

# Project Report File

## Department of Computer Science & Engineering

Title of Project :- Curation

**BTCS 603-18**

Submitted in partial fulfillment of the requirement for the award of Degree of  
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(Computer Science & Engineering)  
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(A State University Established by Govt. of Punjab vide Punjab Act No. 1 of 1997)

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## **ACKNOWLEDGEMENT**

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The completion of any inter-disciplinary project depends upon cooperation, co-ordination and combined efforts of several sources of knowledge.

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## **CERTIFICATE**

This is to certify that project report entitled "**CureNation**" is the work carried out **AntrikshPathania, Pranjeetkumar, Manpreet Mann , Yatinchhabra** students of B.Tech Computer Science & Engineering VI Semester, I.K. Gujral Punjab Technical University under the supervision of **Ms. Jaspreet Kaur , Assistant Professor, Department of Computer Science & Engineering , I. K. Gujral Punjab Technical University , Kapurthala.**

This report has not been submitted to any other organization/institution for the award any other degree/diploma.

Ms. Jaspreet Kaur

(Project Guide)

## **ABSTRACT**

Our project “**Curenation**” includes registration of patients, storing their details into the system, and also booking their appointments with hospital’s doctors. Our software has the facility to give a unique id for every patient and stores the details of every patient and users . User can search availability of a doctor and the details of a patient using the id. The Curenation System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast.

It is having mainly two modules. One is at Administration Level and other one is of user I.e. of patients and hospital’s doctors. The Application maintains authentication in order to access the application. Administrator task includes managing doctors information, hospital’s information , Ambulance’s information , patient’s information. The complaints which are given by user will be referred by authorities. The Patient modules include checking appointments, prescription. User can also pay doctor’s Fee online.

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# **CHAPTER 1**

## **INTRODUCTION**

1.1 PURPOSE

1.2 SCOPE

1.3 DEFINITIONS, ACRONYMS, and ABBREVIATIONS

1.4 REFERENCES

1.5 OVERVIEW

### **1.1 PURPOSE**

This software will help the company to be more efficient in registration of their patients and manage appointments, records of patients. It enables doctors and 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. Patient's can take appointment in any hospital from anywhere and make online payment for appointment fees of hospital . User's found all hospitals in one place.

### **1.2 SCOPE**

The system will be used as the application that serves hospitals, clinic, dispensaries or other health institutions. 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.

All the hospitals present at one place where patient's can take appointment according to convenient and make online payment for appointment fees of hospitals .

### 1.3 **DEFINITIONS, ACRONYMS, and ABBREVIATIONS**

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

- **SRS**: Software Requirement Specification.
- **DFD**: Data Flow Diagram.
- **ENT**- Ear, Nose and Throat Specialist.
- **BG** - Blood group
- ✓ **Appt** – Appointment.
- ✓ **Signup** - Creating New User.
- ✓ **Login**- Logging in Existing User.
- ✓ **PhNo** - Mobile number.
- ✓ **Addr** – Address.
- ✓ **Expr** – Experience

### 1.4 **REFERENCES**

- <https://www.officetimeline.com/make-gantt-chart/excel>
- <https://medium.com/@datamateuaecrescent/hospital-management-systemfeatures-objectives-62eeb13f4fc4>
- R.S Pressman, Software Engineering: A Practitioner's Approach, Mc-Graw-Hill, Edition-7 (2010).
- P. Jalote, an Integrated Approach to Software Engineering, Narosa publication house, Edition -3 (2011).



## **1.5 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 doctor can confirm and/or cancel appointments. The doctors can even add prescriptions for their patients using our application. The patients will be able to apply for the appointment and make transaction for the same, and can even cancel appointments with the doctors. They can track details about the previous transactions made by them.

### **Advantages**

- The system automates the manual procedure of managing hospital activities.
- Doctors can view their patients' treatment records and details easily.
- User's can makes appointments in any hospitals from anywhere .
- 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 updating the information by entering the details in the system.
- Need Internet connection

## **CHAPTER 2**

### **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
  - 2.3.3 DFD Level – 2
- 2.4 Use Case Diagram
- 2.5 Use Case Description
- 2.6 User characteristics
- 2.7 Constraints
- 2.8 Assumptions and dependencies

#### **2.1 Product Perspective**

This Patient's Appointment System is a self-contained system that manages activities 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. The fully functional automated hospital management system 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, employee, stock 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 medical center.

### 2.1.1 System Interfaces

#### ❖ User Interfaces

- This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the hardware, software and communication interfaces and provides basic prototypes of the user interface.
- The protocol used shall be HTTP.
- The Port number used will be 80.
- There shall be logical address of the system in IPv4 format.

#### ❖ Hardware Interfaces

- **Laptop/Desktop PC**-Purpose of this is to give information when Patients ask information about doctors, medicine available lab tests etc. To perform such Action it need very efficient computer otherwise due to that reason patients have to wait for a long time to get what they ask for.
- **LaserPrinter (B/W)** - This device is for printing patients' info etc.
- **Wi-Fi router**-Wi-Fi router is used to for internetwork operations inside of a hospital and simply data transmission from pc's to sever.

#### ❖ Software Interfaces

- **PHP 8.0** – PHP (Hypertext Preprocessor) is a popular server – side scripting language that is widely used for web development.
- **Xampp server** – Xampp is an abbreviation **where X stands for Cross-Platform, A stands for Apache , M stands for MYSQL , P stands for PHP and P stands for Perl.**  
Xampp is a free and open- source cross platform web server solution stack package developed by Apache Friends , consisting mainly of the Apache HTTP Server , MariaDB database and interpreters for scripts written in the PHP and Perl Programming Language.
- **OS Windows 10/11** - Very user friendly and common OS .

## 2.1.2 System Specifications

### 2.1.2.1 H/W Requirement

- Core i5 processor
- 2GB Ram.
- 20GB of hard disk space in terminal machines
- 1TB hard disk space in Server Machine

### 2.1.2.2 S/W Requirement

- Windows 7 or above operating system
- PHP 8.0
- Xampp server

## 2.1.3 Communication Interfaces

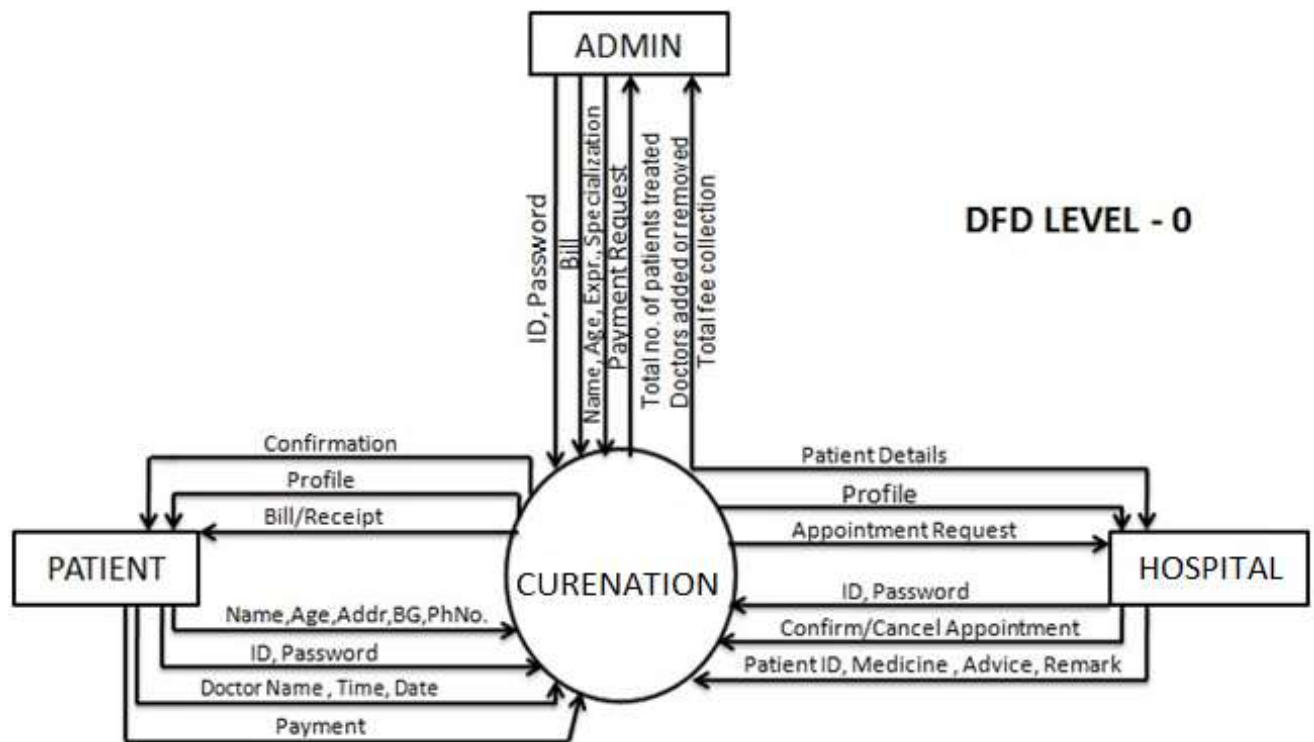
- ❖ **NIC (Network Interface Card)** – It is a computer hardware component that allows a computer to connect to a network. NICs may be used for both wired and wireless connections.
- ❖ **CAT 5 network cable-** for high signal integrity
- ❖ **TCP/IP protocol-** Internet service provider to access and share information over the Internet
- ❖ **Ethernet Communications Interface-** Ethernet is a frame-based computer network technology for local area networks (LANs)
- ❖ Ubiquitous, easy to set up and easy to use. Low cost and high data transmission rate.

## 2.2 Product functions

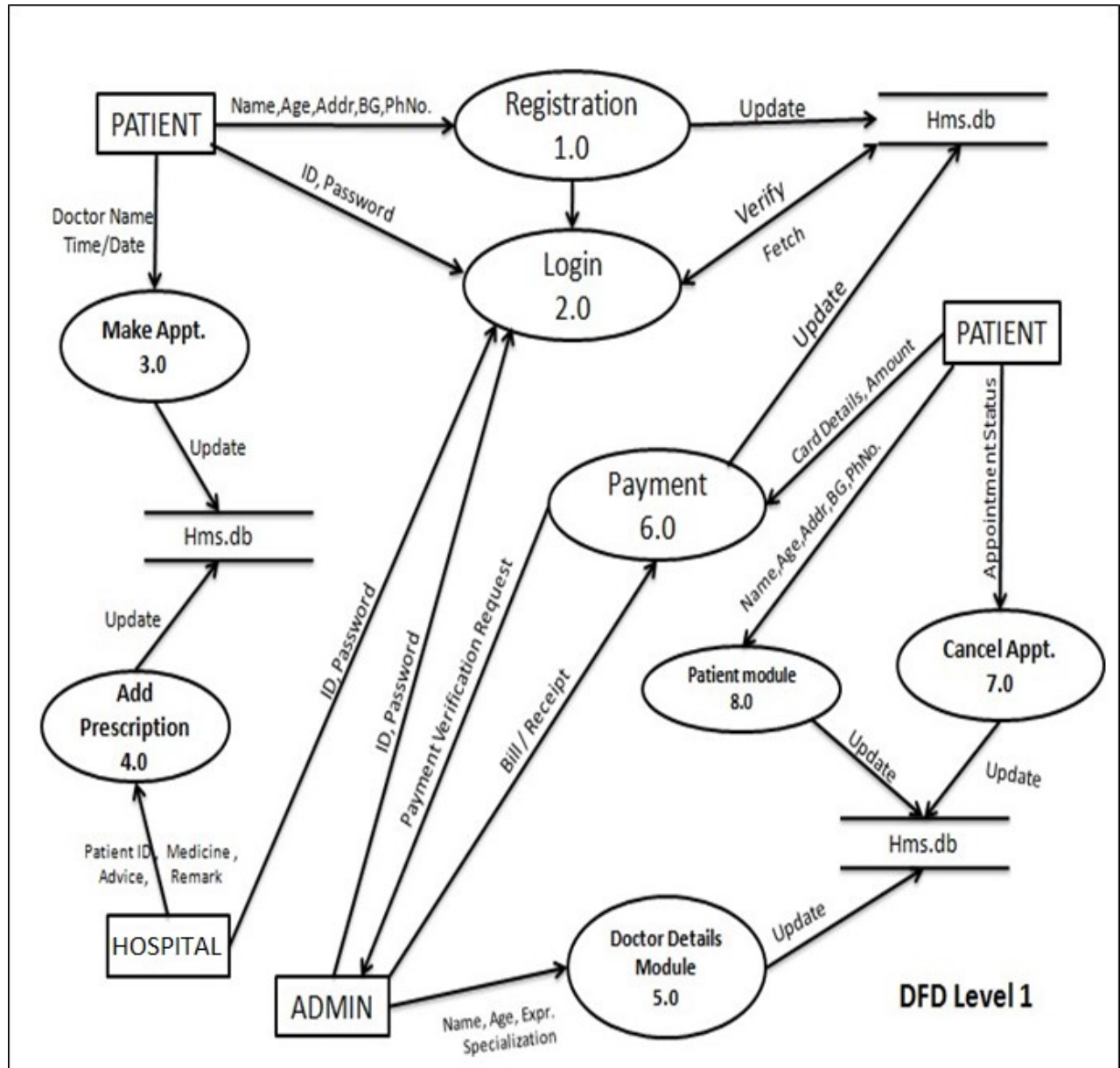
- Provide access to registered users only.
- Registration of new patients.
- Enable patient to view their record.
- Enable patient to update their record.
- Generate appointment date and timing.
- Confirmation by hospital.
- Patients can do Payment.
- Modification in schedule by patient.
- Admin access to patient's record.
- Admin add the new hospital ,doctors , Ambulance information.
- Admin Verify Payment and Generate Bill/Receipt.
- Admin can view monthly/yearly records

## 2.3 DATA FLOW DIAGRAM (DFD)

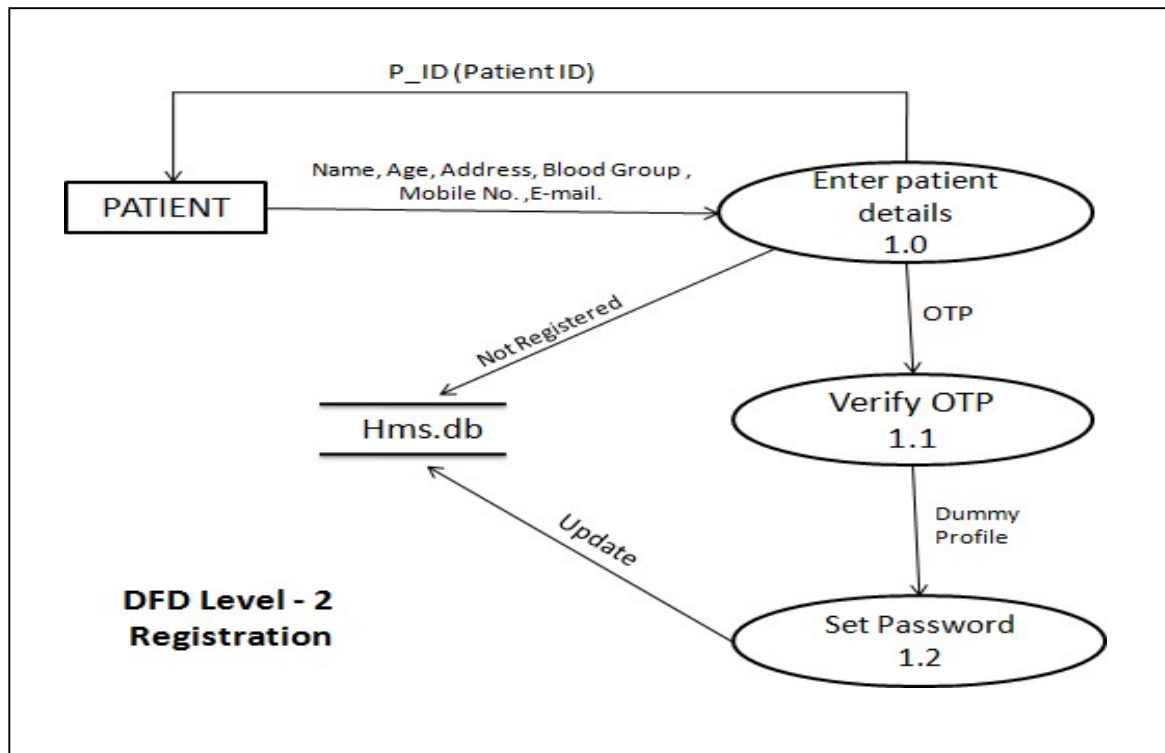
### CONTEXT LEVEL DIAGRAM



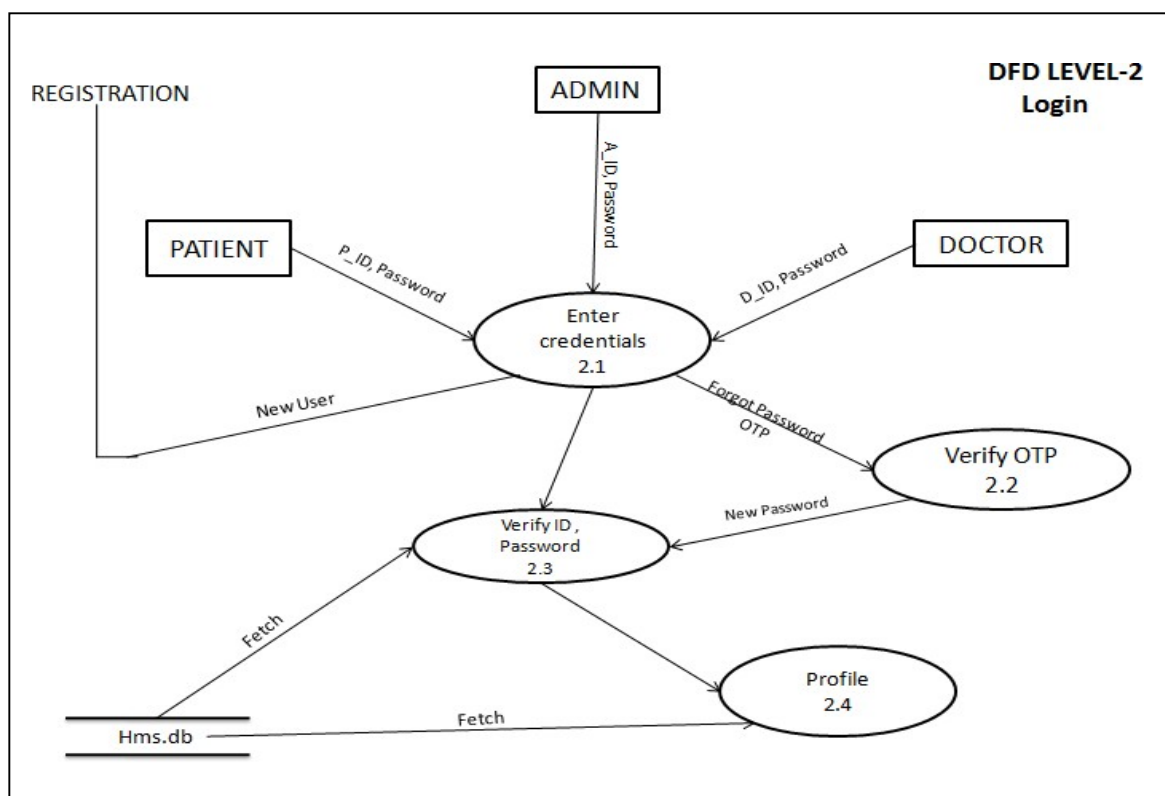
### DFDLEVEL -1



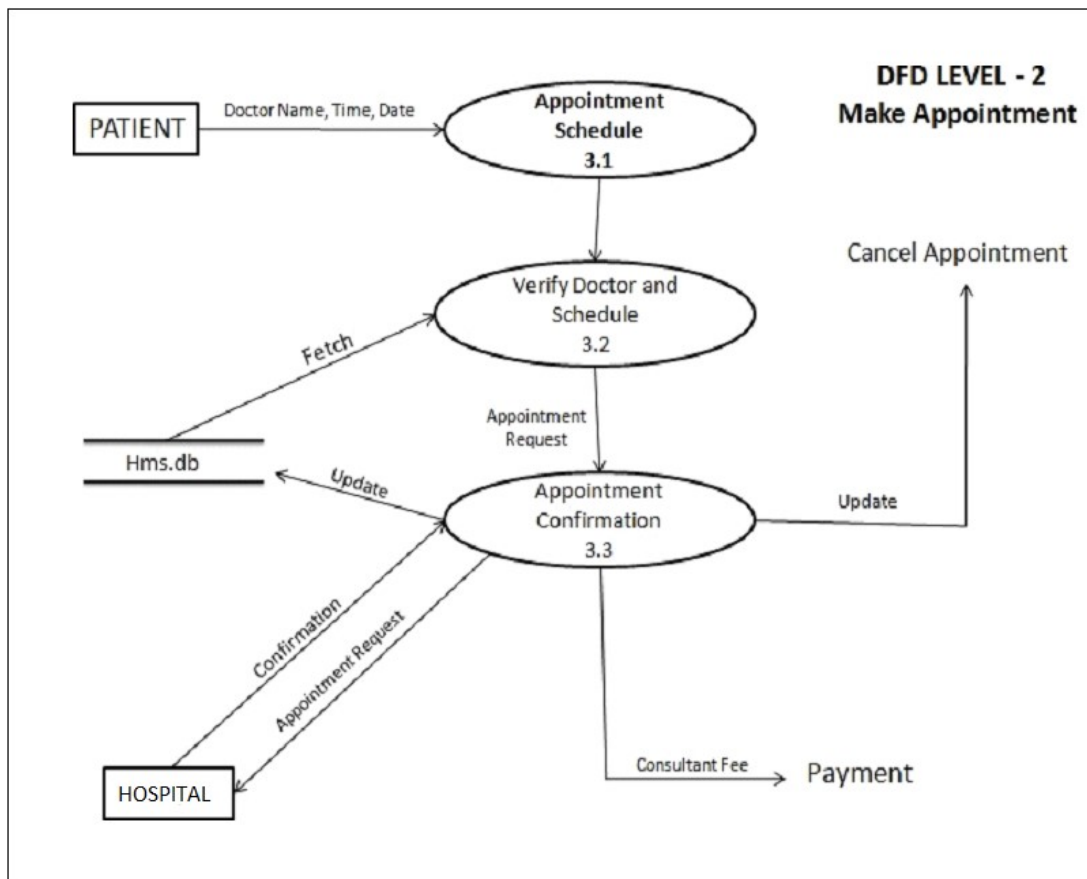
## LEVEL-2Registration



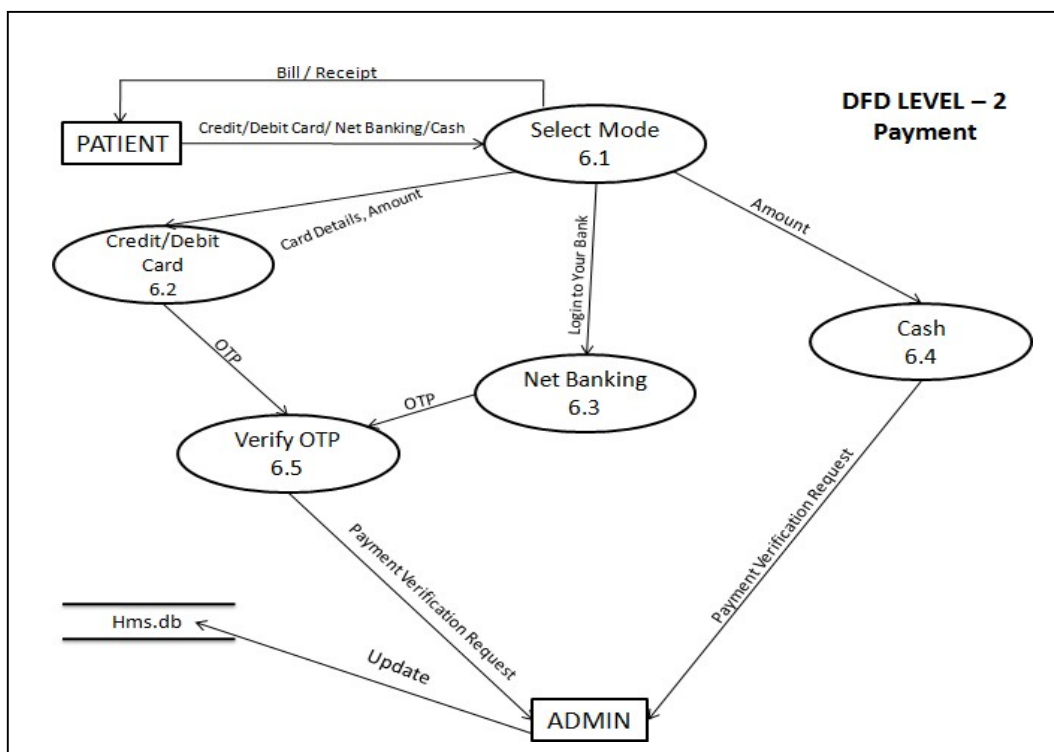
## LEVEL-2Login



## LEVEL-2MakeAppointment

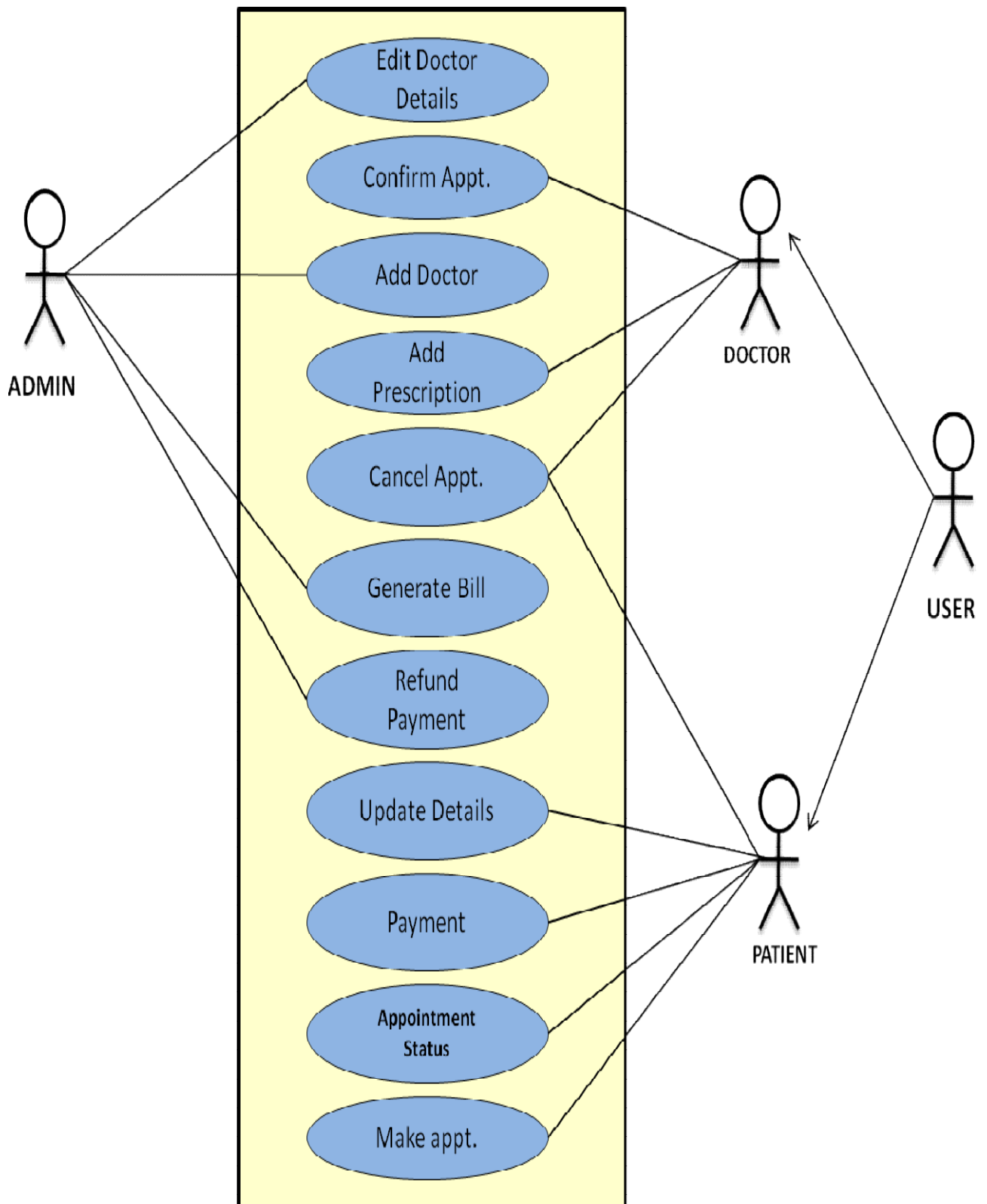


## LEVEL-2Payment





## 2.4 USECASEDIAGRAM



## **2.5 USECASEDESCRIPTION**

### **(1) PATIENT**

#### **\*REGISTRATION**

DESCRIPTION - The new patient can register themselves and add their details like name, age , gender, address, date, time, description etc. The patient entry will be made in the hms database.

PRE-CONDITION–Therpatientmustbeanewpatient,Ifnecessaryfieldsleftbyuser then prompt user to fill the necessary fields.

#### **MAINFLOWOFEVENTS**

1. Patientselectssignupinloginmodule.
2. Aregistrationformgetdisplayed
3. Patientfillstherequireddetails.

POSTCONDITIONS-Patientrecordisaddedtohmsdatabase.

#### **\*UPDATION**

DESCRIPTION-The patient should be enabled to update his/her details and the changes should reflect in hms database.

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

#### **MAINFLOWOFEVENTS**

1. Patientlogsintothesystem.
2. Patientviewhis record
3. Patientselectsupdatedetails.
4. Nowpatientmaychangethenecessaryfields.
5. Popofupdatedetails.

POSTCONDITION-Therecordofpatientisupdatedinhmsdatabase.

## **\*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. Patientfirstlogsintosystem.
2. Viewhis/herrecord.
3. Createanewappointmentorcancelthe appointment..

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

## **\*PAYMENT**

DESCRIPTION-It enables usertopaytheconsultantfeeofDoctoronline.

PRE-CONDITION-The patientmust be aregisteredpatient,IfPatientdon'twants topayonlinehe/shecanpaybycashalso.

### MAINFLOWOFEVENT

1. Patientfirstlogsintosystem.
2. Viewhis/herrecord.
3. AppointmentconfirmedbytheDoctorthengoforPayment.

POSTCONDITIONS-ARecieptwillbedisplayed.Thehmsdatabaseis updated

## **(2) DOCTOR**

DESCRIPTION- The doctor view patient record/ update his details and add description of the treatment given to patient.

PRE-CONDITION- The doctor must be aregistered doctor, System doesnot allowthedoctor to modify the qualification, hospital manageddetails.

### MAINFLOWOFEVENTS

1. Doctor logs into the system.
2. Doctor may select view patient.
  - 2.1 Patient record is displayed with treatment history.
3. Doctor adds description of patient treatment.
4. Doctor may select appointment details
  - 4.1 Appointment Request is displayed with schedule.
5. Doctor confirm or cancel appointment.

POSTCONDITION – The patient and doctor's database are updated.

### **(3) ADMIN**

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

### MAIN FLOW OF 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.
4. Admin Verify the payment submitted by the Patient.
  - 4.1 Generate Bill/Receipt and confirmation message for the same.

PRE -CONDITION - Admin must first log in with his/her credentials.

POST CONDITION - The hms 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 the system.

**Keyfunctions:**

- Accesspatientrecord,doctorRecord.
- Addnew hospital, ambulance ,doctorentryinsystemdatabase.
- ConfirmPaymentandGenerateBill.
- ViewRecords.(Totalnoofpatientstreated,doctoradded/remove,consultantfee).

**PATIENT**

Patients can choose the best preferred appointments from the options provided andcan also change the appointment schedule or cancel it. After appt. is confirmed by the respective doctor they can pay their consultant fee online. Patients have access to only their records.

**Keyfunctions:**

- Makeappointment.
- Cancelappointment.
- View Appointment status.
- Payment.

**HOSPITAL**

Doctors can view the patient appointment list and provide the confirmation or make changesin the appointment listifrequired. Doctors haveaccess toonlyrecordsofthose patients whom they are treating.

**Keyfunctions:**

- Confirmation of appointment.
- Cancellation of appointment.
- Modification of appointment list.
- Add Prescription.

## **2.7 Constraints**

- System is wirelessly networked with an encryption.
- System is only accessible within the hospital's website only.
- Database is password protected.
- Should use less RAM and processing power.
- Each user should have individual ID and password.
- Only administrator can access the whole system.

## **2.8 Assumptions and dependencies**

- Each user must have a valid user ID and password
- Server must be running for the system to function
- Users must log into the system to access any record.
- Only the Administrator can delete records.

## **CHAPTER 3**

### **SPECIFIC REQUIREMENTS**

- 3.1 Performance requirements
- 3.2 Safety requirements
- 3.3 Security constraints
- 3.4 Software system attributes
  - 3.4.1 Usability
  - 3.4.2 Availability
  - 3.4.3 Correctness
  - 3.4.4 Maintainability
  - 3.4.5 Accessibility
- 3.5 Functional Requirements

#### **3.1 PERFORMANCE REQUIREMENTS**

- **Response time-**  
The system will give responses within 1 second after checking the patient information and other information.
- **Capacity-** The system must support 1000 people at a time
- **User interface-** User interface screen will respond 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 the system can

understand who is login in to system right now no intruders allowed except system administrative nobody cannot change record and valuable data.

### 3.3 SECURITY REQUIREMENTS

1. Wanttaketheresponsibilityoffailuresduetohardwaremalfunctioning.
2. Warrantyperiodofmaintainingthesoftwarewouldbeoneyear.
3. Additionalpaymentswillbeanalyzedandchargedforfurthermaintenance.
4. Ifanyerroroccurdueto auser'simproperuse.Warrantywillnotbeallocatedtoit.
5. Nomoneybackreturnsforthesoftware.

### 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/requirements of the client.

**3.4.4 Maintainability:** The ability to maintain, modify information and update fix problems of 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

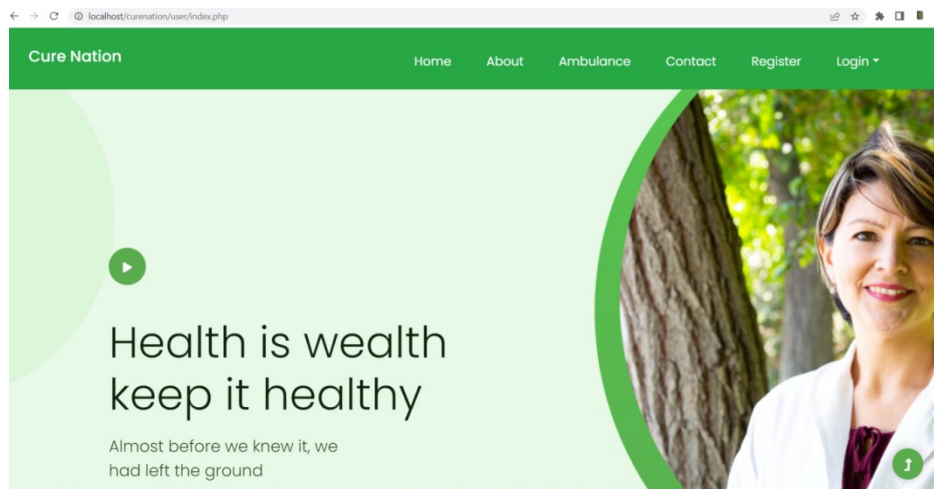
S. No.	MODULE NAME	APPLICABLE ROLES	DESCRIPTION
1.	LOGIN	PATIENT DOCTOR ADMIN	<b>PATIENT:</b> CanloginusinguniqueIdand Password after this system shall show his/her profile.  <b>DOCTOR:</b> CanloginusinguniqueIdand Password after this system shall show his/her profile.



			<b>ADMIN:</b> Can login using unique Id and Password after this system shall show a profile with link to maintain the website.
2.	REGISTRATION	PATIENT	<b>PATIENT:</b> Can Register by filling all the required details, after this the system will verify the details and check if already registered or not.
3.	MAKE APPT.	PATIENT	<b>PATIENT:</b> 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	<p><b>PATIENT :</b> Can Cancel appointment if want to by just one click after this system shall ask for re-schedule or refund of payment.</p> <p><b>DOCTOR:</b> Can Cancel appointment if want to by just one click after this system shall send a message to the patient.</p>
5.	PAYMENT	PATIENT	<b>PATIENT:</b> Enter payment details and make payment after this system shall show the generated bill by the hospital.
6.	DOCTOR MODULE	ADMIN	<p><b>ADMIN:</b> Can add a new doctor by filling all the details after this system shall show a confirmation message.</p> <p>Can Remove a doctor by just one click after this system shall show confirmation message.</p>
7.	PATIENT MODULE	PATIENT	<p><b>PATIENT:</b> Can view payment history or can search for a particular bill also after this system shall show a bill or history.</p> <p>Can also See or search for a doctor by entering dept. name or doctor id if known after this system will check for the doctor if found shall show doctor's profile.</p> <p>Can also update details after this system shall ask for re-enter password and after verifying password shall update details.</p>
8.	ADD PRESCRIPTION	DOCTOR	<b>DOCTOR :</b> Enter Patient Id and after this all the treatment details and medicine, remark and advice for the patient after this system shall show a message for update.

## CHAPTER 4

### SAMPLE SCREENSHOTS



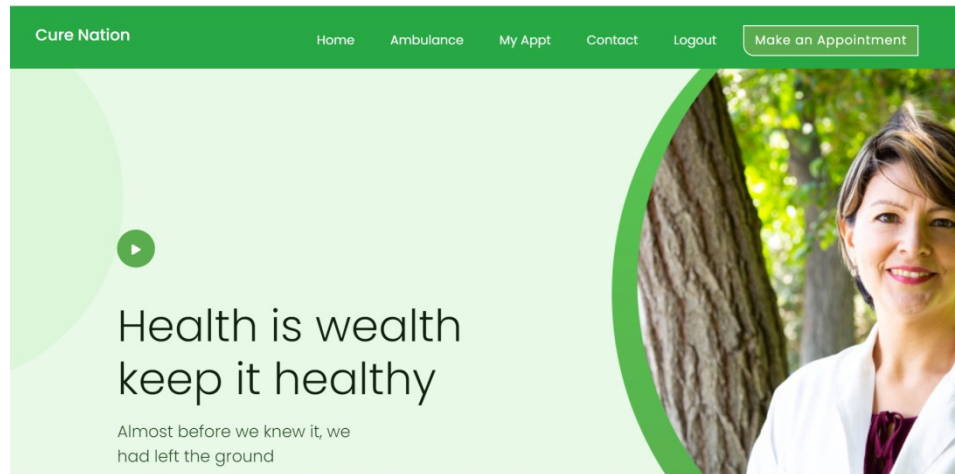
**Figure 4.1** Home page

The screenshot shows the "Register Here" page. It has a green header with the site name and navigation links. Below the header, the text "Register Here" is displayed in green. A light green box contains the text "If already registered, click here". The registration form consists of several input fields: "Enter your name", "Enter Phone Number", "Email", "Enter Password", "Age", "Enter Address", "Id Proof" (with a "Choose File" button and "No file chosen" text), "Address Proof" (with a "Choose File" button and "No file chosen" text), and "Select Gender" (with radio buttons for "Male", "Female", and "Other"). A green "SEND" button is located at the bottom right of the form.

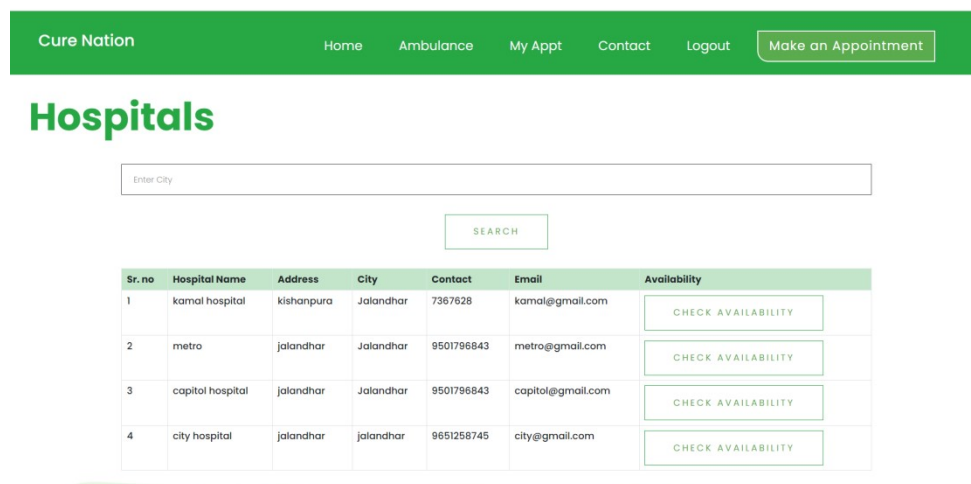
**Figure 4.2** First of all you have to register yourself by selecting the register button.

The screenshot shows the "User's Login" page. It has a green header with the site name and navigation links. Below the header, the text "Welcome to User's Login" is displayed in green. The login form consists of two input fields: "Email" and "Enter Password". A green "LOGIN" button is located below the password field. At the bottom of the page, there is a green decorative shape with a grid of dots and a small green circle with a white "1" inside.

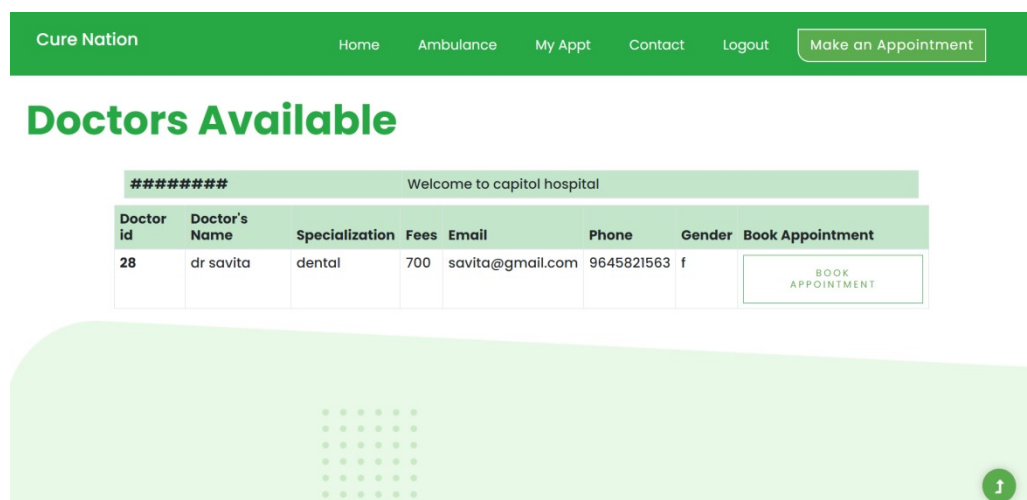
**Figure 4.3** User have to enter the valid credential to login.



**Figure 4.4** After login user can take appointment and also see his/her appointment status , checks ambulance availability , contact to the administrator.



**Figure 4.5** Select the **Make an Appointment** button then user have to search the city wise hospital for take an appointment to the hospital.



**Figure 4.6** After click on **Check Availability** button user have to see all the doctors of that hospitals.

**Cure Nation** Home Ambulance My Appt Contact Logout [Make an Appointment](#)

**Patient's Details**

Enter your name:  Age:

Select Gender: ☐ Male ☐ Female ☐ Other Enter Address:

Choose Appointment Date:  Choose Appointment Time:

Enter Description:

[PAY](#)

**Figure 4.7** After Click on **Book Appointment** button a Appointment form will appear user have to fill form for take an appoointment.

**Cure Nation** Home Ambulance My Appt Contact Logout [Make an Appointment](#)

**Payment Details**

Enter Full Name:

Enter Email:

Enter Address:

Enter City:

Enter State:

[SEND](#)

**Figure 4.8** For Payment your have to fill the Payment details.