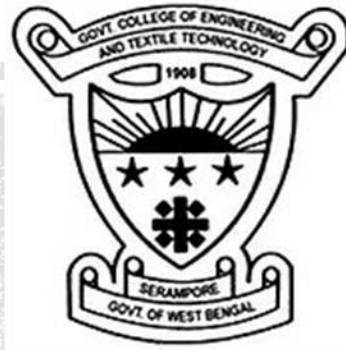


GOVERNMENT COLLEGE OF ENGINEERING & TEXTILE TECHNOLOGY, SERAMPORE



Topic: Advanced Patient Health Care Services Through Web Application

Under The Guidance Of Dr. Sudakshina Das Gupta
(Assistant Professor, Department Of IT)

Stream: Information Technology

G - 8

Student Name

DIPTANIL KISKU

SAYANTAN PAKHIRA

MUKUNDA MONDAL

SAYAN DAS

University Roll No

11000221037

11000221026

11000221063

11000222053

Introduction:

In today's healthcare system, patients often face delays in receiving treatment due to long appointment queues, geographical limitations, and the inefficiency of traditional, paper-based medical records. These issues become even more prominent in rural or underserved areas, where access to timely medical help is limited.

Managing handwritten prescriptions is another critical challenge. Patients struggle to interpret doctors' writing, and there is no reliable digital system to track past prescriptions or remind them of medications, leading to missed doses and health risks.

To address these problems, we propose a centralized web-based healthcare platform. Our solution integrates modern web technologies to simplify doctor appointments, digitize prescription handling, automate reminders, and provide continuous access to health records—all aimed at enhancing convenience, safety, and accessibility for every user.

Key features:-

- Doctor's Appointment Booking (Remote/Physical)
- Appointment Reminders
- Upload and Store Prescriptions
- Medicine Name Recognition from Uploaded Prescriptions
- Comparison of Medicine Prices from Various Online Pharmacies
- Direct Links to Pharmacy Websites for Medicine Purchases
- Medicine Dosage Reminders
- Archiving of Medical Records
- AI-powered ChatBot

Problem Statement:

There are mainly four problems in present healthcare system, which are mention as follows:-

- Long Wait Times:-**

Patients often experience delays in scheduling and attending doctor appointments due to manual and inefficient systems.

- Illegible Prescriptions:-**

Handwritten prescriptions are frequently unclear, leading to confusion or incorrect medication intake.

- Missed Medications:-**

Without a proper reminder system, patients tend to forget their doses, which can negatively affect their treatment outcomes.

- Lack of Digital Access in Rural Areas:-**

People in remote regions often do not have access to modern healthcare tools, limiting their ability to consult doctors or manage records digitally.

- Lack of centralized health record systems for patients**

Objectives :

- Create a User-Friendly Healthcare Web App**

Design an accessible platform that enables easy navigation and use, even for non-tech-savvy users.

- Enable OCR for Prescriptions**

Integrate Optical Character Recognition technology to extract and digitize medicine names from handwritten prescriptions accurately.

- Provide Appointment & Medication Reminders**

Set up an automated reminder system to help users remember doctor visits and medicine schedules through notifications or calendar events.

- Support AI Chatbot for Basic Guidance**

Include an AI-powered assistant to answer common health-related questions and offer simple remedies or suggestions.

- Securely Manage Health Records**

Allow users to store and view their health history and prescriptions securely, ensuring privacy and easy access when needed.

Proposed Solution:

To solve the problems mention above we proposed a advanced healthcare platform. Targeting the core of the issues and deeply understand them. We try to develop a platform that:-

- Digitizes prescription management.

With the help of AI/ML models we try to read and extract the text from prescriptions directly.

- Allows patients to book appointment two different mode
- Allows patients to maintain a personal health record.
- Provides a unified interface for healthcare data.
- Better medication Solution

Comparing the medicine price between different online pharmacy.

Novelty of the Work :

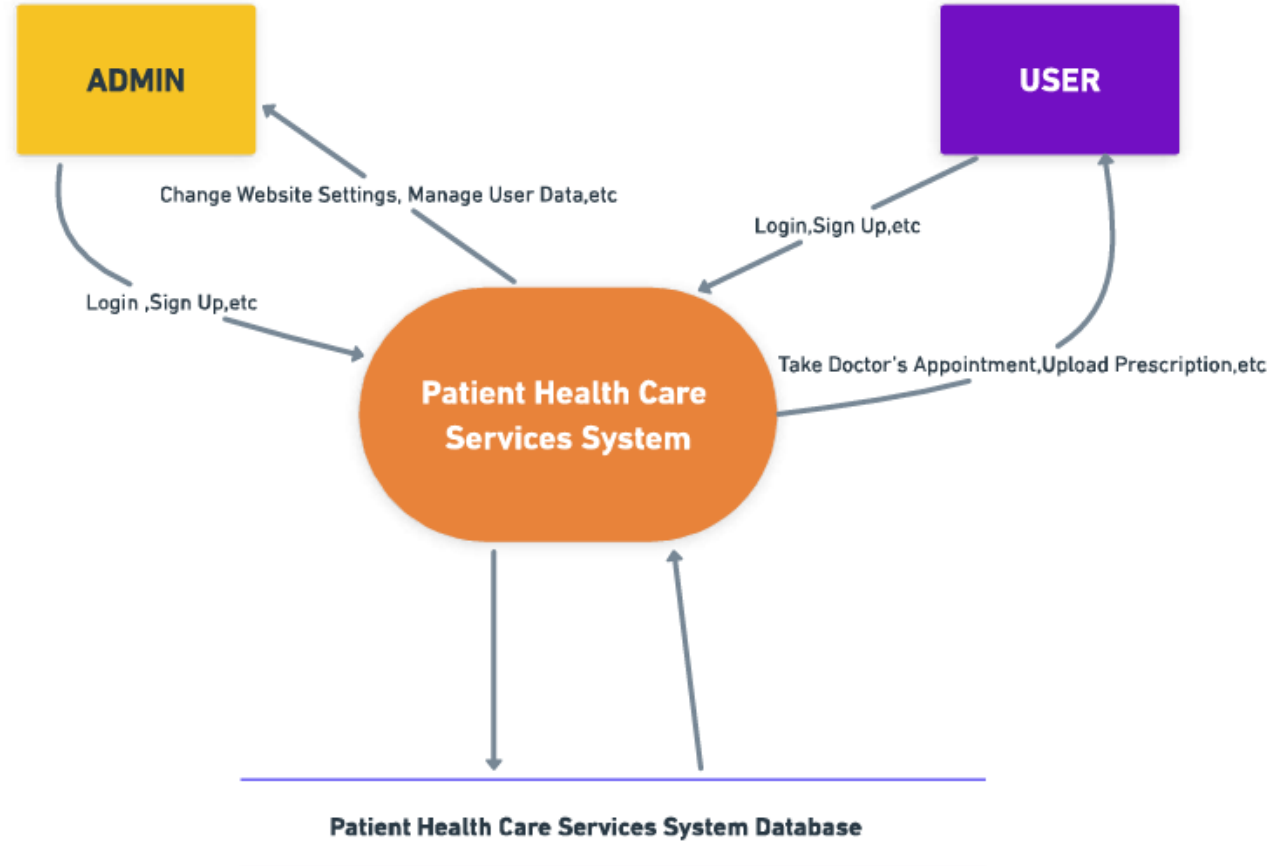
- (a) **Integration of Multiple Healthcare Services in One Platform:** While each of these features may exist independently, integrating all of them seamlessly into one cohesive system — especially within a student-level project — is quite unique and valuable. Most existing systems focus on one or two such services only.
- (b) **Use of OCR + Named Entity Recognition (NER) for Prescriptions:** The two-stage AI pipeline — OCR + NER, with user validation feedback used to retrain and fine-tune the model — is an advanced and rarely implemented feature in student-level projects. It also introduces a semi-supervised learning mechanism, improving the model over time.
- (c) **Real-time Medicine Price Comparison and Redirection:** Combining web scraping or API use to fetch live pricing data and recommending affordable options dynamically is a practical and user-centric innovation not common in typical academic projects.
- (d) **Focus on Accessibility and Rural Healthcare Barriers:** This social focus on solving accessibility issues, especially for rural/remote areas, and offering AI-based support (like reminders or online consultation) helps bridge real-world healthcare gaps.

Technical Implementation:

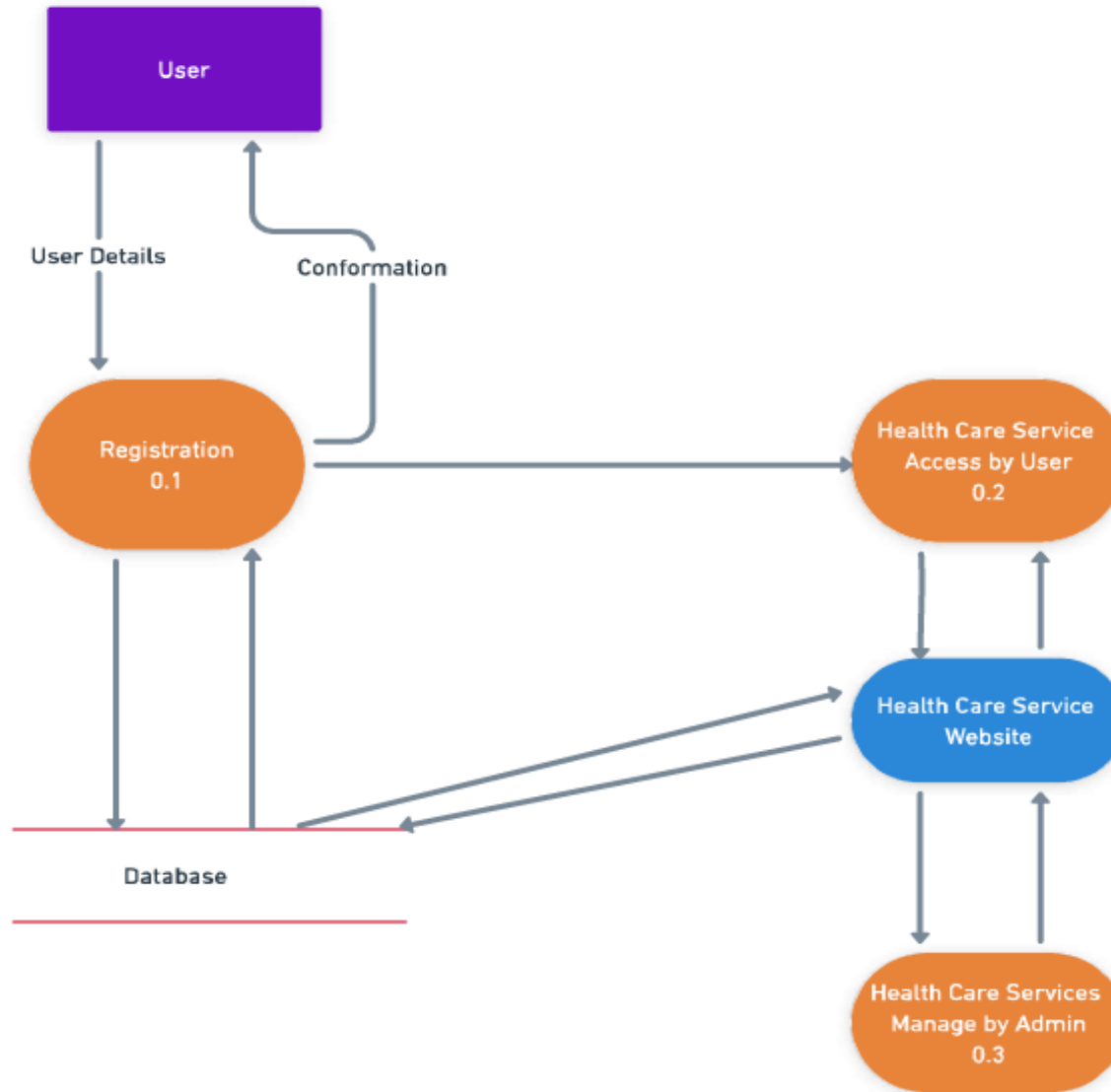
- ❑ To bring the proposed solution into reality we use cutting edge technologies like:-
- ❑ Frontend:- HTML, React JS, Vite, CSS
- ❑ Backend :- Node.JS, JavaScript
- ❑ Database:- MongoDB
- ❑ For Reading Prescription:- OCR Model
- ❑ Tools:- VS Code, Google Colab



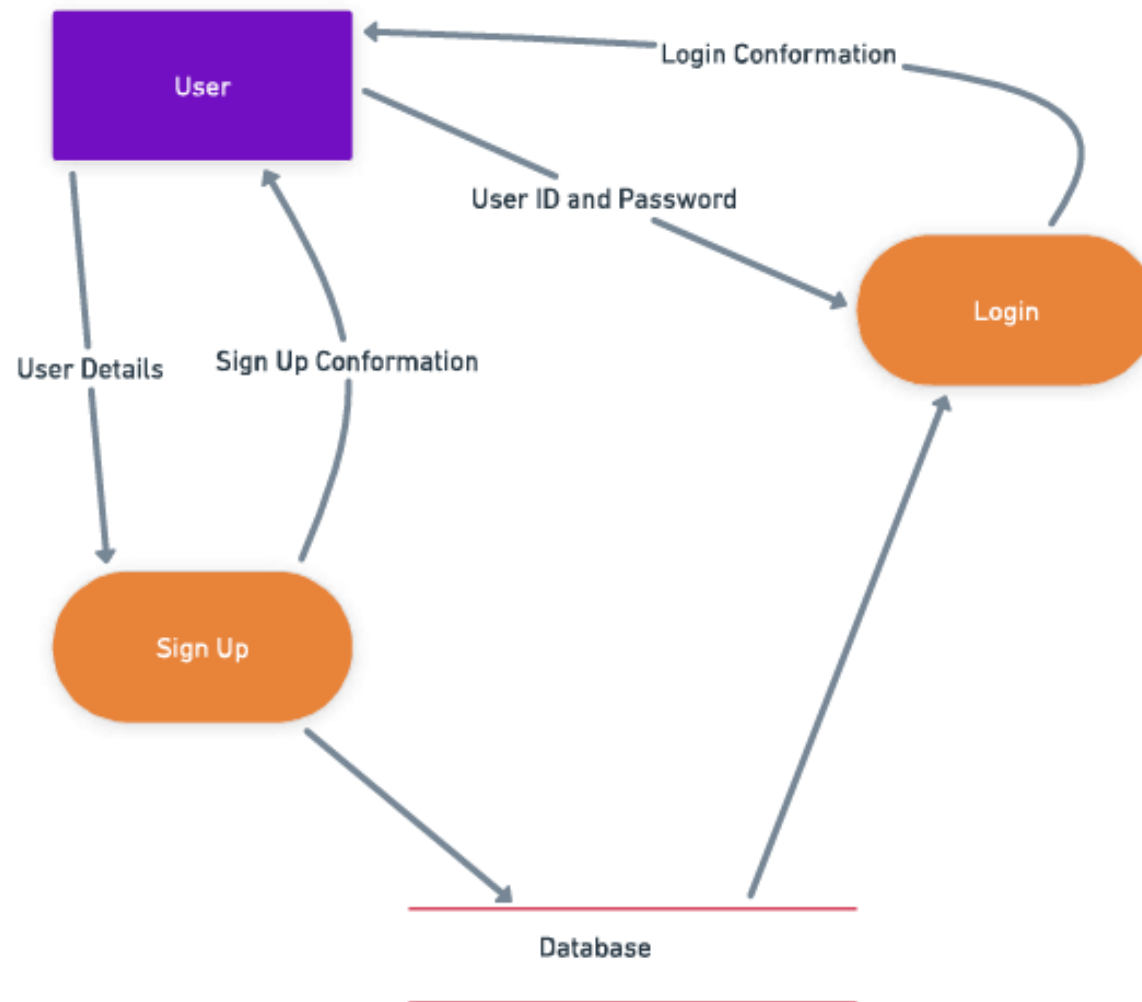
System Diagrams:



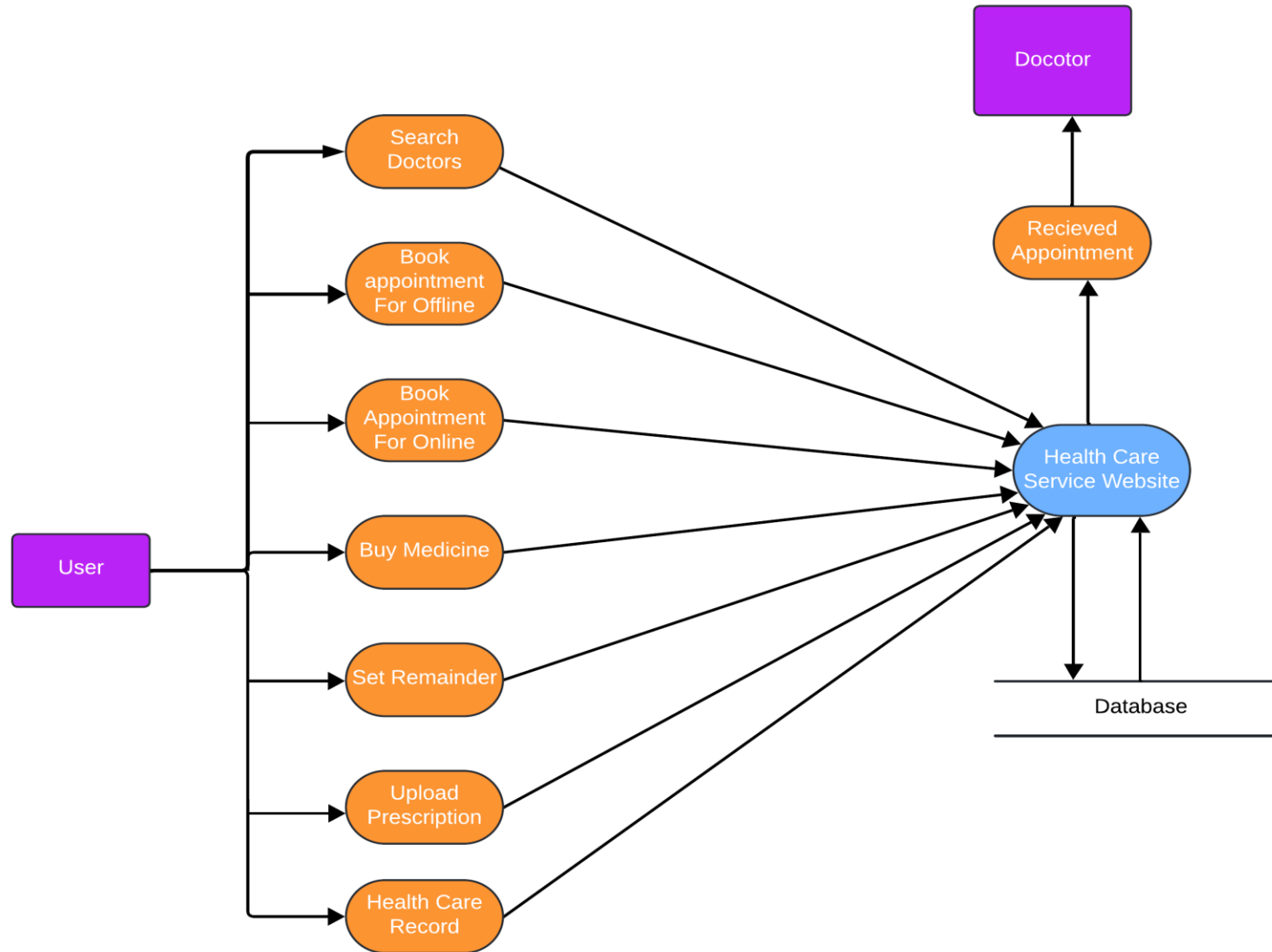
DFD Level 0



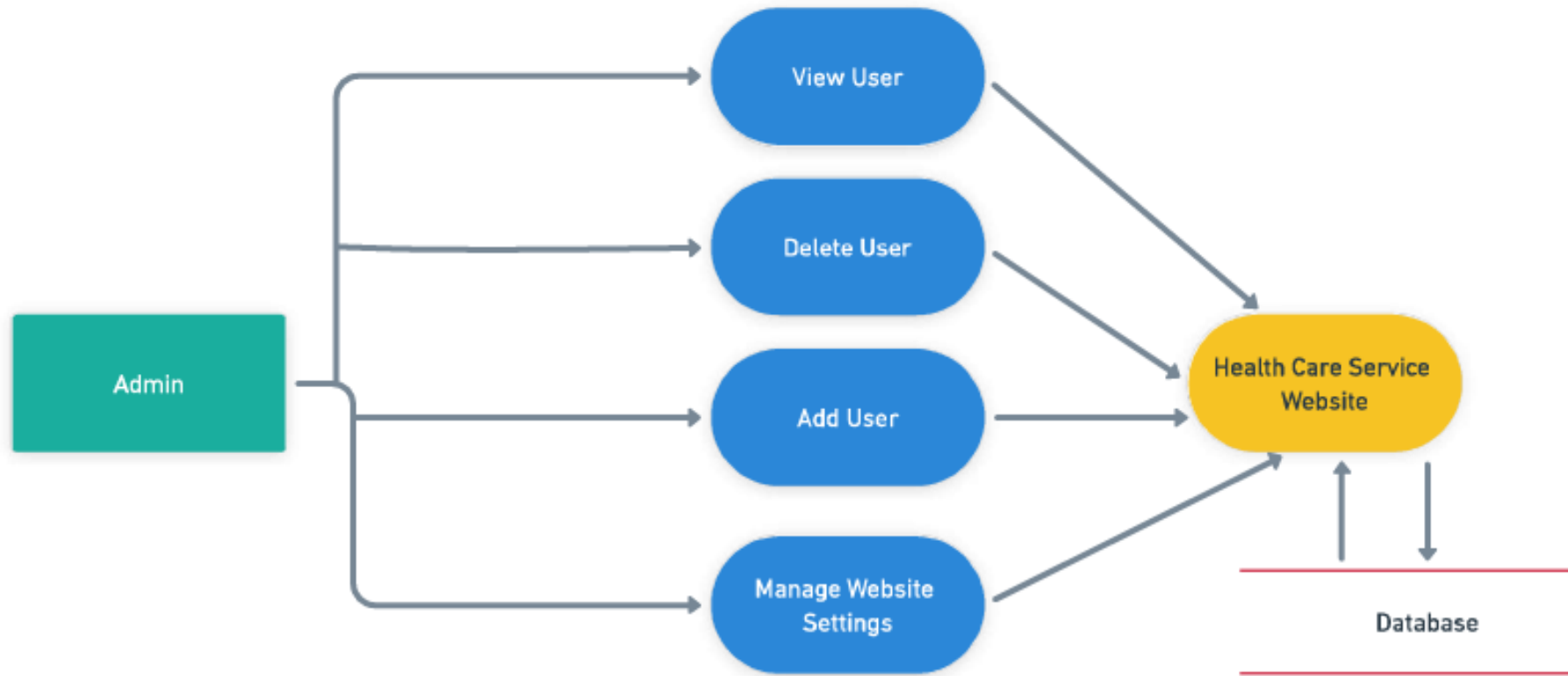
DFD Level 1



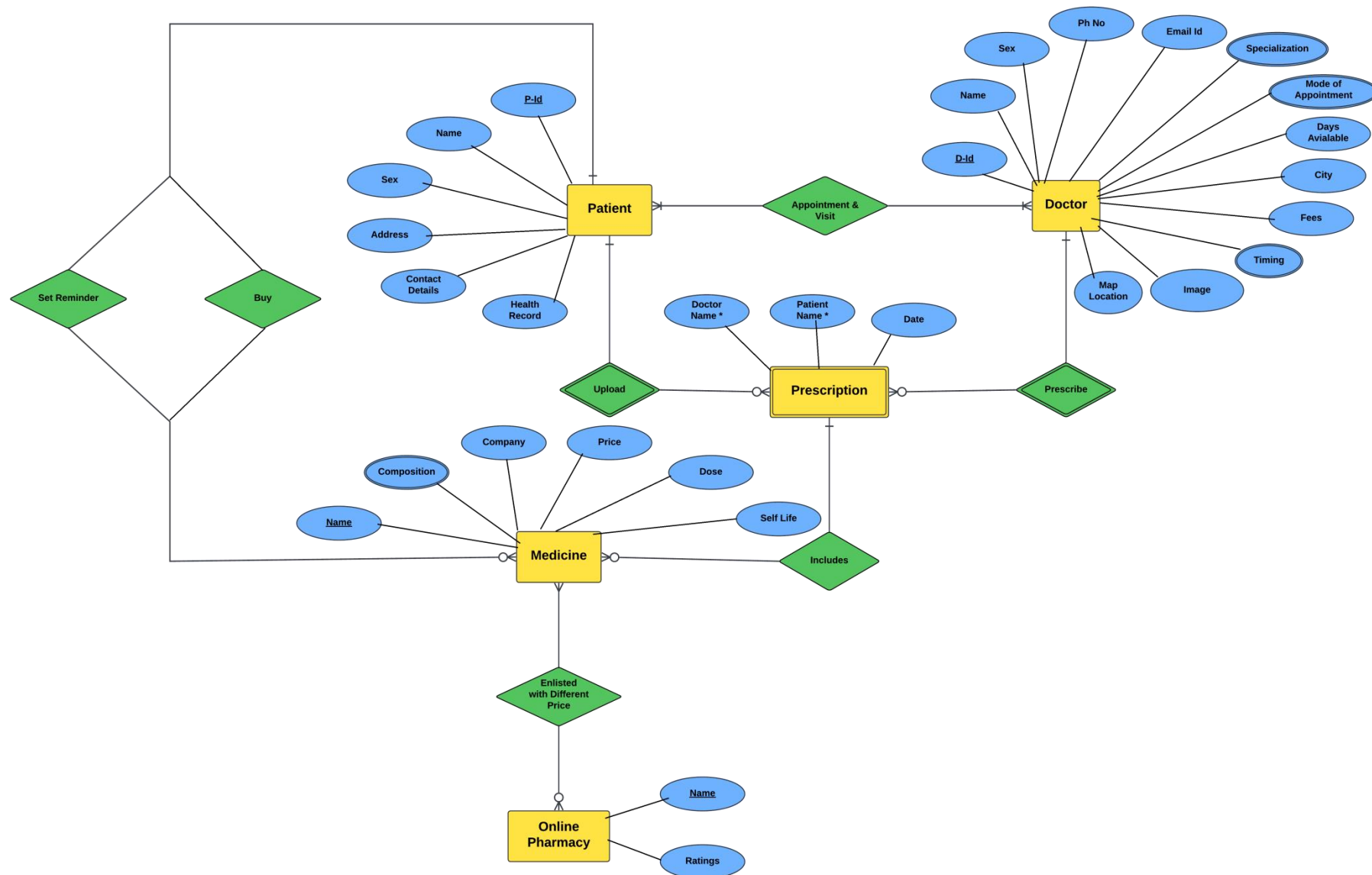
DFD Level 2 Registration



DFD Level 2 User

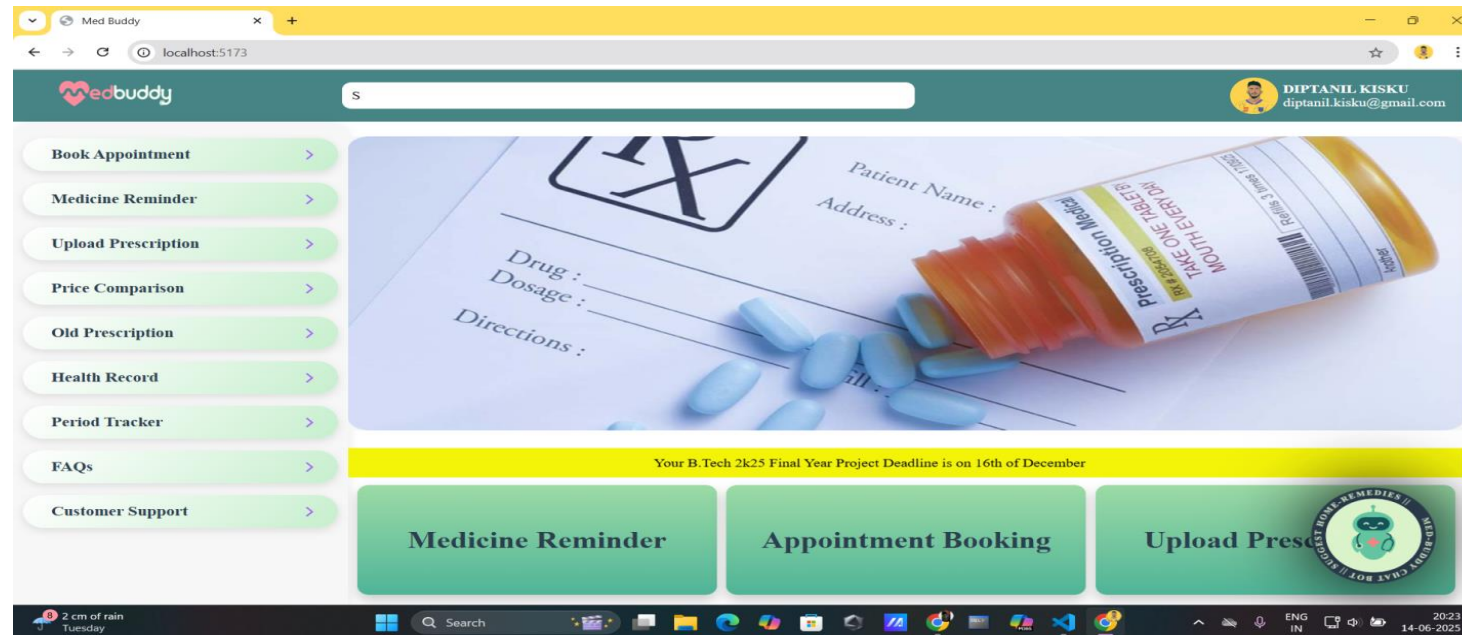
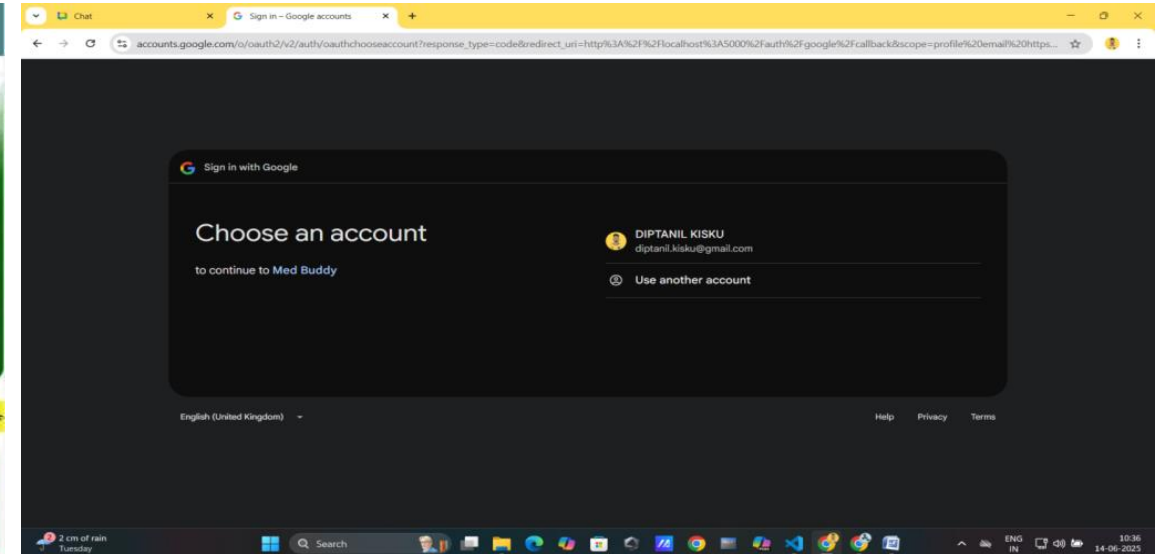


DFD Level 2 Admin



ER Diagram

Result:



Sign Up Page

MedBuddy

Find what you n

Search

Sayanant Pakhira
pakhirasayanant123@gmail.com

All Doctors

Specialization

Doctor Specializations

Search for specialization

Cardiologist

Heart and blood vessels specialist

Look for Cardiologist

Dermatologist

Skin, hair, and nail specialist

Look for Dermatologist

Neurologist

Nervous system and brain specialist

Look for Neurologist

Pediatrician

Children's health specialist

Look for Pediatrician

Orthopedic

Bones and joints specialist

Look for Orthopedic

Oncologist

Cancer diagnosis and treatment specialist

Look for Oncologist

Ophthalmologist


Psychiatrist

Gynecologist

Doctors All Around India

Search with Doctor's name or specialization


Priya Singh



Age: 40
Sex: female
Specialization: Cardiologist
Experience: 11 years
City: Delhi
Mode of Appointment: hybrid
Phone No: +91-9074226417
Email Id: medbuddyproject2025@gmail.com
Days: mon, wed, fri
Timing: 10 AM - 7 PM
Fees: ₹550

Book Appointment


Anil Kapoor



Age: 52
Sex: male
Specialization: Cardiologist
Experience: 24 years
City: Bangalore
Mode of Appointment: hybrid
Phone No: +91-7815325399
Email Id: anilkapoor25@gmail.com
Days: mon, wed, fri
Timing: 9 AM - 8 PM
Fees: ₹500

Book Appointment

Sunita Patel



Age: 61
Sex: female
Specialization: Cardiologist
Experience: 18 years
City: Bangalore
Mode of Appointment: online
Phone No: +91-8943297330
Email Id: sunitapatel5@gmail.com
Days: mon, wed, fri
Timing: 9 AM - 9 PM
Fees: ₹350

Book Appointment

Doctor Appointment Page(Doctor category and list)

Chat Med Buddy

localhost:5173/book-appointment/1

Book Appointment with Dr. Priya Singh

Your Name

Your Email

Your Mobile Number

Short description about your issue

Select Mode

Select Date:

dd / mm / yyyy

Select Time (Between 10 AM - 7 PM):

--:--

Select Duration:

15 minutes

Book Appointment

Network 342
Internet access

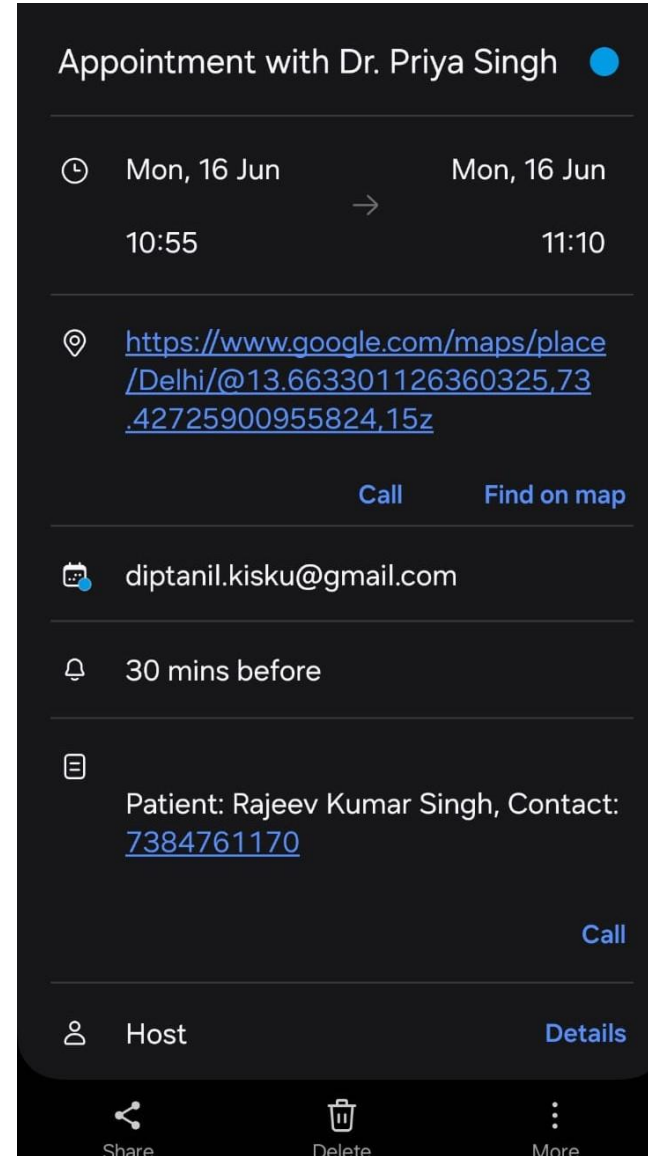
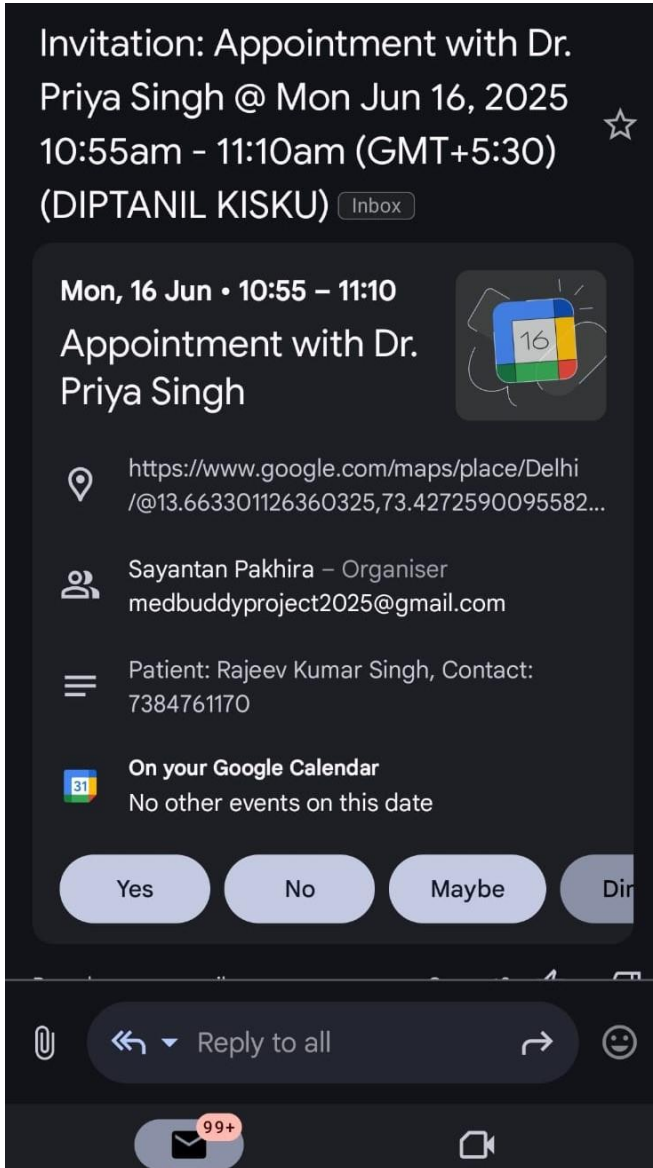
Feels hotter Now

Search

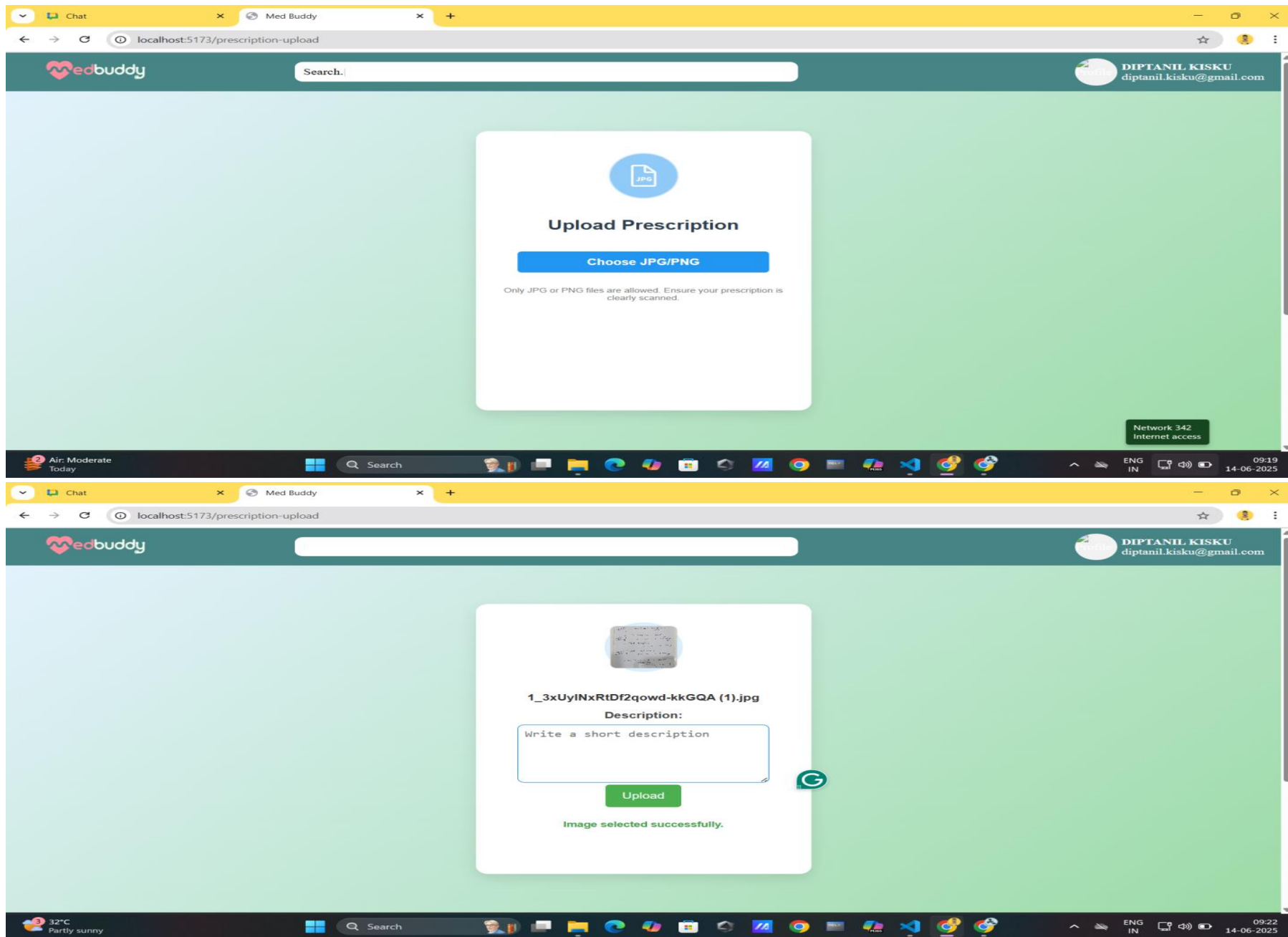
ENG IN

09:16
14-06-2025

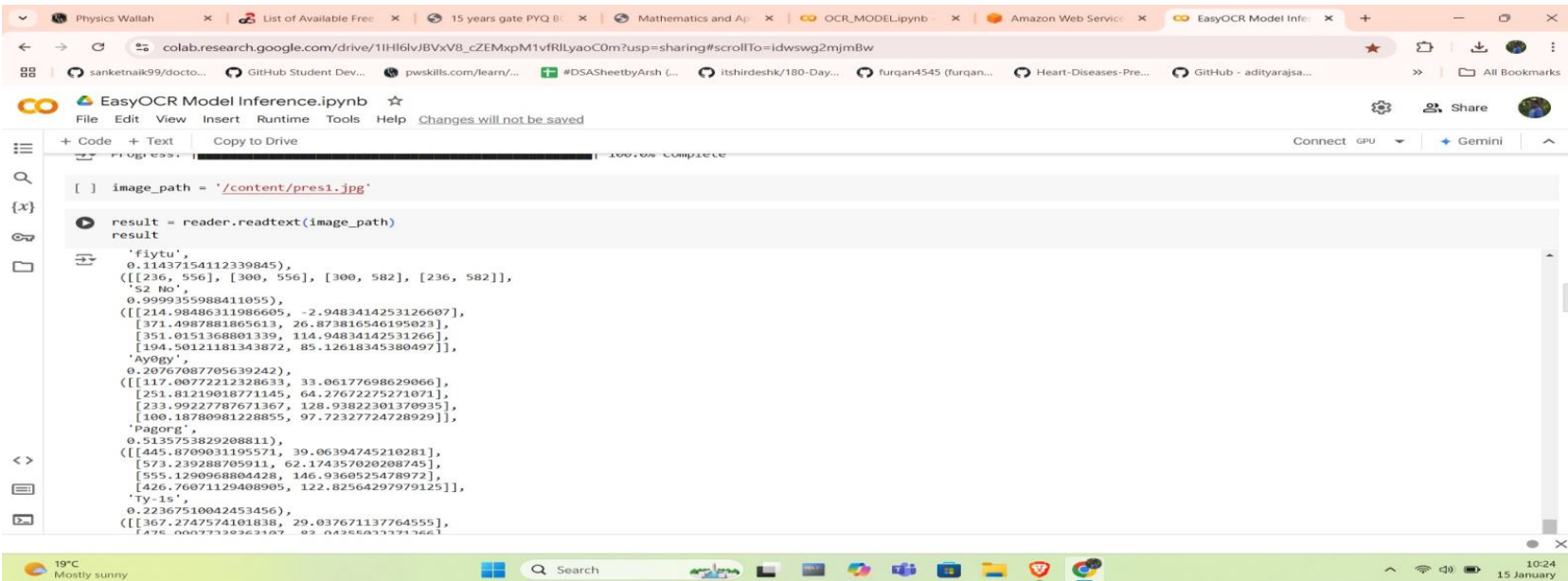
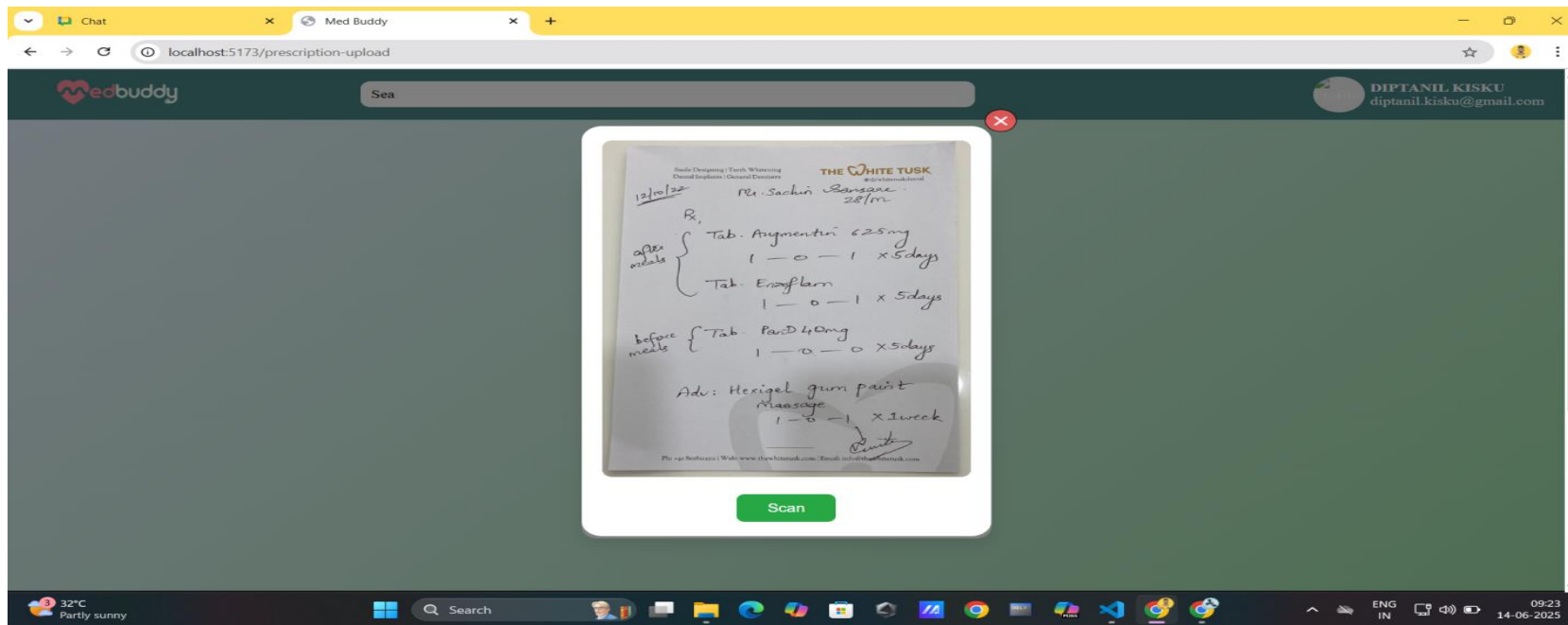
Doctor Appointment(appointment booking form)



Appointment booking conformation(mail and calendar)



Upload Prescription Page



Uploaded prescription goes for scanning

Physics Wallah | List of Available Free | 15 years gate PYQ B | Mathematics and Ap | OCR_MODEL.ipynb | Amazon Web Service | EasyOCR Model Inference |

colab.research.google.com/drive/1IHl6lvJBVxV8_cZEMxpM1vRILyaoC0m?usp=sharing#scrollTo=idwswg2mjmBw

EasyOCR Model Inference.ipynb

File Edit View Insert Runtime Tools Help Changes will not be saved

+ Code + Text Copy to Drive

```
THICKNESS = 3
TEXT_THICKNESS = 1
COLOR = (0,255,255)

[ ] def draw_output(result, test_img, draw_text = False):
    for i in range(len(result)):
        bbox = result[i][0]
        text = result[i][1]
        if draw_text:
            cv2.putText(test_img, text, tuple(list(map(int, bbox[0]))), cv2.FONT_HERSHEY_DUPLEX, 0.8, (0,0,255),TEXT_THICKNESS)
            cv2.line(test_img, tuple(list(map(int, bbox[0]))), tuple(list(map(int, bbox[1]))), COLOR, THICKNESS)
            cv2.line(test_img, tuple(list(map(int, bbox[1]))), tuple(list(map(int, bbox[2]))), COLOR, THICKNESS)
            cv2.line(test_img, tuple(list(map(int, bbox[2]))), tuple(list(map(int, bbox[3]))), COLOR, THICKNESS)
            cv2.line(test_img, tuple(list(map(int, bbox[3]))), tuple(list(map(int, bbox[0]))), COLOR, THICKNESS)
        return test_img

[ ] test_img = cv2.imread(image_path)
cv2.imshow(test_img)
```

Finance headline India Wholesale... Search 10:25 15 January

Physics Wallah | List of Available Free | 15 years gate PYQ B | Mathematics and Ap | OCR_MODEL.ipynb | Amazon Web Service | EasyOCR Model Inference |

colab.research.google.com/drive/1IHl6lvJBVxV8_cZEMxpM1vRILyaoC0m?usp=sharing#scrollTo=idwswg2mjmBw

EasyOCR Model Inference.ipynb

File Edit View Insert Runtime Tools Help Changes will not be saved

+ Code + Text Copy to Drive

Finance headline India Wholesale... Search 10:26 15 January

EasyOCR Model text extraction

Physics Wallah x List of Available Free x 15 years gate PYQ B x Mathematics and Ap x OCR_MODEL.ipynb x Amazon Web Service x EasyOCR Model Infe x + -

colab.research.google.com/drive/1JiDv6TRj6d7-dSqD24EY8EqTnNfNNAXO#scrollTo=sAsdThPX7Xe-

sanketnaik99/docto... GitHub Student Dev... pwskills.com/learn/... #DSASheetbyArsh (... itshirdeshk/180-Day... furqan4545 (furqan... Heart-Diseases-Pre... GitHub - adityarajsa...

OCR_MODEL.ipynb

File Edit View Insert Runtime Tools Help All changes saved

+ Code + Text

```
sample_file = prep_image('pres10.jpg')
text = extract_text_from_image(sample_file, "Extract the text in the image verbatim")
if text:
    print("Extracted Text:")
    print(text)
else:
    print("Failed to extract text from the image.")
```

Uploaded file 'Diagram' as: <https://generativelanguage.googleapis.com/v1beta/files/xxzwhy2glv4d>
Retrieved file 'Diagram' as: <https://generativelanguage.googleapis.com/v1beta/files/xxzwhy2glv4d>
Extracted Text:
Name: Agatha Peralta
Address: JBK Yo Maway St. Me
Age: 14 Sex: F Date: 2-4-11
Rx
Bioquic 500mg tab
(Paracetamol) #12

Sig: take 1 tab q 4h or
as needed

Physician's Sig
Lic. No. 43452
PTR No. 1345900
S2 No.

```
[ ] sample_file = prep_image('pres4.jpg')
text = extract_text_from_image(sample_file, "Extract the text in the image verbatim")
if text:
    print("Extracted Text:")
    print(text)
```

Connected to Python 3 Google Compute Engine backend

Air: Severe Now

Search

10:27 15 January

EasyOCR model text extraction

Extracted Text:

Name: Armando C

Address: West Rimbo, Makati City

Age: 29 Sex: M Date: 12-03-90

Rx

(Himox)

Amoxicillin 500mg

Sig: 1 cap 3x a day for
seven days.

Physician's Sig. _Adela Cruz_

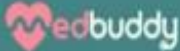
Lic. No. 123457


PTR No. 1234567

S2 No.

Amoxicillin 500mg

Sig: 1 cap 3x a day for
seven days.





Sayantant Pakhira
shuksayantanpakhira74@gmail.com

Scanned Prescription: prescription.jpg

Detected Medicines:

- Augmentin
- Enzflam
- Hexigel

[Compare](#)

Augmentin



Sayantant Pakhira
shuksayantanpakhira74@gmail.com

Scanned Prescription: temp_prescription.jpg

Detected Medicines:

- Augmentin
- Enzflam
- Hexigel

Augmentin

Price Comparison for: Augmentin

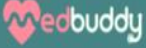
	Augmentin 625 Duo Tablet - 10 Tablet ₹204.86 Accuracy: 100.00%	Visit
	Augmentin 625 Duo Tablet ₹184 Accuracy: 100.00%	Visit

Scanned medicines price comparison


Chat

Med Buddy




localhost:5173/old-prescription



Type to search..

 **DIPTANIL KISKU**
diptanil.kisku@gmail.com


Your Prescriptions


Date	Name	Description	Prescription	Actions
14 Jun 2025, 09:22 am	1_3xUyINxRtDf2qowd-kkGQA (1).jpg	demo perscription		 


MedBuddy

- About us
- Terms & Conditions
- Privacy Policy
- Contact us


Contact Us

 Email: pakhirasayantan123@gmail.com




 Phone: 7478320320

 WhatsApp: 7478320320


Address


 Amritalal Apartment, 1/F
38/A Jannagar Rd, Mahesh Colony, Serampore
West Bengal - 712201

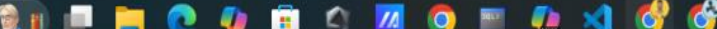
Project License: MAKAUT/GCETTS/2K25/IT/GRP-5



© 2024-2025 MedBuddy Healthcare Limited. All rights reserved.

 32°C
Partly sunny

 Search



ENG
IN

09:24
14-06-2025

Med Buddy

localhost:5173/medicine-reminder

medbuddy

DIPTANIL KISKU
diptanil.kisku@gmail.com

Set Medicine Reminder

Medicine Name:

Date:

Number of Doses:

Dose 1 Time:

Repeat:

Set Reminder

2 cm of rain
Tuesday

Search

ENG
IN

20:24
14-06-2025

M T W T F S S

6 Friday


6 Jun


Take sompraz d40
All day

Add on 6 Jun

+

Medicine Reminder






Sayantan Pakhira
shuksayantanpakhira74@gmail.com

Search Medicine

Compare Medicine Prices From India's Top Pharmacies.



Search

MedBuddy

- About us
- Terms & Conditions
- Privacy Policy
- Contact us




Contact Us


- Email: pakhirasayantan123@gmail.com
- Phone: 7478320320
- WhatsApp: 7478320320


Address

Amritalal Apartment, 1/F
38/A Jannagar Rd, Mahesh Colony, Serampore
West Bengal - 712201

Project License: MAKAUT/GCETTS/2K25/IT/GRP-5








Sayantan Pakhira
shuksayantanpakhira74@gmail.com


Search Medicine

Compare Medicine Prices From India's Top Pharmacies.




Search

Results for: calpol



Calpol 250mg Paediatric Oral Suspension Strawberry - 60ml Oral Suspension
₹45.02
Accuracy: 100.00%

Visit ↗

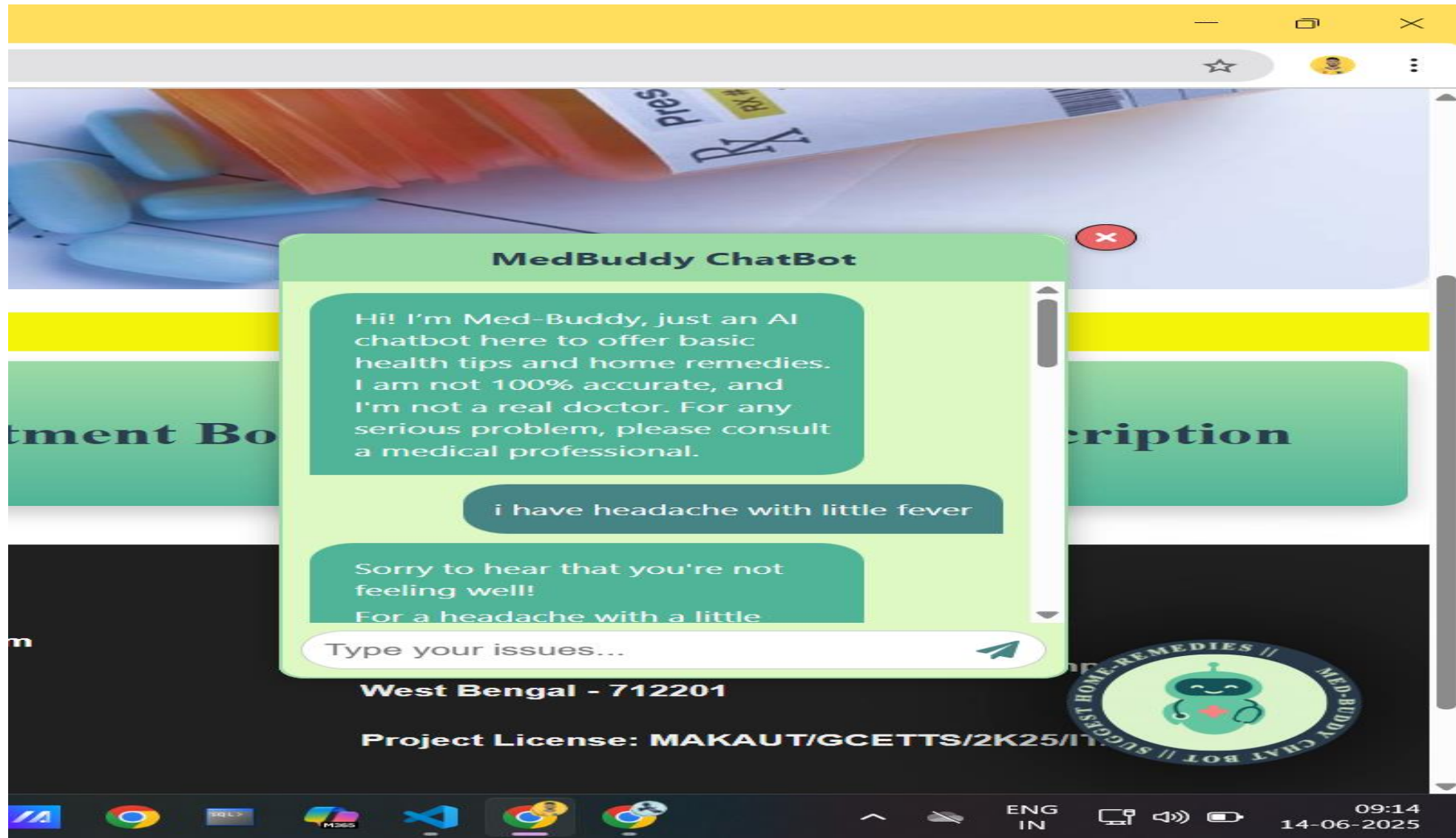


Calpol 650 + Tablet
₹28.1
Accuracy: 100.00%

Visit ↗

Price Comparison

26



MedBuddy Chatbot for home remedies for health issues made with Llama3-70b-8192 LLM model

Med Buddy

localhost:5173/health-record

Health Record Form

Blood Group:

Select

Blood Pressure (e.g., 120/80):

Body Temperature (°F):

Heart Rate (bpm):

Cholesterol Level (mg/dL):

Height:

Feet

Inches

Weight (kg):

Blood Sugar (mg/dL):

Oxygen Saturation (%):

Notes:

Save Record

Date	Blood Group	BP	Temp (°F)	Heart Rate	Cholesterol	Height	Weight	Blood Sugar	O ₂ Saturation	Diagnosis	Notes	Action
14/06/25	O+	90	110	75	120	5ft 11inch	62.8	60	70	Fever, Low Oxygen Level	headache	

Sports headline

Liverpool Shatte...

Search

ENG IN

20:40

14-06-2025

Health Record Page

MedBuddy

Type to search.

Log In +

Menstrual Cycle Tracker

Cycle Settings

Start date of your last period:

12-01-2025

How long did it last (days):

5

Your usual cycle length (days):

28

Cycle Predictions

Last Period End: Thu Jan 16 2025

Next Period Start: Sun Feb 09 2025

Next Period End: Thu Feb 13 2025

Ovulation Day: Sun Jan 26 2025

Fertile Window: Tue Jan 21 2025 - Mon Jan 27 2025

Period Tracker Page

Chat

Med Buddy

localhost:5173/faqs

medbuddy

T

DIPTANIL KISKU
diptanil.kisku@gmail.com

All the A's to your Q's

What is MedBuddy?

+

How can I book appointment on MedBuddy?

+

How can I get access to MedBuddy?

+

How does MedBuddy work?

+

How do I get access to MedBuddy's network?

+

How do MedBuddy help the patients?

+

Still have questions?

Book a call with our team to learn how we can help you to get better medication—forever.

Hot weather
Now

Search

ENG
IN

10:34
14-06-2025

medbuddy

Type to se

DIPTANIL KISKU
diptanil.kisku@gmail.com

Get in Touch with Us

Before contacting us, check out our [FAQ page](#) to find quick answers.

If still facing issue feel free to reach us on below **Contact Details**
We'd love to hear from you! Fill out the Form or contact us via email/phone/WhatsApp.
Your input matters a lot and helps us to improve.

Call Us
+91 7478320320

Email Us
pakhirasayantan123@gmail.com

WhatsApp Us
7478320320

Drop Us Your Query

Enter your name

Enter your email

Enter your Phone Number

Write your message

SUBMIT NOW

MedBuddy

Contact Us
Email: pakhirasavantan123@gmail.com

Address
Amrital Apartment. 1/F

33°C
Partly sunny

Search

ENG
IN

10:23
14-06-2025

https://wa.me/7478320320?text=Hello Support, I need help with...

Costumer Support Page And FAQs Page

30

Benefits:

There are several advantages of using a advanced healthcare platform:-

- Enhances prescription accuracy.
- Easy appointment booking.
- Cost-Effective Medication Choices.
- Streamlines health data management.
- Provides a centralized healthcare platform.
- AI-powered Chabot for home remedies.

Challenges:

While there are multiple benefits, there are some challenges:-

- Initial resistance to adoption by users.
- Ensuring data privacy and security.
- Necessity for a reliable internet connection for rural areas where network is inadequate.
- Scaling the platform for large user bases.
- Handwritten text often contains symbols/abbreviations.

Conclusion:

The platform successfully streamlines modern healthcare by digitizing essential services such as appointment booking, prescription management, and health record tracking. By reducing reliance on in-person visits and eliminating the need for physical paperwork, the system enhances accessibility and convenience for all users. It is particularly beneficial for individuals in rural and underserved areas, empowering them to take control of their health through a user-friendly digital interface. The integration of AI and OCR technologies further strengthens the platform, with the OCR model achieving over 92% accuracy in interpreting real-world handwritten prescriptions. Overall, the project presents a practical, scalable, and intelligent e-healthcare solution capable of addressing real-world challenges in the healthcare domain.

Future Scopes:

- Integration with Wearable Devices
 - Sync data from fitness trackers , smart watches,etc.
 - Enable real-time monitoring and insights.
- Advanced Analytics for Health Trends
 - Predict health risks using AI-powered analytics.
 - Provide personalized health recommendations.
- Multi-language Support
 - Enhance global accessibility.
 - Cater to diverse linguistic groups for better user experience.

THANK YOU!