INSTITUTE FOR ADVANCED COMPUTING AND

SOFTWARE DEVELOPMENT

AKURDI, PUNE

Documentation On

"Hospital Management System"

E-DAC MAY 2021

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Table of Contents

List of Figures

List Table Structures

1 Introduction

In this system we can store patients health records. In the existing system patient records are maintained manually by pen and paper. It is difficult to find the historical data of patients by using existing system. We overcome this issue in our system, also we are providing the facility of booking appointments to save the patients time.

1.1 Document Purpose

This document explains the requirement and scope for developing Hospital management system. The real power of this project lies in the creation of tighter relationships with common people and delivering of a high level of service and support, which in turn improves hospital management and its goodwill. In this system we can maintain the history of patient and which is very important for everyone's health.

Using this system we can save the patients time.

1.2 Product Scope

In the coming time this project can be extended to a larger community/area rather than a small group of people of a particular area.

We can also implement this project in future on a larger scale, this will help to have a digital records of the patients medical history and will help to store data with high security.
Keeping challenges in mind, HMS was built from scratch to provide a solution by bringing convenience, predictability and quality together in the Indian healthcare ecosystem. HMS is unique in its approach to simplify doctor discovery and ease of booking and access.

1.3 Aims & Objectives

1) Our vision is to simplify healthcare by making quality healthcare more accessible, affordable and convenient

2) Digital visibility of doctors. : Aware of the need to bring in digitization to improve patient experience, at the same time ensuring that quality healthcare is delivered. It was important to provide a digital platform for millions of patients visiting the hospital

3). Ease of booking and access:- Healthcare has been one of the largest industries in India with a potential of growing up to $372Bn by 2022. Smartphone penetration has been on the rise and all the industries, including healthcare, have been working to make their services available with a click.

4). The two-fold objective of HMS is to ensure:

   a) Excellent experience for our patients by minimizing their waiting time

   b) Excellent experience for our partners by maximizing their utilization of time

2 Overall Description

<u>The Appointment:-</u>

You have to book an appointment of the doctor using website check the hospital after that select doctor as per your requirement then check the slots of the doctor. Book appointment as per your convenience and his availability.

<u>Hospital:-</u>

The selected hospital checks the data provided and confirms the appointment. A Govt ID is later used for identification at the hospital.

<u>Patients:-</u>

Patients use the this website to obtain information and make appointments in dedicated hospital. During book a appointment, the patient select the hospital that is most convenient for them and choose a suitable appointment from the overview of available appointments.

<u>Data storage:-</u>

(a) The Client shall ensure that all information which comprises personal data under any relevant data protection legislation will be collected, used and disclosed to HMS in accordance with applicable data protection and privacy regulations including, without limitation, the Personal Data Protection Act 2012 ("PDPA") of Singapore.

(b) The Client agrees that HMS may collect, use and disclose the Client's personal data that the Client provides to us in connection with the Agreement for the purpose of our administration and performance of our obligations under the Agreement including but not limited to case analysis, internal management, information storage, compliance and any internal communications within the HMS group.

2.1 Users and Characteristics:

Admin:

- Add new hospital /Delete hospital /Update hospital
- View hospital list
- To view only patient details
- To view only doctor details
- Web dashboard handling

Hospital:

- Add / Delete /Update reception or doctor
- To see patient history
- To view patient bill
- To view appointment history
- Update self profile

Reception:
- View the Status of an appointment
- Take an appointment
- Cancel the appointment
- Check previous medical history
- Check bill status

Doctor:
- Approve appointment
- Check patient history
- Consult patient
- Give prescription

Patient:
- Register/login
- Feel appointment form
- After confirmation consulting by doctor
- Get prescription
- Pay bill

2.2Operating Environment:

Server Side:

Processor: Intel® Xeon® processor 3500 series
HDD: Minimum 500GB Disk Space
RAM: Minimum 2GB OS: Windows 8.1, Linux 6 Database: Mysql

Client Side (minimum requirement)

Processor: Intel Dual Core
HDD: Minimum 80GB Disk Space
RAM: Minimum 1GB
OS: Windows 7, Linux

3 Specific Requirement.

3.1   External Interface Requirements:

3.1.2 User Interfaces:

All the users will see the same page when they enter in this website.All the users can see the websites different component like Home,about us.There is login and register button asks the users a username and a password and other information for registration.

After being authenticated by correct username and password, user will be redirect to their corresponding profile where they can do various activities.

The user interface will be simple and consistence, using terminology commonly understood by intended users of the system. The system will have simple interface, consistence with standard interface, to eliminate need for user training of infrequent users.

3.1.3 Hardware Interfaces:

No extra hardware interfaces are needed.

The system will use the standard hardware and data communication resources.

This includes, but not limited to, general network connection at the server/hosting site, network server and network management tools.

3.1.4 Application Interfaces:

OS: Windows 10

 Web Browser:

The system is a web-based application; clients need a modern web browser such as Mozilla Firebox, Internet Explorer, Opera, and Chrome. The computer must have an Internet connection in order to be able to access the system.

3.1.5 Communications Interfaces:

This system uses communication resources which includes but not limited to, HTTP protocol for communication with the web browser and web server and TCP/IP network protocol with HTTP protocol.

This application will communicate with the database that holds all the booking information. Users can contact with server side through HTTP protocol by means of a function that is called HTTP Service. This function allows the application to use the data retrieved by server to fulfill the request fired by the user.
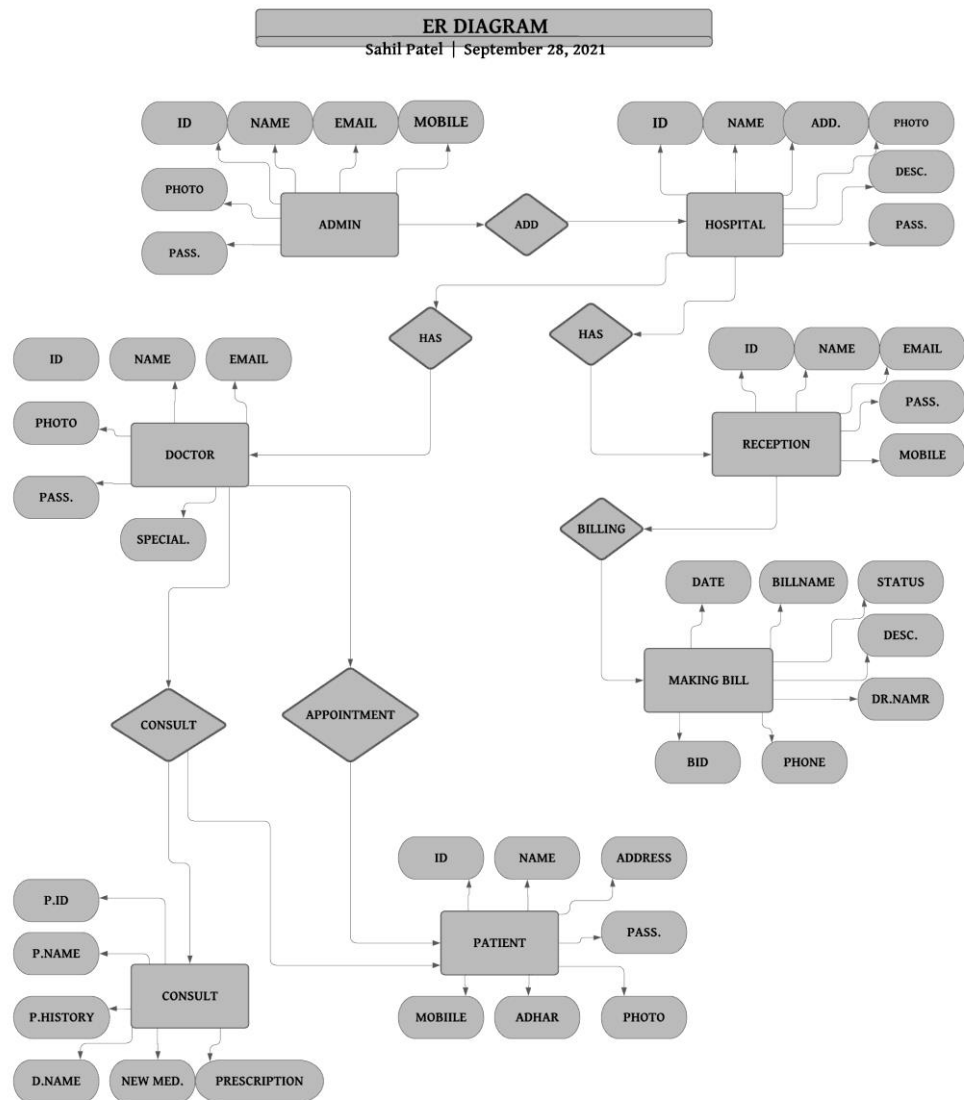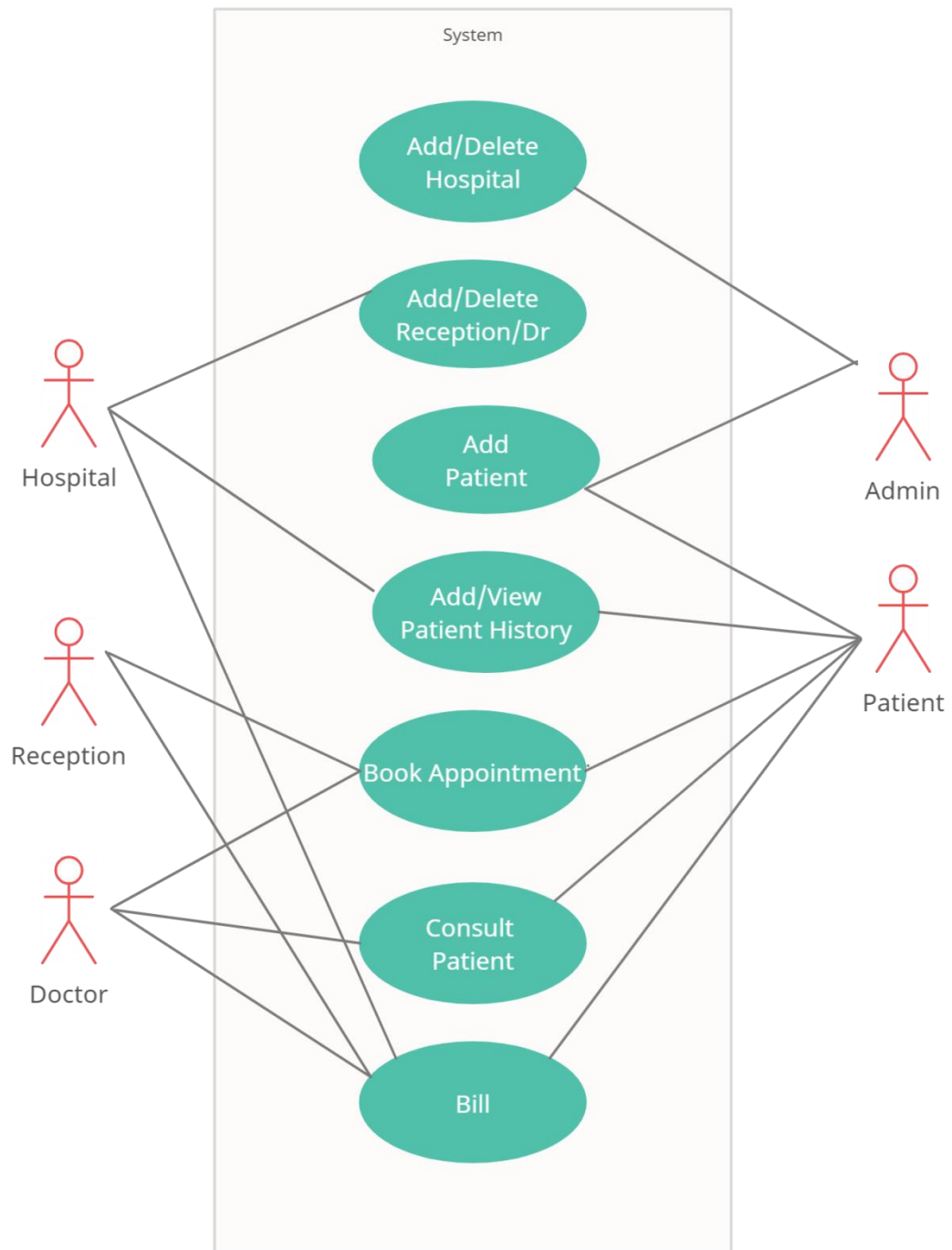
4   System Design

Figure 1 ER Diagram

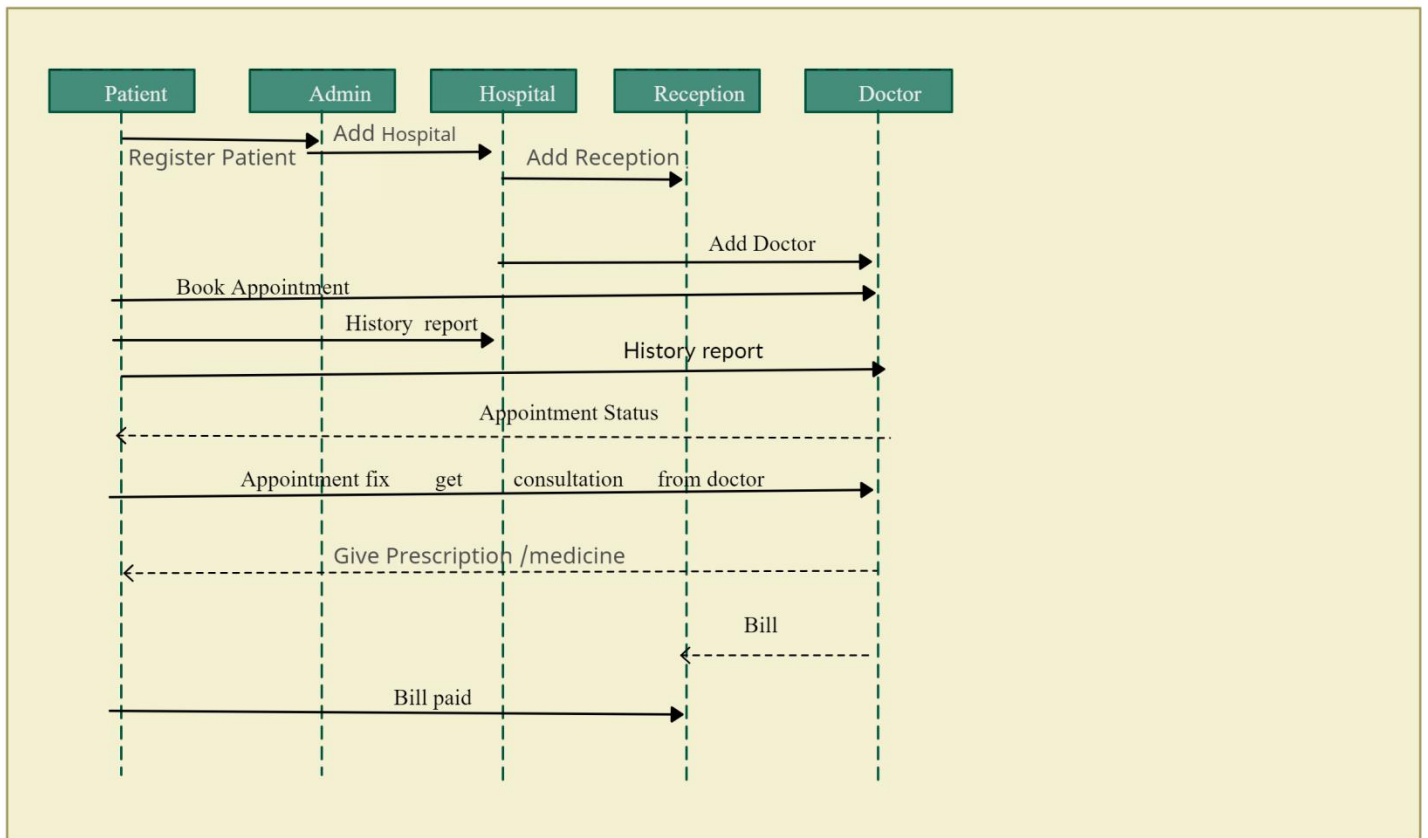*Figure 2 Usecase Diagram*

Sequence Diagram:

Figure 3 Sequence Diagram

5 Table Structure.

```
mysql> desc patient;
+----------+-------------+------+-----+---------+----------------+
| Field    | Type        | Null | Key | Default | Extra          |
+----------+-------------+------+-----+---------+----------------+
| pid      | int         | NO   | PRI | NULL    | auto_increment |
| name     | varchar(50) | YES  |     | NULL    |                |
| address  | varchar(50) | YES  |     | NULL    |                |
| adhar    | int         | YES  |     | NULL    |                |
| mobile   | int         | YES  |     | NULL    |                |
| photo    | blob        | YES  |     | NULL    |                |
| password | varchar(20) | YES  |     | NULL    |                |
+----------+-------------+------+-----+---------+----------------+
7 rows in set (0.00 sec)
```

```
mysql> desc hospital;
+----------+-------------+------+-----+---------+----------------+
| Field    | Type        | Null | Key | Default | Extra          |
+----------+-------------+------+-----+---------+----------------+
| hid      | int         | NO   | PRI | NULL    | auto_increment |
| name     | varchar(50) | YES  |     | NULL    |                |
| address  | varchar(50) | YES  |     | NULL    |                |
| email    | varchar(50) | YES  |     | NULL    |                |
| phone    | int         | YES  |     | NULL    |                |
| photo    | blob        | YES  |     | NULL    |                |
| password | varchar(20) | YES  |     | NULL    |                |
| userid   | int         | YES  |     | NULL    |                |
+----------+-------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

```
mysql> desc doctor;
+----------------+-------------+------+-----+---------+----------------+
| Field          | Type        | Null | Key | Default | Extra          |
+----------------+-------------+------+-----+---------+----------------+
| did            | int         | NO   | PRI | NULL    | auto_increment |
| name           | varchar(50) | YES  |     | NULL    |                |
| mobile         | int         | YES  |     | NULL    |                |
| specialization | varchar(50) | YES  |     | NULL    |                |
| email          | varchar(50) | YES  |     | NULL    |                |
| photo          | blob        | YES  |     | NULL    |                |
| password       | varchar(20) | YES  |     | NULL    |                |
| hid            | int         | YES  | MUL | NULL    |                |
+----------------+-------------+------+-----+---------+----------------+
8 rows in set (0.00 sec)
```

14

```
mysql> desc users;
+-----------+---------------+------+-----+----------------------+-------------------+
| Field     | Type          | Null | Key | Default              | Extra             |
+-----------+---------------+------+-----+----------------------+-------------------+
| userid    | int           | NO   | PRI | NULL                 | auto_increment    |
| name      | varchar(40)   | YES  |     | NULL                 |                   |
| email     | varchar(40)   | YES  | UNI | NULL                 |                   |
| password  | varchar(100)  | YES  |     | NULL                 |                   |
| address   | varchar(100)  | YES  |     | NULL                 |                   |
| birthdate | date          | YES  |     | NULL                 |                   |
| contact   | bigint        | YES  | UNI | NULL                 |                   |
| role      | varchar(20)   | YES  |     | _cp850\'customer\'   | DEFAULT_GENERATED |
| thumbnail | varchar(150)  | YES  |     | NULL                 |                   |
+-----------+---------------+------+-----+----------------------+-------------------+
```

```
 userid | name      | email                 | password                                                     | address | birthdate  | contact     | role      | thumbnai
--------+-----------+-----------------------+--------------------------------------------------------------+---------+------------+-------------+-----------+---------
     1  | sahil     | sahil@project.com     | $2a$12$/pWuGPESvMo.SNA5iIzHoOD7IN6Gy8quniUtFNQ.2lVFtl2zrahIi  | satara  | 1994-04-04 | 916626364   | admin     | NULL
     2  | saurabh   | saurabh@project.com   | $2a$12$u8R2utmxuKd9FUgr0uJip.lY5lQYv44q2ohjczhLRIwkC5k6tsck.  | satara  | 1995-05-03 | 915125354   | admin     | NULL
     3  | doctor    | doctor@project.com    | $2a$12$oZWx8.h1gFnegUFdUHIGSOudCdIwmVyhzBBJDxsLrnoatgbi6s4s6  | satara  | 1995-05-01 | 915111354   | doctor    | NULL
     4  | hospital  | hospital@project.com  | $2a$12$MlqSpXVm2DJtyPj7Oo3V.uhRgPX7pM5k.Y0MOB5E5pxqbmkop2mty | satara  | 1995-05-01 | 9151134354  | hospital  | NULL
     5  | patient   | patient@project.com   | $2a$12$kQHbiP9LeGCx0XvPgP3YluzDTTIKunZHmc/2/BoUy9Dt4vJGMklSG  | satara  | 1994-04-04 | 916622264   | patient   | NULL
     6  | reception | reception@project.com | $2a$12$BKuAykWtluwOovSOrSaJP.r810/x0P9tx9ewwZlEq7gDmJLcuJhg6  | satara  | 1994-04-04 | 933622264   | reception | NULL
     7  | asaas     | hsmadmin@gmail.com    | $2a$10$Vdm1KoYVeRdHPssxHwZzEuoUZP/XaPmZQPe.Ny5VOlqQSilqg7qaS  | NULL    | NULL       |        NULL | NULL      | NULL
     8  | NULL      |                       | $2a$10$CbJ99Q/bOfZ1vdQmHBbhNuP00Kx87517yCdMNpSMasKWHj5v.8Rl.  | NULL    | NULL       |        NULL | hospital  | NULL
     9  | hospital1 | newhospital@project.com | $2a$10$AH4NJA7WJ8AKY1EKYdw9r.r0GWNliosBocL2deHnmyEuJ.Mom20Fu | NULL    | NULL       |        NULL | hospital  | NULL
    10  | s1        | s1@gmail.com          | $2a$10$BjKEqG6IyVHfEENzD6MAUO9YA9WYszSpCBEteZFzrCgTFo.MYAgIy  | NULL    | NULL       |        NULL | NULL      | NULL
--------+-----------+-----------------------+--------------------------------------------------------------+---------+------------+-------------+-----------+---------
10 rows in set (0.03 sec)
```

```
mysql> select * from hospital;
+-----+-----------+----------+-------+-------+-------+----------+--------+
| hid | name      | address  | email | phone | photo | password | userid |
+-----+-----------+----------+-------+-------+-------+----------+--------+
|   1 | NULL      | NULL     | NULL  |     0 | NULL  | NULL     |      1 |
|   2 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   3 | hospital2 | address2 | NULL  | 12344 | NULL  | NULL     |      1 |
|   4 | hospital2 | address2 | NULL  | 12344 | NULL  | NULL     |      1 |
|   5 | hospital3 | address3 | NULL  | 12347 | NULL  | NULL     |      1 |
|   6 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   7 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   8 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   9 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  10 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  11 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  12 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  13 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  14 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  15 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  23 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      8 |
|  24 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      9 |
+-----+-----------+----------+-------+-------+-------+----------+--------+
17 rows in set (0.00 sec)
```

```
mysql> select * from patient;
+-----+---------+---------+-------+--------+-------+----------+
| pid | name    | address | adhar | mobile | photo | password |
+-----+---------+---------+-------+--------+-------+----------+
|   1 | sahil   | satara  | 12323 | 12345  | NULL  | sahil    |
|   2 | saurabh | satara  | 12323 | 12345  | NULL  | saurabh  |
+-----+---------+---------+-------+--------+-------+----------+
2 rows in set (0.00 sec)
```

```
mysql> select * from hospital;
+-----+-----------+----------+-------+-------+-------+----------+--------+
| hid | name      | address  | email | phone | photo | password | userid |
+-----+-----------+----------+-------+-------+-------+----------+--------+
|   1 | NULL      | NULL     | NULL  |     0 | NULL  | NULL     |      1 |
|   2 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   3 | hospital2 | address2 | NULL  | 12344 | NULL  | NULL     |      1 |
|   4 | hospital2 | address2 | NULL  | 12344 | NULL  | NULL     |      1 |
|   5 | hospital3 | address3 | NULL  | 12347 | NULL  | NULL     |      1 |
|   6 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   7 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   8 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|   9 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  10 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  11 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  12 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  13 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  14 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  15 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      1 |
|  23 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      8 |
|  24 | hospital1 | address1 | NULL  |  1234 | NULL  | NULL     |      9 |
+-----+-----------+----------+-------+-------+-------+----------+--------+
17 rows in set (0.00 sec)
```

16

6 Screen Shots of Working Project
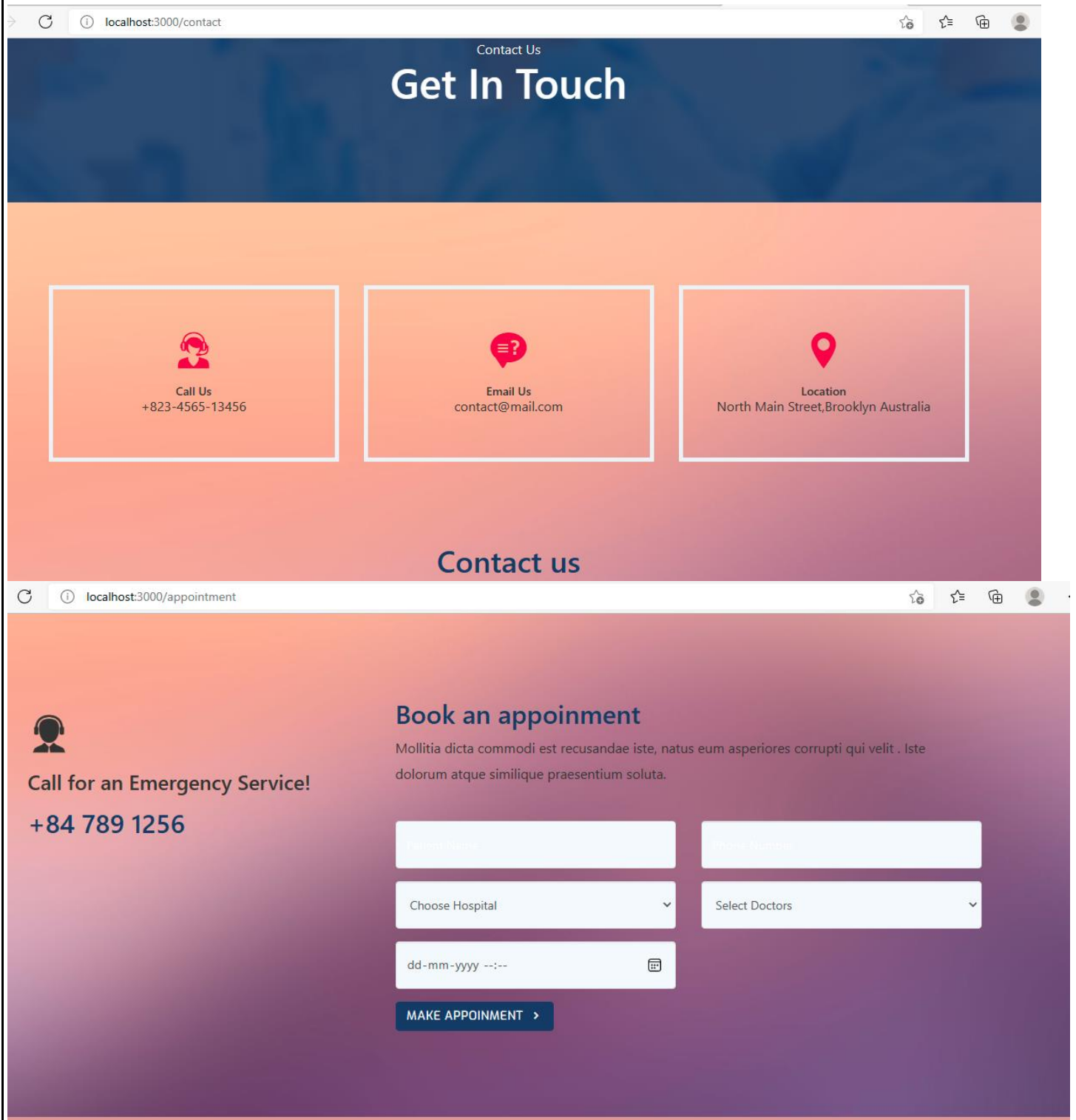
Doctors

We provide a wide range of creative services adipisicing elit. Autem maxime
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| All Department | Cardiology | Dental | Neurology | Medicine | Pediatric | Traumatology |
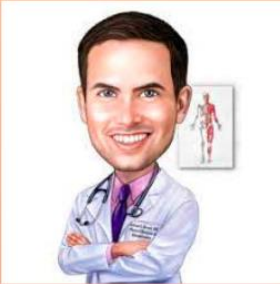
Thomas Henry
Cardiology

Harrision Samuel
Radiology

Alexandar James
Dental

Edward john
Pediatry

C   ⓘ   localhost:3000/department

Award winning patient care

Lets know moreel necessitatibus dolor asperiores illum possimus sint voluptates incidunt
molestias nostrum laudantium. Maiores porro cumque quaerat.

Opthomology

Saepe nulla praesentium eaque omnis
perferendis a doloremque.

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Cardiology

Saepe nulla praesentium eaque omnis
perferendis a doloremque.

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perferendis a doloremque.

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Child Care

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Pulmology

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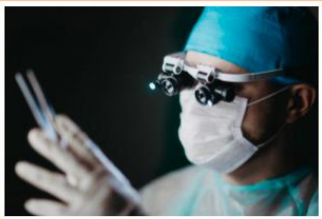
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Gynecology

Saepe nulla praesentium eaque omnis perferendis a doloremque.

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Our services

What We Do

Child care

Saepe nulla praesentium eaque omnis perferendis a doloremque.

Personal Care

Saepe nulla praesentium eaque omnis perferendis a doloremque.

CT scan

Saepe nulla praesentium eaque omnis perferendis a doloremque.

About Us

About Us

Personal care for your healthy living

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Incidunt, quod laborum alias. Vitae dolorum, officia sit! Saepe ullam facere at, consequatur incidunt, quae esse, quis ut reprehenderit dignissimos, libero delectus.

Healthcare for Kids

Medical Counseling

Modern Equipments

Qualified Doctors

What they say about us

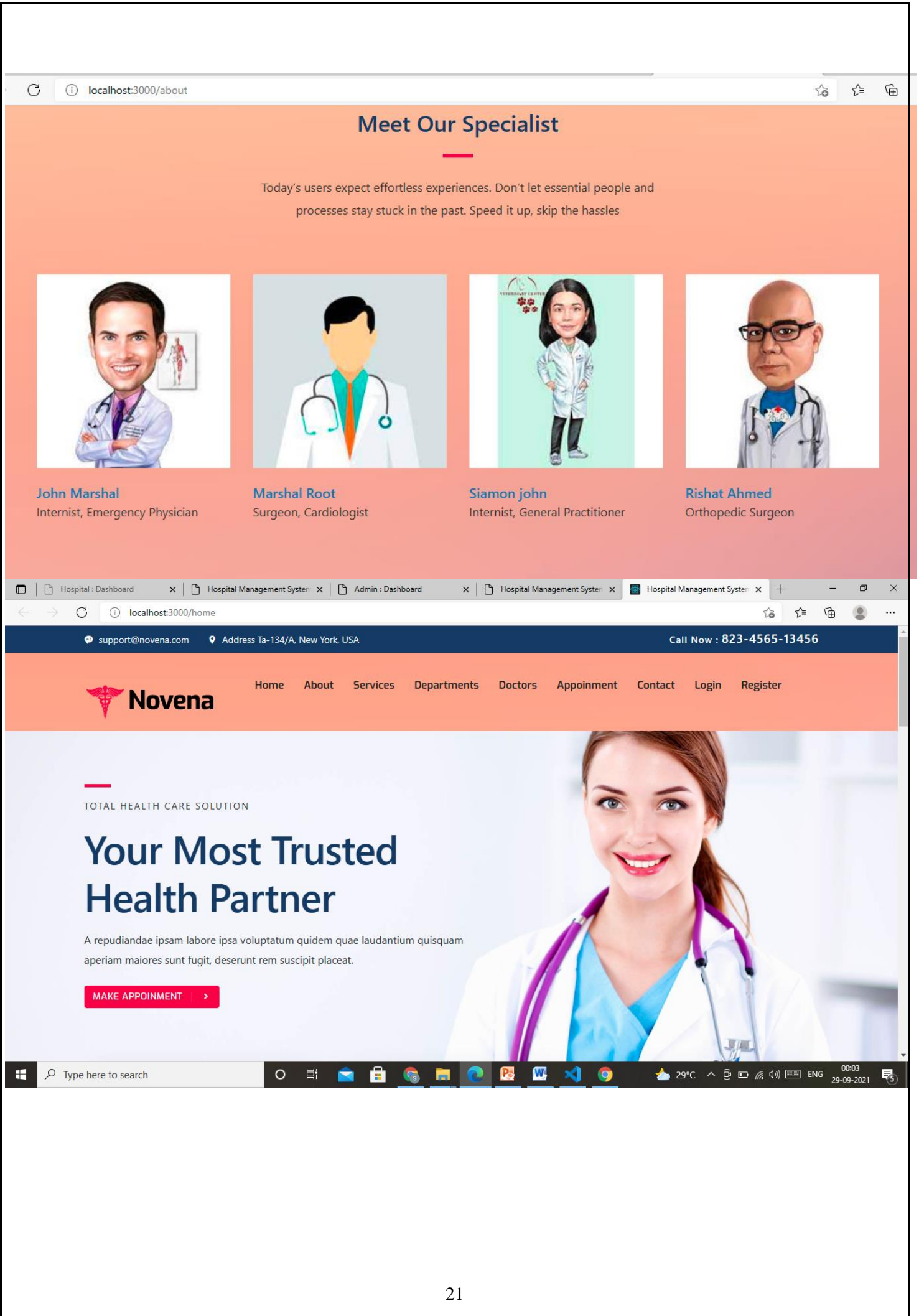**Amazing service!**
John Partho

They provide great service facilty consectetur adipisicing elit. Itaque rem, praesentium, iure, ipsum magnam deleniti a vel eos adipisci suscipit fugit placeat. Quibusdam laboriosam eveniet nostrum nemo commodi numquam quod.

Expert doctors!
Mullar Sarth

They provide great service facilty consectetur adipisicing elit. Itaque rem, praesentium, iure, ipsum magnam deleniti a vel eos adipisci suscipit fugit placeat. Quibusdam laboriosam eveniet nostrum nemo commodi numquam quod.

Good Support!
Kolis Mullar

They provide great service facilty consectetur adipisicing elit. Itaque rem, praesentium, iure, ipsum magnam deleniti a vel eos adipisci

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MAKE APPOINMENT >

NAME

nikita

PHONE

Address

Adhar No

Upload Photo

Choose File   No file chosen

....

SUBMIT

ADD HOSPITALS

Hello
Profile

Add Hospital

Show Hospital

Patient Details

Doctor Details

Add Service

Show Service

Show contact

Hospital Name	
Address	
Pnone No	
Email	
Photo	Choose file No file chosen
Description	
Password	
	save

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23

REGISTER NOW

NAME

E-MAIL

PHONE

Address

Adhar No

password

VIEW DOCTORS

did	name	mobile	specialization	email	password	hid
1	sahil	1234	neurology	sahil@projecct.com	sahil	
2	saurabh	1234	surgeon	sahil@projecct.com	sahil	
3	sahil1	1234	phiysiotherapy	sahil@projecct.com	sahil	

VIEW PATIENT

pid	name	address	mobile
1	sahil	satara	12345
2	saurabh	satara	12345

VIEW HOSPITAL

hid	name	address	phNo
1			0
2	hospital1	address1	1234
3	hospital2	address2	12344
4	hospital2	address2	12344
5	hospital3	address3	12347
6	hospital1	address1	1234
7	hospital1	address1	1234

Hello

Profile

Add Hospital

Show Hospital

Patient Details

Doctor Details

Add Service

Show Service

Show contact

FUTURE SCOPE

In the coming time this project can be extended to a larger community/area rather than a small group of people of a particular area.

We can also implement this project in future on a larger scale, this will help to have a digital records of the patients medical history and will help to store data with high security.
Keeping challenges in mind, HMS was built from scratch to provide a solution by bringing convenience, predictability and quality together in the Indian healthcare ecosystem. HMS is unique in its approach to simplify doctor discovery and ease of booking and access.

CONCLUSION

This is to conclude that the project that I undertook was worked upon with a sincere effort. Most of the requirements have been fulfilled up to the mark and the requirements which have been remaining, can be completed with a short extension. The project made here is just to ensure that this product could be valid in today real challenging world. Here all the facilities are made and tested. Currently the system works for limited number of administrators to work. In near future it will be extended so that efficiency can be improved.

The package was designed in such a way that future modifications can be done easily. The following conclusions can be deduced from the development of the project,

- Automation of the entire system improves the efficiency

- It gives appropriate access to the authorized users depending on their permissions.

- It effectively overcomes the delay in communications.

- Updating of information becomes so easier.

- System security, data security and reliability are the striking features.

- The System has adequate scope for modification in future if it is necessary.

REFERENCES

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- https://spring.io/projects/spring-boot

- https://reactjs.org/docs/

- https://reactstrap.github.io/

- https://css3generator.com/

- https://help.practo.com/