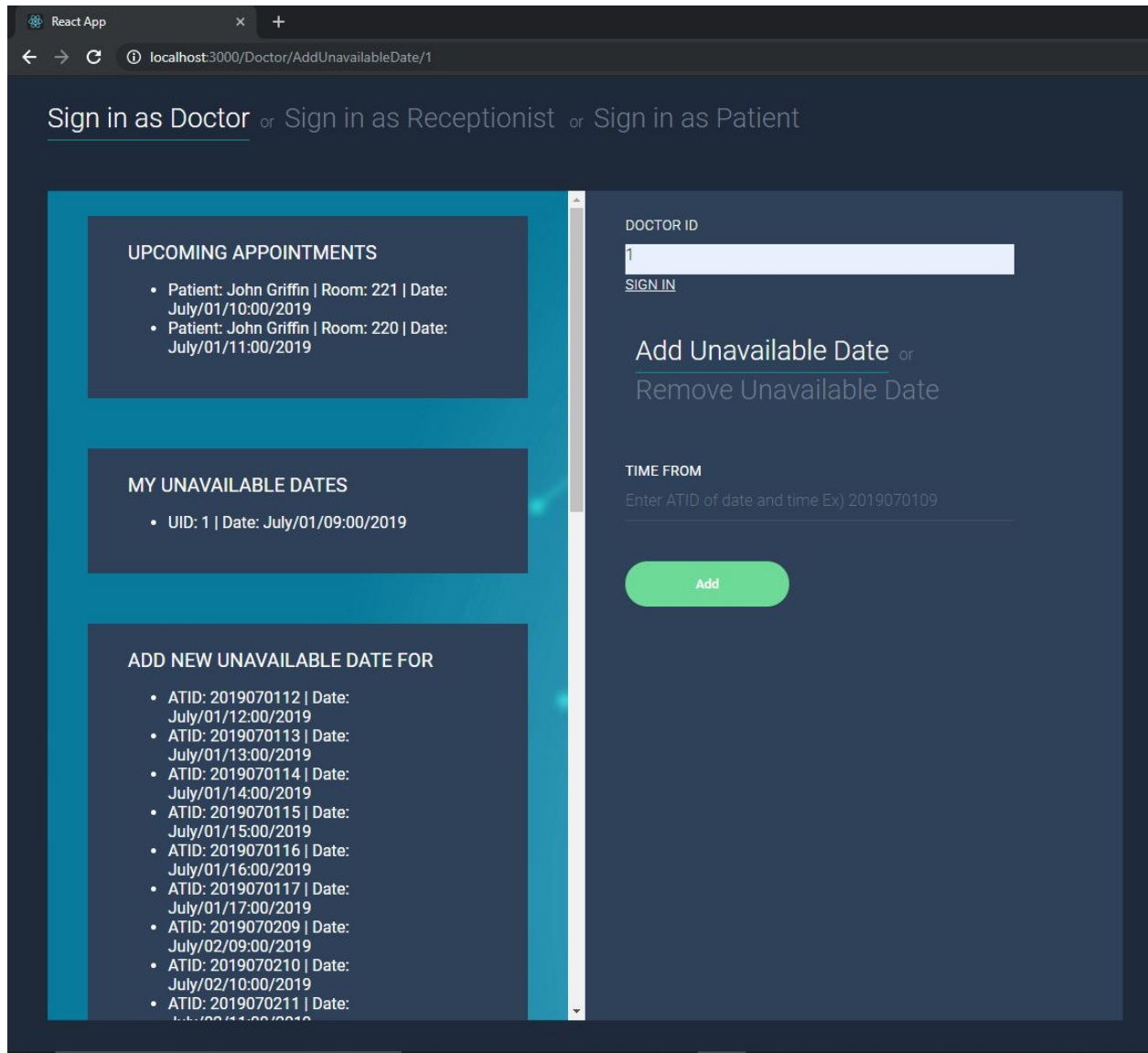
UPDATE ADDRESS  
5120 Georgia Street Vancouver

UPDATE PHONE NUMBER  
778-243-1109

Update

(Original information for patient with patient id 1)





(Original information of patient id 1 under doctor view)



React App

localhost:3000/Patient/UpdatePersonalInformation/1

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

MY APPOINTMENTS

CONTACT US

YOUR AND DOCTOR'S AVAILABLE TIME

PATIENT ID  
1

SIGN IN

Book a New Appointment or  
Update Personal Information

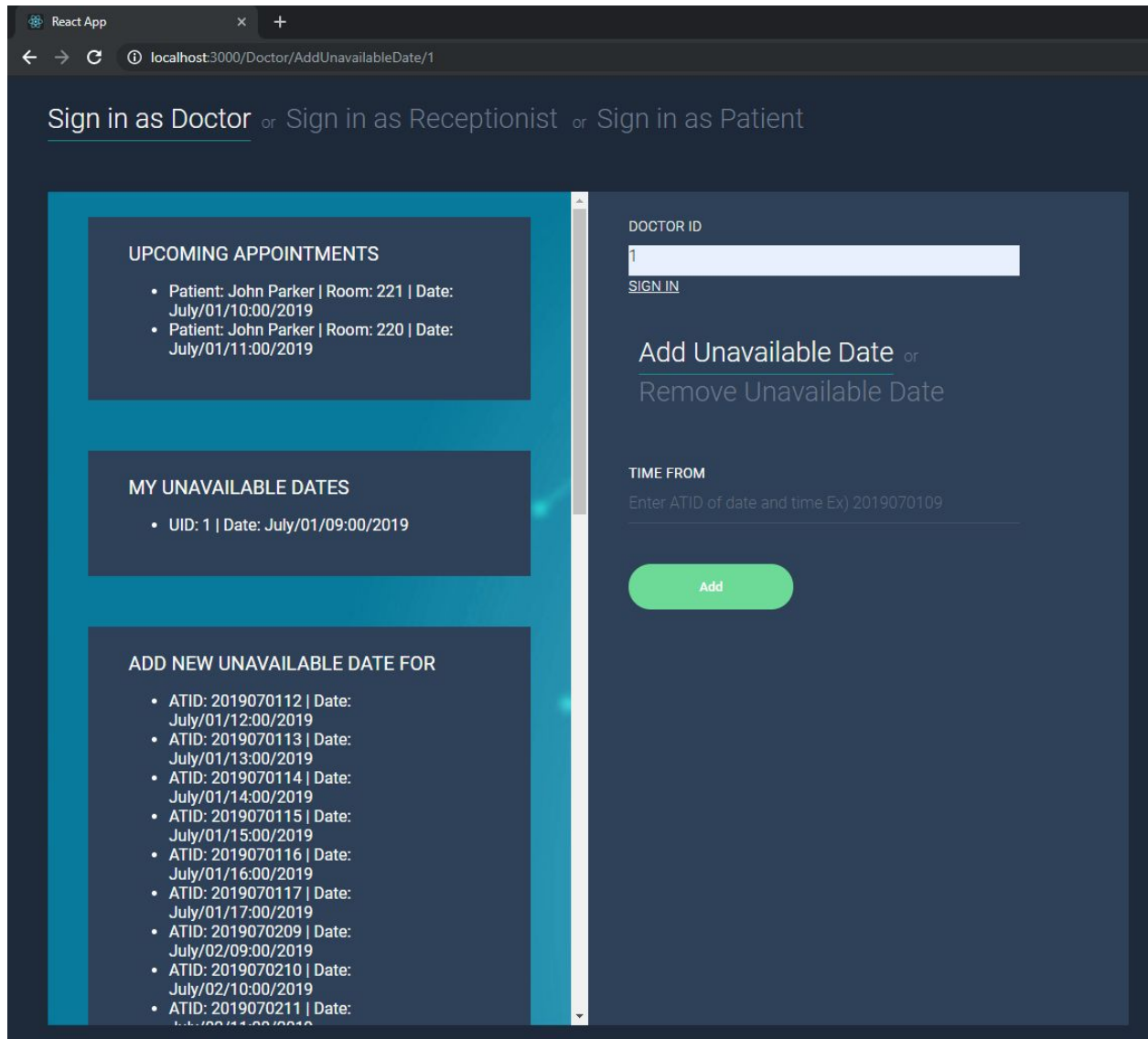
UPDATE NAME  
John Parker

UPDATE ADDRESS  
5120 Georgia Street Vancouver

UPDATE PHONE NUMBER  
778-243-1109

Update

(Changing patient last name)



(Results reflected on doctor view)

Show patients' upcoming appointments

Queries: Join on Patient, Doctor, and Time

Projection on attributes showed separated on three options

Show all the date-times where no doctor is available.

Queries: Division

Show doctors name, specialization and number of patients

Queries: Aggregation (count on patients)

React App

localhost:3000/Receptionist/RegisterPatientYoung/2

Sign in as Doctor or Sign in as Receptionist or Sign in as Patient

☐ Show patient, room, time, and doctor  
☐ Show patient, time, and doctor  
☐ Show patient, time

**PATIENTS UPCOMING APPOINTMENTS**

- Patient: Bernard James | Room: 310 | Date: July/01/10:00/2019 | Doctor: Benjamin Winks

**DOCTOR AND NUMBER OF PATIENTS**

- Doctor ID: 1 | Name: Max Albert | Specialization: Allergy & immunology | Number of patients: 1
- Doctor ID: 2 | Name: Benjamin Winks | Specialization: Anesthesiology | Number of patients: 1
- Doctor ID: 3 | Name: Joshua Depay | Specialization: Allergy | Number of patients: 1
- Doctor ID: 4 | Name: Alan Thomas | Specialization: Cardiology | Number of patients: 2
- Doctor ID: 5 | Name: Terry Schmidt | Specialization: Addiction | Number of patients: 2

**TIME SLOTS WHERE NO DOCTOR IS AVAILABLE**

- Time ATID: 2019070109 | Date: July/01/09:00/2019

**PATIENT NAME**  
Enter full name

**ADDRESS**  
Enter full address

**PHONE NUMBER**  
Enter phone number

**BIRTHDATE**  
Enter birthdate

**GUARDIAN NAME**  
Enter full name

**GUARDIAN WORK ADDRESS**  
Enter full address

**GUARDIAN PHONE NUMBER**  
Enter phone number

**GUARDIAN BIRTHDATE**  
Enter birthdate

## Queries

### Doctor interface

1. List upcoming appointment

Given doctor\_id

Return patient name, room, time

```
SELECT Patient.Pname, MeetAt.RoomNumber, MeetAt.ATID FROM MeetAt INNER JOIN
Patient on MeetAt.PatientID = Patient.PID WHERE Patient.DID = doctor_id order by
MeetAt.ATID
```

2. List unavailable dates for a given doctor id

Given doctor\_id

Return UID, AT,

```
SELECT DoctorUnavailable.UID, DoctorUnavailable.ATID FROM DoctorUnavailable
WHERE DoctorUnavailable.DID = doctor_id
```

3. Show all available times to choose a new unavailable time

Given doctor\_id

Return AT,

```
SELECT * FROM AllTime
WHERE AllTime.ATID NOT IN
(SELECT d.ATID FROM DoctorUnavailable d where d.DID = doctor_id)
and AllTime.ATID NOT IN (select m.ATID from MeetAt m, Doctor d, Patient p where
m.PatientID = p.PID and p.DID = d.DID and d.DID = doctor_id)
Order by AllTime.ATID;
```

4. Add new unavailable time

Given time\_from, doc\_id

```
INSERT into DoctorUnavailable VALUES
(NULL, time_from, doctor_id);
```

5. Remove unavailable time

Given time\_id

DELETE from DoctorUnavailable

WHERE UID = unavailable\_id

POST

### **Receptionist interface**

1. List all patient's upcoming appointments

Given receptionist\_id

Return patient name, room, time, doctor name

```
SELECT Patient.Pname, MeetAt.RoomNumber, MeetAt.ATID, Doctor.Dname FROM MeetAt
INNER JOIN Patient on MeetAt.PatientID = Patient.PID INNER JOIN Doctor on Patient.DID =
Doctor.DID WHERE Patient.RID = 1
Order by MeetAt.ATID;
```

2. Insert a new doctor

INSERT into Doctor VALUES

(NULL, doctor\_name, doctor\_address, doctor\_specs, doctor\_year, doctor\_contact)

3. Insert new patient

INSERT into Patient VALUES

(NULL, patient\_name, patient\_address, patient\_contact, patient\_bdate, insurance\_id, NULL,  
receptionist\_id, doctor\_id)

INSERT into Insurance VALUES

(insurance\_id, insurance\_cost)

4. Insert new patient plus guardian

INSERT into Patient VALUES

(NULL, patient\_name, patient\_address, patient\_contact, patient\_bdate, NULL, guradian\_contact,  
receptionist\_id, doctor\_id)

INSERT into Guardian VALUES

(guardian\_name, guardian\_bdate, guardian\_address, guardian\_contact)

5. List doctors and how many patients they have currently  
 (select d.DID, d.Dname, d.Dspec, COUNT(\*) as NumPatients  
 from Patient p, Doctor d  
 where p.DID = d.DID  
 group by d.DID, d.Dname, d.Dspec)  
 union  
 (select d.DID, d.Dname, d.Dspec, 0  
 from Doctor d where d.DID not in (select d.DID  
 from Patient p, Doctor d  
 where p.DID = d.DID))

### **Patient Interface**

1. List this patient's upcoming appointments  
 Return doctor name, time, room

SELECT Doctor.Dname, AllTime.Tfrom, MeetAt.RoomNumber FROM Patient INNER JOIN  
 Doctor on Patient.DID = Doctor.DID INNER JOIN MeetAt on Patient.PID = MeetAt.PatientID  
 INNER JOIN AllTime on MeetAt.ATID = AllTime.ATID WHERE Patient.PID = 1  
 Order by MeetAt.ATID

2. Provide receptionist's contact number  
 Given Patient\_id  
 Return receptionist's contact  
 Send patient\_id

SELECT Receptionist.Rname, Receptionist.Rcontact FROM Patient INNER JOIN Receptionist  
 on Patient.RID = Receptionist.RID WHERE Patient.PID = 1

3. Book new appointment  
 Get and choose a time id for an available time where both patients and doctors are free  
 Given patient\_id

Select a.ATID, a.Tfrom  
 from AllTime a  
 where a.ATID not in (select du.ATID from DoctorUnavailable du, Patient p where p.DID =  
 du.DID and p.PID = patient\_id)  
 and a.ATID not in (select m.ATID from MeetAt m where m.PatientID = patient\_id)  
 and a.ATID not in (select m.ATID from MeetAt m, Patient p where m.PatientID = p.PID and  
 p.DID in (select pa.DID from Patient pa where pa.PID = patient\_id))

Make an appointment

Given patient\_id, time\_from

insert into MeetAt values (patient\_id, (select min(Rnumber) from Room where Rnumber not in (select m.RoomNumber from MeetAt m where m.ATID = time\_from)), time\_from)

4. Update information

Give patient\_id, patient\_address, patient\_contact, patient\_name

Update Patient

Set

Patient.Paddress = patient\_address,

Patient.Pcontact = patient\_contact,

Patient.Pname = patient\_name

Where Patient.PID = patient\_id;

5. Get patient info

Given patient\_id

Return patient\_name, patient\_address, patient\_contact

Select Patient.Pname, Patient.Paddress, Patient.Pcontact FROM Patient WHERE Patient.PID = patient\_id

6. Get dates where all doctors are available

Select DoctorsAppointment.AllTime.TFrom

From DoctorsAppointment.AllTime

Where not exists

(Select \* from DoctorsAppointment.DoctorUnavailable

Where not exists

(Select DoctorsAppointment.Doctor.DID

From DoctorsAppointment.Doctor, DoctorsAppointment.MeetAt

Where DoctorsAppointment.AllTime.ATID != DoctorsAppointment.DoctorUnavailable.ATID

And DoctorsAppointment.AllTime.ATID != DoctorsAppointment.MeetAt.ATID

And DoctorsAppointment.Doctor.DID = DoctorsAppointment.DoctorUnavailable.DID));



7. Get all dates where all doctors are not available

Select DoctorsAppointment.AllTime.TFrom

From DoctorsAppointment.AllTime

Where not exists

(Select \* from DoctorsAppointment.DoctorUnavailable

Where not exists

(Select DoctorsAppointment.Doctor.DID, AllTime.ATID

From DoctorsAppointment.Doctor

Where DoctorsAppointment.AllTime.ATID = DoctorsAppointment.DoctorUnavailable.ATID

And DoctorsAppointment.Doctor.DID = DoctorsAppointment.DoctorUnavailable.DID));