REDUCING THE EXPOSURE OF NON-COVID PATIENTS

PROJECT REPORT

Submitted in fulfillment for the J-Component of CSE3002 – Internet and WebProgramming

B.Tech. (Computer Science)

By

1. NITISH GUPTA [19BCI0189]
2. RAHUL KUMAR [19BCE0965]

Under the guidance of

Prof. Jayakumar

SadhasivamSCOPE

VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

Fall Semester 2021-2022

ABSTRACT

The growth of Covid patients in India in second wave was exponential and the no. of deaths was also increasing and there is no way to stop the widespread of the virus other than by staying at home. In the second wave Since, the hospitals were filled with Covid patients thus, a non-COVID patient has a huge exposure to COVID in any hospital, on the other hand as we saw in the second wave, the hospital was full with patients and lack of availability of hospital beds.

The aim of this project is to solve the issue for both sides of the problem by limiting the time, for a patient to stay inside the hospital, to as low as possible

INTRODUCTION

1. The major reason for choosing this topic is upcoming third wave of COVID, many researchers have predicted that a third wave is yet to come and as we have seen in second wave, the situation of our country was not good, there were huge number of deaths and the pressure on hospitals was also very high.

2. Not only the COVID patients, but the non-COVID patients also suffered a lot. The second wave is a huge learning for us and we don't want situation to be this bad in third wave.

3. In this website, patients can login to their account and can directly consult about their problems to management staff. The management staff will then allocate a doctor to the patient based on his/her symptoms.

4. The patient will then message to the doctor and send him all of his/her problems. The doctor may give some medical test for patient.

5. Patient has to go to hospital once and there, staff will take all the requested tests of the patient. As soon as the tests are done the patients are supposed to leave the hospital and the reports of the test will be send to them online by the management, so there is no need for the patient to go to hospital to collect their reports.

6. Once the reports are received by patient, he needs to send it to the doctor. The doctor will go through the report and give him a prescription.

7. In the case of emergency Doctor will report it to the management team and the management team will arrange a room and ask the patient to report to the hospital as soon as possible.

8. If the doctor is not responding to the patient or patient is having any kind of problem with the doctor, he can send his complain to the management team. The management team will have the access to see all the doctor's and patient's page, he can see how the doctor is dealing with a patient and how patient is

communicating with the doctor. . The management team can create, remove or edit any doctor.

9. In this way patient have to go to the hospital for as minimum time as possible and hence it will significantly reduce the exposure of non-COVID patient and there will be a better crowd management in the hospital

PROBLEM STATEMENT

HOSPITAL PROBLEM :

The major problem in the second wave was lack of hospital bed because of which they faced huge problem in giving proper treatment to
the patients.

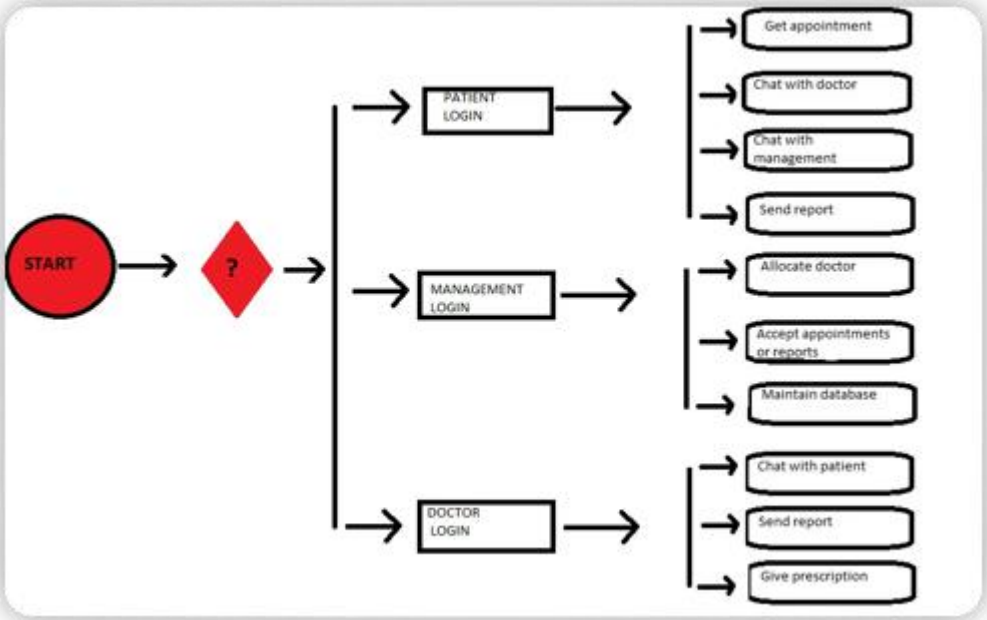
PATIENT PROBLEM :

Most of the hospitals were filled with Covid patients thus, a non-COVID patient has a huge exposure to COVID in any hospital, so the longer they stay at the hospital the higher are the chances for them to catch COVID.

LACK OF DOCTOR'S :

Since the COVID is highly communicable, many of the doctors catch COVID while treating them as a result of which we have seen that many doctors were avoiding to treat patients for their safety. Due to which there was lack of doctors as well.

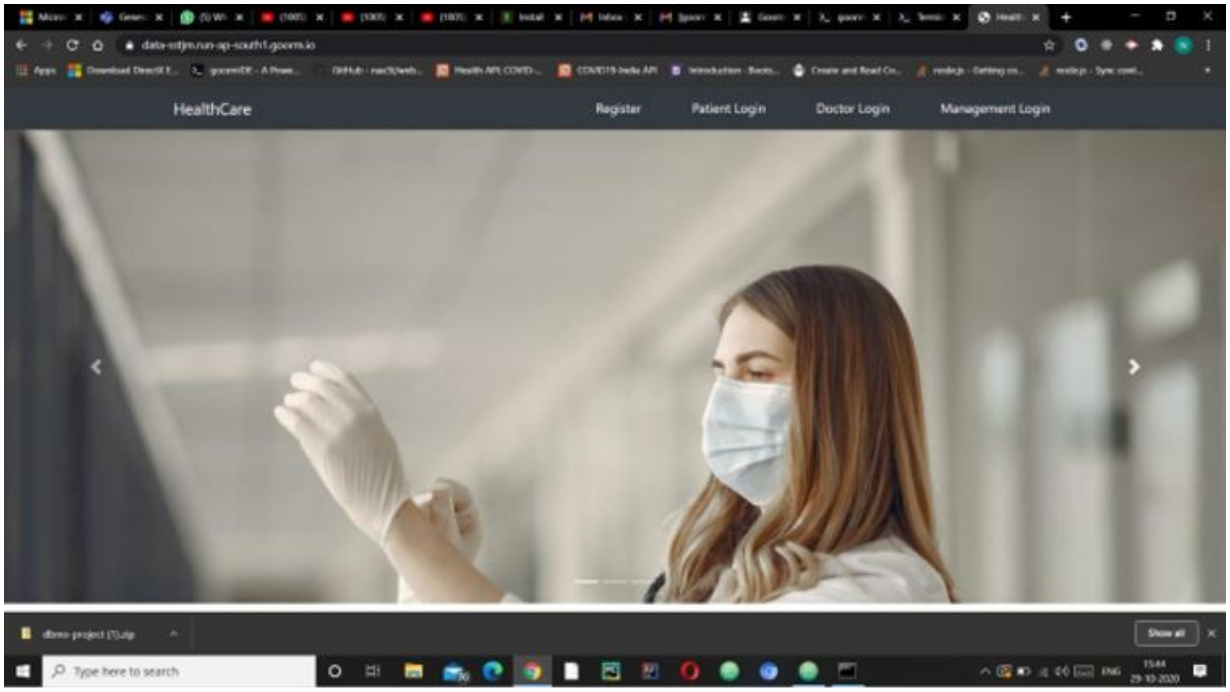
PROCESS FLOW DIAGRAM



MODULES

- Login System for patients, Doctor and Management.
- Patient can chat with Management Team and tell him his problems.
- Management Team allocates patient a doctor.
- Patient can chat with doctor and tell him all his problems in detail in chat
- Doctor can respond to all the queries of the patients and can ask them for all the tests that he needs to analyze the problem

PROTOTYPE DESIGN

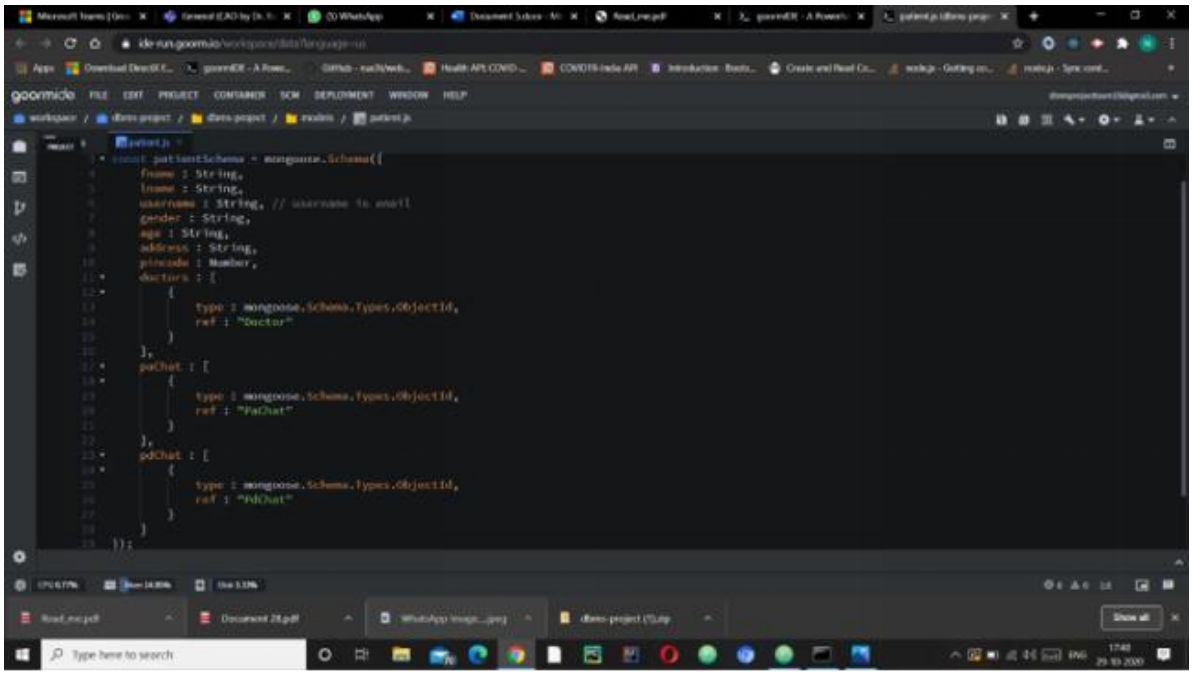


DATABSE DESIGN

User Database

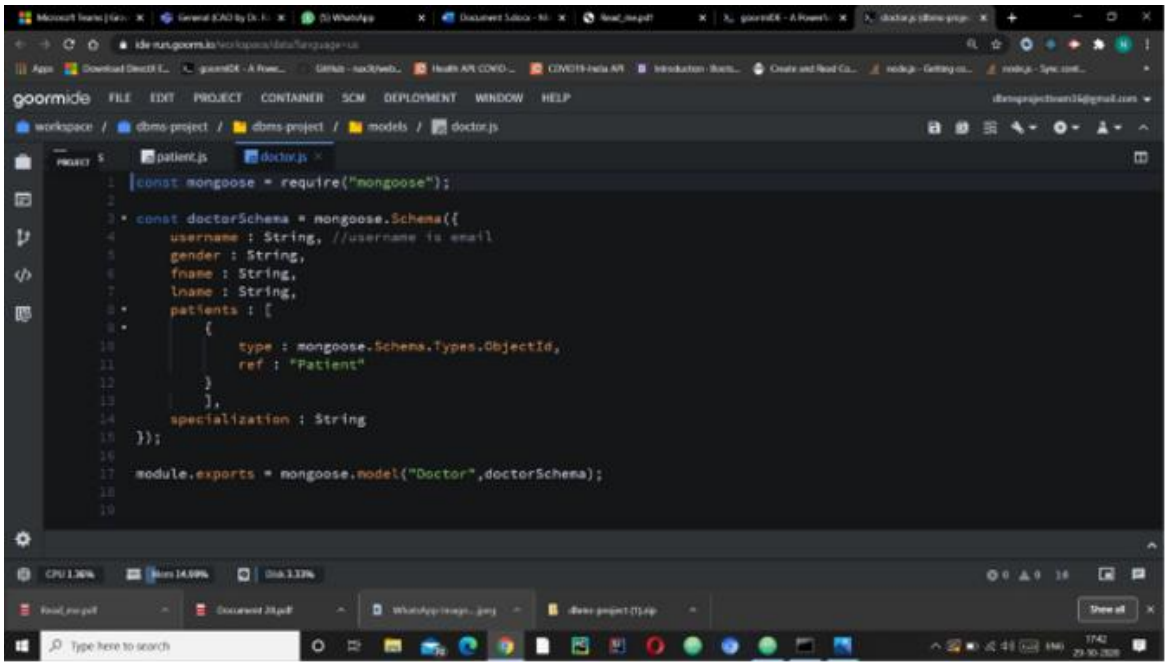
```
const userSchema = mongoose.Schema({
    username : String,
    password : String,
    isPatient : {
        type : Boolean,
        default : false
    },
    isDoctor : {
        type : Boolean,
        default : false
    },
    isAdmin : {
        type : Boolean,
        default : false
    }
});
```

PATIENT DATABASE



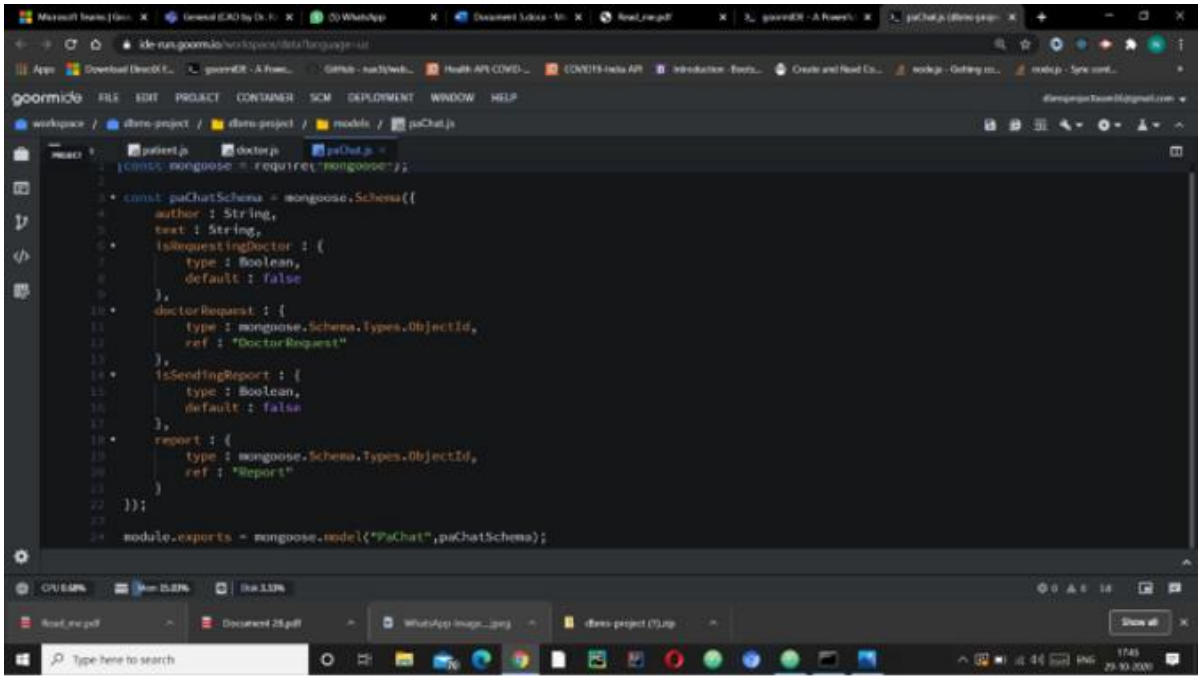
```
const patientSchema = mongoose.Schema({
    fname : String,
    lname : String,
    username : String, // username is email
    gender : String,
    age : String,
    address : String,
    pincode : Number,
    doctors : [
        {
            type : mongoose.Schema.Types.ObjectId,
            ref : "Doctor"
        }
    ],
    paChat : [
        {
            type : mongoose.Schema.Types.ObjectId,
            ref : "PaChat"
        }
    ],
    pdChat : [
        {
            type : mongoose.Schema.Types.ObjectId,
            ref : "PdChat"
        }
    ]
});
```

Doctor Database



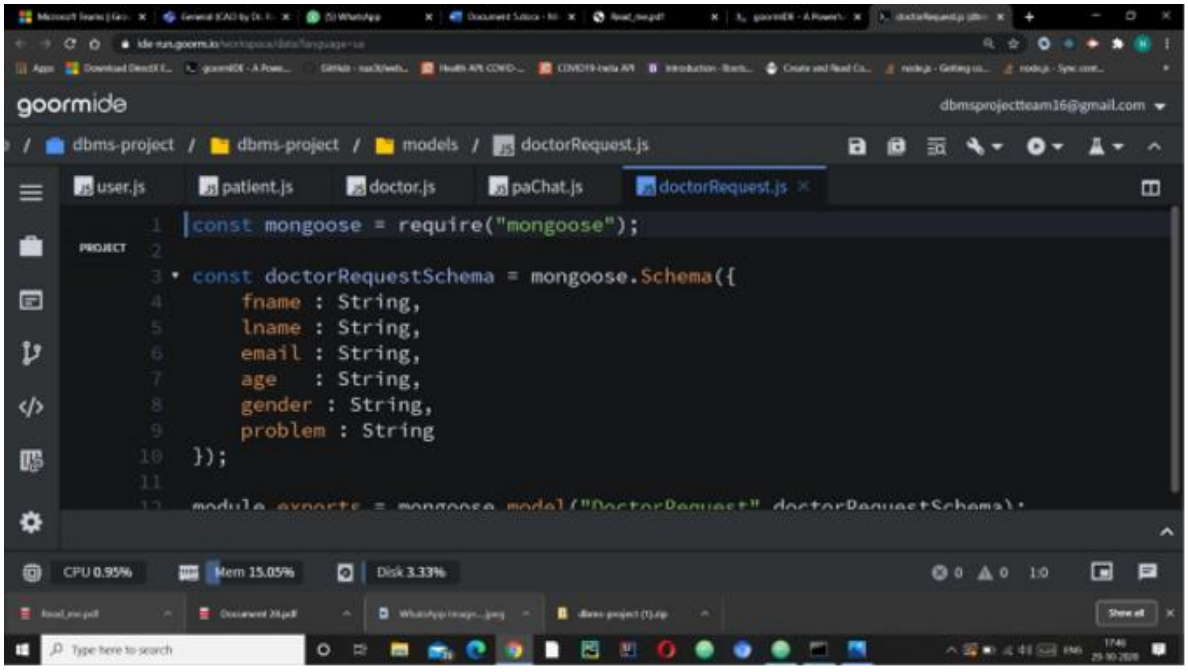
```
const mongoose = require("mongoose");

const doctorSchema = mongoose.Schema({
    username : String, //username is email
    gender : String,
    fname : String,
    lname : String,
    patients : [
        {
            type : mongoose.Schema.Types.ObjectId,
            ref : "Patient"
        }
    ],
    specialization : String
});

module.exports = mongoose.model("Doctor",doctorSchema);
```

PATIENT-ADMIN CHAT DATABASE (PACHAT)



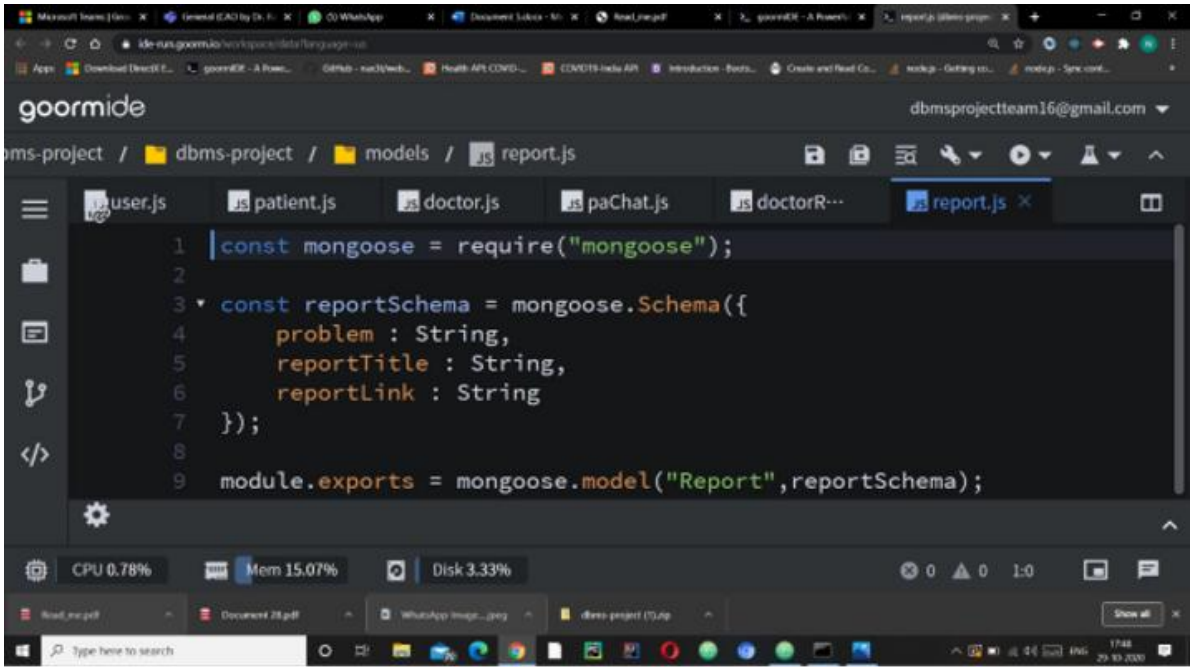
```
const mongoose = require("mongoose");

const paChatSchema = mongoose.Schema({
    author : String,
    text : String,
    isRequestingDoctor : {
        type : Boolean,
        default : false
    },
    doctorRequest : {
        type : mongoose.Schema.Types.ObjectId,
        ref : "DoctorRequest"
    },
    isSendingReport : {
        type : Boolean,
        default : false
    },
    report : {
        type : mongoose.Schema.Types.ObjectId,
        ref : "Report"
    }
});

module.exports = mongoose.model("PaChat",paChatSchema);
```

DOCTOR REQUEST DATABASE

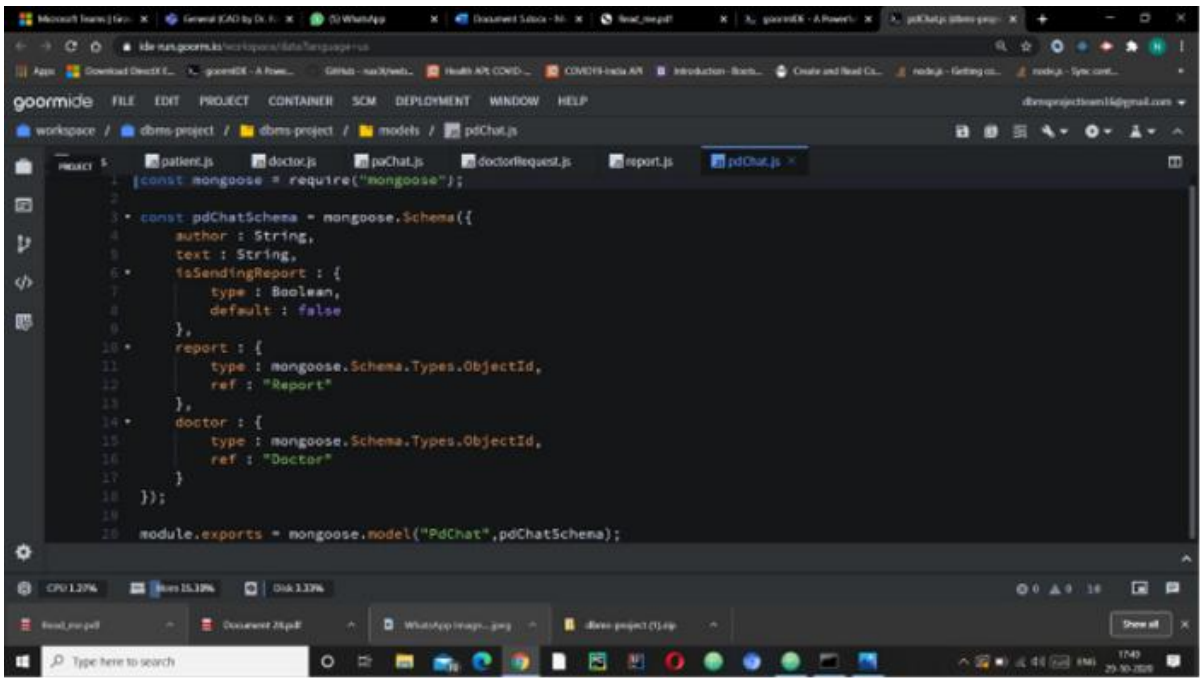


```
const mongoose = require("mongoose");

const doctorRequestSchema = mongoose.Schema({
    fname : String,
    lname : String,
    email : String,
    age   : String,
    gender : String,
    problem : String
});

module.exports = mongoose.model("DoctorRequest",doctorRequestSchema);
```

REPORT DATABASE



PATIENT-DOCTOR CHAT DATABASE (PDCHAT)



CONCLUSION:

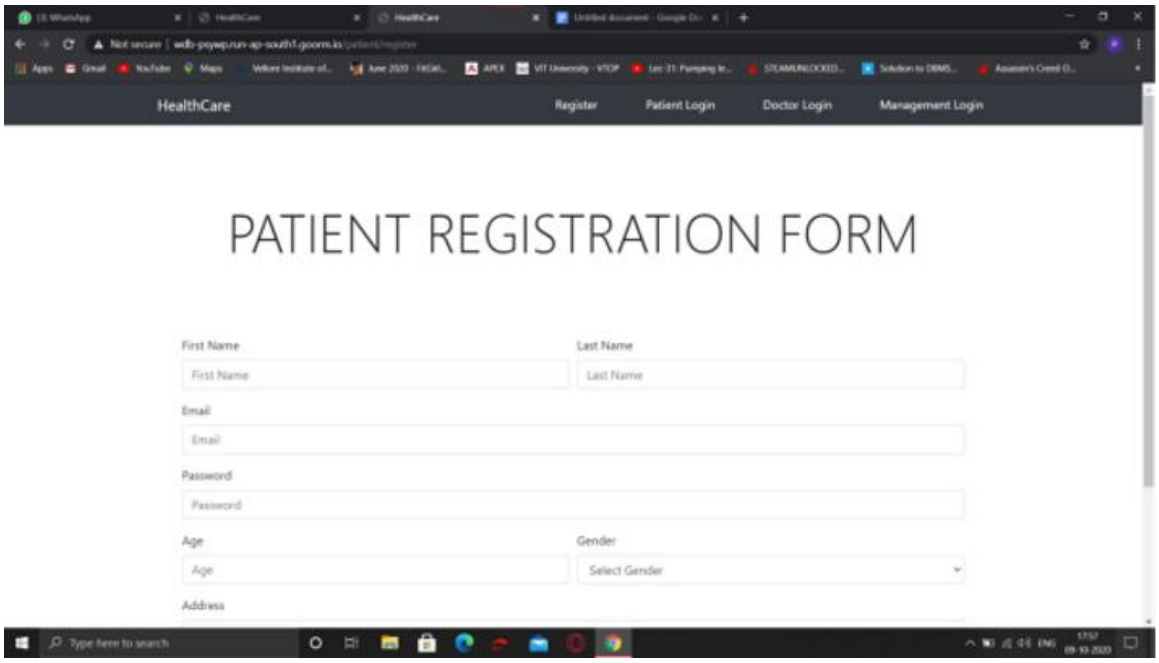
In this website, patients can login to their account and can directly consult about their problems to management staff. The management staff will then allocate a doctor to the patient based on his/her symptoms.

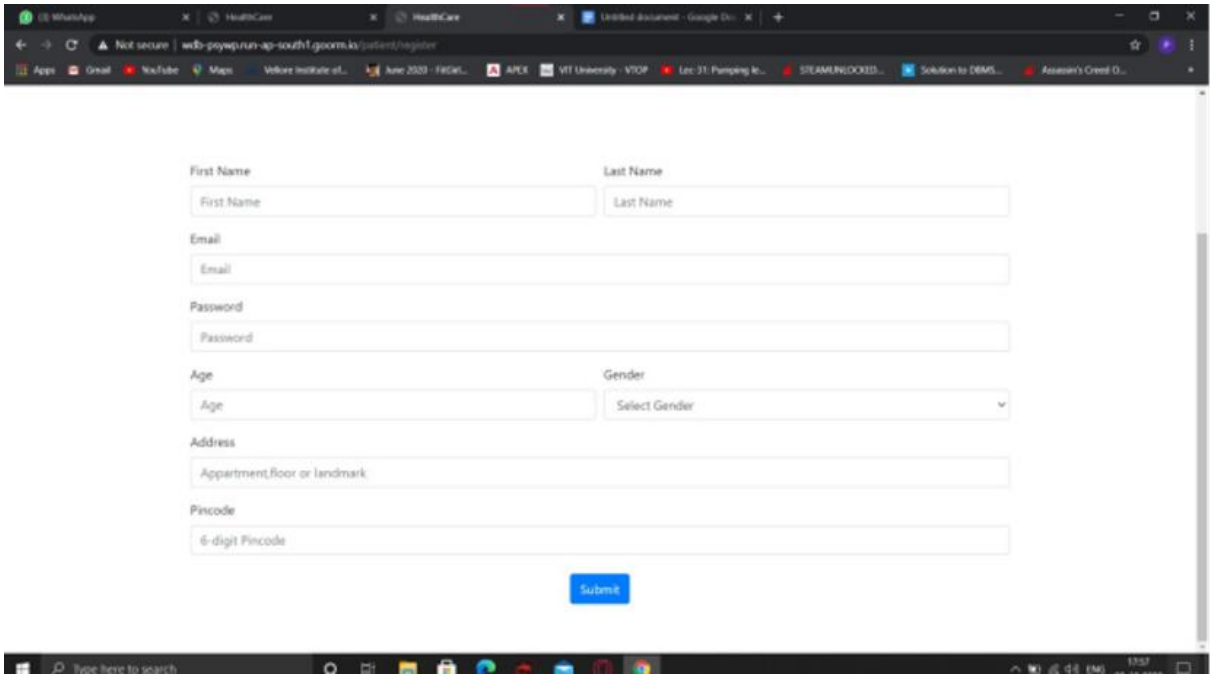
Patient has to go to hospital once and there, staff will take all the requested tests of the patient. As soon as the tests are done the patients are supposed to leave the hospital and the reports of the test will be send to them online by the management, so there is no need for the patient to go to hospital to collect their reports.

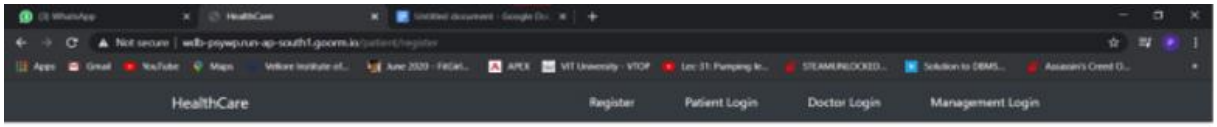
REFERENCES:

https://www.w3schools.com/html/
https://docs.mongodb.com/manual/tutorial/
https://nodejs.dev/learn
http://www.passportjs.org/docs/
https://getbootstrap.com/docs/4.0/getting-started/introduction/
https://www.w3schools.com/css/

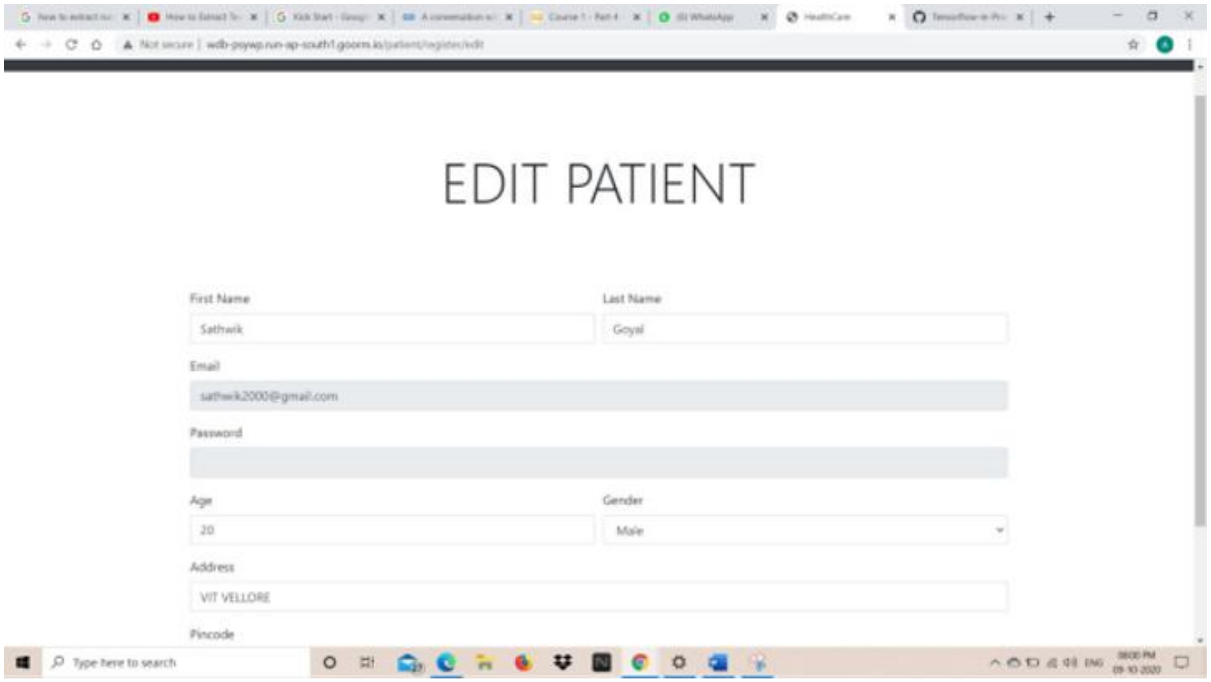
SNAPSHOTS:

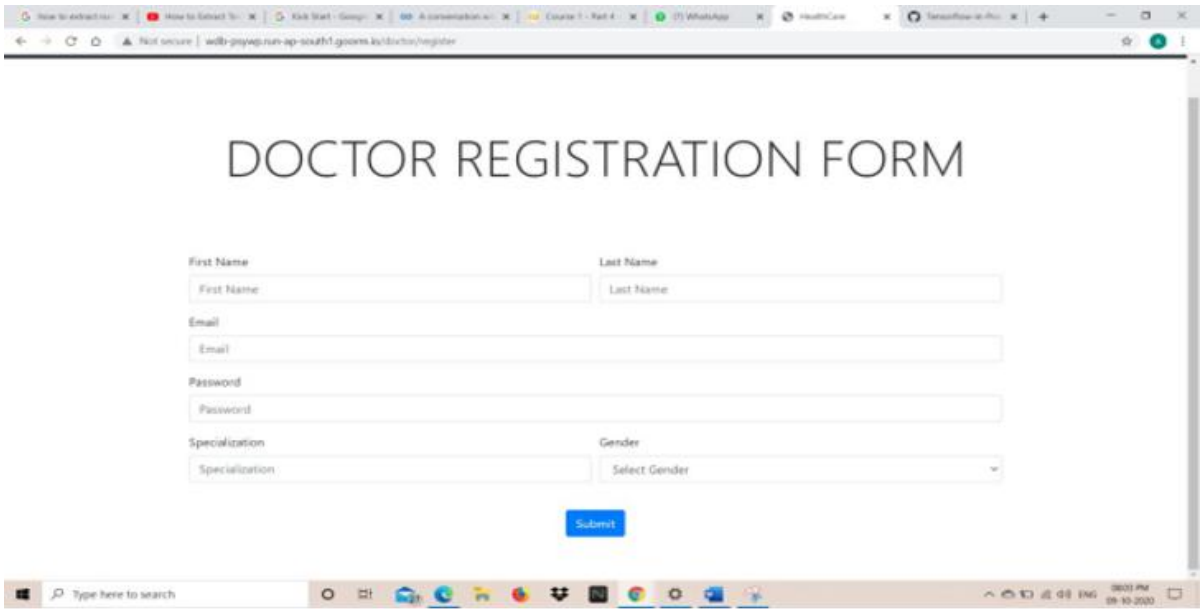


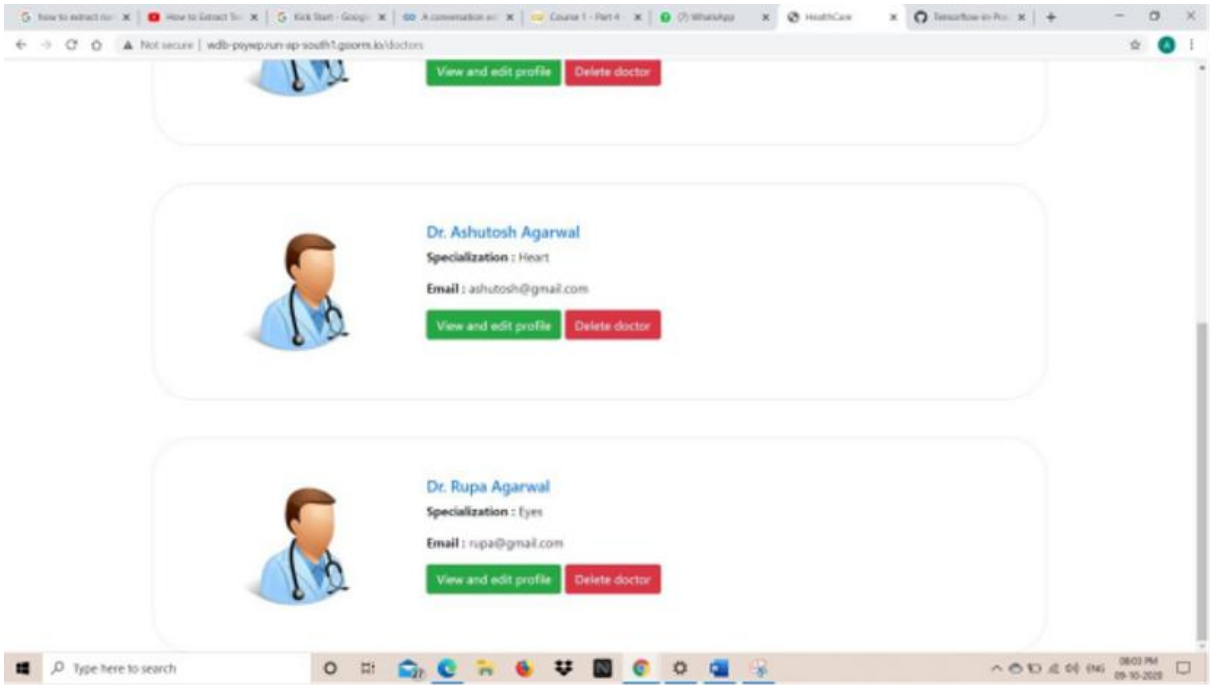

First Name
Last Name
Email
Password
Age
Gender
Address
Appartment,floor or landmark
Pincode
6-digit Pincode
Submit

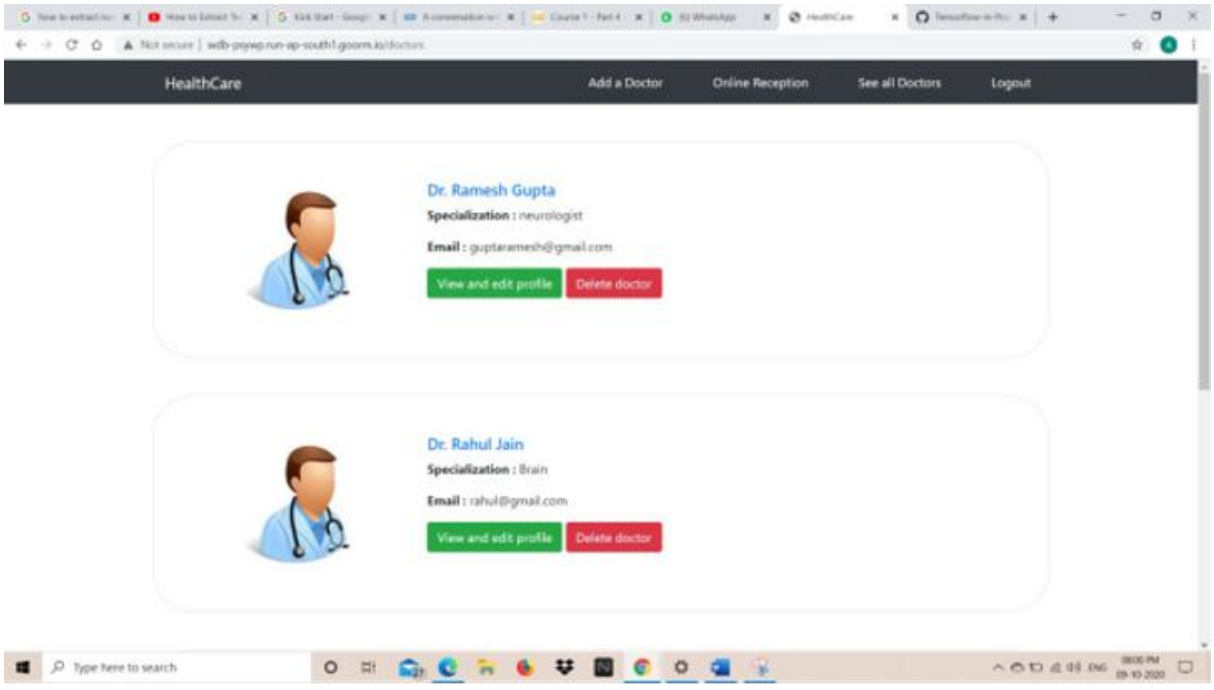

HealthCare
Register
Patient Login
Doctor Login
Management Login

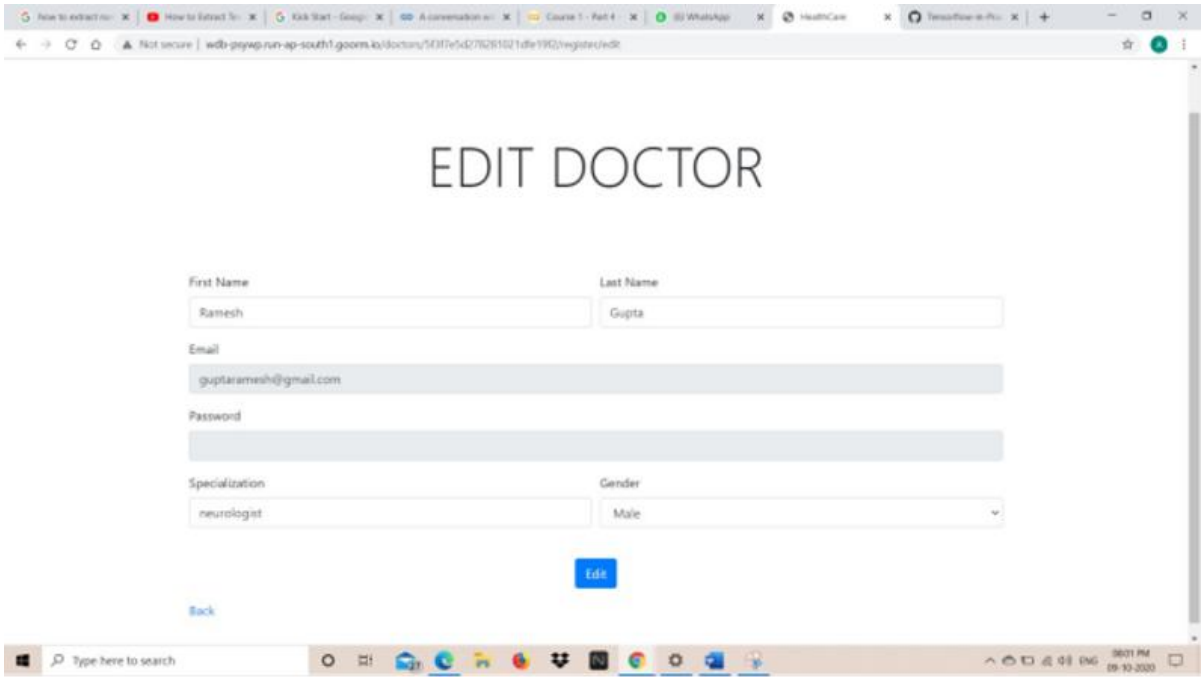
PATIENT LOGIN
Email address
modirocks@gmail.com
Password
Submit

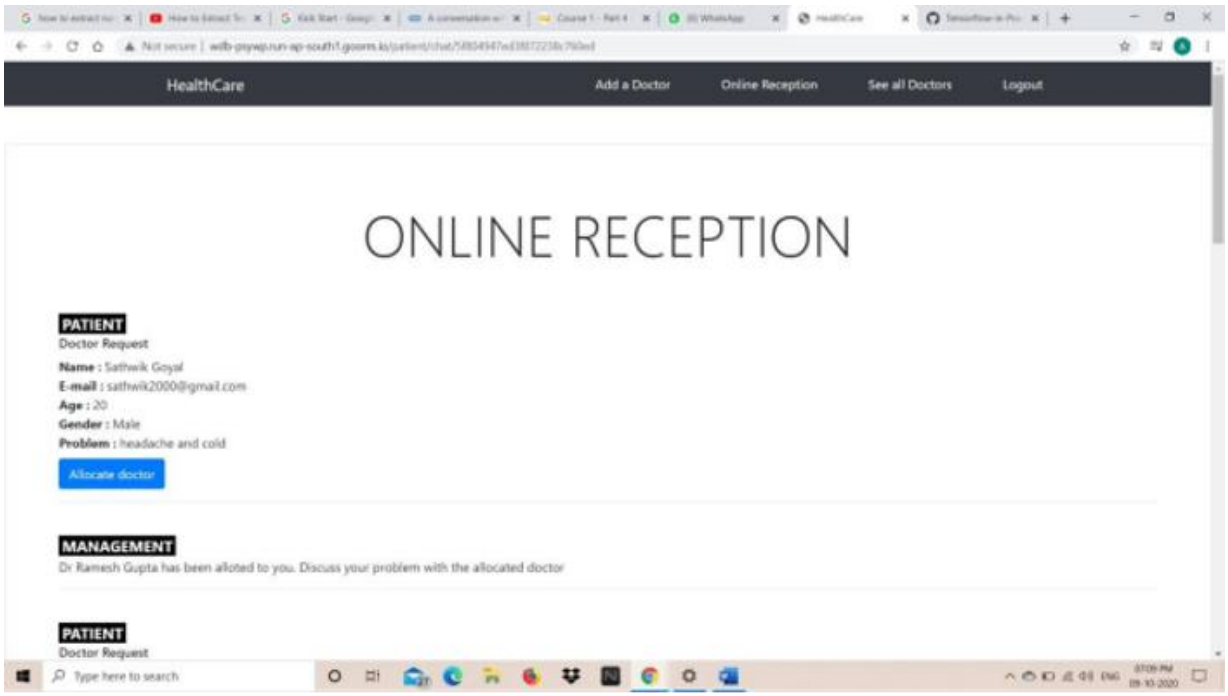

EDIT PATIENT
First Name
Sathwik
Last Name
Goyal
Email
sathwik2000@gmail.com
Password
Age
20
Gender
Male
Address
VIT VELLORE
Pincode

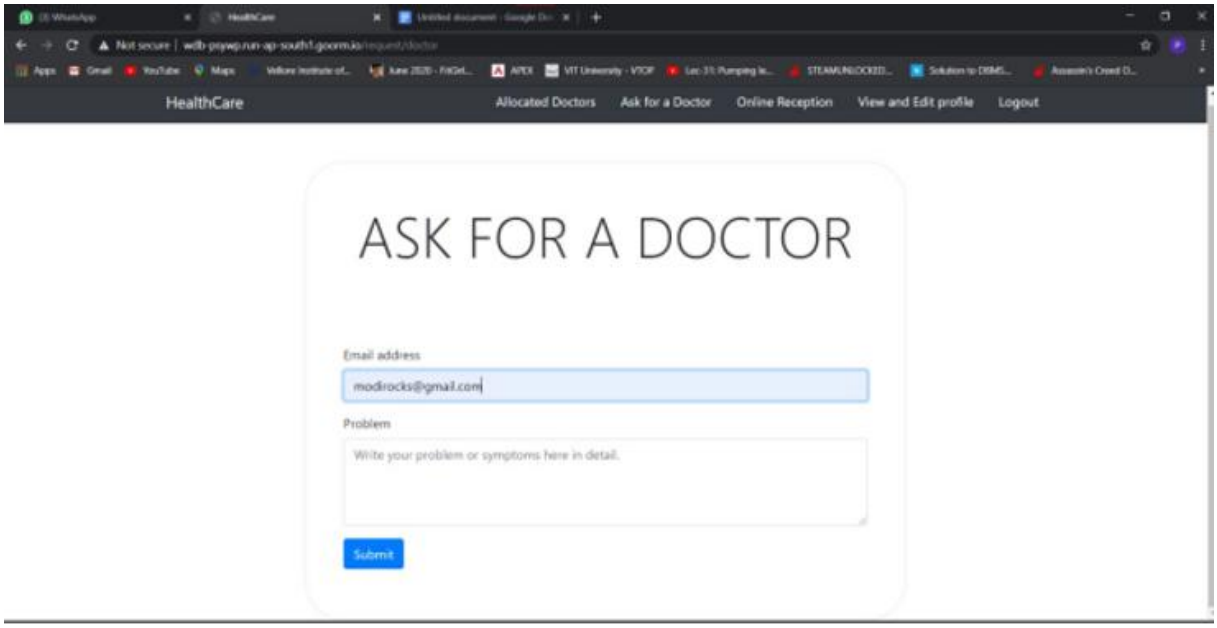

DOCTOR REGISTRATION FORM
First Name
First Name
Last Name
Last Name
Email
Email
Password
Password
Specialization
Specialization
Gender
Select Gender
Submit

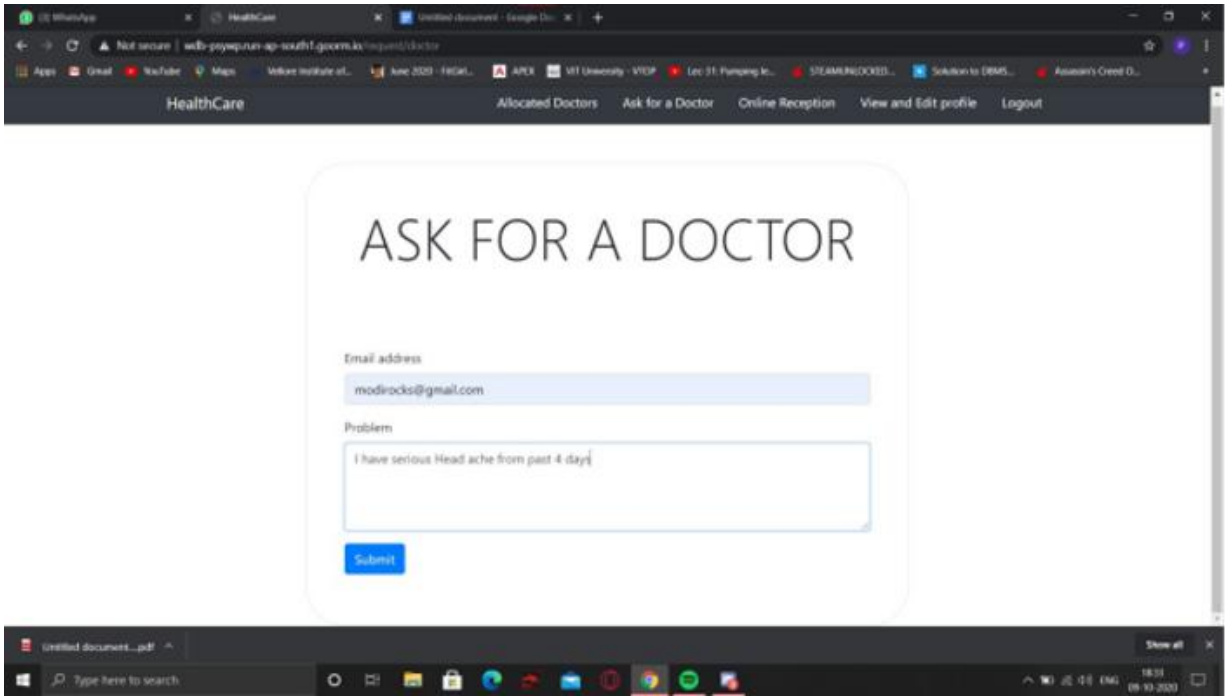

View and edit profile
Delete doctor
Dr. Ashutosh Agarwal
Specialization : Heart
Email : ashutosh@gmail.com
View and edit profile
Delete doctor
Dr. Rupa Agarwal
Specialization : Eyes
Email : rupa@gmail.com
View and edit profile
Delete doctor
Type here to search

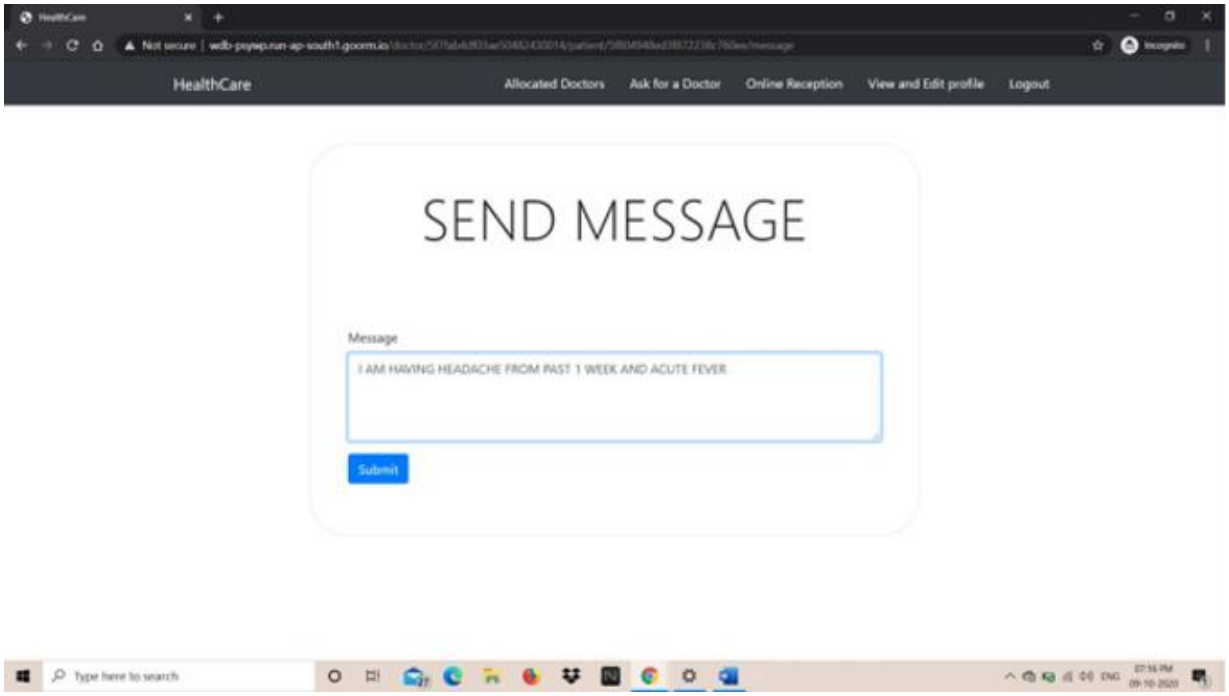

HealthCare
Add a Doctor
Online Reception
See all Doctors
Logout
Dr. Ramesh Gupta
Specialization : neurologist
Email : guptaramesh@gmail.com
View and edit profile
Delete doctor
Dr. Rahul Jain
Specialization : Brain
Email : rahul@gmail.com
View and edit profile
Delete doctor
Type here to search

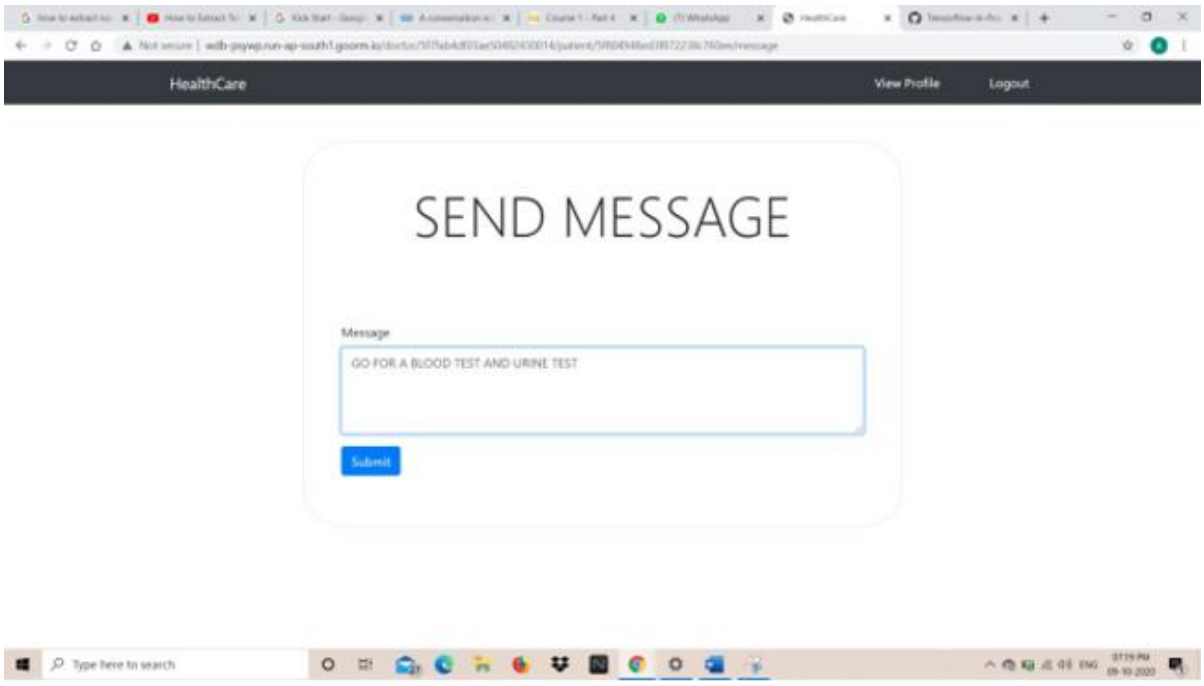

EDIT DOCTOR
First Name
Ramesh
Last Name
Gupta
Email
guptaramesh@gmail.com
Password
Specialization
neurologist
Gender
Male
Edit
Back


HealthCare
Add a Doctor
Online Reception
See all Doctors
Logout
ONLINE RECEPTION
PATIENT
Doctor Request
Name : Sathwik Goyal
E-mail : sathwik2000@gmail.com
Age : 20
Gender : Male
Problem : headache and cold
Allocate doctor
MANAGEMENT
Dr Ramesh Gupta has been alloted to you. Discuss your problem with the allocated doctor
PATIENT
Doctor Request


HealthCare
Allocated Doctors
Ask for a Doctor
Online Reception
View and Edit profile
Logout
ASK FOR A DOCTOR
Email address
modirocks@gmail.com
Problem
Write your problem or symptoms here in detail.
Submit


HealthCare
Allocated Doctors
Ask for a Doctor
Online Reception
View and Edit profile
Logout
ASK FOR A DOCTOR
Email address
modirocks@gmail.com
Problem
I have serious Head ache from past 4 days
Submit


HealthCare
Allocated Doctors
Ask for a Doctor
Online Reception
View and Edit profile
Logout
SEND MESSAGE
Message
I AM HAVING HEADACHE FROM PAST 1 WEEK AND ACUTE FEVER
Submit


HealthCare
View Profile
Logout
SEND MESSAGE
Message
GO FOR A BLOOD TEST AND URINE TEST
Submit

MANAGEMENT

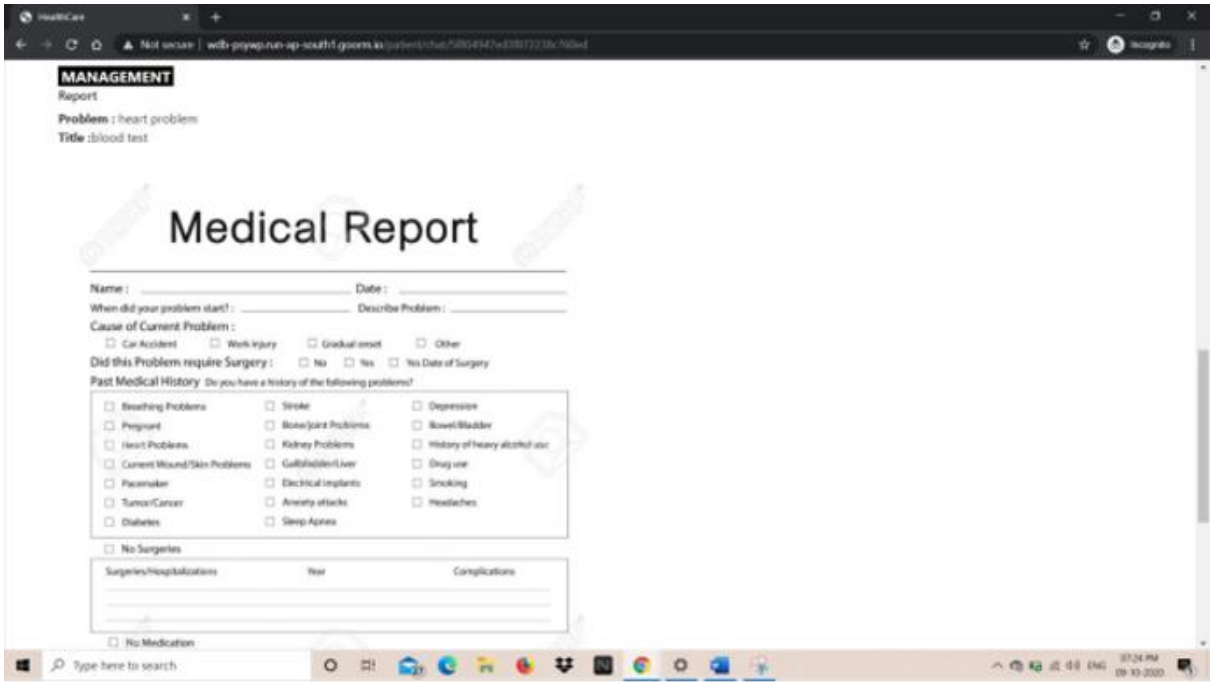
Dr Ashutosh Agarwal has been alloted to you. Discuss your problem with the allocated doctor

PATIENT

when will i get my blood report

MANAGEMENT

it will 1 week



SOURCE CODE :

https://github.com/Nitish-19BCI0189/Reducing_Exposure_Of_Non-Covid_Patients.git