

ALZHEIMER'S DISEASE PREDICTION

WITH AI PERSONALIZED TREATMENT RECOMMENDATION SYSTEM

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INTRODUCTION

The system is an integrated website platform that uses **CNNs** and **DNNs** to detect, predict, and manage **Alzheimer's Disease (AD)** through **MRI brain imaging data**.

It offers features like :

- **early disease prediction**
- **online appointments**
- **personalized medicine recommendations**
- **and easy access to medical reports**

This system addresses these issues by providing an AI-driven platform for **early detection**, improving convenience for both patients and healthcare professionals.



MODULES

- 1 REGISTRATION FORM AND LOGIN MODULE
- 2 ONLINE APPOINTMENT MODULE
- 3 DISEASE PREDICTION MODULE
- 4 MEDICINE MODULE
- 5 REFERRAL MODULE
- 6 ONLINE REPORT MODULE

HARDWARE & SOFTWARE REQUIREMENTS

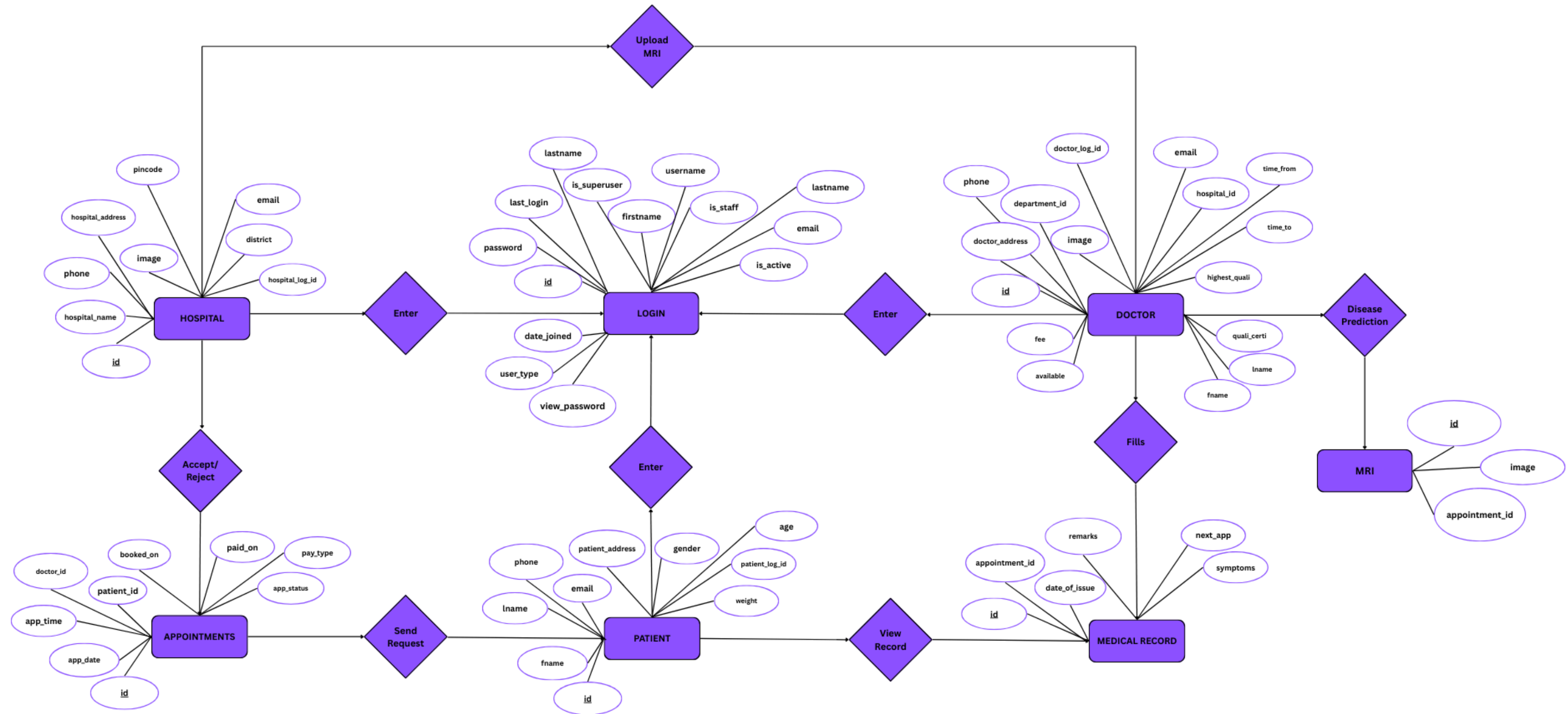
● Hardware Requirement

- Operating System: Windows 10
- Processor: I5 processor
- RAM: 8GB
- Storage: 100 GB ROM

● Software Requirement

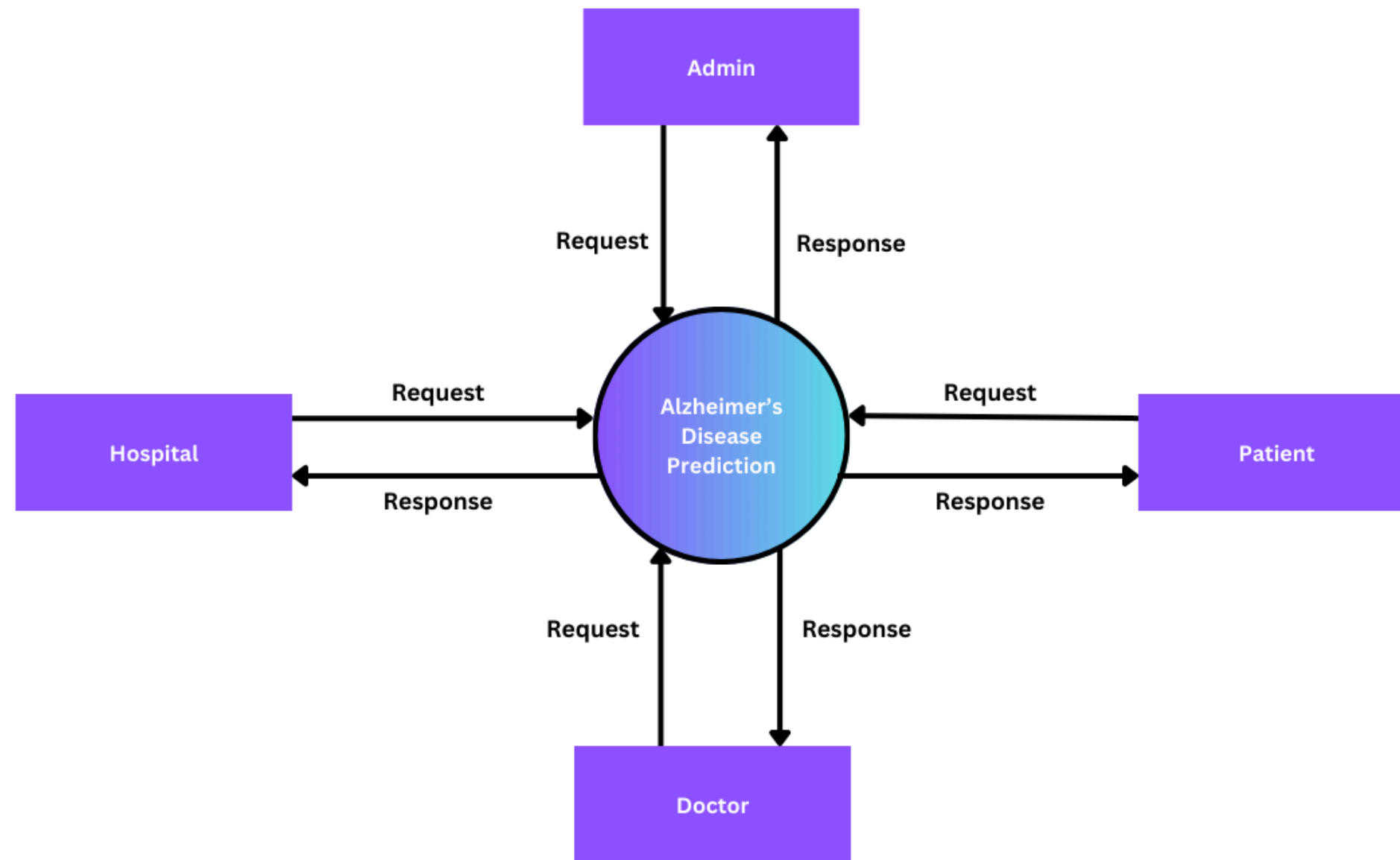
- Frontend - HTML, CSS, Javascript
- Backend - Python, Django
- DB - Sqlite3

ENTITY RELATIONSHIP DIAGRAM

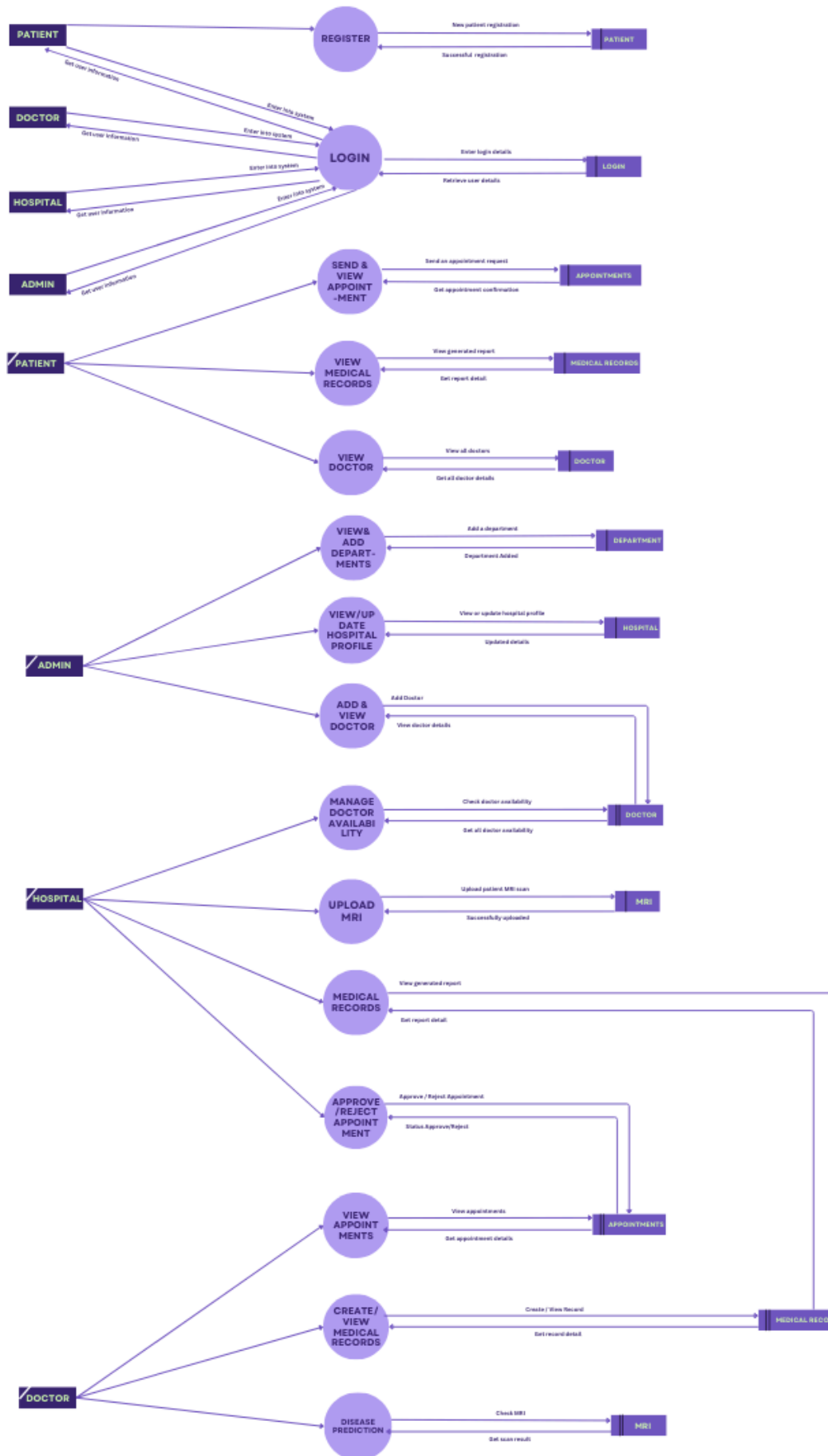


DATA FLOW DIAGRAM

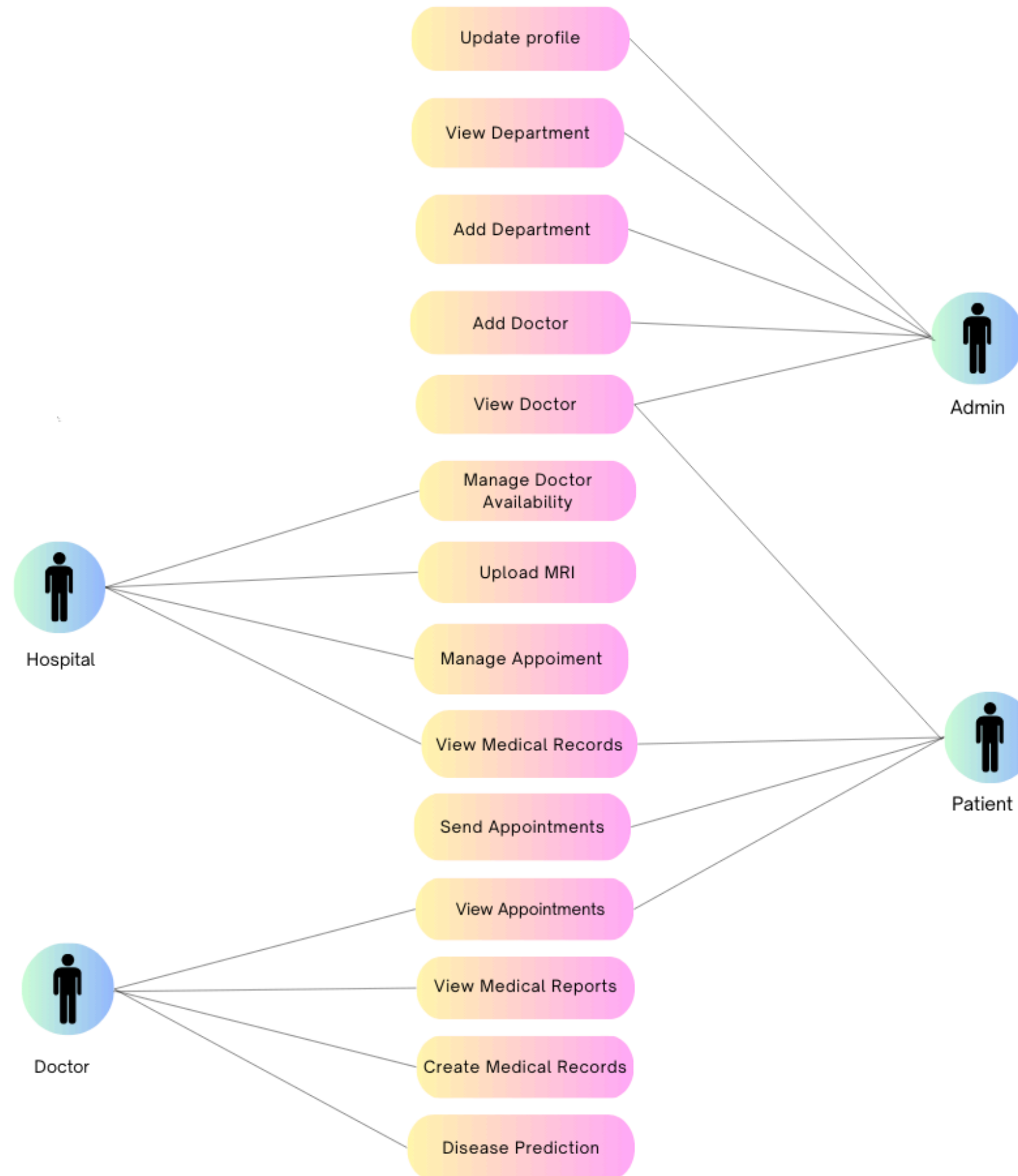
DFD LEVEL 0



DFD LEVEL 1



USE CASE DIAGRAM



PROJECT WORKFLOW DIAGRAM

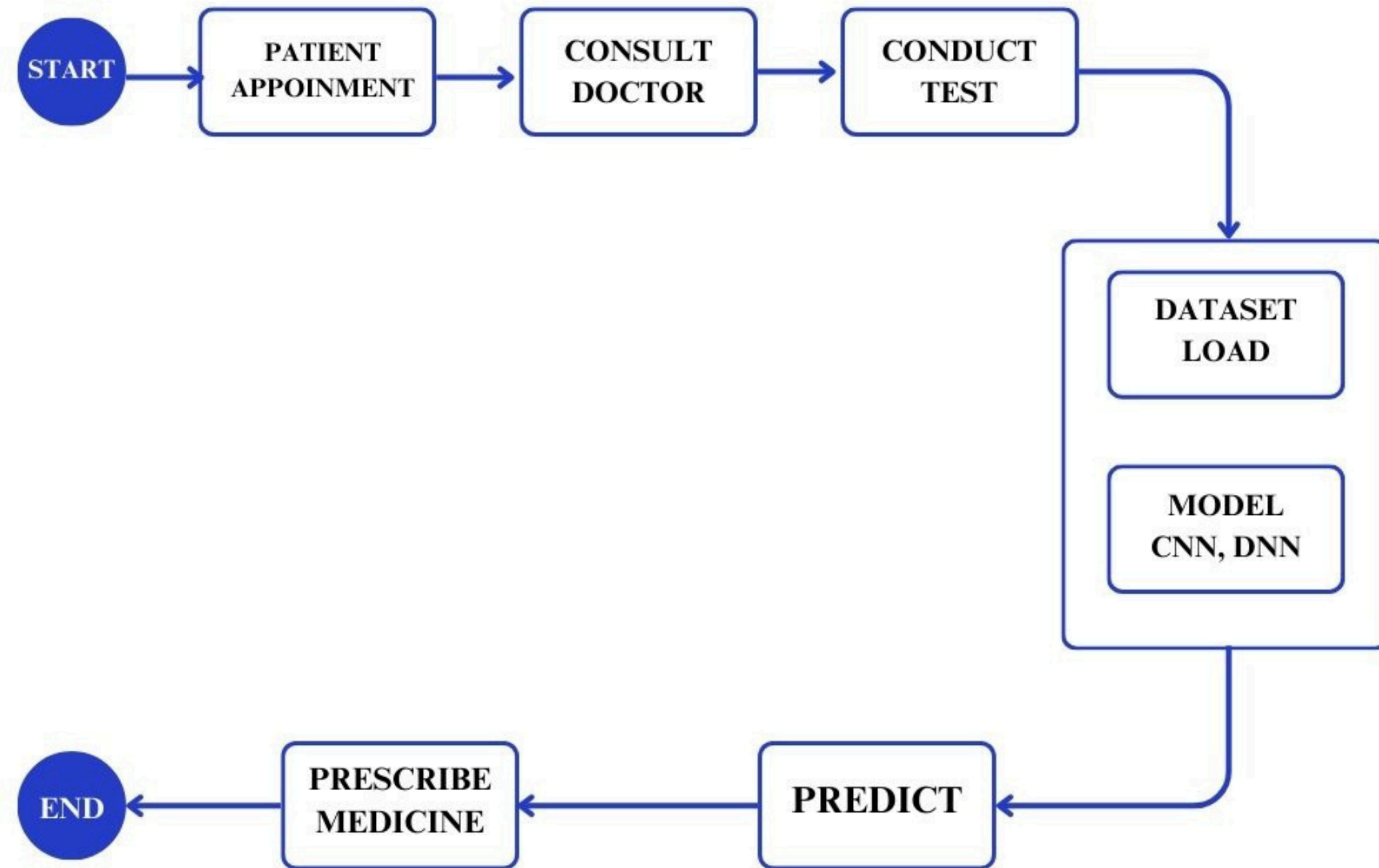


TABLE DESIGN

Medico_app_appointment

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
app_date	DATE	
app_time	TIME	
doctor_id	INT	FOREIGN KEY REFERENCES doctorreg(id)
patient_id	INT	FOREIGN KEY REFERENCES patientreg(id)
booked_on	DATE	
paid_on	DATE	
paytype	ENUM("debit card" ,"credit card")	
app_status	ENUM ("pending" ,"approved")	

Medico_app_doctor

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
phone	VARCHAR (15)	
email	VARCHAR (50)	
doctor_address	TEXT	
department_id	INT	FOREIGN KEY REFERENCES medico_app_department (id)
doctor_log_id	INT	FOREIGN KEY REFERENCES login (id)
hospital_id	INT	FOREIGN KEY REFERENCES hospitalreg(id)
image	VARCHAR (255)	
time_from	TIME	
time_to	TIME	
highest_quali	VARCHAR (30)	
quali_certi	VARCHAR (255)	
fname	VARCHAR (30)	
lname	VARCHAR (30)	
fee	VARCHAR (30)	
available	VARCHAR (30)	

Medico_app_departmentt

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
department_name	VARCHAR (30)	

TABLE DESIGN

Medico_app_login

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
password	VARCHAR (128)	
last_login	DATETIME	
is_superuser	BOOL	
username	VARCHAR(150)	
firstname	VARCHAR(30)	
lastname	VARCHAR(30)	
email	VARCHAR (50)	
is_staff	BOOL	
is_active	BOOL	
date_joined	DATETIME	
user_type	VARCHAR (255)	
view_password	VARCHAR (30)	

Medico_app_hospital

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
hospital_name	VARCHAR (50)	
phone	VARCHAR (15)	
email	VARCHAR(50)	
hospital_address	TEXT	
pincode	VARCHAR(10)	
district	VARCHAR(50)	
hospital_log_id	INT	FOREIGN KEY REFERENCES medico_app_login(id)
image	VARCHAR (255)	

Medico_app_medical_record

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
date_of_issue	DATE	
remarks	TEXT	
appointment_id	INT	FOREIGN KEY REFERENCES medico_app_appointment(id)
next_app	DATE	
symptoms	TEXT	

TABLE DESIGN

Medico_app_medicine_details

Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
m_name	VARCHAR (30)	
m_dosage	VARCHAR (30)	
m_quantity	VARCHAR(30)	
m_directions	VARCHAR(30)	
m_days	VARCHAR(30)	
medical_record_id	INT	FOREIGN KEY REFERENCES medico_app_medical_record(id)

Medico_app_Patient

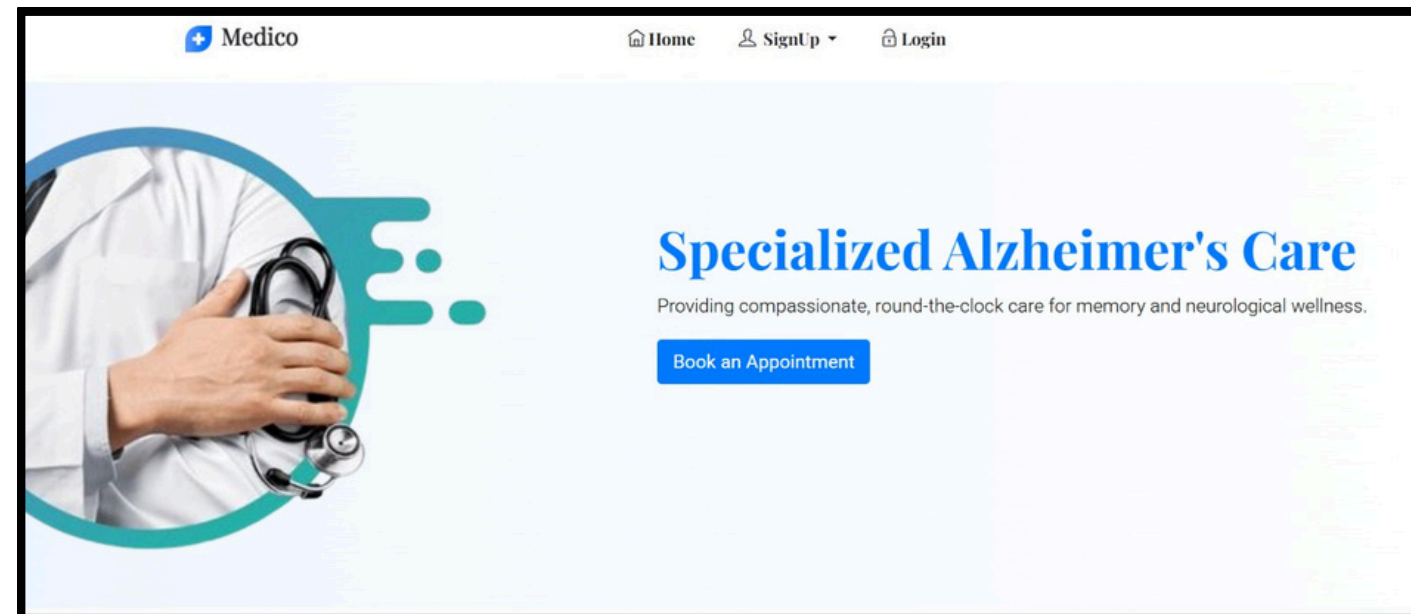
Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
fname	VARCHAR (30)	
lname	VARCHAR(30)	
phone	VARCHAR(15)	
email	VARCHAR(50)	
patient_address	TEXT	
gender	VARCHAR(10)	
age	VARCHAR 30)	
weight	VARCHAR(30)	
patient_log_id	INT	FOREIGN KEY REFERENCES medico_app_login(id)

Medico_app_MRI

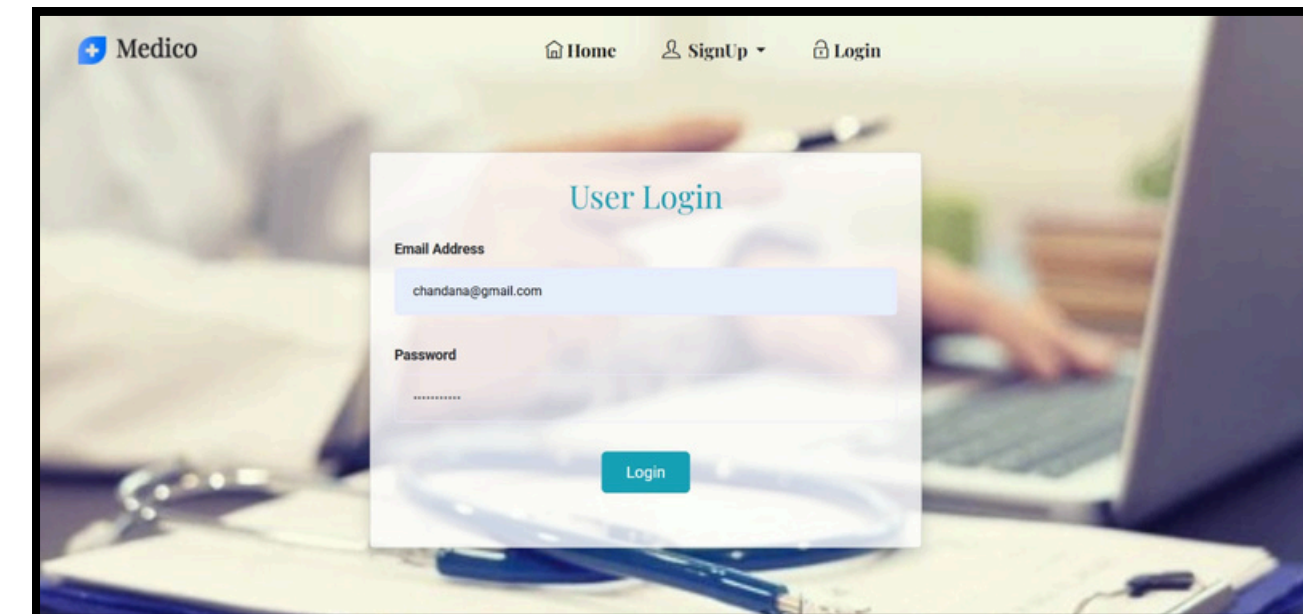
Attributes	Data Type	Constraints
id	INT	PRIMARY KEY, AUTO INCREMENT
image	VARCHAR (255)	
appointment_id	INT	FOREIGN KEY REFERENCES medico_app_appointment(id)

INPUT OUTPUT SCREEN DESIGN

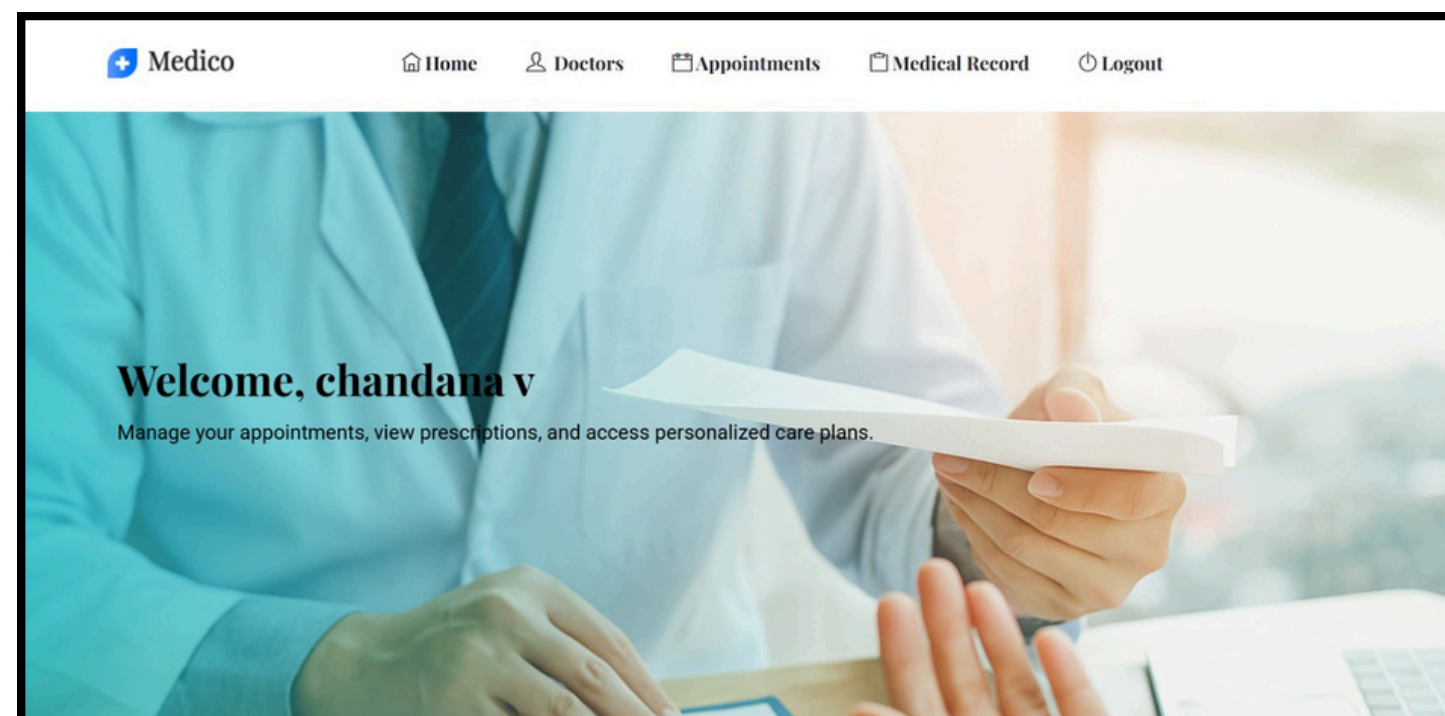
HOMEPAGE



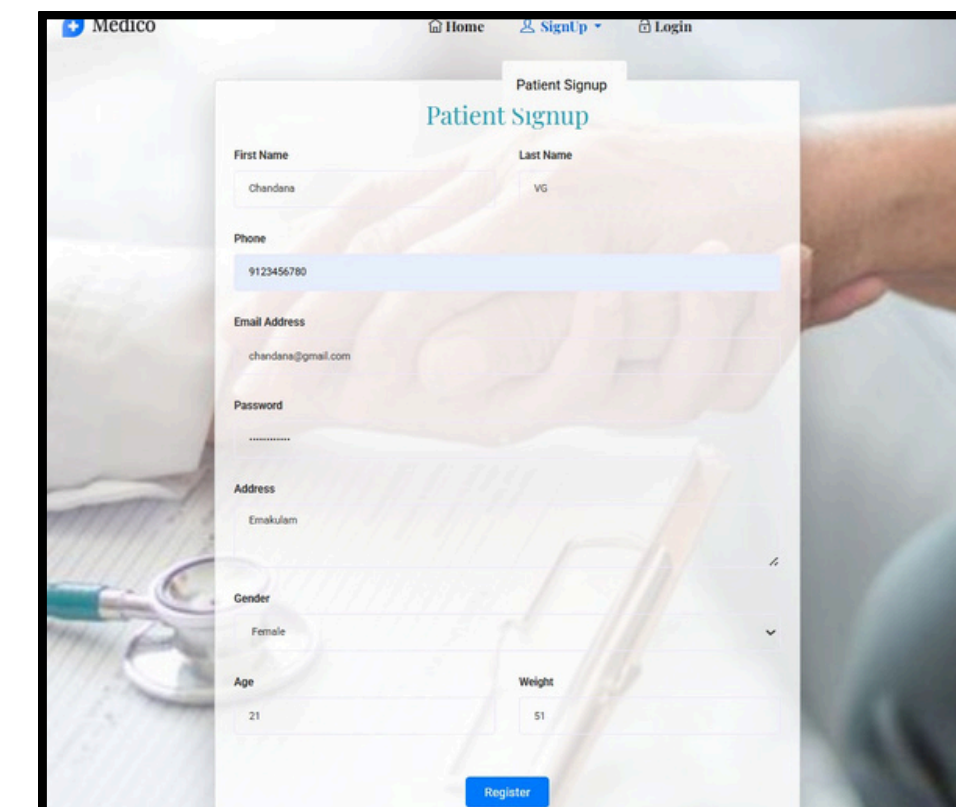
LOGIN



PATIENT HOMEPAGE



PATIENT SIGNUP



INPUT OUTPUT SCREEN DESIGN

VIEW DOCTORS

+

Medico

Home

Doctors

Appointments

Medical Record

Logout

Choose Department

Filter

All

Vignesh H R

BDS

Neurology

Email

vignesh@gmail.com

Phone

9085201479

Address

vignesh address

Consultation Time

10 a.m. - 3:30 p.m.

Consultation Fee

300 Rs.

Make Appointment

Nia V

MBBS

Geriatrician

Email

nia@gmail.com

Phone

9123456780

Address

Elamakkara,Kochi,Kerala

Consultation Time

2:43 p.m. - 2:49 p.m.

Consultation Fee

200 Rs.

Make Appointment

APPOINTMENT REQUEST

+

Medico

Home

Doctors

Appointments

Medical Record

Logout

Appointment Request

Name

chandana v

Email

chandana@gmail.com

Phone

9123456780

Department

Neurology

Preferred Doctor

Vignesh H R

Preferred Date

27-04-2025

Preferred Time

12:13 PM

Send Request

BOOKING APPOINTMENT

+

Medico

Home

Doctors

Appointments

Medical Record

Logout

Appointment with Dr. Vignesh H R

Department:

Neurology

Appointment Date:

April 27, 2025

Consultation Fee:

300 Rs.

Visiting Time:

12:13 PM

Booked On:

April 26, 2025

Status:

Approve

Cancel

Pay Consultation Fee

PAYMENT DETAILS

PAYMENT DETAILS

Doctor

Vignesh H R, Neurology

Date

April 27, 2025

Hospital

Emergency hospital

Consultation Fee

300 Rs.

Choose Payment Type

Debit Card

Proceed to Pay

INPUT OUTPUT SCREEN DESIGN

CONFIRM APPOINTMENT

Medico

Home

Doctors

Appointments

Medical Record

Logout

Appointment with Dr. Vignesh H R

Department:

Neurology

Appointment Date:

April 27, 2025

Consultation Fee:

300 Rs.

Visiting Time:

12:13 PM

Booked On:

April 26, 2025

Status:

Confirm

Payment On:

April 26, 2025

Payment Type:

Debit Card

PRESCRIPTION DETAILS

Medico

Home

Doctors

Appointments

Medical Record

Logout

chandana v

Email: chandana@gmail.com

Phone: 9123456780

Address: Elamakkara,Kochi,Kerala

Prescription Date: April 26, 2025

Prescribed By: Vignesh H R, Neurology

Hospital: Emergency hospital

Contact: 9567217436

Symptoms:

loss of meomory

Medicines:

Medicine	Dosage	Quantity	Directions	Days
Donepezil	10mg	10	Before Food	5

Remarks:

non demented

Tests:

Test Name	Test Result
Non Demented	<div><div>Choose File</div>No file chosen</div>

Upload Test Result

INPUT OUTPUT SCREEN DESIGN

HOSPITAL HOMEPAGE



DOCTOR AVAILABILITY

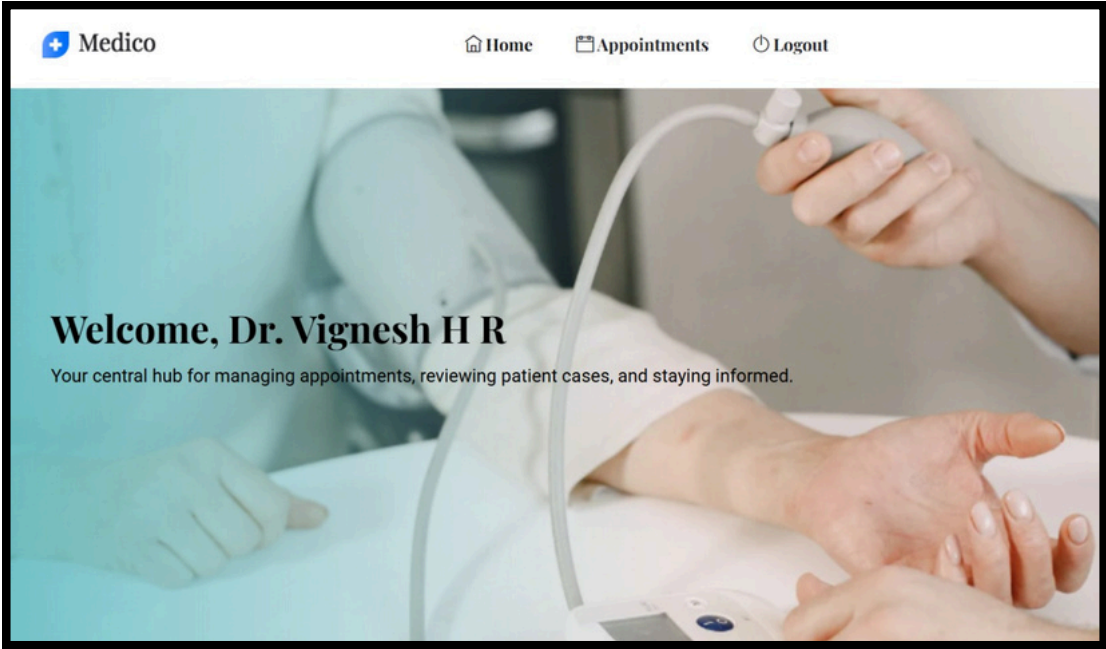
Medico							
Home Appointments Doctor Logout							
#	PATIENT	DOCTOR	APPOINTMENT DATE	STATUS	APPROVE/REJECT	MEDICAL RECORD	ADD MRI SCAN
1	chandana v	Vignesh H R, Neurology Emergency hospital	April 27, 2025	Paid	<div>Accept</div> <div>Reject</div>	<div>View</div>	<div>Choose File</div> No file chosen <div>Upload MRI Scan</div>
2	Megha Mahesh	Ema j, Geriatrician Emergency hospital	April 16, 2025	Prescription added	no action	<div>View</div>	<div>Choose File</div> No file chosen <div>Upload MRI Scan</div>
3	Avril Martin	Ema j, Geriatrician Emergency hospital	April 15, 2025	Visited	no action	<div>View</div>	<div>Choose File</div> No file chosen <div>Upload MRI Scan</div>
4	Avril Martin	neena a, Geriatrician Emergency	April 13, 2025	Visited	no action	<div>View</div>	<div>Choose File</div> No file chosen <div>Upload MRI Scan</div>

MANAGING APPOINTMENTS

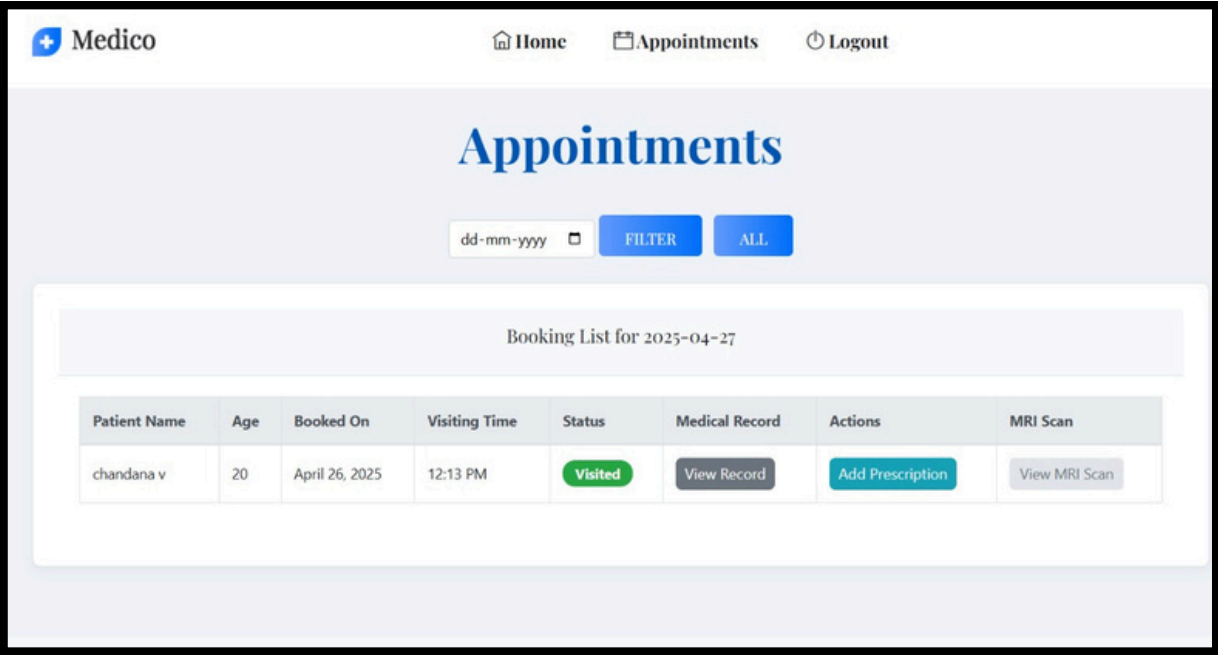
Medico				
Home Appointments Doctor Logout				
#	DOCTOR	DEPARTMENT	AVAILABILITY	ACTION
1	Vignesh H R	Neurology	<input checked="" type="checkbox"/>	<div>Submit</div>
2	Priya S	Neurology	<input type="checkbox"/>	<div>Submit</div>
3	Nia V	Geriatrician	<input checked="" type="checkbox"/>	<div>Submit</div>
4	appu kuttan	Geriatrician	<input checked="" type="checkbox"/>	<div>Submit</div>
5	Iva a	Geriatrician	<input checked="" type="checkbox"/>	<div>Submit</div>
6	Ema j	Geriatrician	<input checked="" type="checkbox"/>	<div>Submit</div>
7	neena a	Geriatrician	<input checked="" type="checkbox"/>	<div>Submit</div>

INPUT OUTPUT SCREEN DESIGN

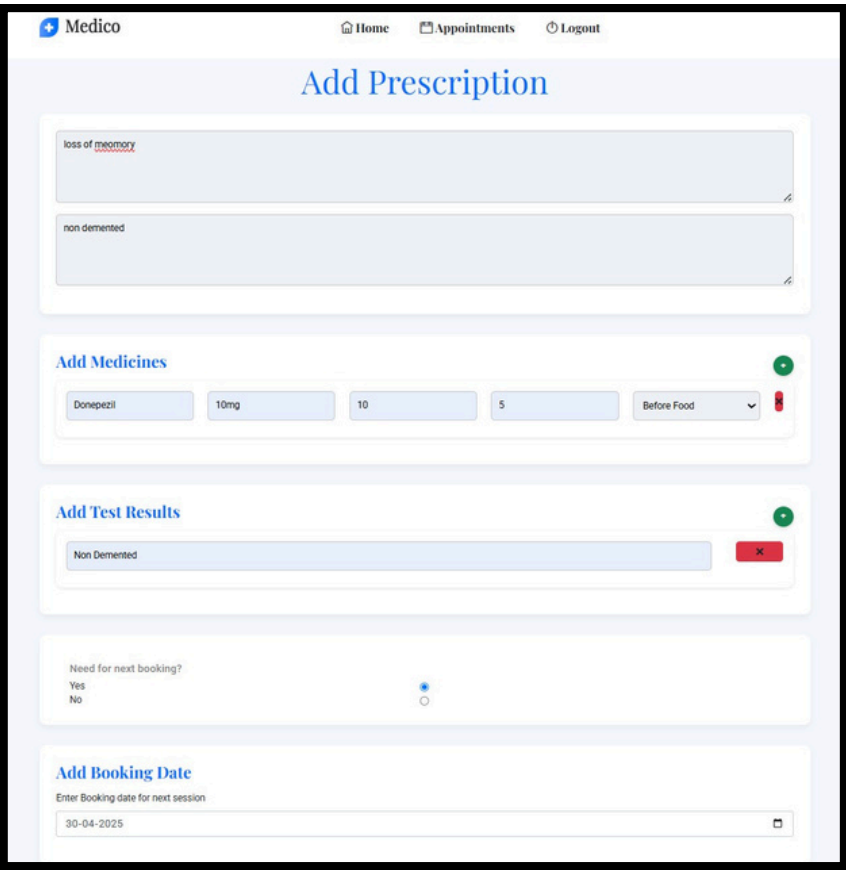
DOCTOR HOMEPAGE



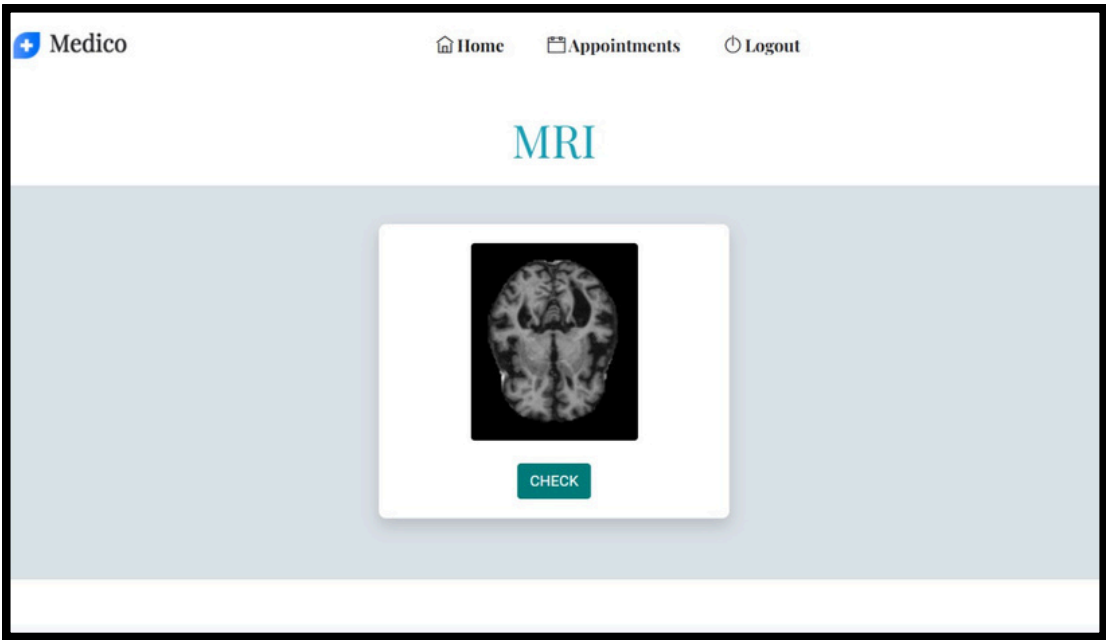
APPOINTMENTS



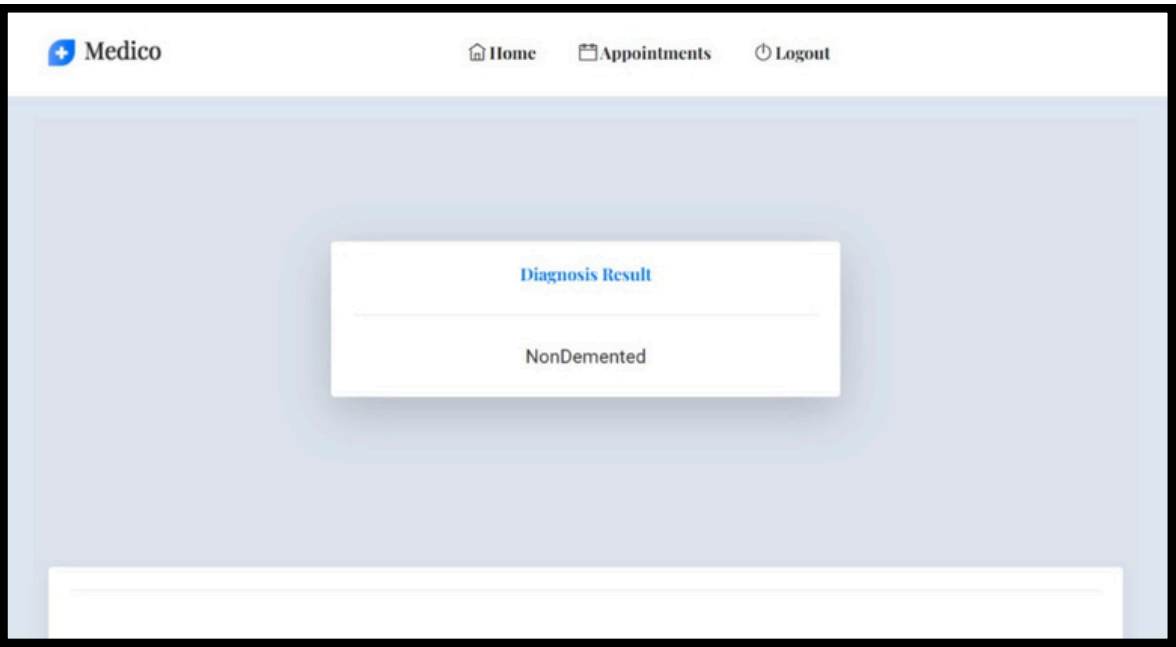
ADD PRESCRIPTION



MRI CHECKING

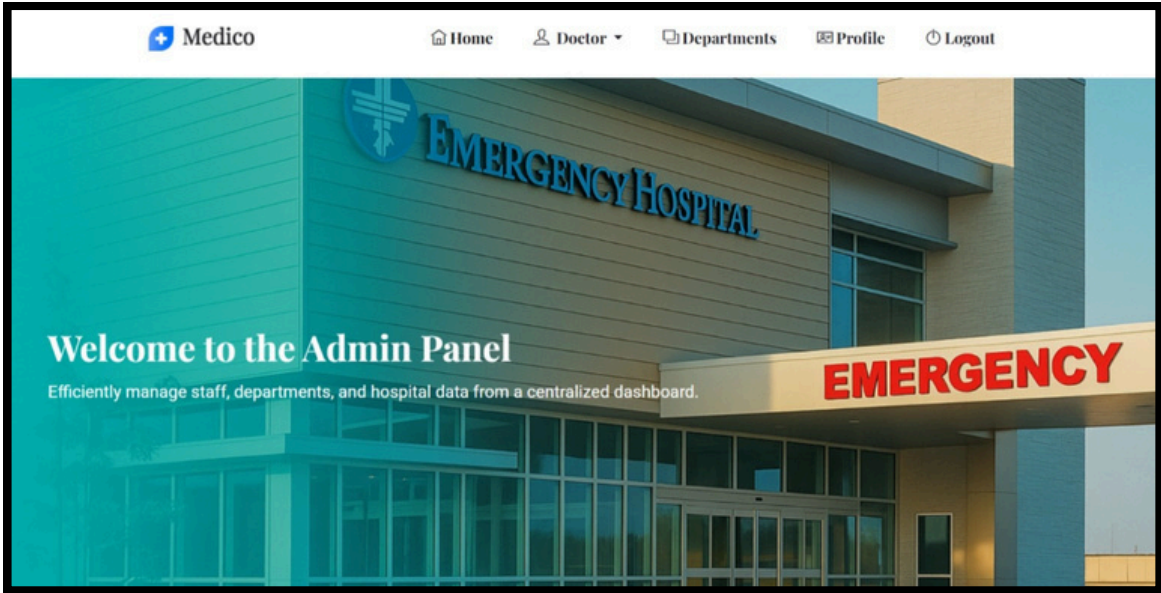


DISEASE PREDICTION



INPUT OUTPUT SCREEN DESIGN

ADMIN HOMEPAGE



ADD DOCTOR

Medico Home Doctor Departments Profile Logout

Add View Doctor

Doctor Image
Choose File MeghaMahesh.jpg

First Name: Megha Last Name: Mahesh

Highest Qualification: MBBS Geriatric Psychiatry

Qualification Certificate
Choose File Order Encoding in Genetic Algorithm.pdf

Phone: 9123456780 Email: megha200mahesh@gmail.com

Password: Password Department: Geriatrician

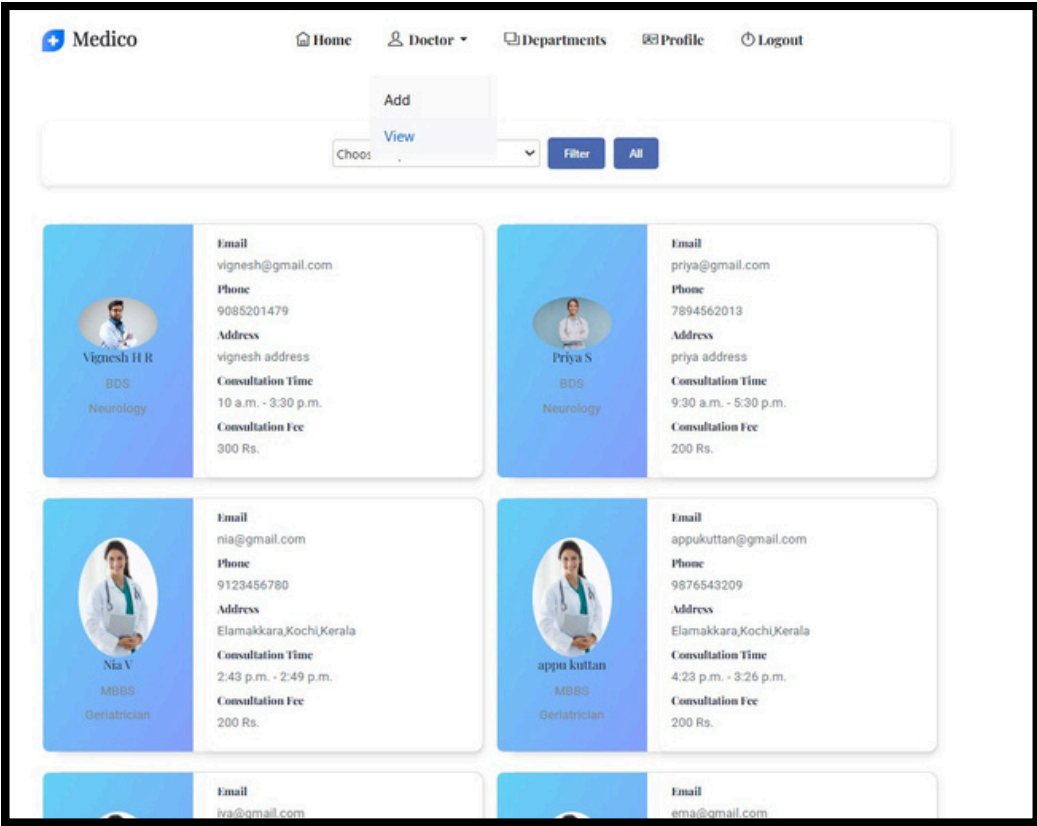
Address: Emakulam

Doctor Available From: 12:00 Doctor Available To: 09:00

Consultation Fee: 400

Register

VIEW DOCTORS



ADD & VIEW DEPARTMENTS

Medico Home Doctor Departments Profile Logout

ADD NEW DEPARTMENT

Enter department

Add Department

VIEW DEPARTMENTS

Department Name	Action
Geriatrician	
Neurology	

VIEW HOSPITAL

Medico Home Doctor Departments Profile Logout

Emergency hospital
Emakulam

Information

Email: emer@gmail.com Phone: 9567217436

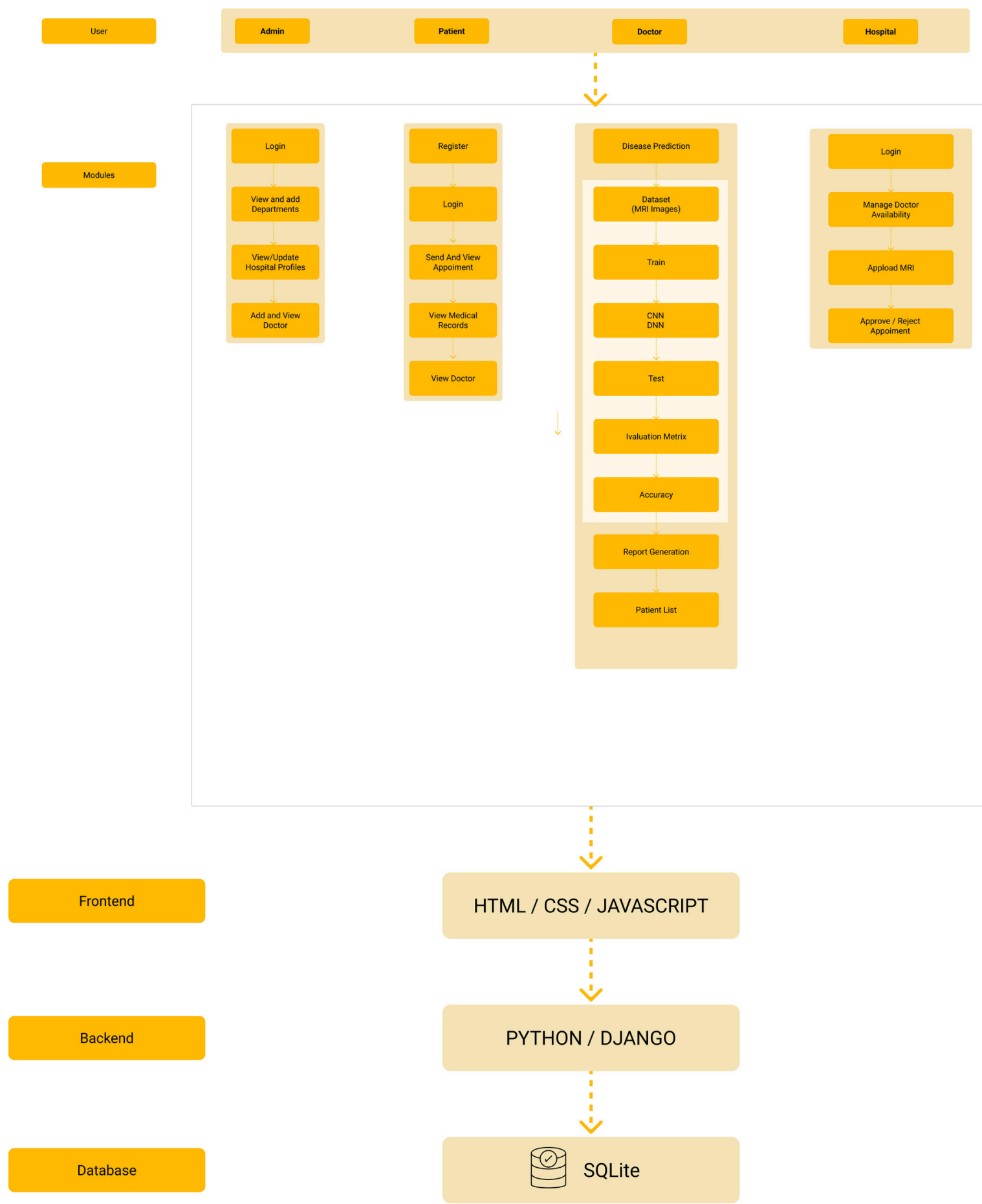
Address: XXXXXX

Pincode: 682024

Action

Update Profile

ARCHITECTURAL DESIGN



CONCLUSION

The AI-based personalized treatment recommendation system for Alzheimer's has the potential to revolutionize early detection and management. By overcoming existing system limitations, it provides timely interventions, improving patient care and outcomes. Through collaboration and quality data, it can significantly enhance Alzheimer's disease management.

FUTURE SCOPE

- **Mobile App Support** – Create a mobile app for patients and doctors to access reports and appointments easily.
- **Remote Monitoring** – Add features to monitor patients from home using wearable devices.
- **Real-time Alerts** – Notify doctors or caregivers instantly if abnormal patterns are detected in MRI or behavior data.
- **Multilingual Support** – Include different languages to help users from various regions.
- **Voice Assistants** – Use voice commands for elderly users to interact easily with the system.

REFERENCES

Websites Reference:

- <https://www.mayoclinic.org/diseases-conditions/alzheimers-disease/symptoms-causes>
- <https://www.medicalnewstoday.com/articles>
- <https://viso.ai/deep-learning/deep-neural-network-three-popular-types/>
- <https://www.w3schools.com/>
- <https://www.geeksforgeeks.org/>



THANK YOU