PATIENT'S UNIQUE IDENTIFICATION

PROJECT REPORT

OF MINI PROJECT

BACHELOR OF TECHNOLOGY

Computer Science and Engineering Branch

SUBMITTED BY:

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SUPERVISED BY:

Mr. VAIBHAV DIWAN
(Technical Trainer)

GLA University

Mathura- 281406, INDIA

(2020-2021)

Declaration

Department of computer Engineering and Applications
GLA University, Mathura
17 km. Stone NH#2, Mathura-Delhi Road, P.O. – Chaumuha,
Mathura – 281406

I hereby declare that the work which is being presented in the Mini project -I "Patient's Unique Identification app**",** in partial fulfilment of the requirements for Mini Project-I viva voce, is an authentic record of my own work carried under the supervision of Mr. Vaibhav Diwan, Technical Trainer, GLAU.

Name of Candidate:

Course: B Tech

Year: III

Semester: VI

CERTIFICATE

This is to certify that the mini project report entitled "Patient’s Unique Identification" submitted by Abhinav Bhardwaj, Aditya Singh Chauhan, Anvit Gupta has been carried out under the guidance of Mr. Vaibhav Diwan, Technical Trainer, Department of Computer Engineering & Applications, GLA University, Mathura.

Signature:

Date:

ACKNOWLEDGEMENT

The project work in this report is an outcome of continuous work over a period and drew intellectual support from various sources. We would like to articulate our profound gratitude to all those people who extended their wholehearted co-operation and have helped me in completing this project successfully.

We are thankful to Mr. Vaibhav Diwan for teaching and assisting me in making the project successful. We would also like to thank other fellow mates for guiding and encouraging me throughout the duration of the project.

Abhinav Bharadwaj (181500009)

Aditya Singh Chauhan (181500046)

Anvit Gupta (181500127)

ABSTRACT

We all can't disagree with the fact that there are so many people in our society who are patients of such kind of diseases which need a long duration of treatment. And changing multiple doctors in this long duration of treatment is very often. In some case, it may due to unsatisfactory treatment by his/her doctor, while in some cases patients are supposed to change their city because of other reasons, but in both cases, it becomes very hard to keep its medical history (like previous prescriptions, reports, test results, etc.) with him/her.

Training Certificates

Certificate of Completion
This is to certify that Abhinav Bhardwaj successfully completed 19 total hours of React, NodeJS, Express & MongoDB - The MERN Fullstack Guide online course on Nov. 18, 2020
Academind by Maximilian Schwarzmüller
Academind by Maximilian Schwarzmüller, Instructor
Maximilian Schwarzmüller
Maximilian Schwarzmüller, Instructor
Manuel Lorenz
Manuel Lorenz, Instructor
&
Udemy
Certificate no: UC-4e6c25c0-d5c7-4778-bac9-2d76b70ccf03
Certificate url: ude.my/UC-4e6c25c0-d5c7-4778-bac9-2d76b70ccf03
Version 3
#BeAble

GitHub Repository

https://github.com/Mini-Project-GLAU-2020-21/Patient-s_Unique_Identification

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Chapter 01

1.1 General Introduction to the Project

Currently in our society, patient used to keep hard copy of reports and prescriptions that becomes very difficult to maintain. There is no central system in our country that provides a facility of accessing someone's medical history in case of any accident or emergency. We totally depend on patient or his/her family during treatment which results problematic delays.

We are going to design a system that will provide Signup and then Login facility to the patient. We'll try to help patient in maintaining record of previous reports and prescriptions. As well as our system will attach a Unique Patient Identification to every patient who creates account on our database. This Unique number will be used to view patient's report. We'll design an android app as well as a website to facilitate patient as well as guest. Guest view will be used in viewing report of any patient if you are having his/her Unique Identification Number. It'll be very important, if in case of any emergency, any paramedical staff, who is not having account on our database, wants to examine operate any patient then he/she can view patient's reports just by searching Patient's Unique Identification number.

Area of Computer Science

The computer has brought revolution in every sphere of human life, whether it is business, education field, governance, medical science etc. The computer has reduced the human work load, businesses are going global and everything is available at the click of mouse. Most of the patients have to go to hospital which is a very time-consuming task. By this application they can keep in touch with them.

Chapter 02

Problem Definition

Our system will provide a unique identifier to every patient that can be used to view his/her previous medical history. Our system will keep track of all the records, with proper updating and modification facilities as and when required. Patient will be able to login into his/her own database using same username and password set during signup process, also every patient can access, update and modify its own records through our system.

Chapter 03

Objectives of the Project

Unique Patient Identifier (UPI) will be an individual identification number of every patient issued by this system. The objective of this project is to collect Patient's basic details (like Name, DOB, Contact number, Blood Group, Address, etc.) as well as giving a facility to upload heap of reports and prescriptions, store them in a centralized database.

Chapter 04

Technology being used

Hardware Requirements:

- Computer System with minimum 8GB of RAM **Software Requirements:**

- Windows/Linux OS
- Android Studio
- Visual Code Studio
- Robo 3T
- Postman
- Adobe XD

Programming language:

- Java Programming
- JavaScript
- MERN Stack

Chapter 05

Software Development Tools

Android Studio

Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (ADT) as the primary IDE for native Android application development.

Android Studio was announced on May 16, 2013 at the Google I/O conference. It was in early access preview stage starting from version 0.1 in May 2013, then entered beta stage starting from version 0.8 which was released in June 2014. The first stable build was released in December 2014, starting from version 1.0.

Features

The following features are provided in the current stable version:

Gradle-based build support

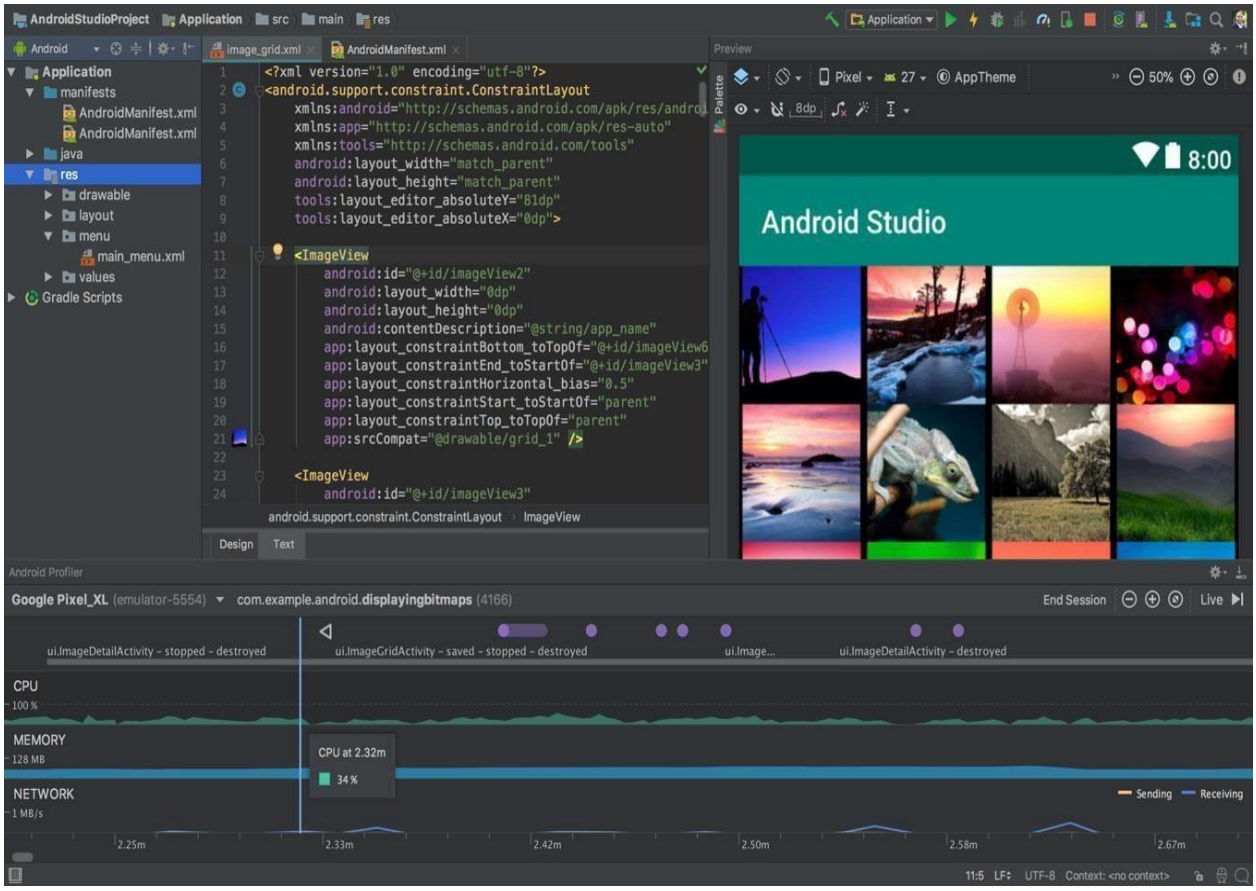
Android-specific refactoring and quick fixes

Lint tools to catch performance, usability, version compatibility and other problems

ProGuard integration and app-signing capabilities

Template-based wizards to create common Android designs and components

A rich layout editor that allows users to drag-and-drop UI components, option to preview layouts on multiple screen configurations Support for building Android Wear apps


AndroidStudioProject
Application
src
main
res
Android
image_grid.xml
AndroidManifest.xml
Application
manifests
AndroidManifest.xml
AndroidManifest.xml
java
res
drawable
layout
menu
main_menu.xml
values
Gradle Scripts
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/andro
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:layout_editor_absoluteY="81dp"
tools:layout_editor_absoluteX="0dp">
<ImageView
android:id="@+id/imageView2"
android:layout_width="0dp"
android:layout_height="0dp"
android:contentDescription="@string/app_name"
app:layout_constraintBottom_toTopOf="@+id/imageView6
app:layout_constraintEnd_toStartOf="@+id/imageView3"
app:layout_constraintHorizontal_bias="0.5"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:srcCompat="@drawable/grid_1" />
<ImageView
android:id="@+id/imageView3"
android.support.constraint.ConstraintLayout
ImageView
Design
Text
Preview
Pixel
27
AppTheme
50%
8dp
Palette
8:00
Android Studio
Android Profiler
Google Pixel_XL (emulator-5554)
com.example.android.displayingbitmaps (4166)
End Session
Live
ui.ImageDetailActivity - stopped - destroyed
ui.ImageGridActivity - saved - stopped - destroyed
ui.Image...
ui.ImageDetailActivity - destroyed
CPU
100 %
MEMORY
128 MB
CPU at 2.32m
34 %
NETWORK
1 MB/s
Sending
Receiving
2.25m
2.33m
2.42m
2.50m
2.58m
2.67m
11:5
LF
UTF-8
Context: <no context>

Chapter 06

Introduction to Android

5.1 Introduction to Android Studio

Android is a mobile operating system developed by Google. It is based on a modified version of the Linux kernel and other open source software, and is designed primarily for touchscreen mobile devices such as smartphones and tablets. In addition, Google has developed Android TV for televisions, Android Auto for cars, and Wear OS for wrist watches, each with a specialized user interface. Variants of Android are also used on game consoles, digital cameras, PCs and other electronics.

Initially developed by Android Inc., which Google bought in 2005, Android was unveiled in 2007, with the first commercial Android device launched in September 2008. The current stable version is Android 9 "Pie", released in August 2018. Google released the first beta of the next release, Android Q, on Pixel phones in March 2019. The core Android source code is known as Android Open Source Project (AOSP), which is primarily licensed under the Apache License.

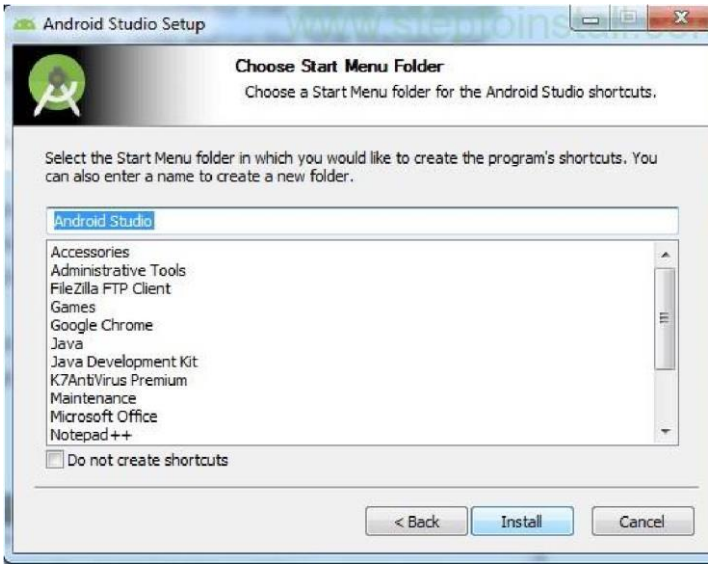
Features:

Interface

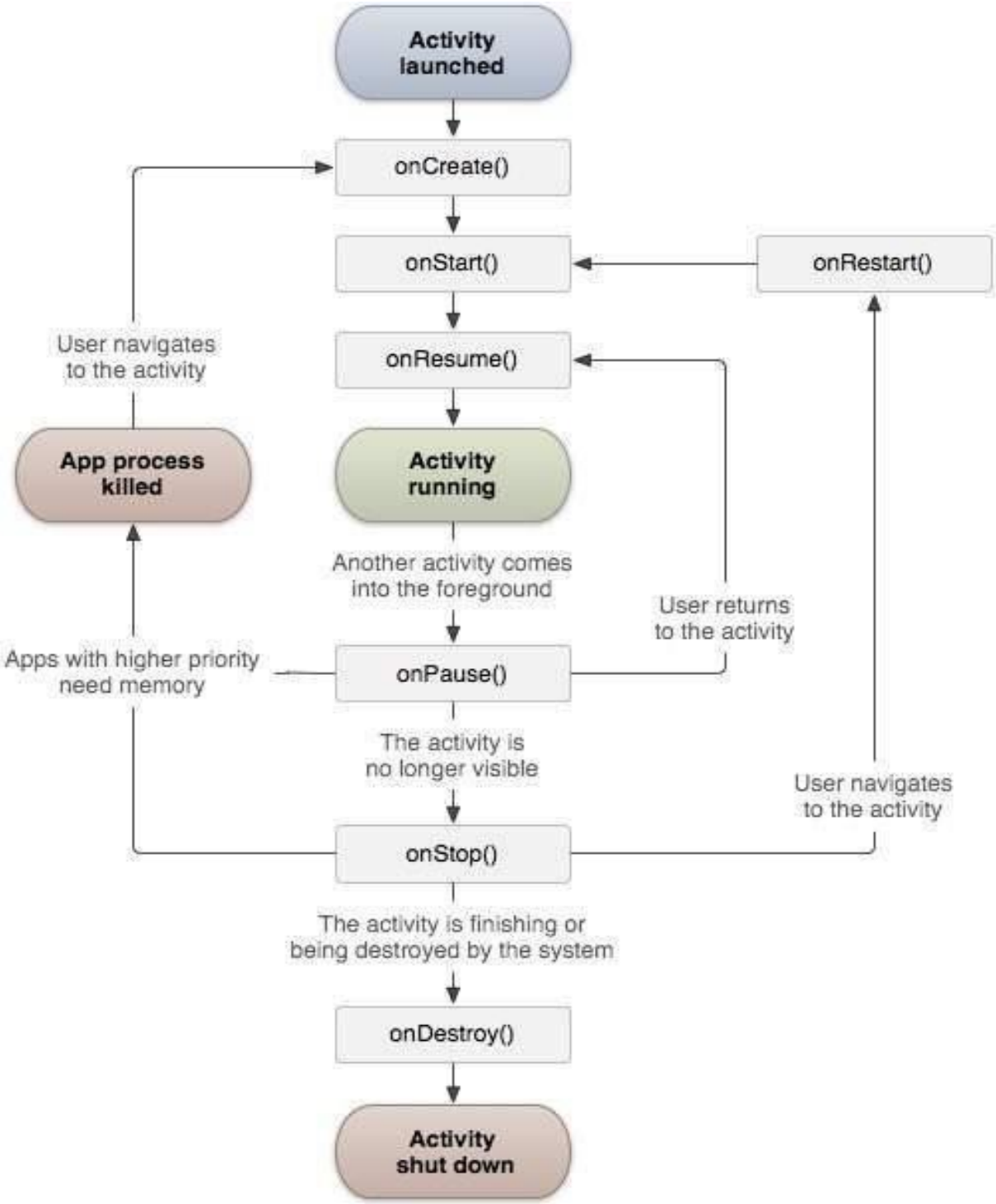
Applications

Memory management

5.2 Installation



5.3 Basic of Android

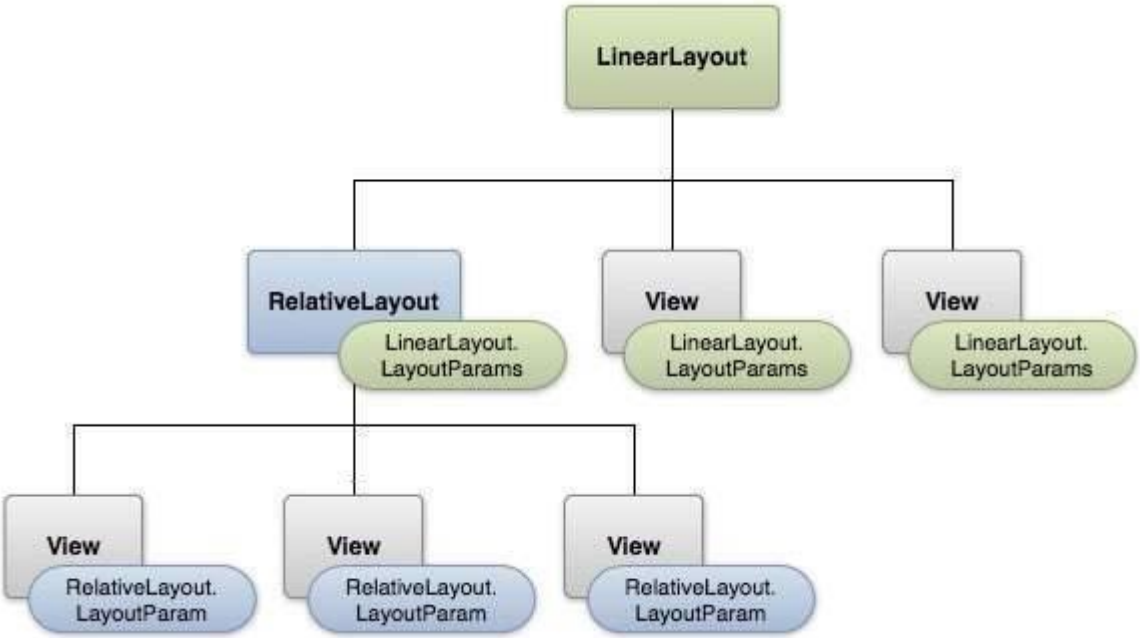


The basic building block for user interface is a View object which is created from the View class and occupies a rectangular area on the screen and is responsible for drawing and event handling.

View is the base class for widgets, which are used to create interactive UI components like buttons, text fields, etc.

The View Group is a subclass of View and provides invisible container that hold other Views or other View Group and define their layout properties.

At third level we have different layouts which are subclasses of View Group class and a typical layout defines the visual structure for an Android user interface and can be created either at run time using View/View Group objects or you can declare your layout using simple XML file main_layout.xml which is located in the res/layout folder of your project.



Chapter 07

Methodology

We are using Android Java and React based Webpage Portal as the frontend with the backend made using MongoDB. To see what's inside the android application a user has to login, if the user is not register, he/she can also register himself/herself. App will keep records of patient's reports as well as past health issues which we have feed there.

The modules used in this app are listed as follows:

1. Main Dashboard
2. My Profile
3. BMI Calculator
4. Upload Record
5. Records
6. Logout

Chapter 08

Implementation Details

App Development

i. Backend Development:

The technology used for developing backend is MongoDB. Basically we have implemented the backend part using Mongo. We implemented an admin panel to monitor all the activities which will be happening in the android application. The owner of this application is having one admin login username and password, only the admin can add or remove the data, the changes will be reflected to the android application. The data will be sent to the android application using API's

An application program interface (API) is a set of routines, protocols, and tools for building software applications. Basically, an API specifies how software components should interact. The data will sent in JSON format.

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate.

ii. Frontend Development:

We are using android studio, the tool which is used to develop android applications. The technology used for developing frontend is Android and Java. User will have to register themselves before login. We are parsing the data coming in JSON from the backend and displaying it on android application.

The modules used in this app are listed as follows:

1. Sign In – will use to sign in to the account.
2. Sign Up – will use to register his/her self.
3. Dashboard – It consist of 6 modules:
    a. My Profile – It will show the profile of the user
    b. Records – It will keep records of reports.

c. BMI Calculator – It will calculate BMI of user by some inputting some variables
d. Upload Record – It will use to upload/save his/her records.
e. To-do – will ease you to mark to do work.

Webpage based Portal: We are working on this in two parts viz frontend and backend. Firstly, we are working on backend after that will move towards frontend. There might be some changes in the backend while working with frontend.

i. **Backend Development:** The project commences with designing of fundamental patient schema and document schema. We will use APIS for creating different routes. Unique Patient Identification Number (UPI) will be generated by the server every time the new user creates his/her account. We will differentiate user as patient and admin with the help of middleware. Admin will be able to use few more functionalities than patient like viewing total number of users, etc. The data will be sent to backend using APIs.

An application program interface (API) is a set of routines, protocols and tools for building software applications. Basically, an API specifies how software components should interact.

The data will be sent in JSON format.

JSON is a lightweight data-interchange format it is easy for humans to read and write. It is easy for machines to parse and generate.

We are using MongoDB Atlas for cloud storage during development phase because of its flexibility and scalability of document database, available as a fully managed service.

MongoDB Atlas is the global cloud database service for modern applications. Deploy fully managed MongoDB across AWS, Azure, or GCP. Best-in-class automation and proven practices guarantee availability, scalability, and compliance with the most demanding data security and privacy standards.

ii. Frontend: We will be using React, HTML, Bootstrap for frontend development part. On home page, there will be basic functionalities like BMI calculator or viewing public details of any patient using UPI. But to store his/her records, he/she has to create account using Signup Page and then sign in using Sign In Page. After signing in into account, there will be various modules like My Profile, Records, Upload Record, BMI Calculator, Sign-out etc.

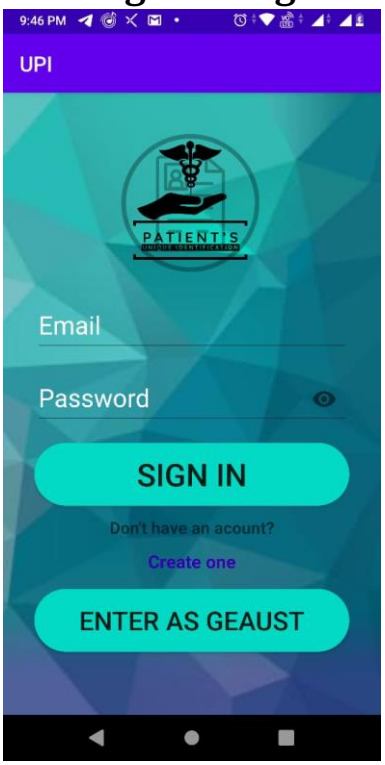
Chapter 09

SCREENSHOT

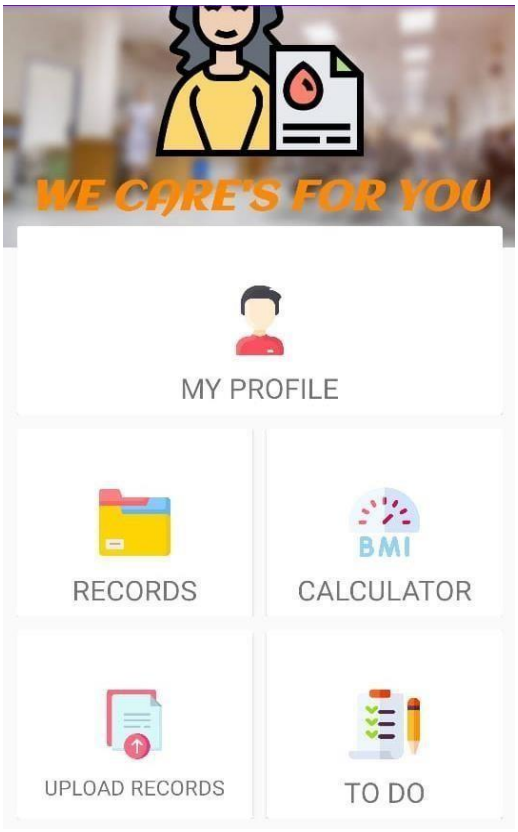
Android Application:

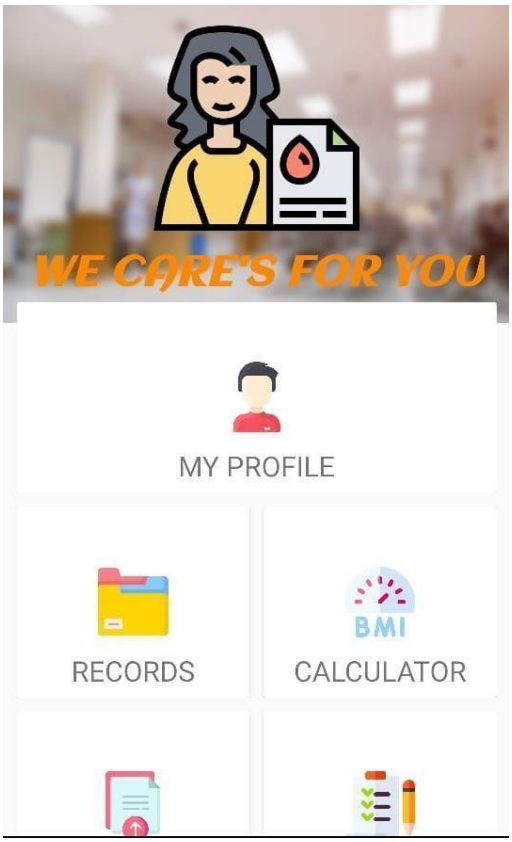
Signup Page

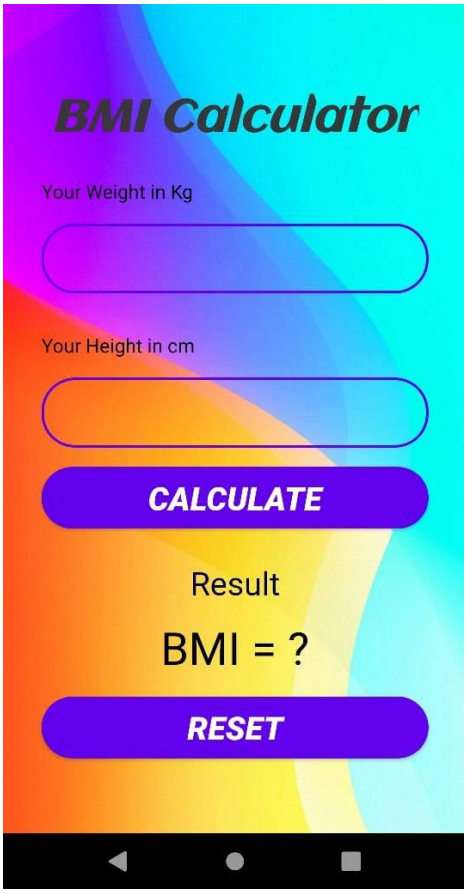
Sign in Page

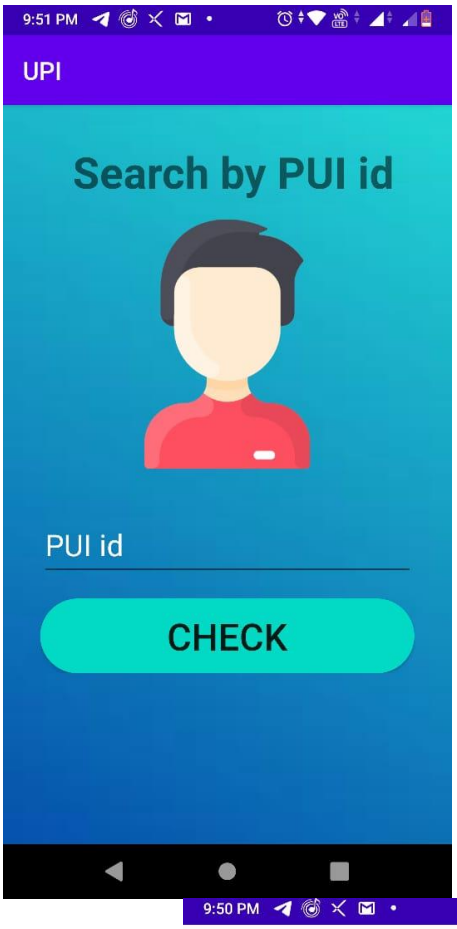


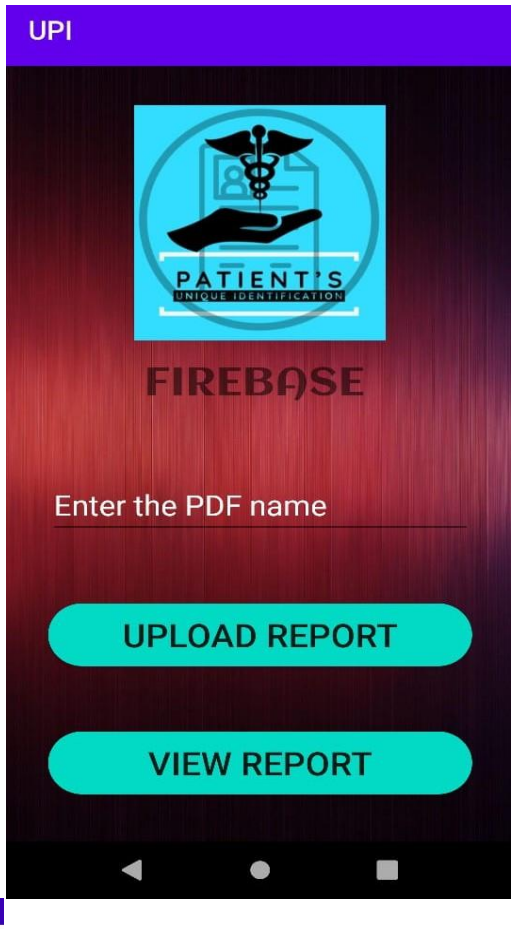
Main Dashboard

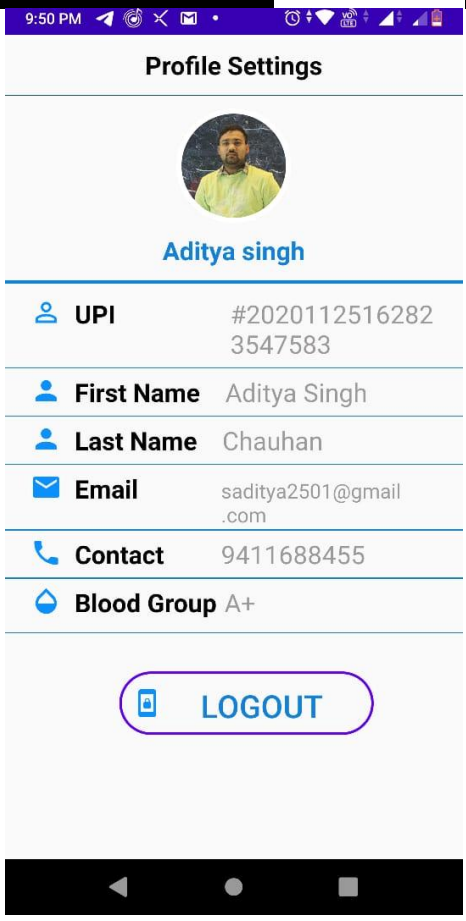

WE CARE'S FOR YOU
MY PROFILE
RECORDS
BMI
CALCULATOR
UPLOAD RECORDS
TO DO


WE CARE'S FOR YOU
MY PROFILE
RECORDS
BMI
CALCULATOR


BMI Calculator
Your Weight in Kg
Your Height in cm
CALCULATE
Result
BMI = ?
RESET


9:51 PM
UPI
Search by PUI id
PUI id
CHECK

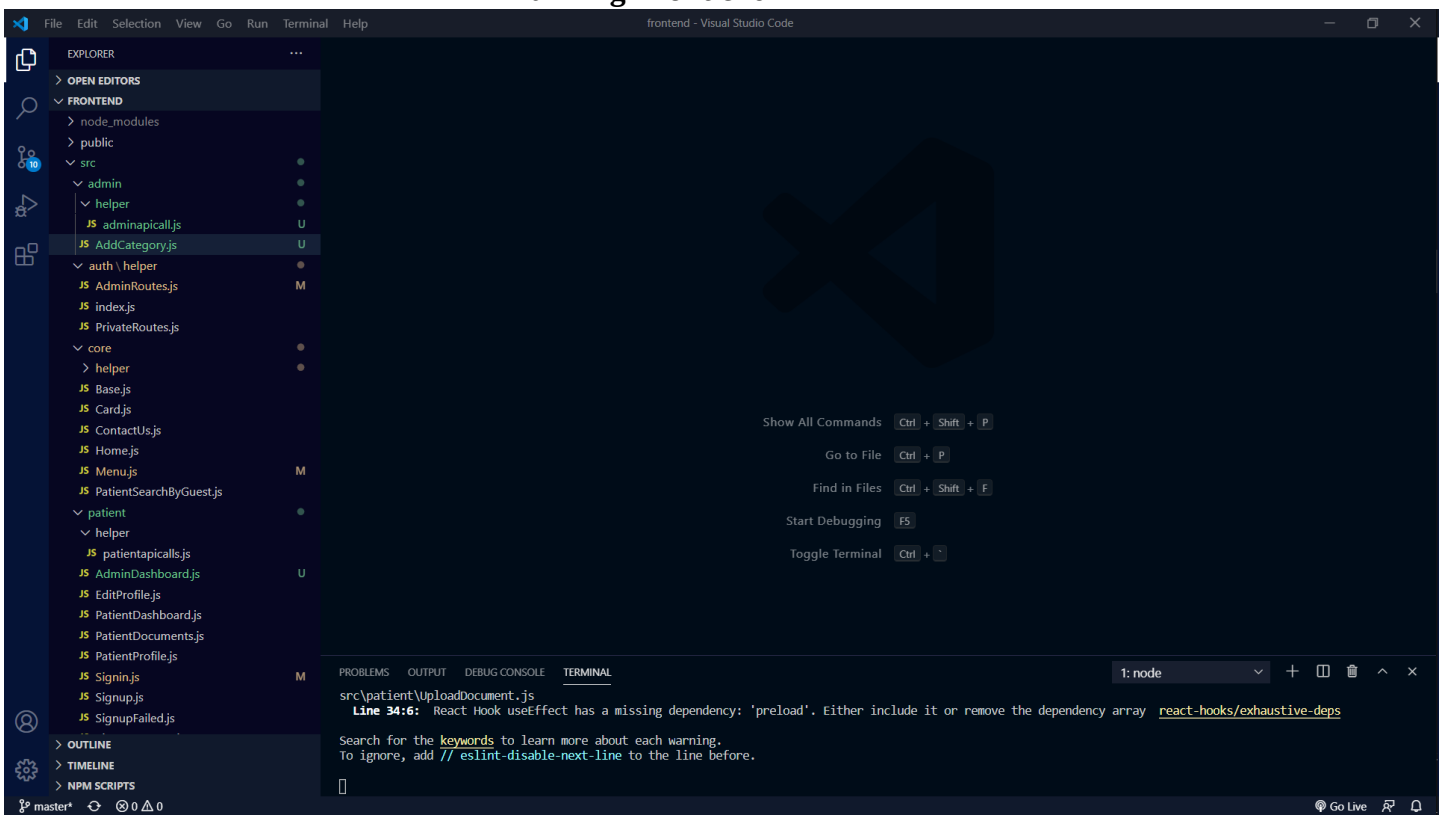

UPI
PATIENT'S
UNIQUE IDENTIFICATION
FIREBASE
Enter the PDF name
UPLOAD REPORT
VIEW REPORT


9:50 PM
Profile Settings
Aditya singh
UPI
#2020112516282
3547583
First Name
Aditya Singh
Last Name
Chauhan
Email
saditya2501@gmail
.com
Contact
9411688455
Blood Group
A+
LOGOUT

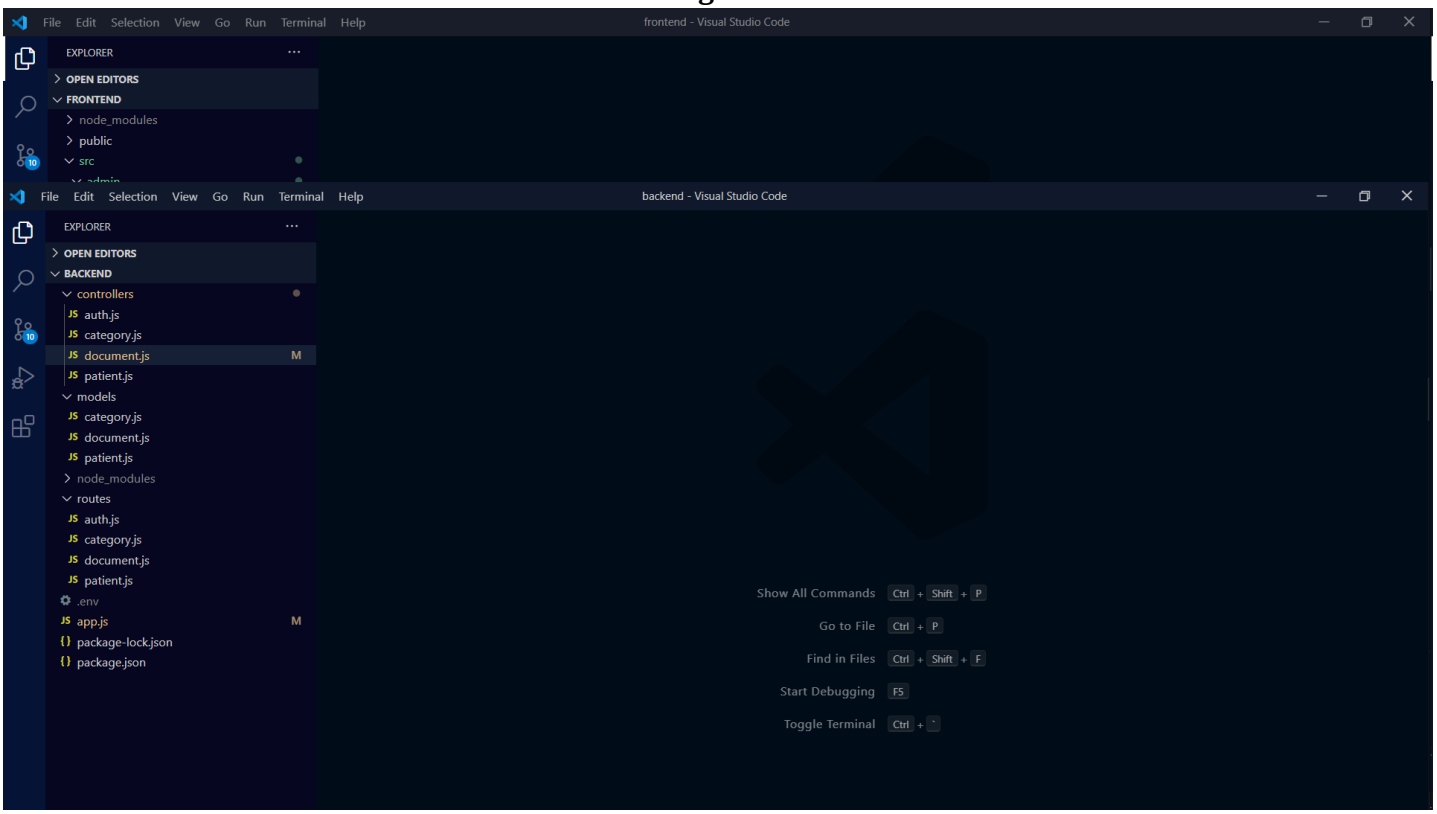
Webpage based Portal:

Successfully linked Project with MongoDB Cloud Storage (MongoDB Atlas): -

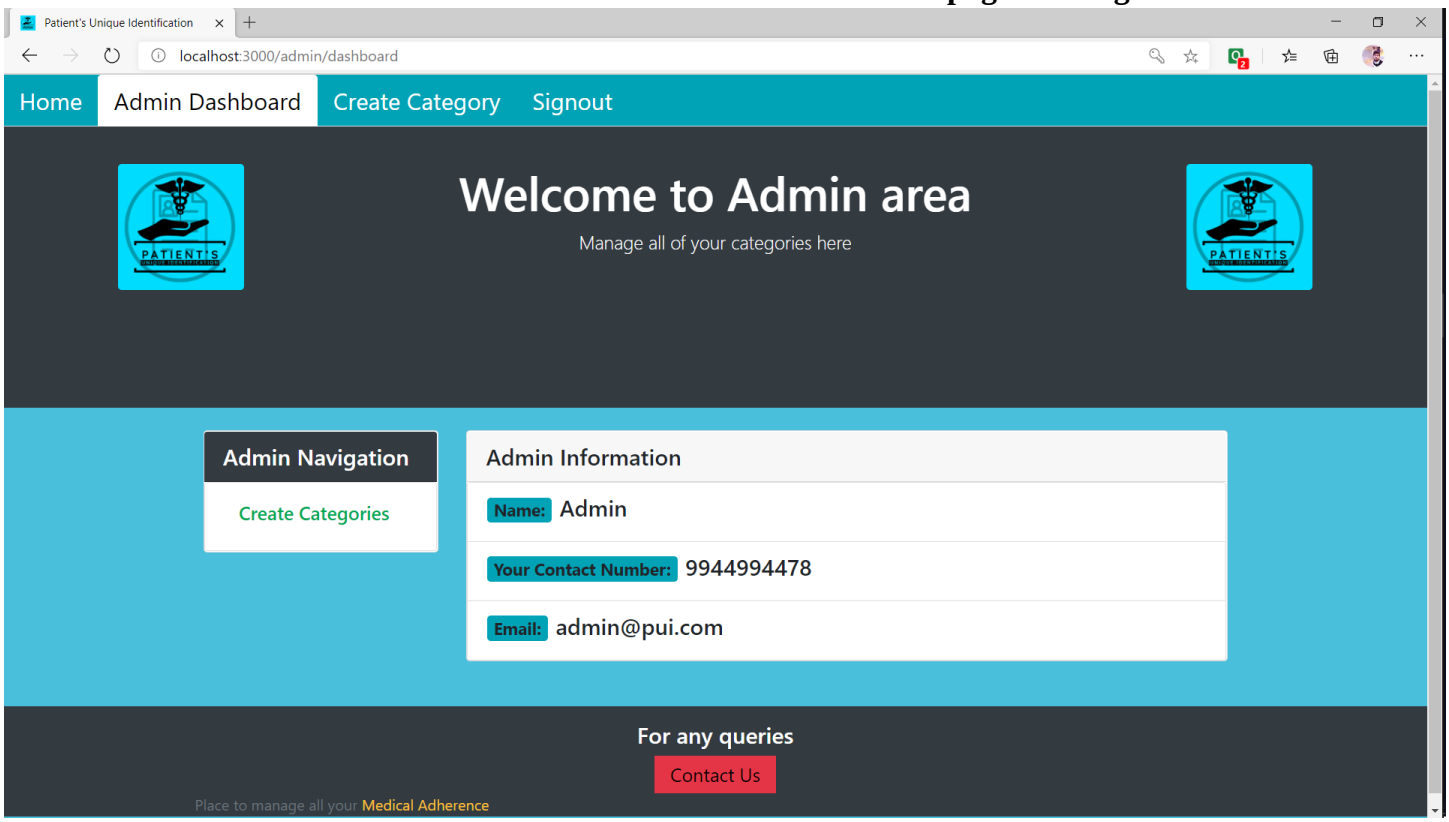
Running Front end



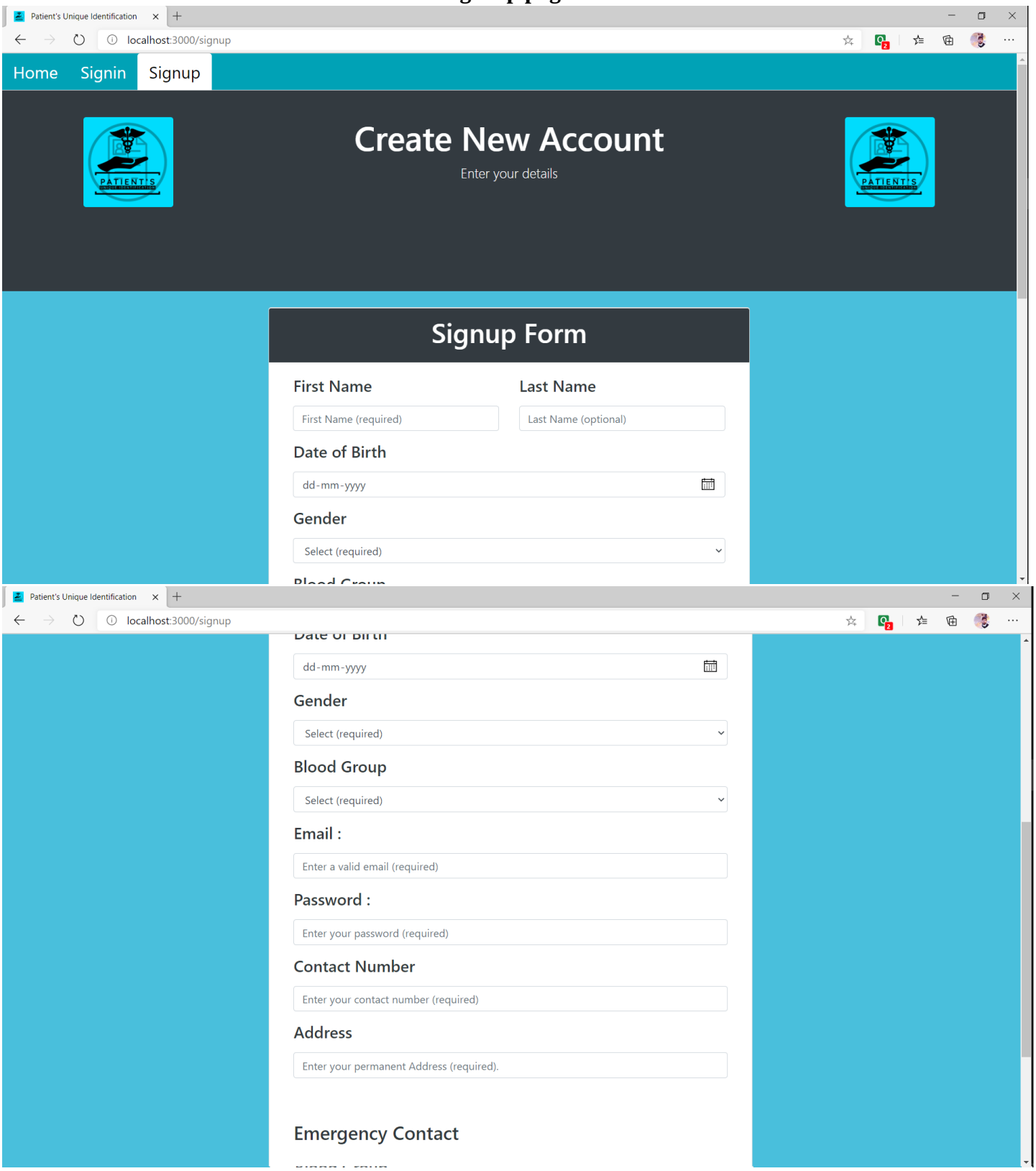
Running Backend

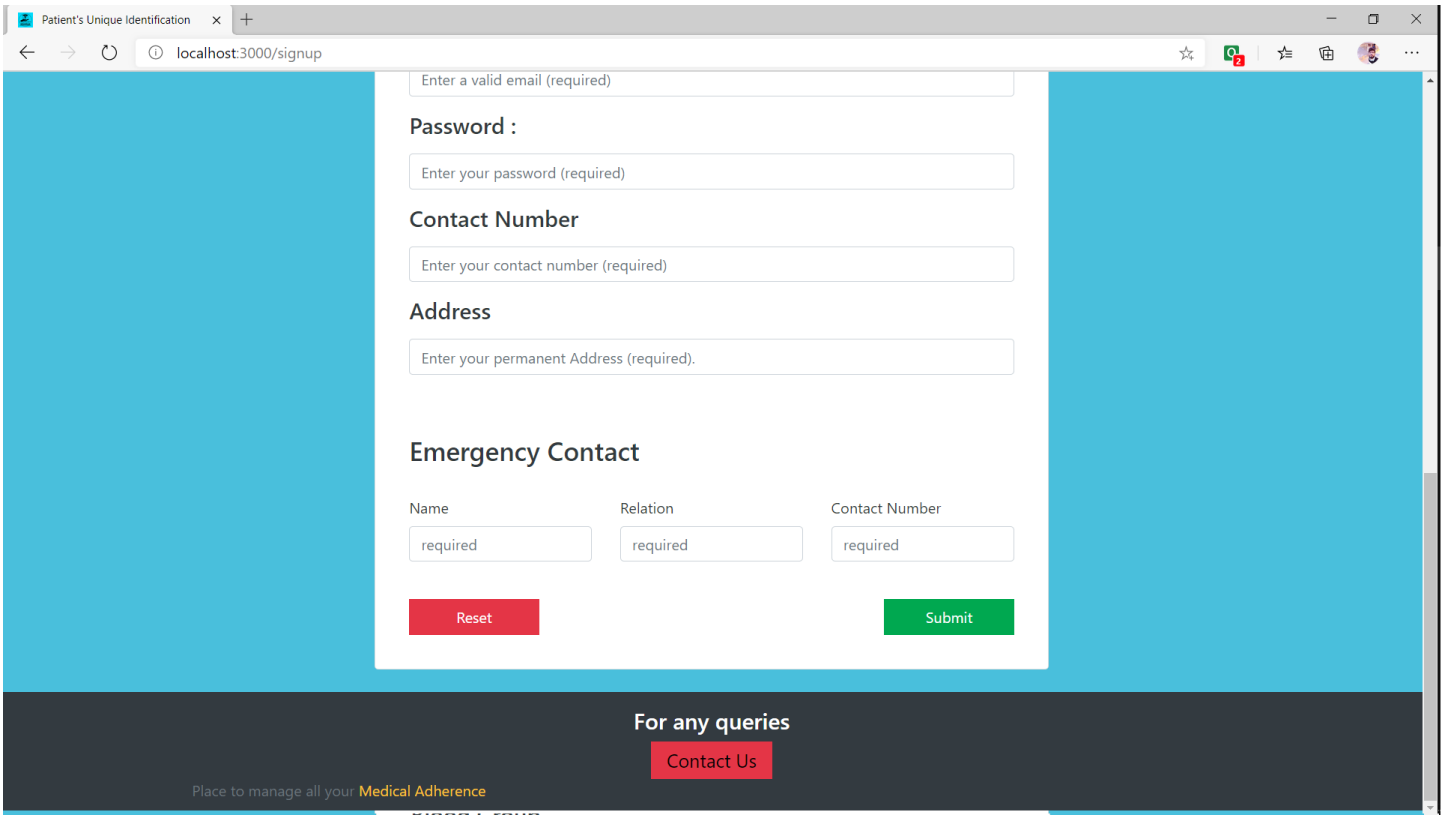


Admin Dashboard - Admin will be redirected to this page after sign in

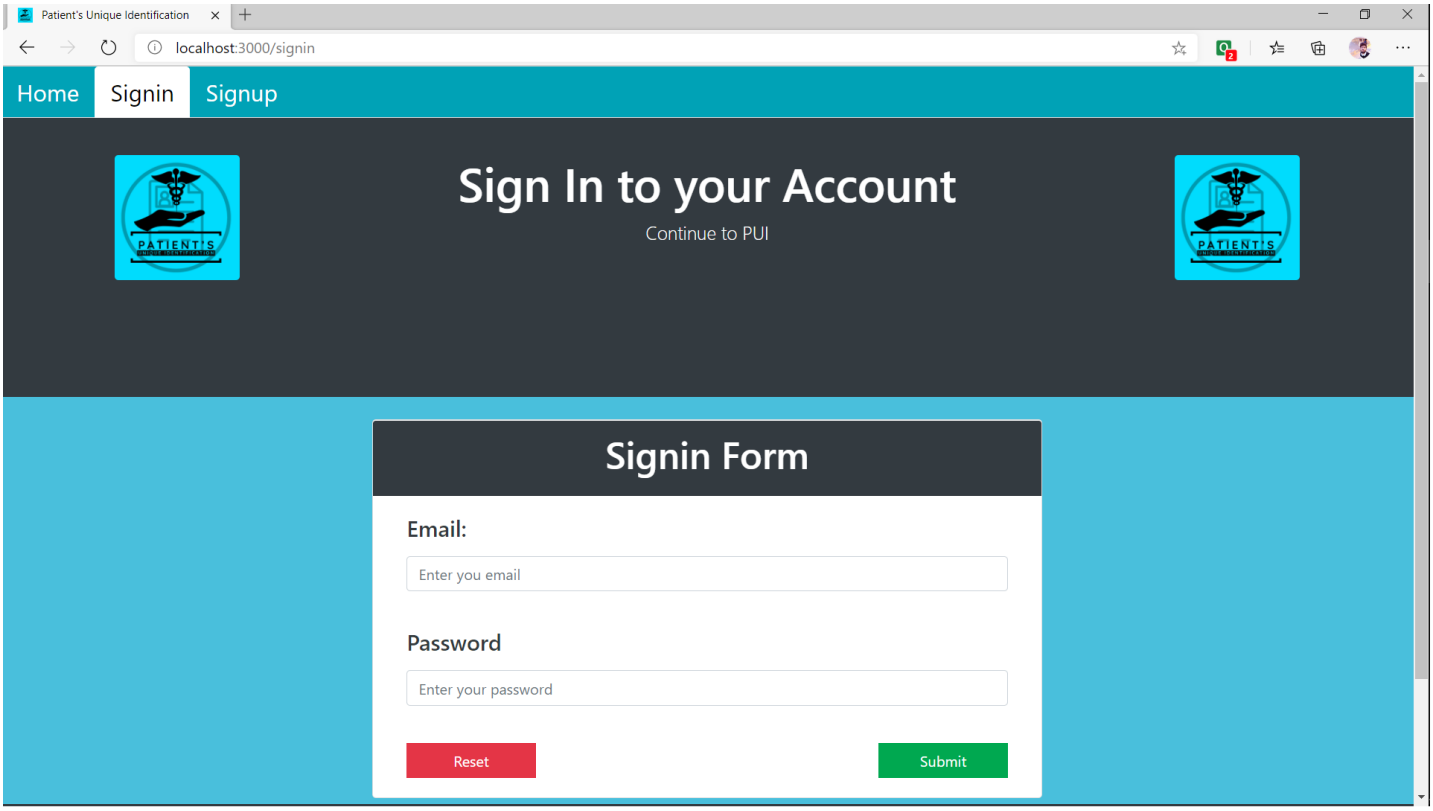


Sign Up page

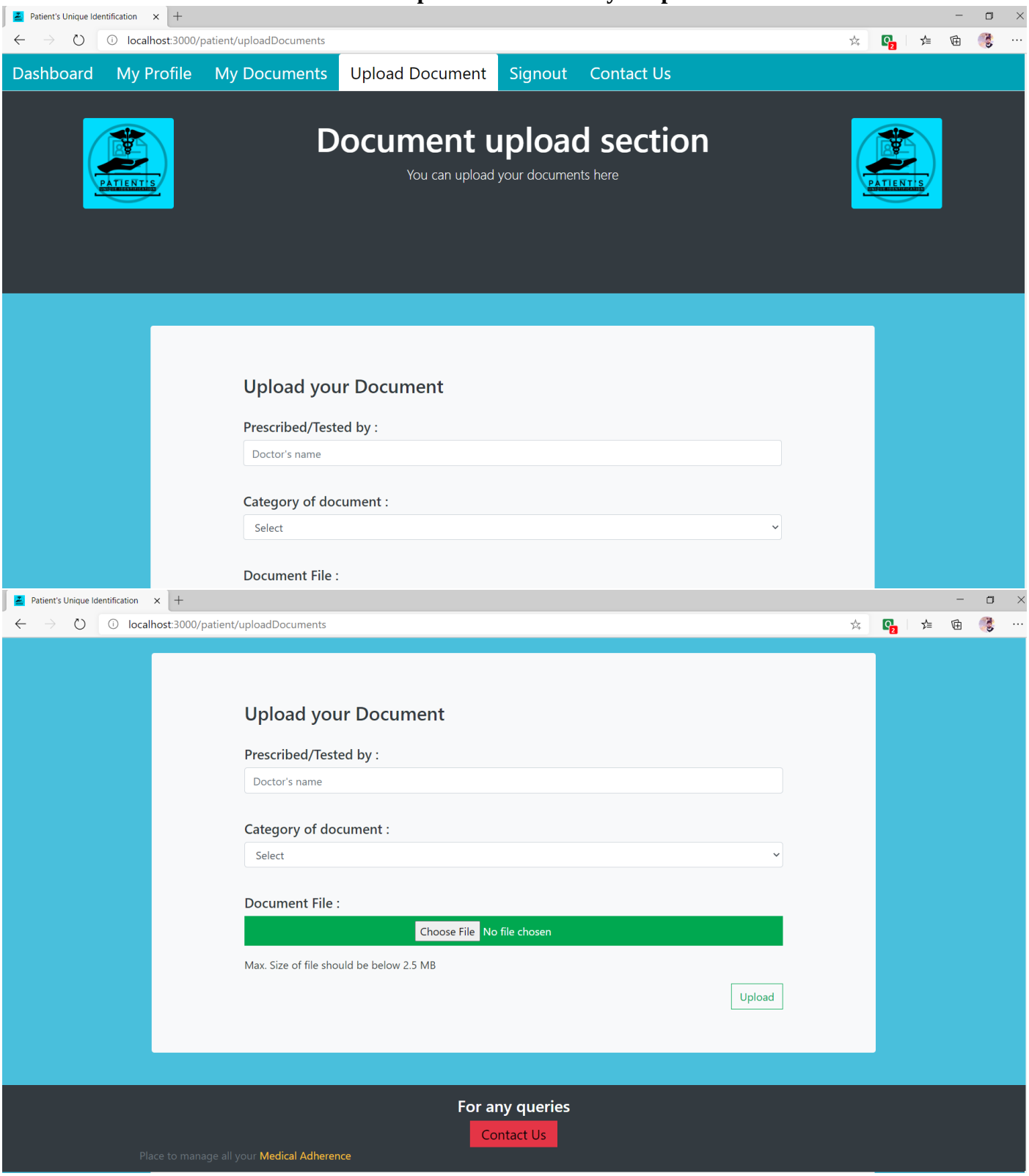

Patient's Unique Identification
localhost:3000/signup
Home
Signin
Signup
Create New Account
Enter your details
Signup Form
First Name
First Name (required)
Last Name
Last Name (optional)
Date of Birth
dd-mm-yyyy
Gender
Select (required)
Blood Group
Select (required)
Email :
Enter a valid email (required)
Password :
Enter your password (required)
Contact Number
Enter your contact number (required)
Address
Enter your permanent Address (required).
Emergency Contact

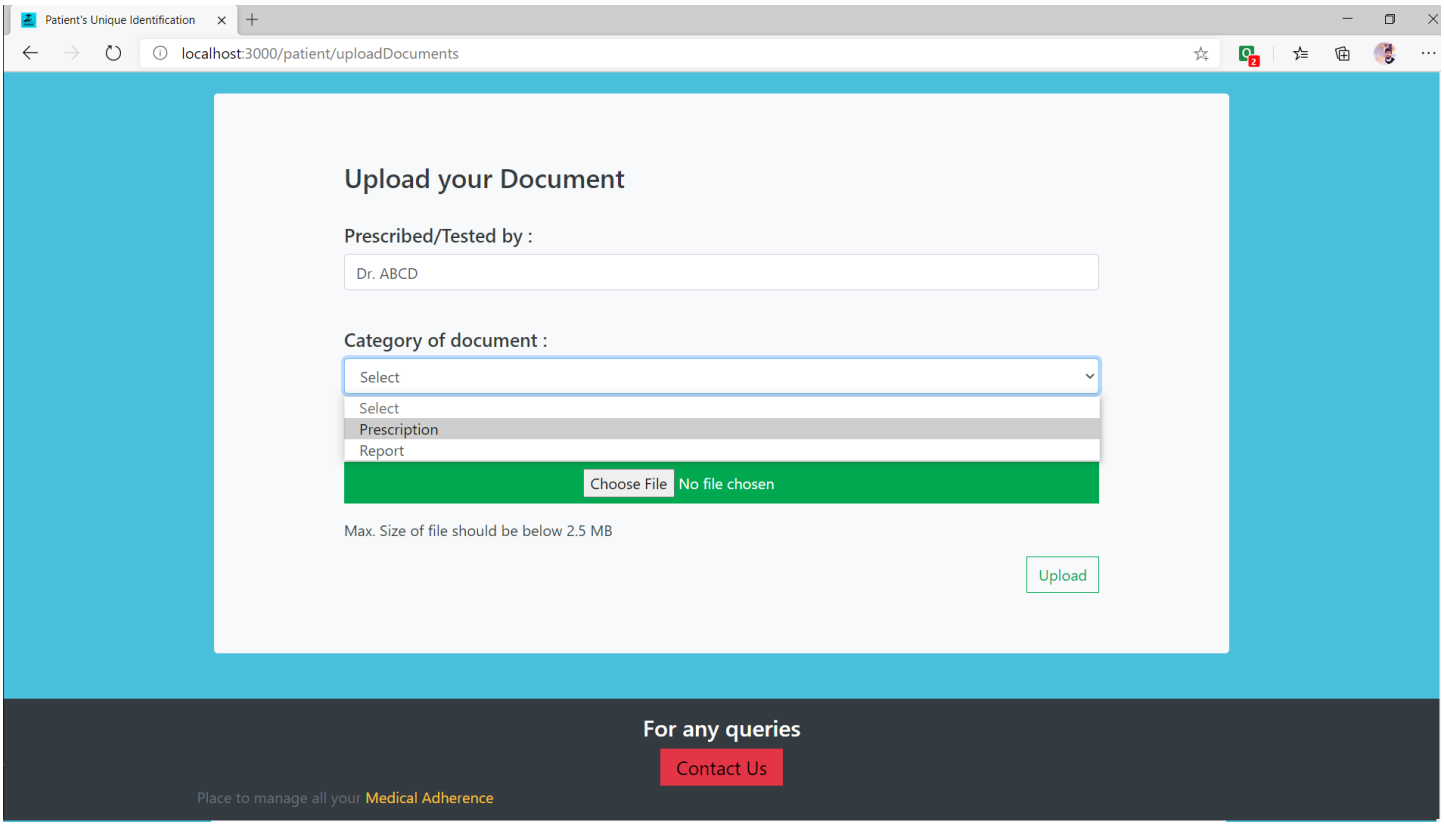

Patient's Unique Identification
localhost:3000/signup
Enter a valid email (required)
Password :
Enter your password (required)
Contact Number
Enter your contact number (required)
Address
Enter your permanent Address (required).
Emergency Contact
Name
Relation
Contact Number
required
required
required
Reset
Submit
For any queries
Contact Us
Place to manage all your Medical Adherence

SignIn Page

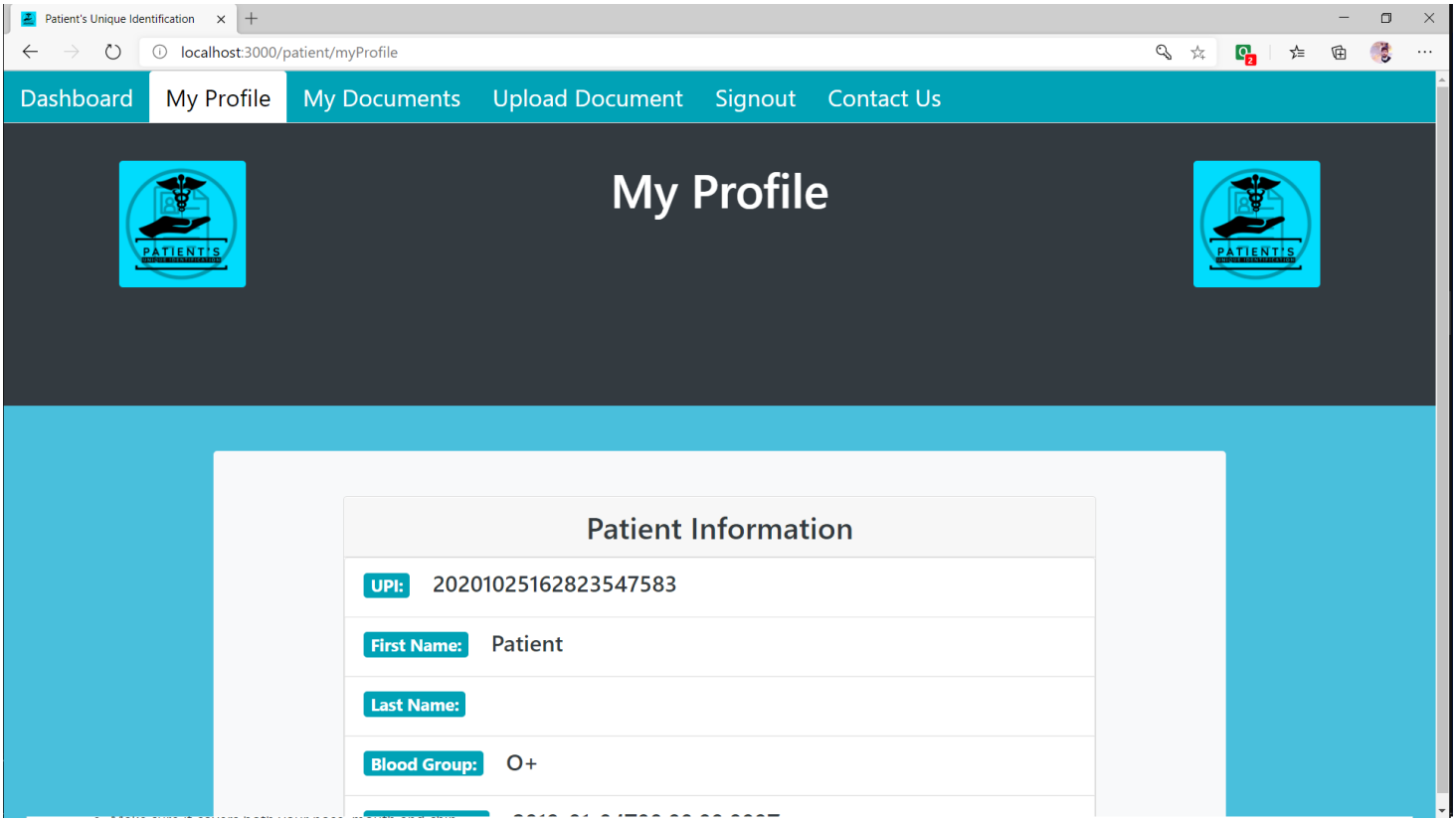

Patient's Unique Identification
localhost:3000/signin
Home
Signin
Signup
Sign In to your Account
Continue to PUI
Signin Form
Email:
Enter you email
Password
Enter your password
Reset
Submit

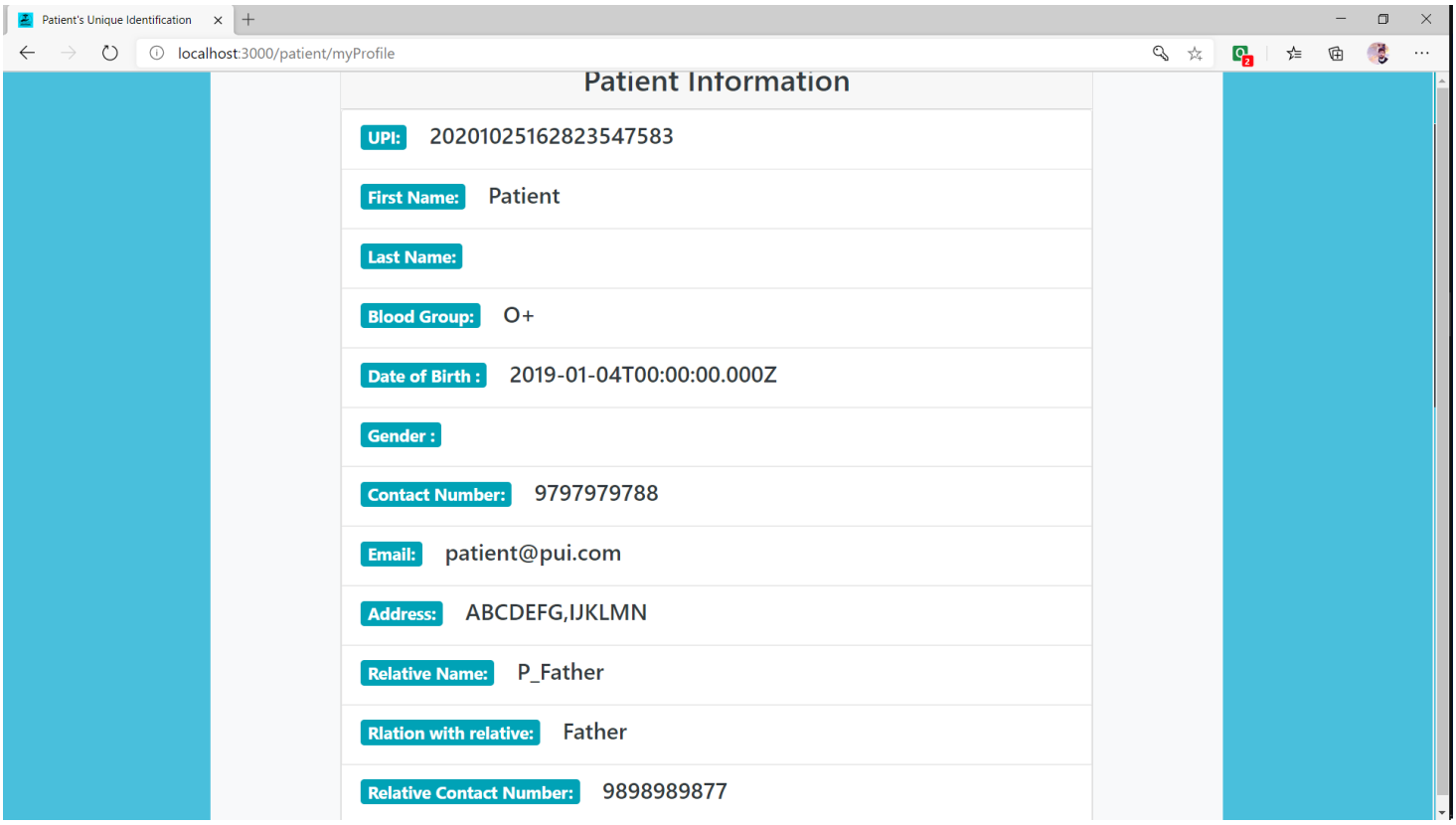
Section to upload documents by the patient

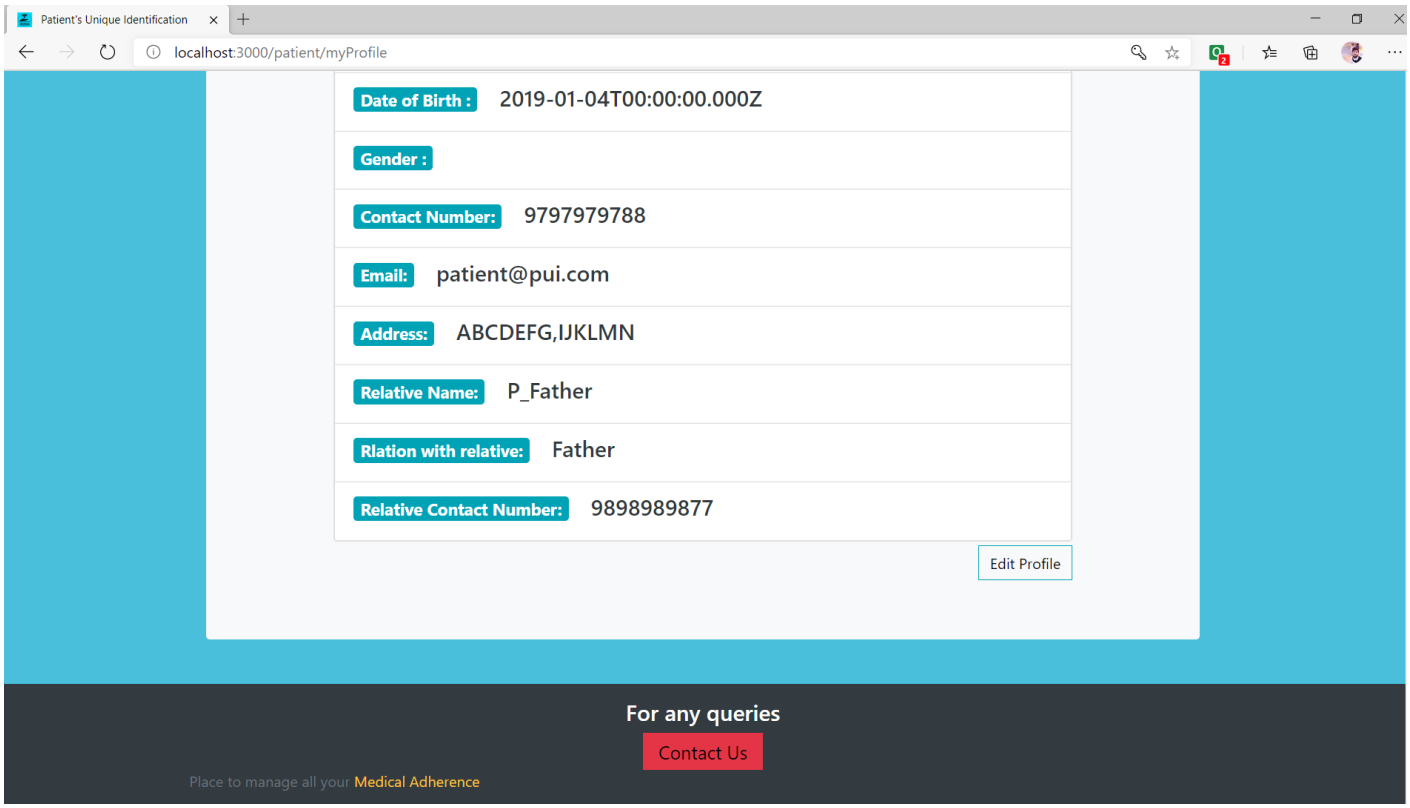



Patient's Unique Identification
localhost:3000/patient/uploadDocuments
Upload your Document
Prescribed/Tested by :
Dr. ABCD
Category of document :
Select
Select
Prescription
Report
Choose File
No file chosen
Max. Size of file should be below 2.5 MB
Upload
For any queries
Contact Us
Place to manage all your Medical Adherence

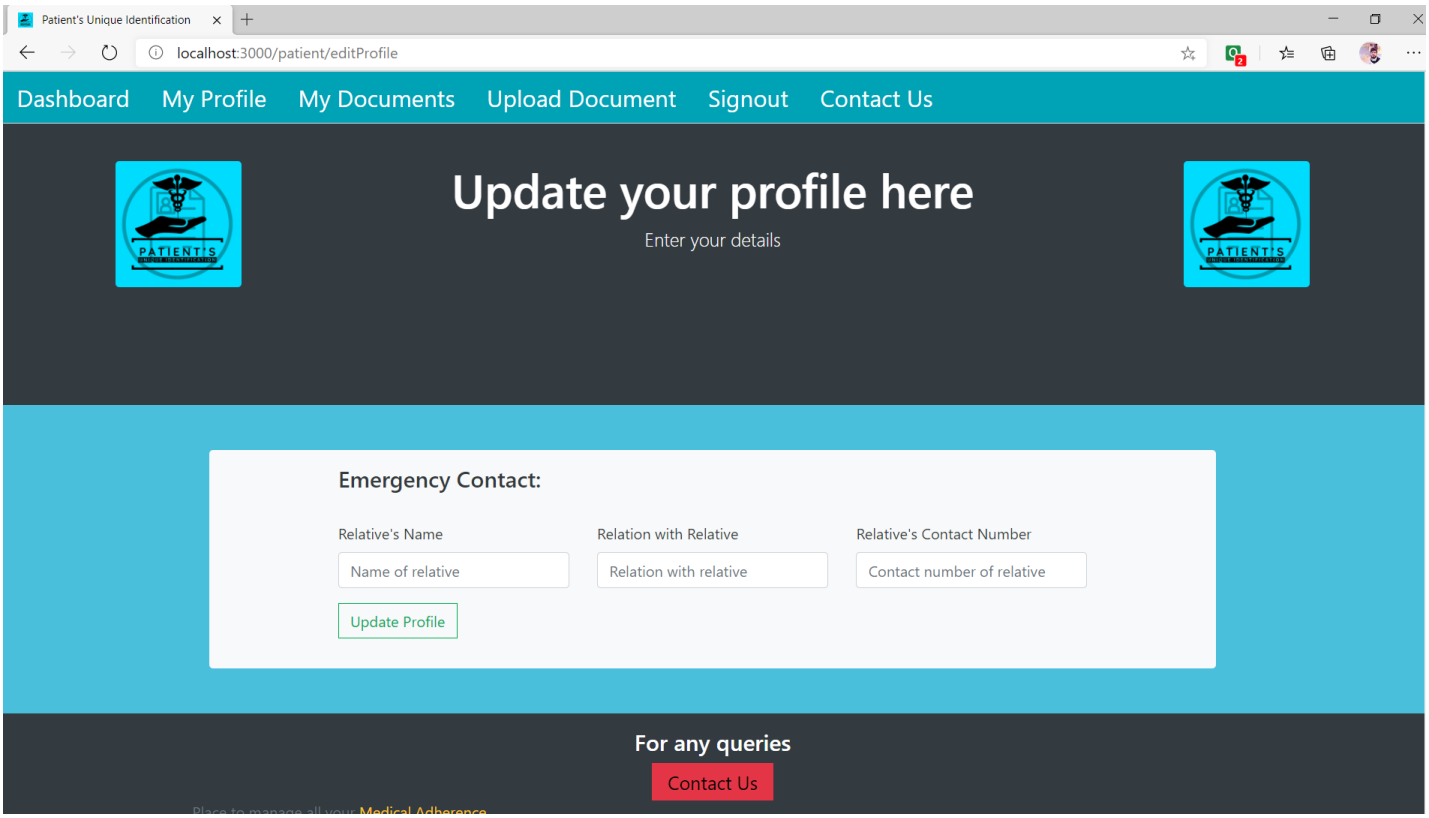
Patient Profile



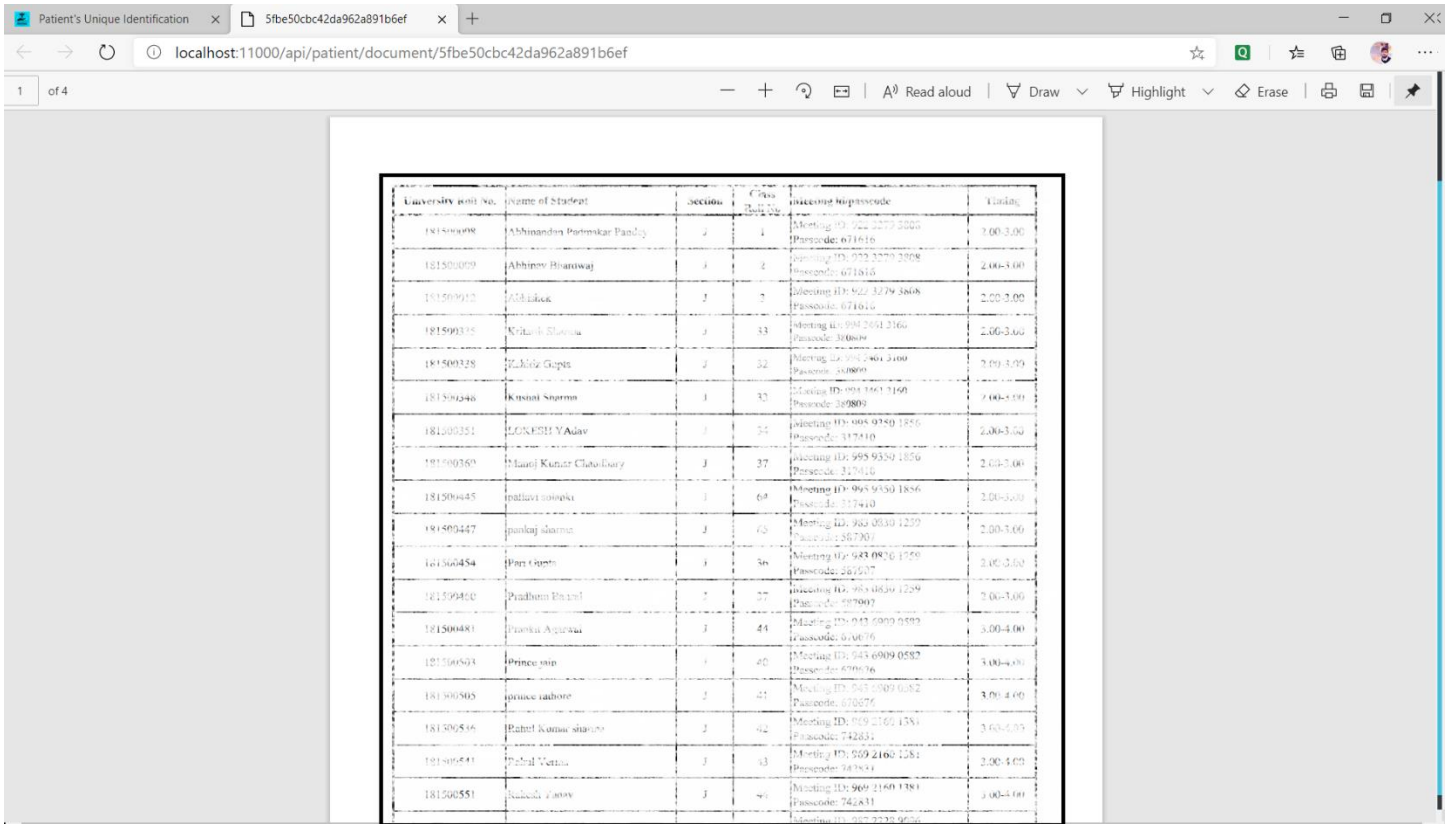



Patient's Unique Identification
localhost:3000/patient/myProfile
Date of Birth : 2019-01-04T00:00:00.000Z
Gender :
Contact Number: 9797979788
Email: patient@pui.com
Address: ABCDEFG,IJKLMN
Relative Name: P_Father
Ration with relative: Father
Relative Contact Number: 9898989877
Edit Profile
For any queries
Contact Us
Place to manage all your Medical Adherence

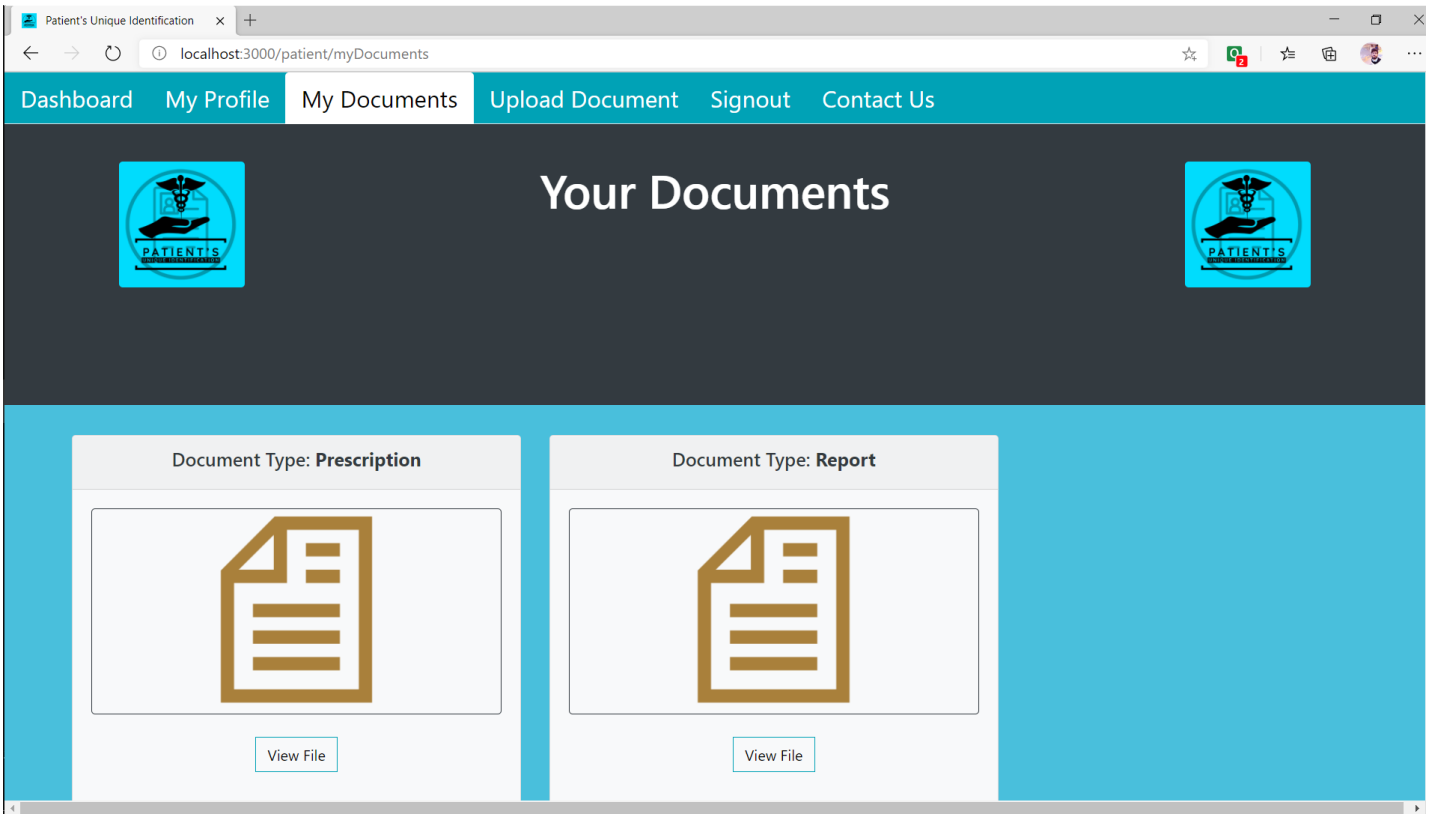
Section to edit Emergency Contact Details



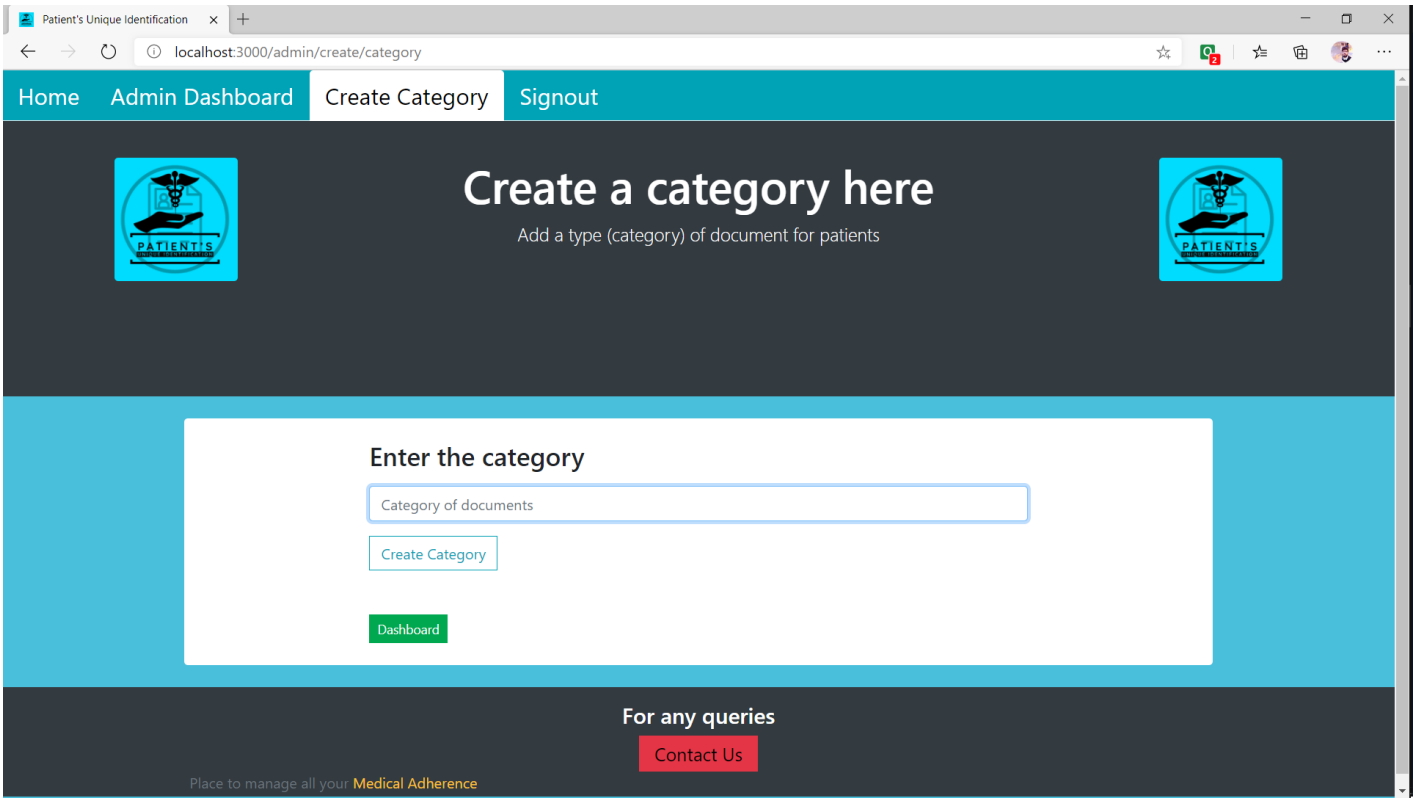
Uploaded PDF will open in new

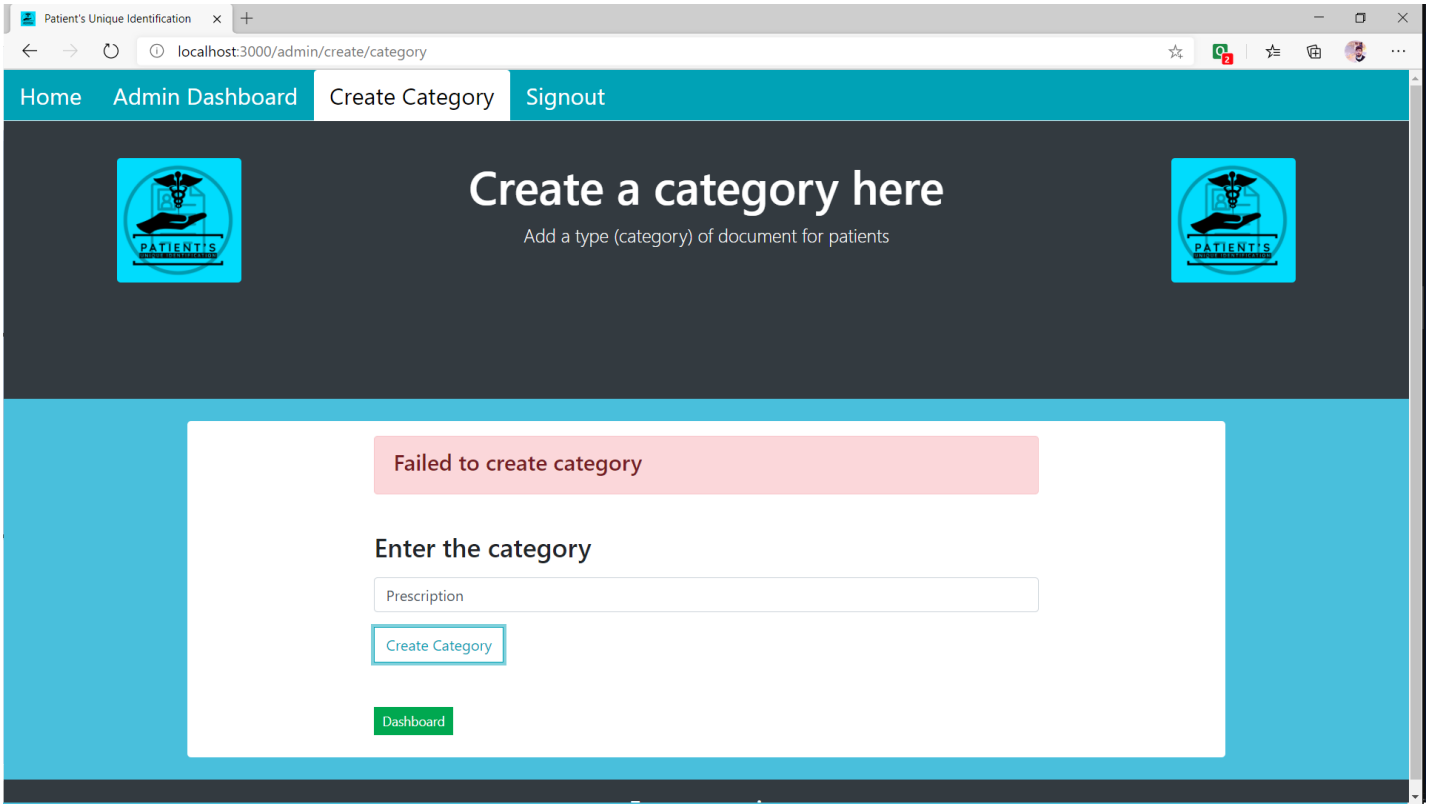


tab

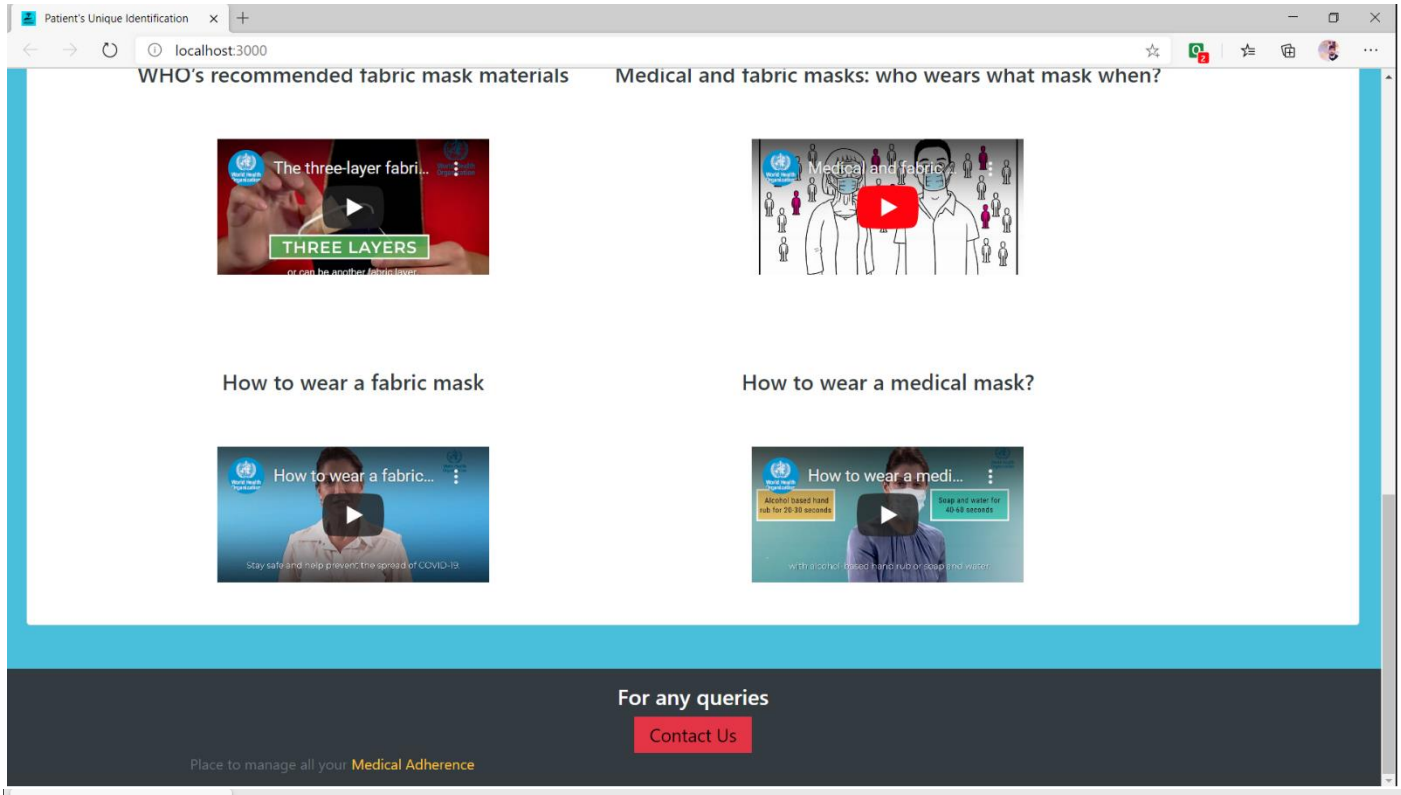

Patient's Unique Identification
localhost:3000/patient/myDocuments
Dashboard
My Profile
My Documents
Upload Document
Signout
Contact Us
Your Documents
Document Type: Prescription
View File
Document Type: Report
View File

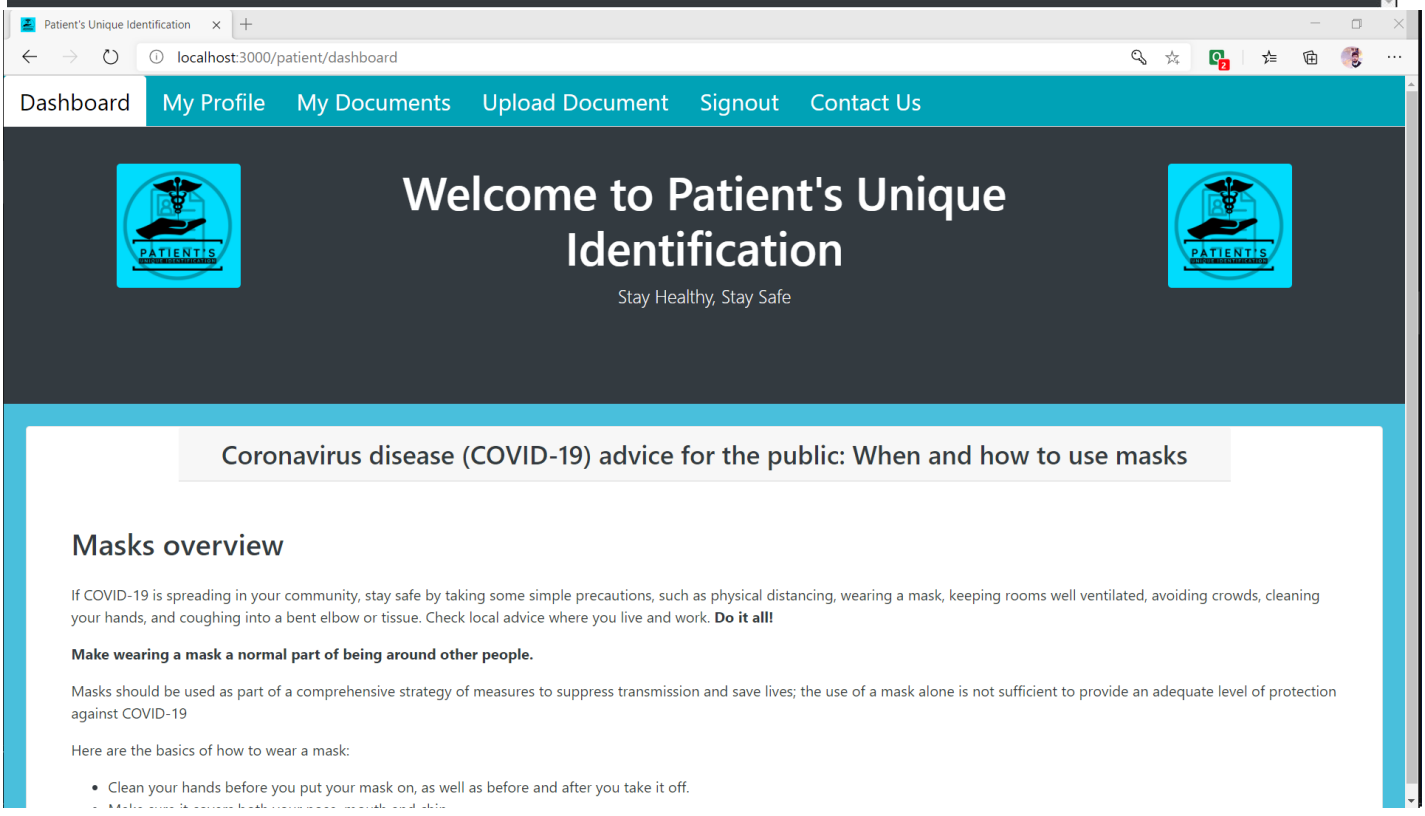
Page to create new category of documents in system

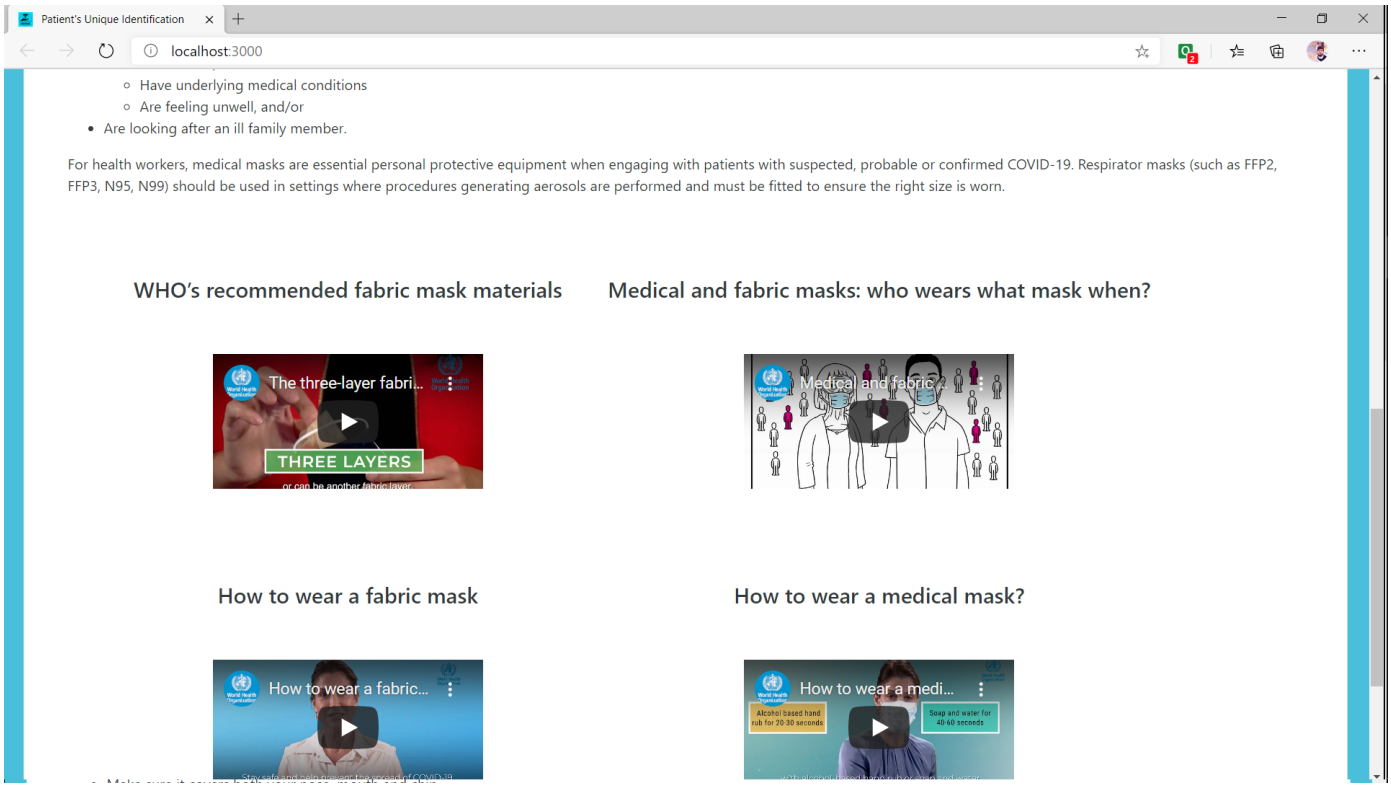




Home


Patient's Unique Identification
localhost:3000
WHO's recommended fabric mask materials
Medical and fabric masks: who wears what mask when?
The three-layer fabri...
THREE LAYERS
Medical and fabric...
How to wear a fabric mask
How to wear a medical mask?
How to wear a fabric...
Stay safe and help prevent the spread of COVID-19
How to wear a medi...
Alcohol based hand rub for 20-30 seconds
Soap and water for 40-60 seconds
For any queries
Contact Us
Place to manage all your Medical Adherence


Patient's Unique Identification
localhost:3000/patient/dashboard
Dashboard
My Profile
My Documents
Upload Document
Signout
Contact Us
Welcome to Patient's Unique Identification
Stay Healthy, Stay Safe
Coronavirus disease (COVID-19) advice for the public: When and how to use masks
Masks overview
If COVID-19 is spreading in your community, stay safe by taking some simple precautions, such as physical distancing, wearing a mask, keeping rooms well ventilated, avoiding crowds, cleaning your hands, and coughing into a bent elbow or tissue. Check local advice where you live and work. Do it all!
Make wearing a mask a normal part of being around other people.
Masks should be used as part of a comprehensive strategy of measures to suppress transmission and save lives; the use of a mask alone is not sufficient to provide an adequate level of protection against COVID-19
Here are the basics of how to wear a mask:
Clean your hands before you put your mask on, as well as before and after you take it off.


Patient's Unique Identification
localhost:3000
Have underlying medical conditions
Are feeling unwell, and/or
Are looking after an ill family member.
For health workers, medical masks are essential personal protective equipment when engaging with patients with suspected, probable or confirmed COVID-19. Respirator masks (such as FFP2, FFP3, N95, N99) should be used in settings where procedures generating aerosols are performed and must be fitted to ensure the right size is worn.
WHO's recommended fabric mask materials
The three-layer fabri...
THREE LAYERS
Medical and fabric masks: who wears what mask when?
Medical and fabric...
How to wear a fabric mask
How to wear a fabric...
How to wear a medical mask?
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Alcohol based hand rub for 20-30 seconds
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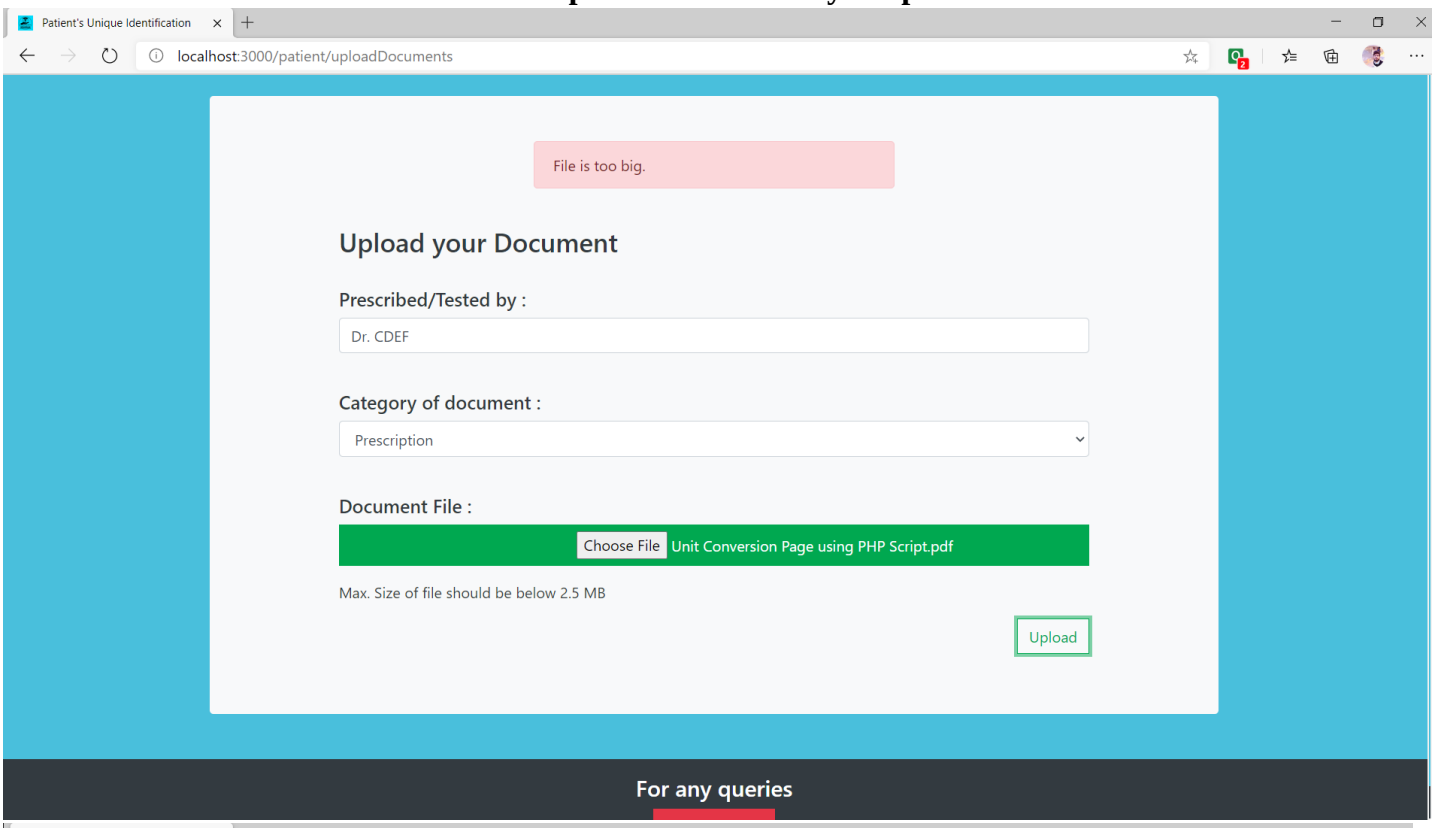
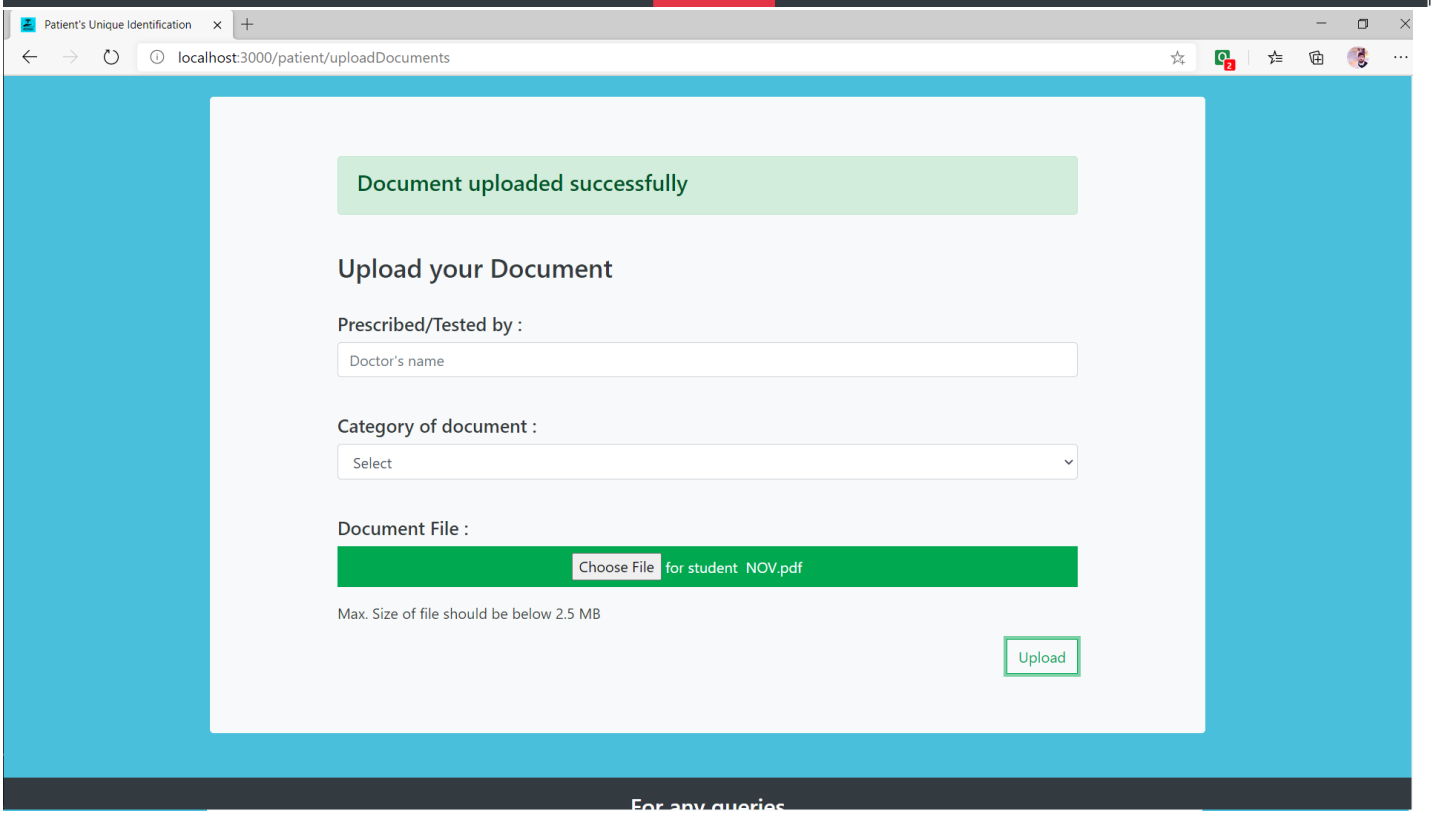
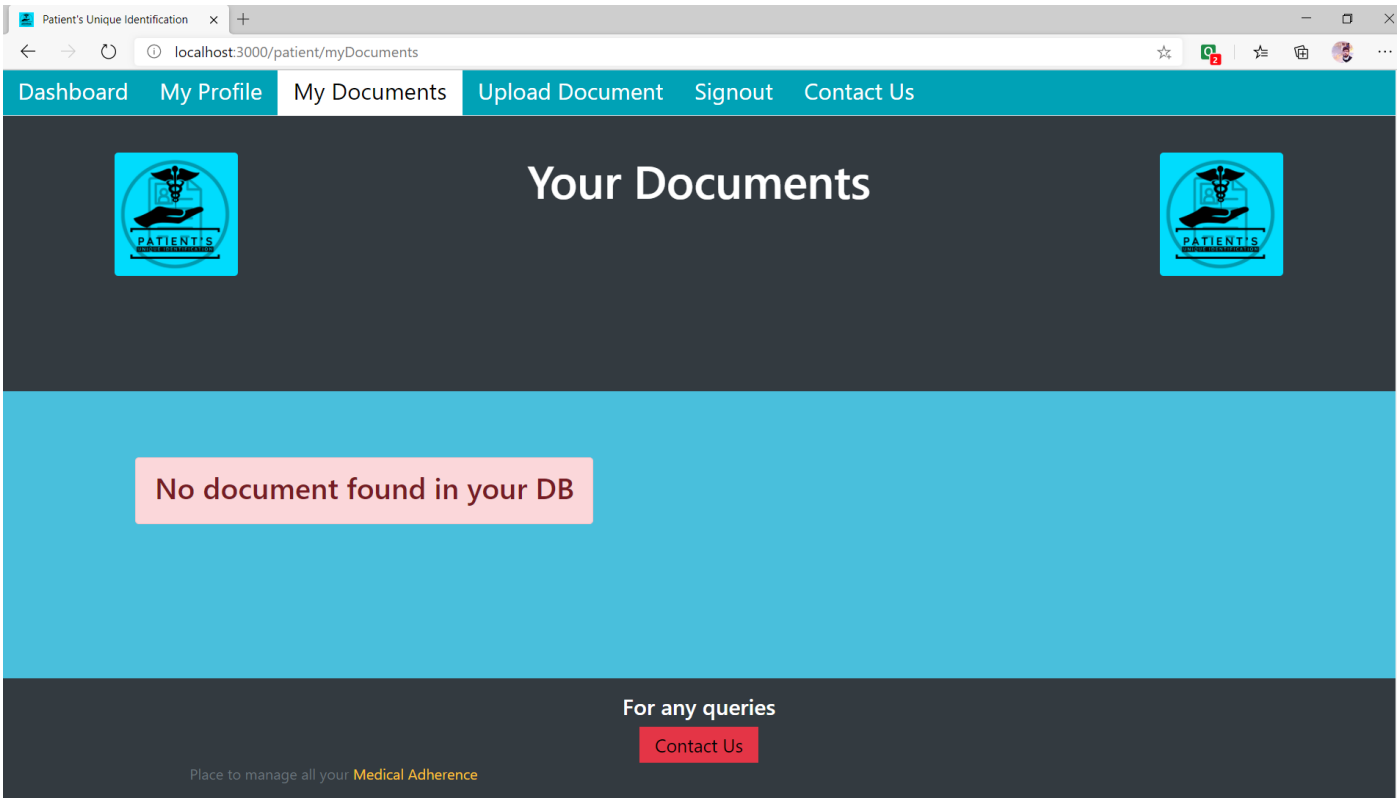
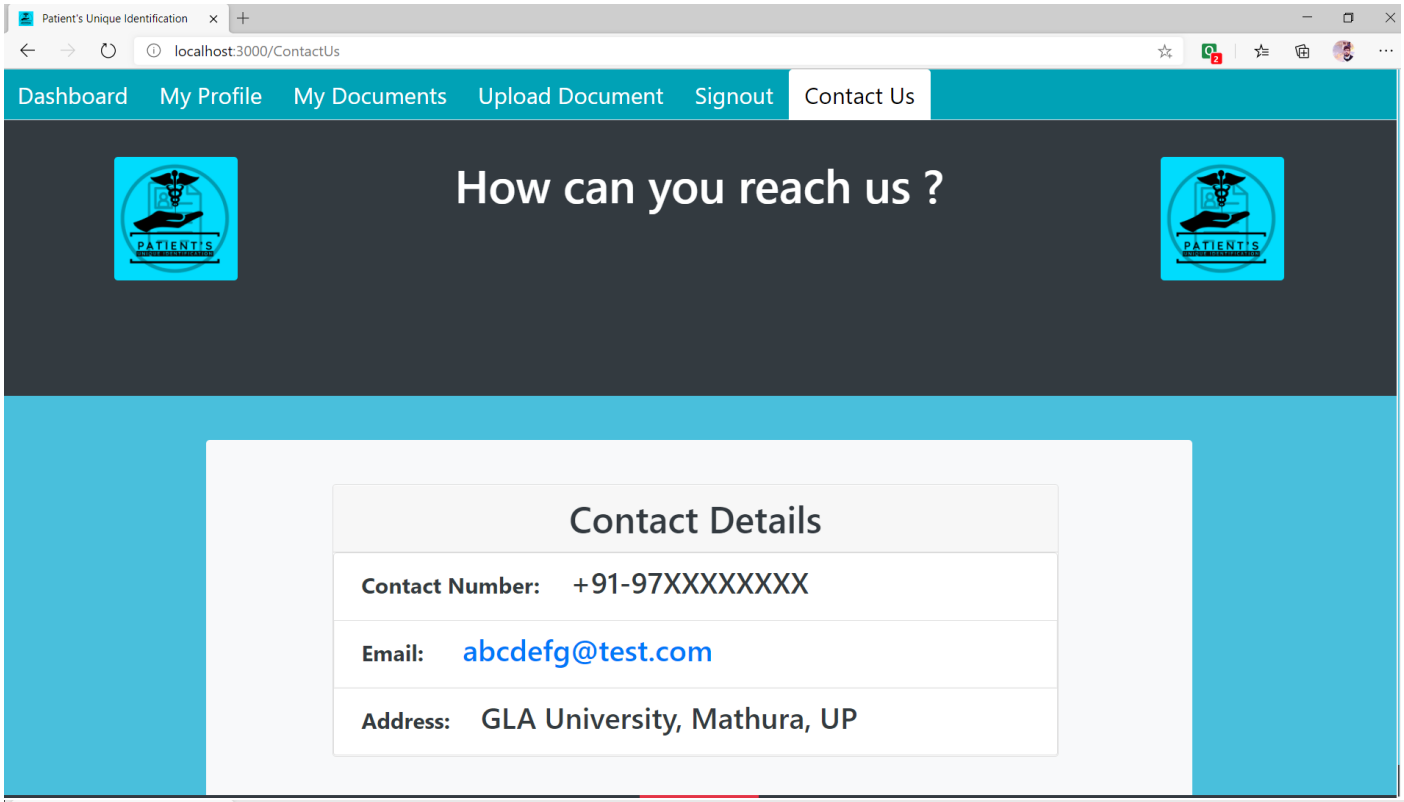
Section to upload documents by the patient

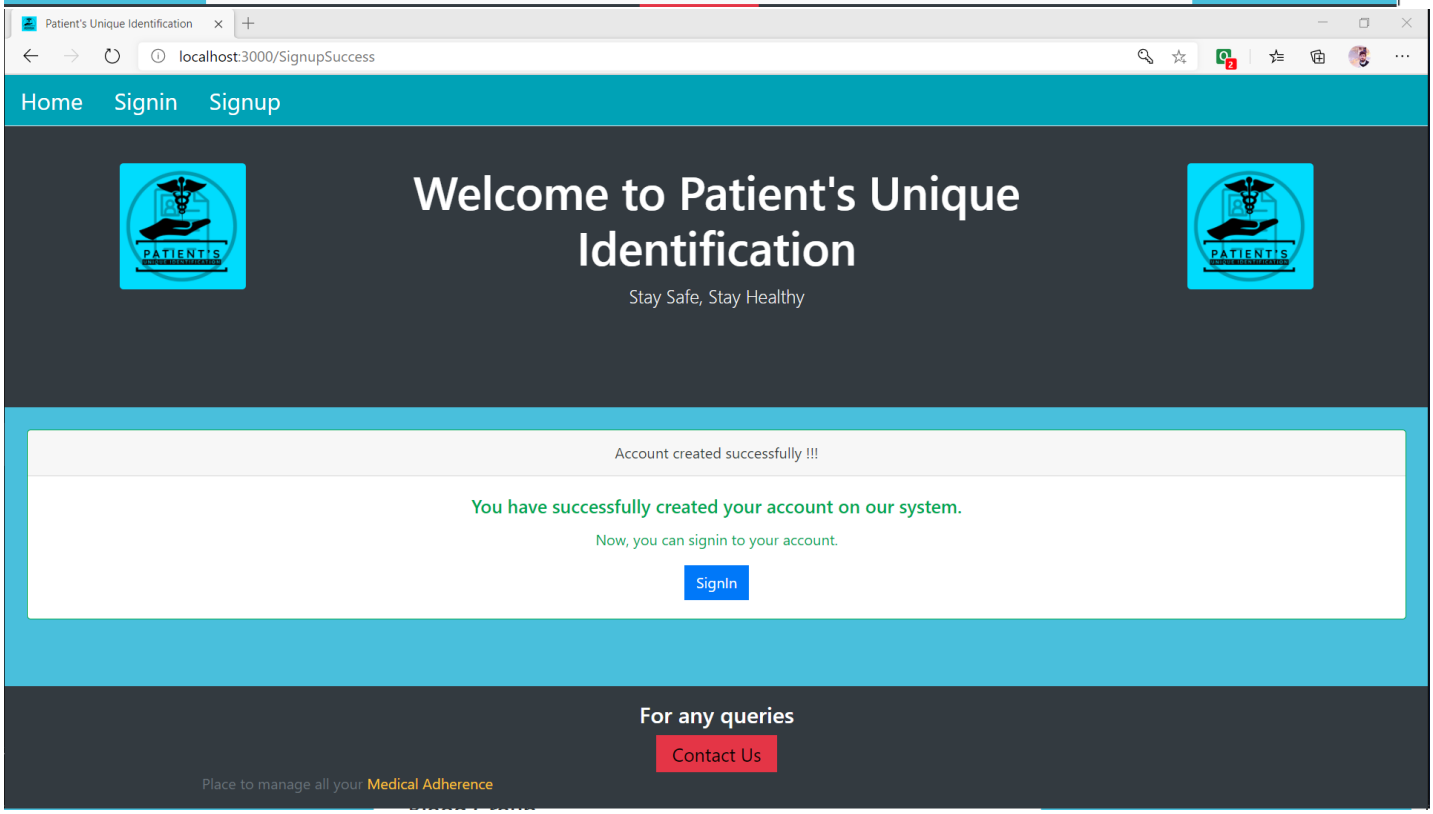





Patient's Unique Identification
localhost:3000/patient/myDocuments
Dashboard
My Profile
My Documents
Upload Document
Signout
Contact Us
Your Documents
No document found in your DB
For any queries
Contact Us
Place to manage all your Medical Adherence

Contact us


Patient's Unique Identification
localhost:3000/ContactUs
Dashboard
My Profile
My Documents
Upload Document
Signout
Contact Us
How can you reach us ?
Contact Details
Contact Number: +91-97XXXXXXXX
Email: abcdefg@test.com
Address: GLA University, Mathura, UP


Patient's Unique Identification
localhost:3000/SignupSuccess
Home
Signin
Signup
Welcome to Patient's Unique Identification
Stay Safe, Stay Healthy
Account created successfully !!!
You have successfully created your account on our system.
Now, you can signin to your account.
SignIn
For any queries
Contact Us
Place to manage all your Medical Adherence