West Bengal State Council of Technical & Vocational Education and Skill Development

Medcare

Under the support and guidance of

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K.G. ENGINEERING INSTITUTE
BISHNUPUR, BANKURA
2021 - 2022

CERTIFICATE

This is to certify that this project entitled "**Medcare web application**" by **Indrani Mondal, Deb Kaiti, Pramit Nandi, Rakesh Singha, Sumangal Dey, Tufan Chowdhury, Gopinath Pal** is submitted by partial fulfilment of all the requirements for the degree of Diploma in Computer Science & Technology from K.G. Engineering Institute, Bishnupur, Bankura of the WBSCT&VE&SD, Kolkata, during academic year 2021-2022. This application has been carried out under our supervision.

PROJECT GUIDE   PROJECT CO-GUIDE
_____   _____

DATE: DATE:

Everyone is student of Diploma in Computer Science & Technology, K.G. Engineering Institute, Bishnupur, Bankura

ACKNOWLEDGEMENT

First and foremost, we would like to thank our projects guides, **Mr. Amiya Mandal, Mr. Raj Kumar Datta, Mr. Sourav Chakraborty** and **Mrs. Mamata Dutta** for their constant support and guidance, without which we would not have been able to attempt this project. Their contribution in stimulating suggestions and encouragement, helped us to coordinate the project.

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DECLARATION

We the undersigned solemnly declare that the project "**Medcare web application**" is based on our own work carried out during the course of our study under the course of our study under the supervision of **Mr. Amiya Mandal** (HOD, Department Of Computer Science & Technology), **Mr. Raj Kumar Datta** (Lecturer, Department Of Computer Science & Technology), **Mr. Sourav Chakraborty** (Lecturer, Department Of Computer Science & Technology) and **Mrs. Mamata Dutta** (Lecturer, Department Of Computer Science & Technology).

We further clarify that –

a) The work in the report is original and has been done by us under the general supervision of my supervisor.

b) The work has not been submitted to any other Institution for any other degree/diploma/certificate in this university or any other university of India or abroad.

c) We have followed the guidelines provided by the institute for writing project report.

d) Whenever we have used materials (data, theoretical analysis, or text) from other sources we have given due credit to them in the text of the report and giving their details in the references.

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ABSTRACT

Nowadays, smartphones, laptop, computers have reached every hand and every home. As a result, people are making use of the beneficial web applications to make their everyday life easier. This project focuses on development of a web application to help providing an effective health care system. Using this application peoples can get numerous benefits like finding hospital information in different places, intelligent suggestion on choosing suitable hospital, finding experience doctors, emergency service calling, booking for doctors' appointment, surgery cost etc. When people from rural areas come to urban areas for better health care service, they find it very difficult to choose a suitable hospital. Besides, when comparing a number of hospitals for finding better alternatives, it poses some complexities. The cost and quality for various services in a hospital can be used as a metric for comparison with other hospitals which is not always possible. So, it will help the masses in their everyday life by providing hospitals details and facilities. So, our goal is to provide new technologies that can easily affordable, maintainable and fastest way of intractable. In our proposed model, we will be used HTML5 ,CSS, Bootstrap5,java script for frontend & PHP , MySQL for backend.

Keywords:
Health Care, Doctors′ Appointment, Web Based Application, Hospital,

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PROBLEM STATEMENT

In this busy world we don't have the time to wait in infamously long hospital queues. The problem is, queuing at hospital is often managed manually by administrative staff, then take a token there and then wait for our turn then ask for the doctor and the most frustrating thing - we went there by traveling a long distance and then we come to know the doctor is on leave or the doctor can't take appointments.

Medcare web application will help us overcome all these problems because now patient can book their appointment at home. They can check whether the doctor they want to meet is available or not. Admins can also confirm or decline appointments. This help both patient and the doctor because if the Admin declines' appointment then patient will know this in advance and patient will visit hospital only when the doctor confirms' the appointment this will save time and money of the patient.

The main goal is to computerize all the details regarding the patient and the hospital. The installation of this health care software results in improvement in administrative functions and hence better patient care, which is the prime focus of any health care unit.

Benefits of implementing a Medcare web application:

- **Appointment booking**
  - Helps patients cut the long queue and saves their time.
  - Is equipped with features like automated email and text message reminders.
- **Over all cost reduction**
  - Cuts down paper costs as all the data are computerized.
  - No separate costs for setting up physical servers

- **Data security**
  - Helps to keep patients records private
  - Restricts access through role-based access control

Process model

Medcare web application follows **INCREMENTAL MODEL** because initially software requirements are reasonably well defined but the overall scope of development effort is a purely linear process. There may be other requirements of the user which will be known later. So, those requirements can the implemented and delivered in the following next increments. Our project is a short term project of 4 months and 3 weeks only and staffing available is also low(7 persons).

INTRODUCTION

1.1 PURPOSE

1.2 SCOPE

1.3 DEFINITIONS, ACRONYMS, and ABBREVIATIONS

1.4 OVERVIEW

1.1 PURPOSE

Our project Medcare includes registration of patients, storing their details into the system, and also booking their appointments with doctors. Our software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. User can search availability of a doctor and the details of a patient using the id. It enables admin to view and modify appointments schedules if required. The purpose of this project is to computerize all details regarding patient details and hospital details.

1.2 SCOPE

The system will be used as the application that serves hospitals. The intention of the system is to increase the number of patients that can be treated and managed properly. If the hospital management system is file based, management of the hospital has to put much effort on securing the files. They can be easily damaged by fire, insects and natural disasters. Also could be misplaced by losing data and information.

1.3 DEFINITIONS, ACRONYMS, and ABBREVIATIONS

- o **Cardiologist**- treats heart disease.
- o **Pediatrician**-treats infants, toddlers, children and teenagers.
- o **Plastic Surgeon**-restores, reconstructs, corrects or improves in the shape and appearance of damaged body structures, especially the face.
- o **Psychiatrist**-treats patients with mental and emotional disorders.
- o **Ophthalmologist**-treats eye defects, injuries, and diseases.
- o **ENT**-Ear, Nose and Throat Specialist.

- o **SRS**: Software Requirement Specification.
- o **DFD:** Data Flow Diagram.
- o **ENT**-Ear, Nose and Throat Specialist.
- o **BG**-Blood group

- o **Appt**–Appointment.
- o **Signup-**Creating New User.
- o **Login-**Logging in Existing User.
- o **Ph No**-Mobile number.
- o **Addr** –Address.
- o **Expr**–Experience.

1.4 OVERVIEW

Our application contains two modules – the admin module and the user module. Our application will not only help the admin to preview the monthly and/or yearly data but it will also allow them to edit, add or update records. The software will also help the admin to monitor the transactions made by the patients and generate confirmations for the same. The admin will be able to manage and update information about doctors.
The user module can be accessed by both the doctors and the patients. The admin can confirm and/or cancel appointments. The patients will be able to apply for the appointment.

Advantages

- The system automates the manual procedure managing hospital activities.
- Doctor scan view their patients' treatment records and details easily.
- The system is convenient and flexible to be used.
- It saves their time, efforts, money and resources.

Disadvantages

- Requires large database.
- The admin has to manually keep up dating the information by entering the details in the system.
- Need Internet connection.

SOFTWARE REQUIREMENT SPECIFICATION

2.1 Product Perspective

    2.1.1 System Interfaces

    2.1.2 System Specifications

       2.1.2.1 H/W Requirement

       2.1.2.2 S/W Requirement

       2.1.3 Communication Interfaces

2.2 Product functions

2.3 Data Flow Diagram(DFD)

    2.3.1 Context Level Diagram

    2.3.2 DFD Level –1

2.4 UseCase Diagram

2.5 UseCase Description

2.6 User Characteristics

2.7 Constraints

2.8 Assumptions and dependencies

2.1 Product Perspective

This Medcare web application is a self-contained system that manages activites of the hospital. Due to improperly managed details medical center faces quite a lot of difficulties in accessing past data as well as managing present data. This is a fully functional automated web application which will be developed through this project will eliminate the disadvantages caused by the manual system by improving the reliability, efficiency and performance. The usage of a database to store patient, doctor and treatment details etc. will accommodate easy access, retrieval, and search and manipulation of data. The access limitations provided through access privilege levels will enhance the security of the system. The system will facilitate concurrent access and convenient management of activities of the hospital.

2.1.1 System Interfaces

❖ **User Interfaces**
  - This section provides a detailed description of all hospital and doctor details and also reservation system of the particular department on particular hospital to the users.
  - Users search Hospital according to their district and also search hospital just putting their pin code.

❖ **Hardware Interfaces**
  - **Mobile/Laptop/Desktop PC**-Purpose of this is to give information when Patients ask information about doctors, hospital which is available according to requirement.

❖ **Software Interfaces**
  - **Mysql server**-Database connectivity and management
  - **OS Windows7/8/8.1**-Very user friendly and common OS
  - **Xampp – Apache and MySql server**

2.1.2 System Specifications

2.1.2.1 H/W Requirement
- ☞ Minimum Core i3 processor
- ☞ 2GB Ram.
- ☞ 100 MB hard disk space
- ☞ 100 MB hard disk Server Machine

2.1.2.2 S/W Requirement
- ☞ Operating System (Windows / Mac)
- ☞ Xampp (MySQL server & apache server)
- ☞ Browser (Chrome/Firefox)

2.1.3 Communication Interfaces

- ⌃ **NIC (Network Interface Card)** – It is a computer hardware component that allows a computer to connect to a network. NICs may be used for both wired and wireless connections.
- ⌃ **TCP/IP protocol**-Internet service provider to access and share information over the Internet
- ⌃ **Ethernet Communications Interface**-Ethernet is a frame-based computer network technology for local area networks (LANs)

2.2 Product functions

- o Registration of new patients.
- o Enable patient to view their record.
- o Generate appointment date and timing.
- o Confirmation by admin.
- o Admin access to patient's record.
- o Enable admin to update patient details and confirm, reject or completed the patient appointment

## 2.3 DATA FLOW DIAGRAM (DFD)

### CONTEXT LEVEL DIAGRAM
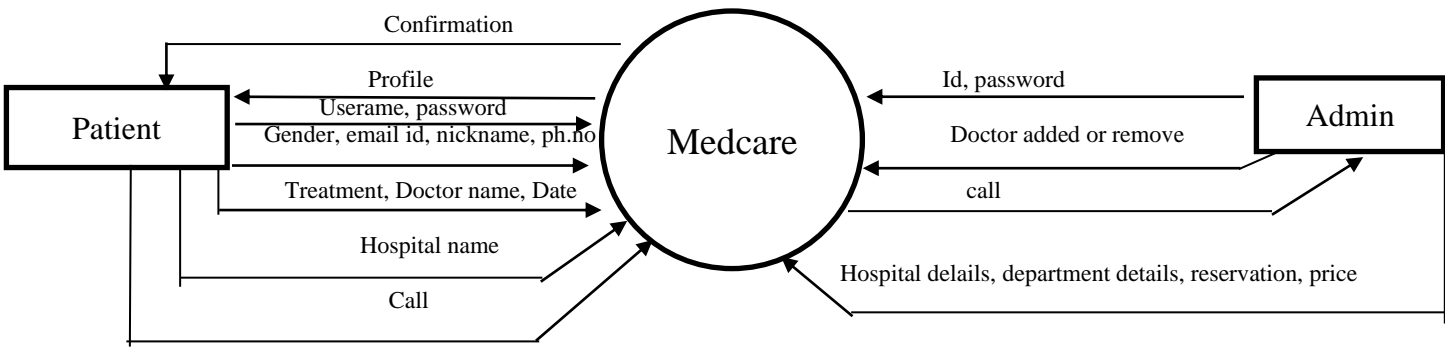
FIGURE 2.1 CONTEXT LEVEL DFD

DFD LEVEL – 1

Patient

Nick name, Mobile no, id, password. Gender, gmail

Sign UP

Db

Mobile no, Dr name, Category name, gmail, date

Verify

Id, password

Book Appintment

Check Appintment

Login

Update

Hospital Details

Id, password

Hospital name, email, phone, state, dist, pinncode, dept, map

update

Db

Hospital name, dept, Dr name

Doctor Details

Update

Db

Registration Details

Comfirm, reject, Complete

Admin

Deptment, treatment

Update

Dept Details

FIGURE 2.2 LEVEL – 1 DFD

2.4 USECASE DIAGRAM
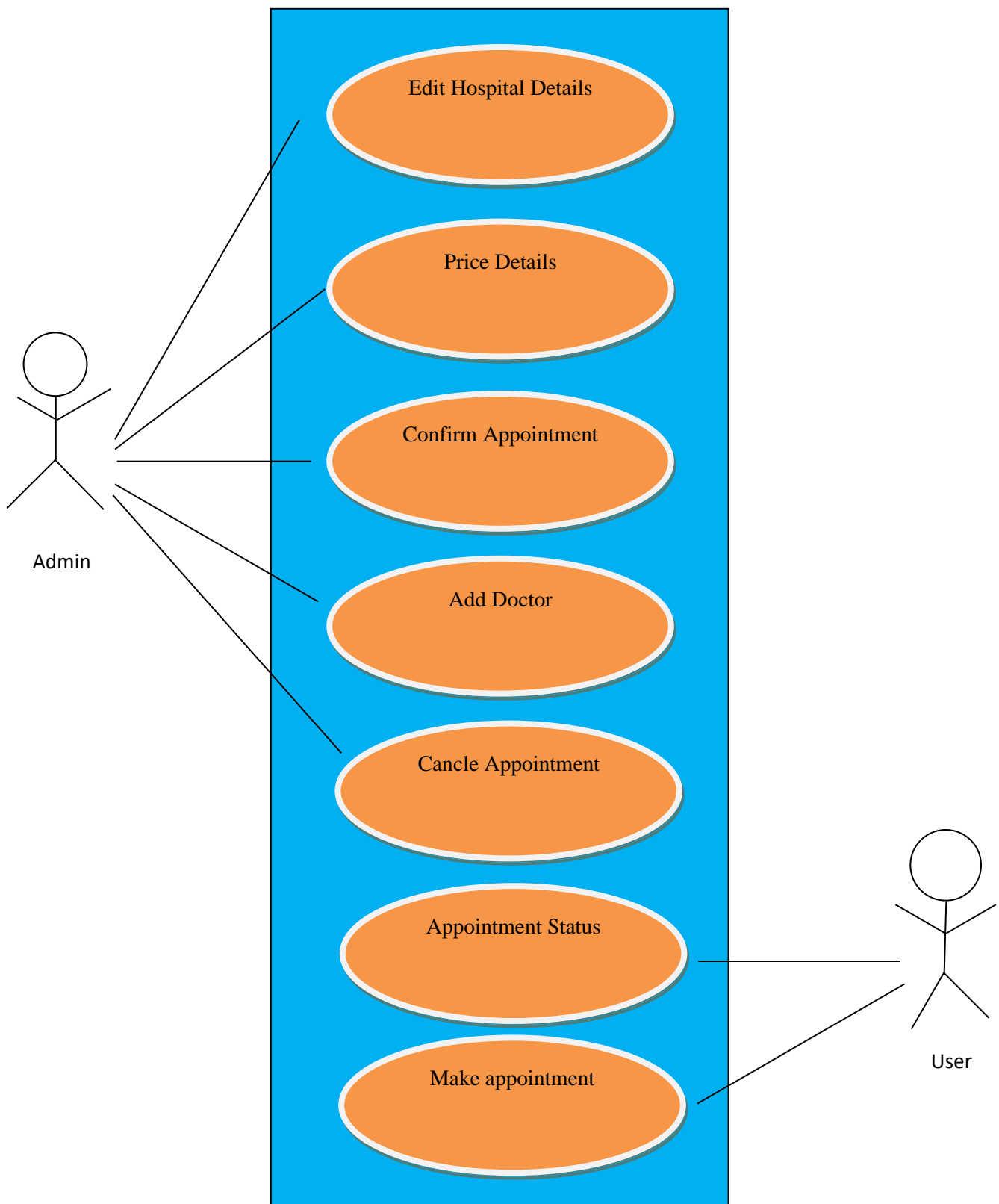
2.5 USECASE DESCRIPTION

(1) PATIENT

* REGISTRATION

DESCRIPTION-The new patient can register themselves and add their details like name, age, gender, blood group etc. The patient entry will be made in the database.

PRE-CONDITION–The patient must be a new patient, If necessary fields left by user then prompt user to fill the necessary fields.

MAINFLOWOFEVENTS
1. Patient selects signup in login module.
2. A registration form get displayed
3. Patient fills the required details.

POST CONDITIONS – Patient record is added to database.

* UPDATION

DESCRIPTION-The patient should been abledtoupdatehis/herdetailsandthechangesshouldreflectinhmsdatabase.

PRE-CONDITION–The patient must be a registered patient,The patient cannot update details after treatment starts.

MAIN FLOWOF EVENTS
1. Patient login to the system.
2. Patient view his record
3. Patient selects update details.
4. Now patient may change the necessary fields.
5. Pop of update details.

*APPOINTMENT

DESCRIPTION - It shows users a list of available doctors, timings, dates and enables patients to select the most suitable appointment date and doctor. The patient may also the cancel the appointment.

PRE-CONDITION - The patient must be a registered patient, Patient can fix only one appointment for a particular department.

MAINFLOWOFEVENT
1. Patient first login to system.
2. View his/her record.
3. Create a new appointment or cancel the appointment.

POST CONDITIONS - patient details are displayed and a new appointment is fix or a existing appointment is cancelled. The database is updated.

(2) ADMIN

DESCRIPTION-The admin add doctor, update doctor details and verify payment and generate Bill/ Reciept for the same.

MAIN FLOWOF EVENTS
1. Admin logs in the system.
2. Admin may add doctor new doctor.
    2.1 Admin fills the doctor's details.
3. Admin view Doctor record.
    3.1 Admin enters the doctor id in the system.
    3.2 Doctor details are displayed, Admin can update details.
PRE–CONDITION-Admin must first login with his/her credentials.

POSTCONDITION-The web application database is updated.

2.6 User characteristics

ADMIN
Admin has the full access to the system which means he is able to manage any activity with regard to the system. He is the highest privileged user who can access to thesystem.

Key functions:
- Access patient record, doctor Record.
- Add new doctor entry in system database.
- View Records.

PATIENT
Patientscanchoosethebestpreferredappointmentsfromtheoptionsprovidedandsee the appointment schedule. After appt. is confirmed by the respective admin. Patients have access to only their records.

Key functions:
- Make appointment.
- View Payment History.

2.7 Constraints

- System is wirelessly net worked with an encryption.
- System is only accessible with in the hospital's website only.
- Database is password protected.
- Each user should have individual ID and password.
- Only admin is can access the whole system.

2.8 Assumptions and dependencies

- Each user must have id user id and password
- Server must be running for the system to function
- Users must login to the system to access any record.
- Only the Administrator can delete records.

SPECIFIC REQUIREMENTS

3.1 PERFORMANCE REQUIREMENTS

- **Responsetime**-
  Thesystemwillgiveresponseswithin1secondaftercheckingthepatientinformationandother information.
- **Capacity**-The system must support infinity people at a time
- **User interface**-User interface screen will response within 5 seconds

3.2 SAFETY REQUIREMENTS

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure. All the administrative and data entry operators have unique logins so system can understand who is login in to system right now no intruders allowed except system admin is trative nobody cannot change record and value able data.

3.3 SECURITY REQUIREMENTS

1. Want take the responsibility of failures due to hardware malfunctioning.
2. Warranty period of maintaining the software would be one year.
3. Additional payments will be analyzed and charged for further maintenance.
4. If any error occur due to a user's improper use. Warranty will not be allocated to it.
5. No money back returns for the software.

3.4 SOFTWARE SYSTEM ATTRIBUTES

3.4.1 Usability: Software can be used again and again without distortion.

3.4.2 Availability: The system shall be available all the time.

3.4.3 Correctness: Bug free software which fulfills the correct need/ requirement so the client.

3.4.4 Maintainability: The ability to maintain, modify information and update fix problem so the system.

3.4.5 Accessibility: Administrator and many other users can access the system but the access level is controlled for each user according to their work scope.

3.5 FUNCTIONAL REQUIREMENTS

S.No.	MODULE NAME	APPLICABLE ROLES	DESCRIPTION
1.	LOGIN	PATIENT ADMIN	**PATIENT:** Can login using unique Id and Password after this system shall show his/her profile at the time of booking. **ADMIN:** Can login using unique Id and Password after this system shall show a Profile with links to maintain the website.
2.	REGISTRATION	PATIENT	**PATIENT:** Can Register by filling all the required details, after this the system will verify the details and check if already Registered or not at the time of booking appointment.
3.	MAKE APPT.	PATIENT	**PATIENT:** Can Select doctor, date time and make an appointment request after this system shall show a confirmation for Appointment request.
4.	CANCL APPT.	PATIENT DOCTOR	**ADMIN :** Can Cancel appointment if want to by just one click after this system shall send a information to the patient.
5.	PATIENT MODULE	PATIENT	**PATIENT :** Can see or search for a hospital details by entering hospital name or pincode. Can also search for the treatment

6.	DOCTORM ODULE	ADMIN	**ADMIN :** Can add a new doctor by filling all the details after this system shall show a confirmation message. Can Remove a doctor by just one click after this system shall show confirmation message.

DESIGN

4.1 Data Dictionary

4.2 ER Diagram

4.3 Data Design

4.1 DATA DICTIONARY

1.	legal_character	[a-z|A-Z]
2.	Digit	[0-9]
3.	special_ch	[@|$|#|+|-]

1.	Name	first_name+(middle_name)+last_name
2.	Password	{legal_character+digit+special_ch}*
3.	Address	House_no+(Street)+City
4.	Mobile No.	{digit}*

Table 4.1 Data Dictionary

4.2 ER DIAGRAM
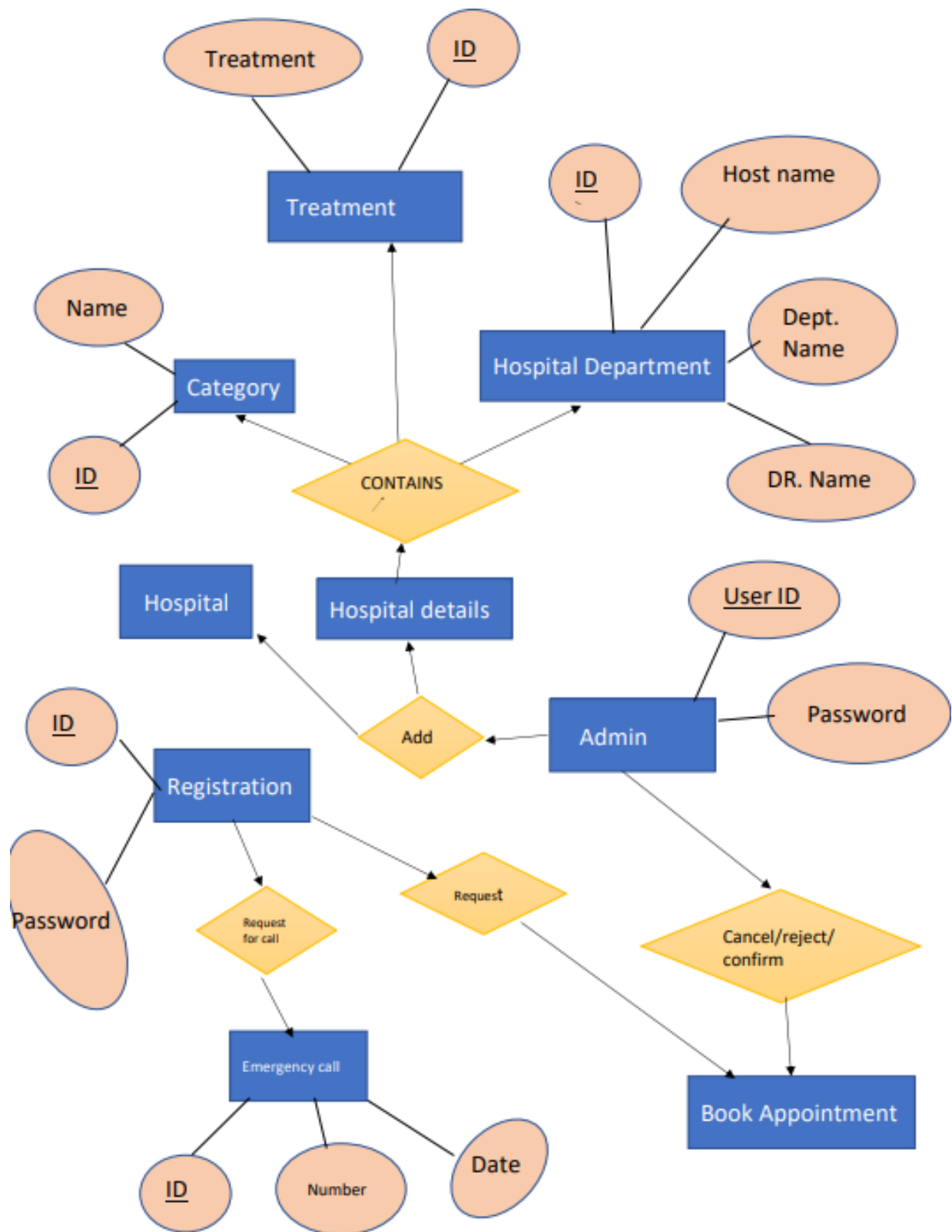
4.3 DATA DESIGN

Table 1- admin

SNO.	Column Name	Data Type	Constraints	Description
1	Username	Varchar(100)	Primary Key	Contains User name
2	Password	Varchar(50)	-	Contains Password

Table 2 – Category

Sno	Column name	Data Type	Contraints	Description
1	id	Int(11)	Primary key	Contains id
2	name	Varchar(100)	-	Contains Category_name

Table 3 – hospital

Sno	Column name	Data type	Constraints	Description
1	h_id	Int(11)	Primary key	Contains id
2	h_dep	Varchar(100)	-	Contains department
3	h_ treat	Varchar(100)	-	Contains treatment
4	treat_price	Varchar(100)	-	Contains treatment price
5	h_name	Varchar(100)	-	Contains hospital name
6	d_name	Varchar(100)	-	Contains doctor name

Table 4- only_treatment

Sno	Column name	Data type	Constraints	Description
1	id	Int(11)	Primary key	Contains id
2	treat_name	Varchar(100)	-	Contains treatment name
3	department	Varchar(100)	-	Contains department name

Table 5 – emergency call

Sno	Column name	Data type	Constraints	Description
1	Id	Int(10)	Primary key	Contains id
2	Number	Varchar(100)	-	Contains mobile numbers
3	date	Varchar(100)	-	Contains date

Table 6 - reservation

Sno	Column name	Data type	Constraints	Description
1	r_id	Int(11)	Primary key	Contains id
2	p_name	Varchar(100)		Contains patient name
3	email	Varchar(100)		Contains email
4	phone	Int(10)		Contains mobile no
5	catagory	Varchar(100)		Contains category
6	doctor	Varchar(100)		Contains doctor
7	date	Date()		Contains date
8	status	Varchar(100)		Contains status

Table 7 - register

Sno	Column name	Data type	Constraints	Description
1	Id	Int(10)	Primary key	Contains id
2	username	Varchar(100)		Contains username
3	password	Varchar(100)		Contains password
4	gender	Varchar(100)		Contains gender
5	email	Varchar(100)		Contains email
6	surname	Varchar(100)		Contains surname
7	phone	Int(100)		Contains phone

Table 8 – hospital_dep_doctor

Sno	Column name	Data type	Constraints	Description
1	Id	Int(11)	Primary key	Contains id
2	h_name	Varchar(100)		Contains hospital name
3	dep_name	Varchar(100)		Contains department name
4	doctor_name	Varchar(100)		Contains doctor name

Table 9- demo

Sno	Column name	Data type	Constraints	Description
1	id	Int(11)	Primary key	Contains id
2	department	Varchar(100)		Contains department
3	hospital	Varchar(100)		Contains hospital

Table 10 – hospital_details

Sno	Column name	Data type	Constraints	Description
1	id	Int(11)	Primary key	Contains id
2	name	Varchar(100)		Contains name
3	email	Varchar(100)		Contains email
4	district	Varchar(100)		Contains district
5	state	Varchar(100)		Contains state
6	map	Varchar(100)		Contains map
7	phone	Int(100)		Contains mobile no
8	pincode	Int(100)		Contains pin code
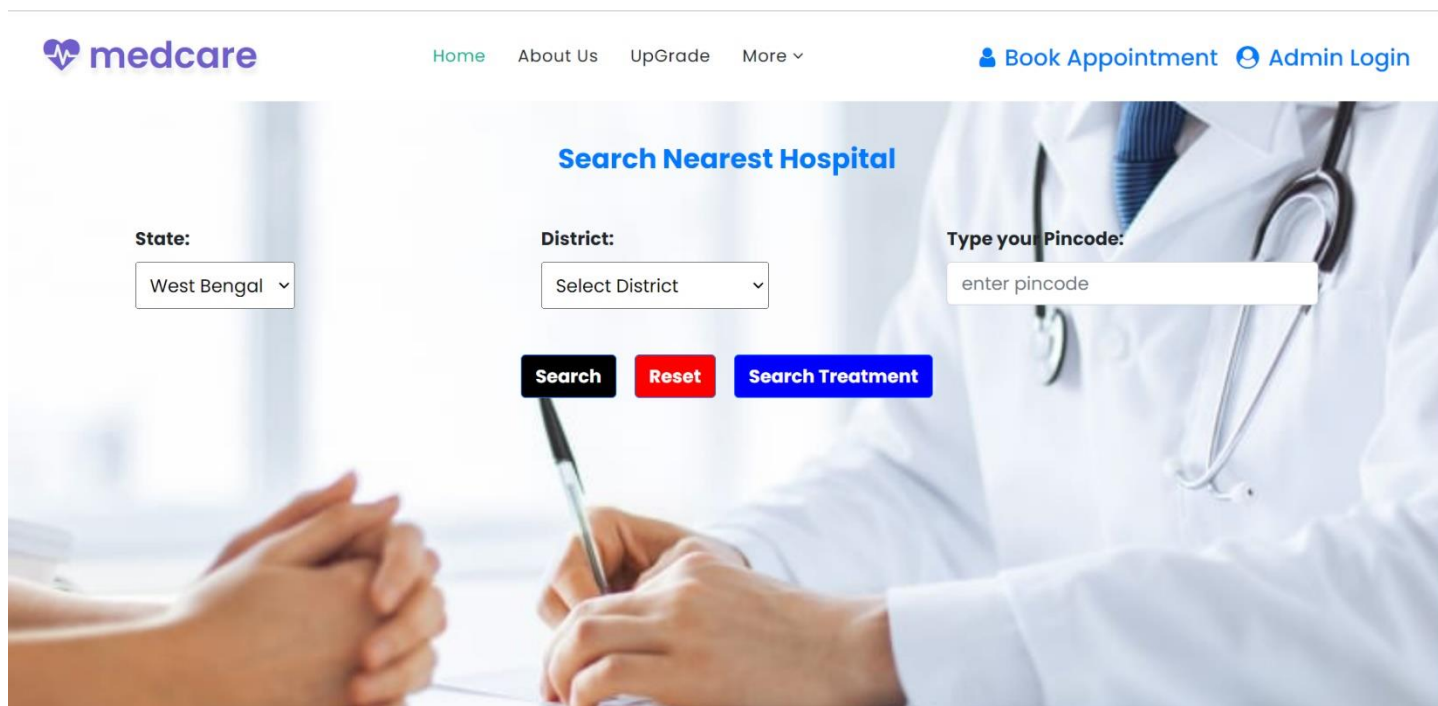
TESTING

SL NO.	Test Description	Step	Expected Result	Actual Result	Defect
1.	Log In	Wrong user name and right password for book appointment & Admin log in	Invalid username or password, try again	Invalid username or password, try again	None
		Right user name and wrong password for book appointment & Admin log in	Invalid username or password, try again	Invalid username or password, try again	
		Wrong user name and wrong password for book appointment & Admin log in	Invalid username or password, try again	Invalid username or password, try again	
		Right user name and right password for book appointment & Admin log in	Valid for Log in	Valid for Log in	
2.	Searching Hospital using Pin code	Wrong pin code	No data found	No data found	None
		Right pin code	Proper data will be visible	Proper data will be visible	
3.	Sign up	Less than 3 characters for user name or password	"Please lengthen this text to 3 characters or more"	"Please lengthen this text to 3 characters or more"	None
		Unfilled any box (user name, password, gender, email, nickname, mobile no)	"Please fill out this field."	"Please fill out this field."	
		Entering email with inappropriate formats	"Please include an '@' in the email address"	"Please include an '@' in the email address"	
		Less than 10 characters for entering mobile number	"Please match the requested format"	"Please match the requested format"	

4.	Appointment confirmation	Confirming or rejecting the appointment by admin.	"Action (confirm/reject/ completed) will be reflected to the user"	"Action (confirm/reject/ completed) will be reflected to the user"	None
5.	Emergency call	Requesting for emergency call by entering the mobile number	"A call request will be shown at the admin side."	"A call request will be shown at the admin side."	None

SAMPLE SCREENSHOTS

FIGURE 6.1 HOME PAGE

FIGURE 6.2 ABOUT PAGE
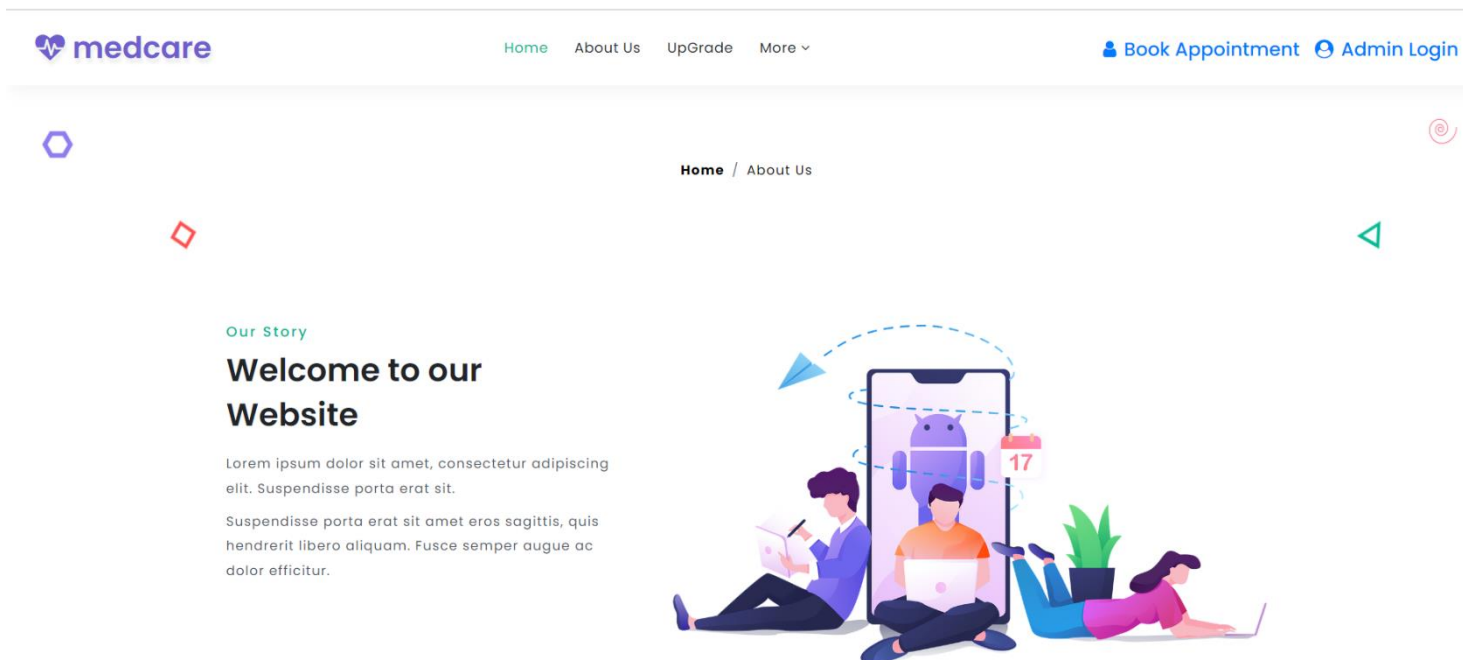
FIGURE 6.3 SUBSCRIPTION PAGE
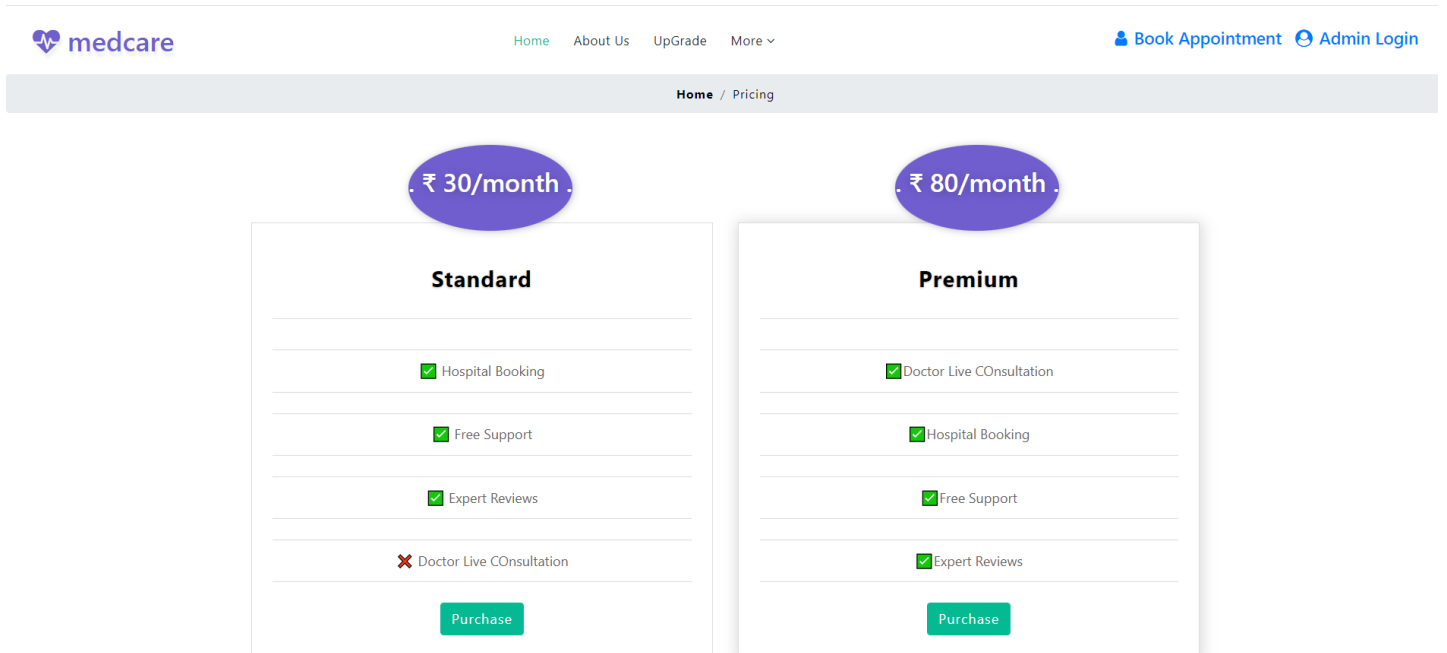
FIGURE 6.4 FAQ PAGE
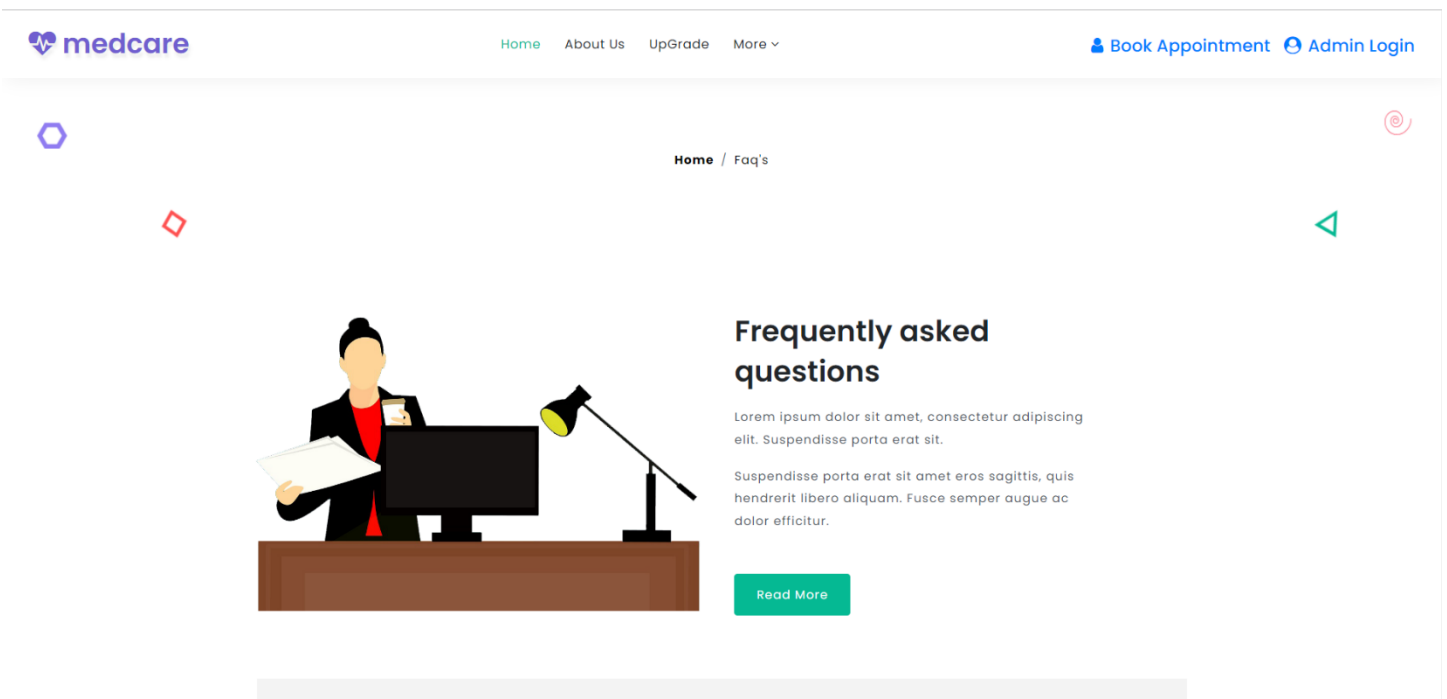
FIGURE 6.5 ERROR PAGE
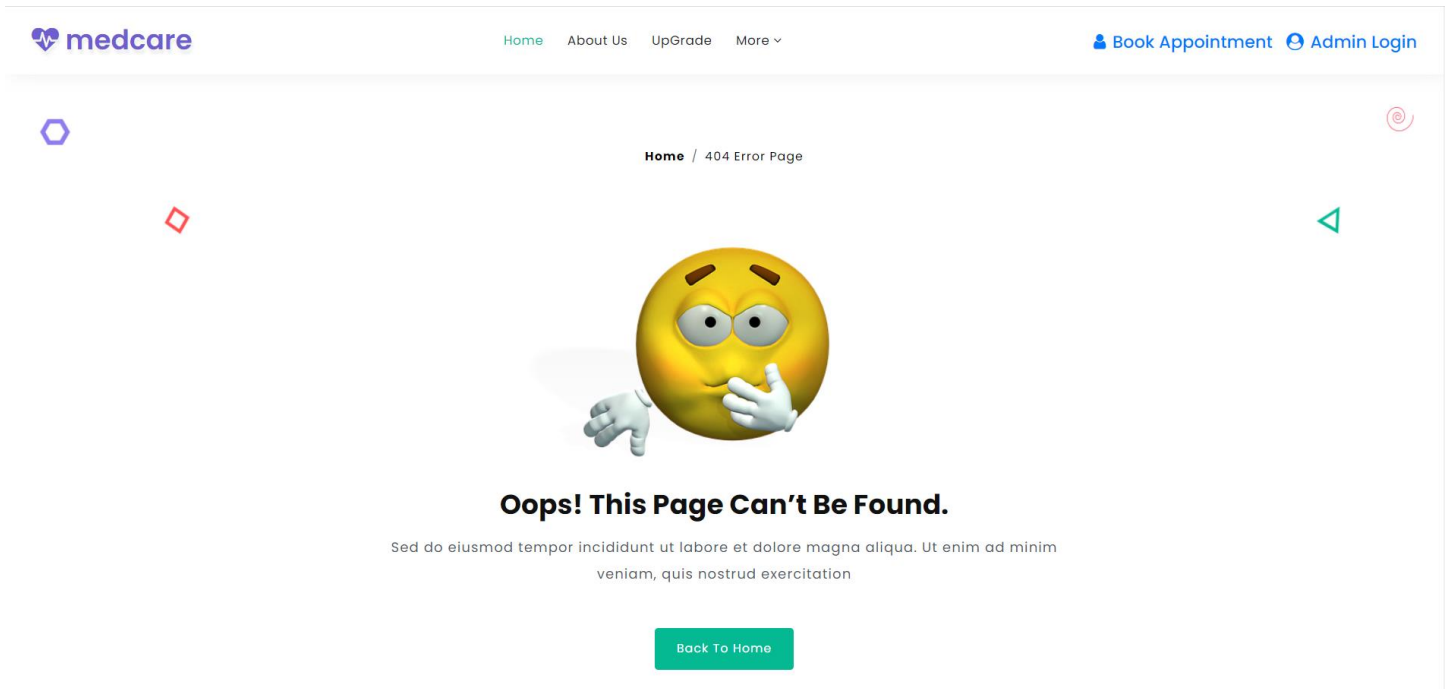
FIGURE 6.6 USER LOGIN PAGE

FIGURE 6.7 WRONG USERNAME PASSWORD PAGE

localhost:8081 says

Try again!! Invalid Username or Password

OK

FIGURE 6.8 USER SIGNUP PAGE

User Signup Form

Username :

Password :

☐ Show password

Gender : ○Male ○Female

Email :
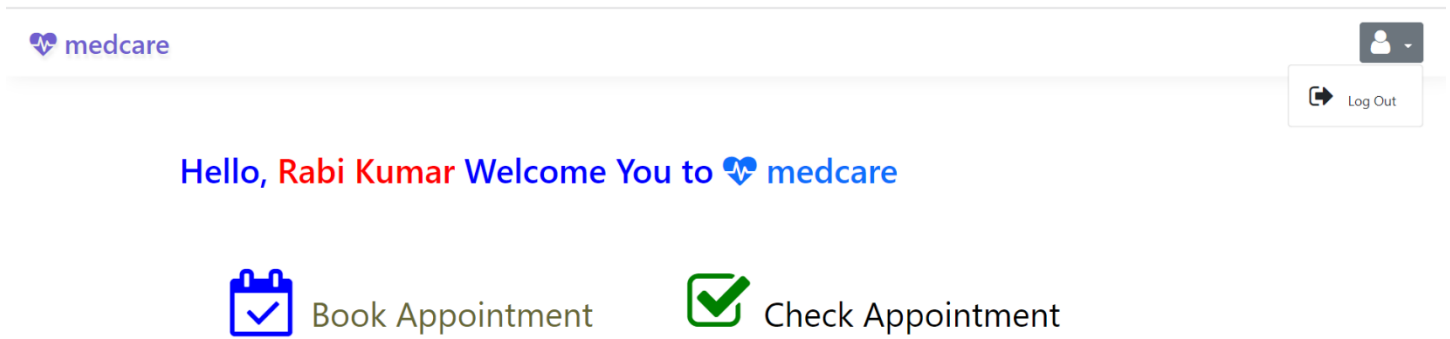
Nickname:

Mobile Number:

Submit

🏠 Home

FIGURE 6.9 PATIENT APPOINTMENT
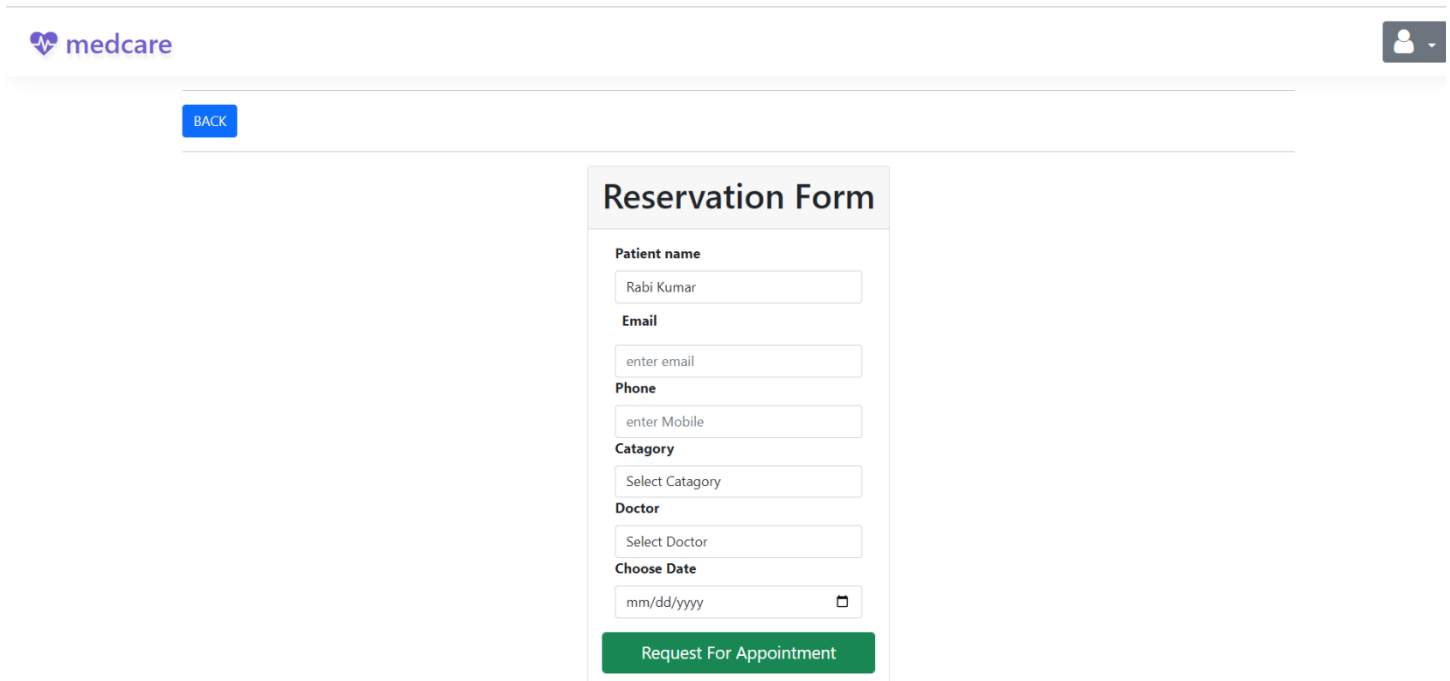
FIGURE 6.10 APPINTMENT FORM

FIGURE 6.11 ADMIN LOG IN

FIGURE 6.12 ADMIN HOME PAGE

FIGURE 6.13 ADD AND SHOW HOSPITAL

FIGURE 6.14 ADD DEPARTMENT AND TREATMENT

## FIGURE 6.15 ADD DOCTOR


FIGURE 6.16 APPOINTMENT DETAILS

FIGURE 6.17 PRICE INSERT FORM

CONCLUSION

Working on the project was an excellent experience. It helped us to understand the importance of planning, designing and implementation so far we have learnt in our theory books. It helped us unleashing our creativity while working in a team. It also realized the importance of team working, communication as a part of this project.

The project was successfully complete dafter a lot of effort sand work hours. This project underwent number of compiling, debugging, removing errors, making it bug free, adding more facilities in the web application and interactivity making it more reliable and useful.

This project focused that scheduling a project and adhering to that schedule creates a hard sense of time- management. It has also let us known that co-operative team work always produce effective results.

The entire project has been developed and deployed as per the requirements state by the user.

Finally, we like to conclude that we put all our efforts throughout the development of our project and tried to fulfill most of the requirements of the user.