

# 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**

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## **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:

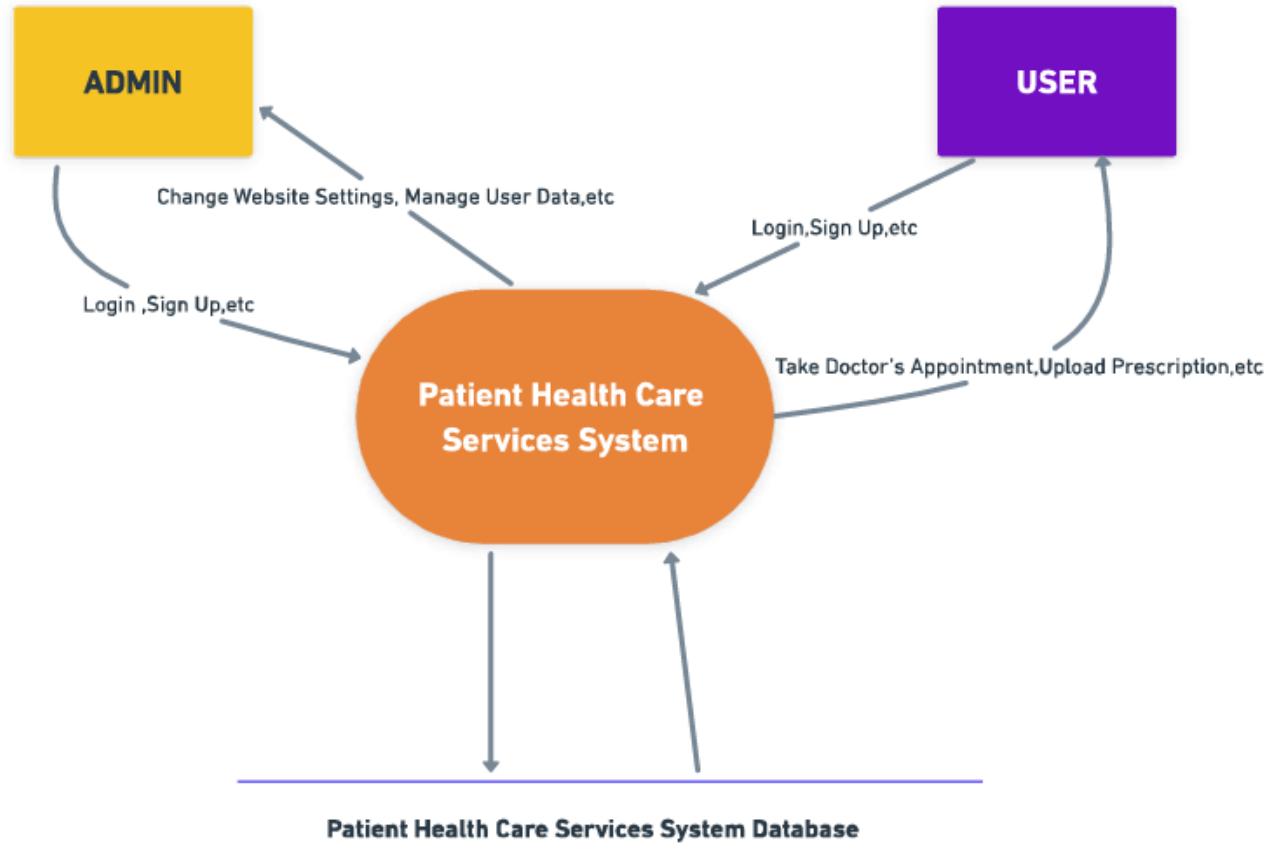
- To bring the proposed solution into reality we use cutting edge technologies like:-
- Frontend:- HTML, React JS, Vite, CSS
- Backend :- Node.JS, JavaScript
- Database:- MongoDB
- For Reading Prescription:- OCR Model
- Tools:- VS Code, Google Colab



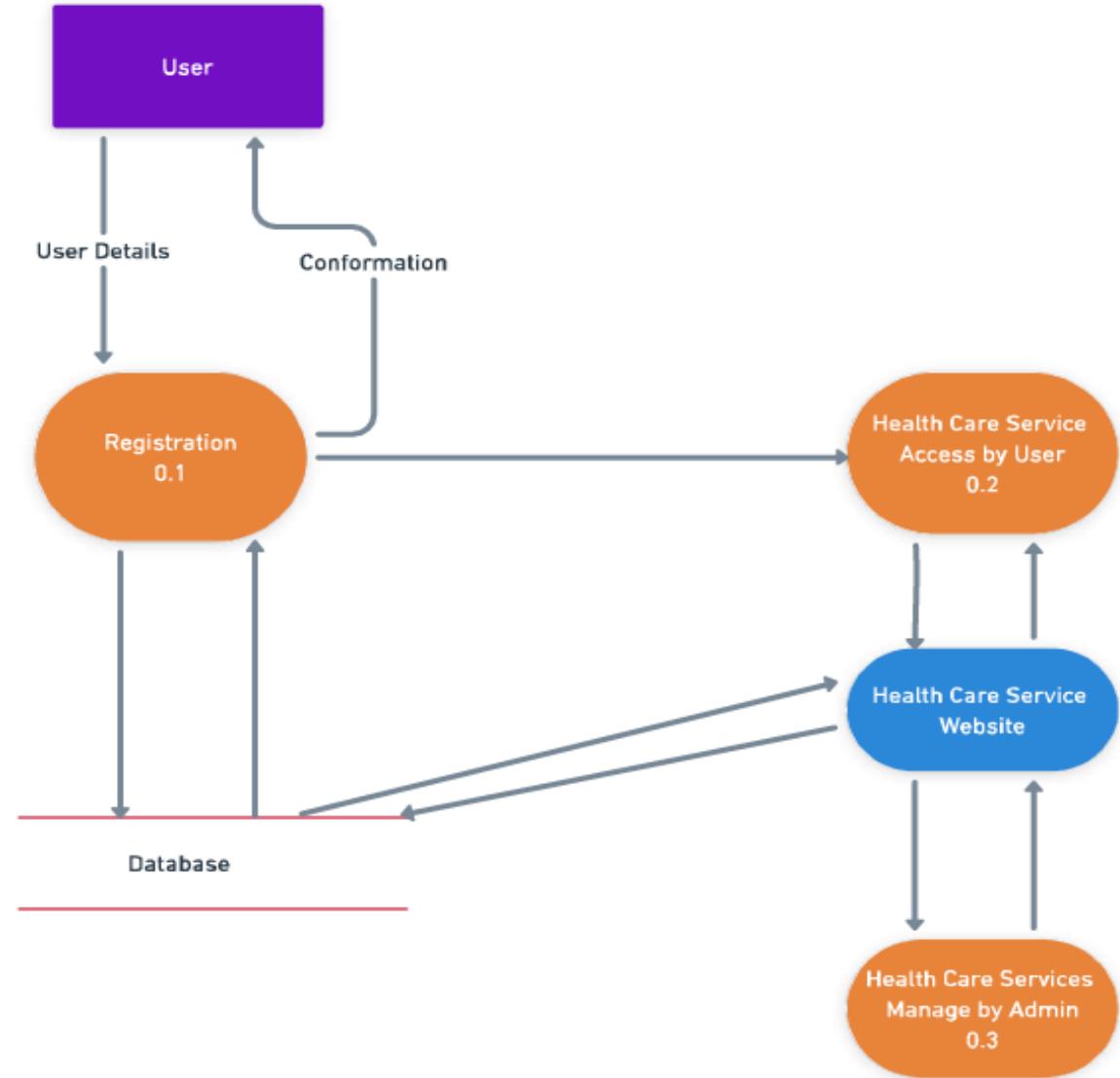
Visual Studio Code



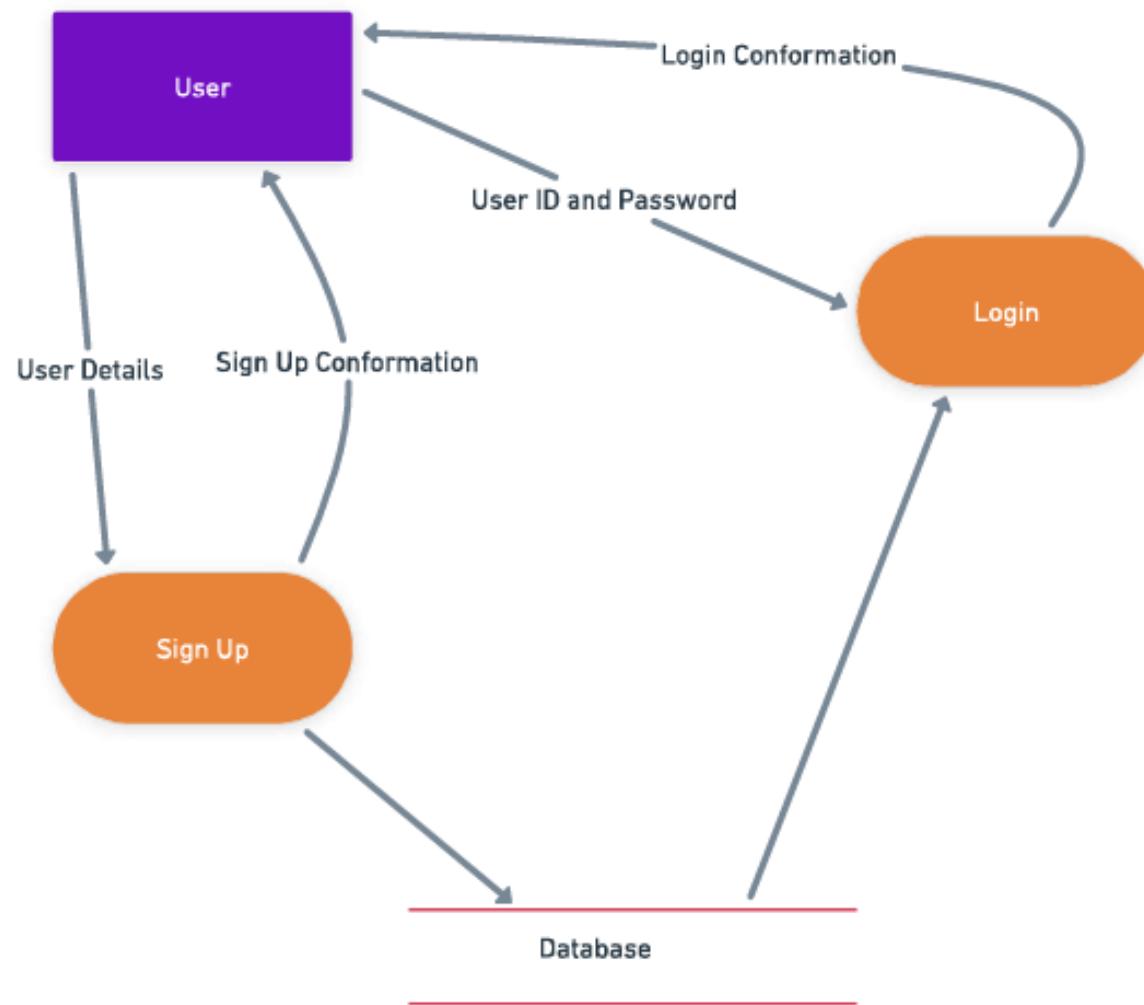
## System Diagrams:



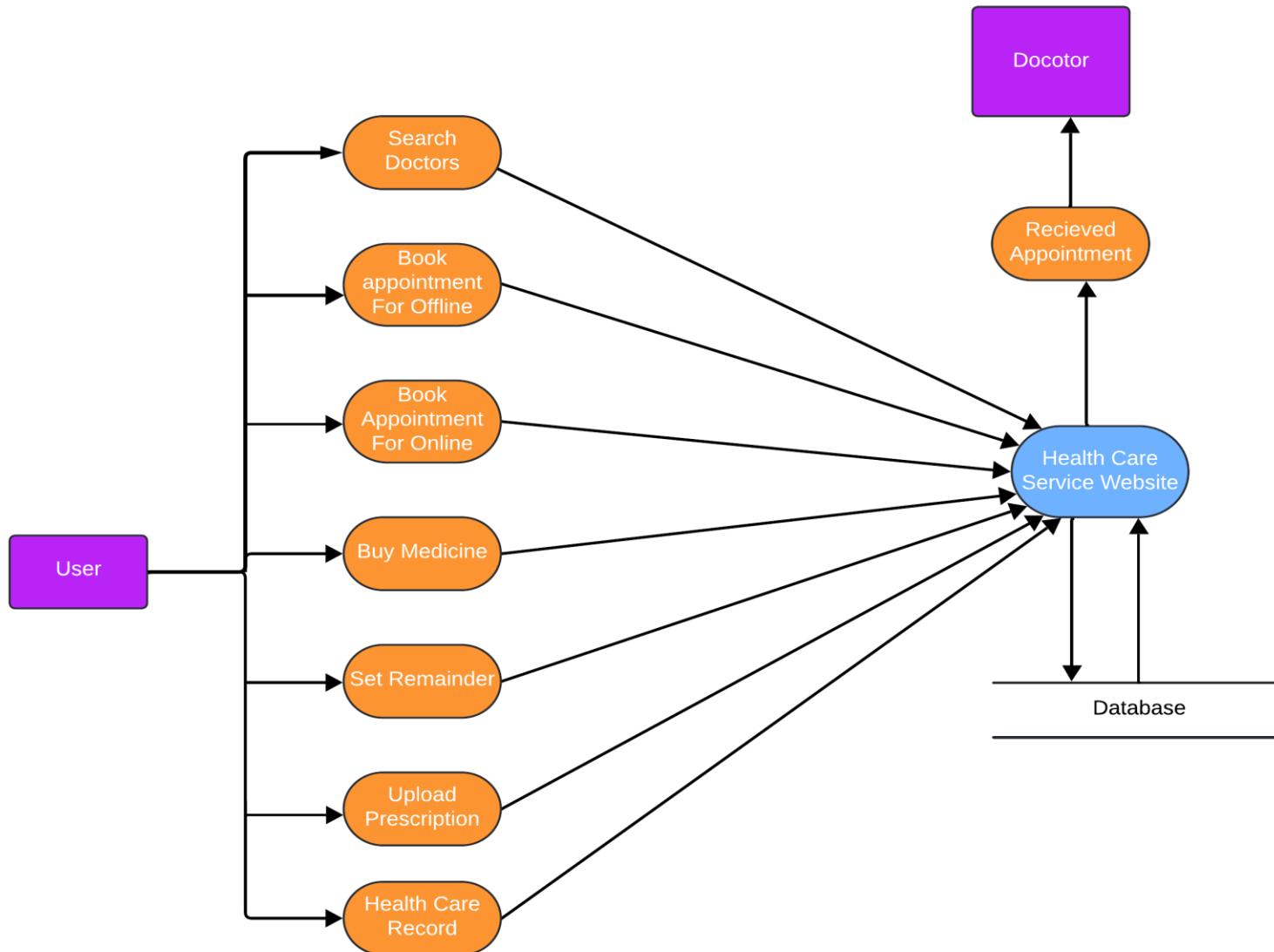
DFD Level 0



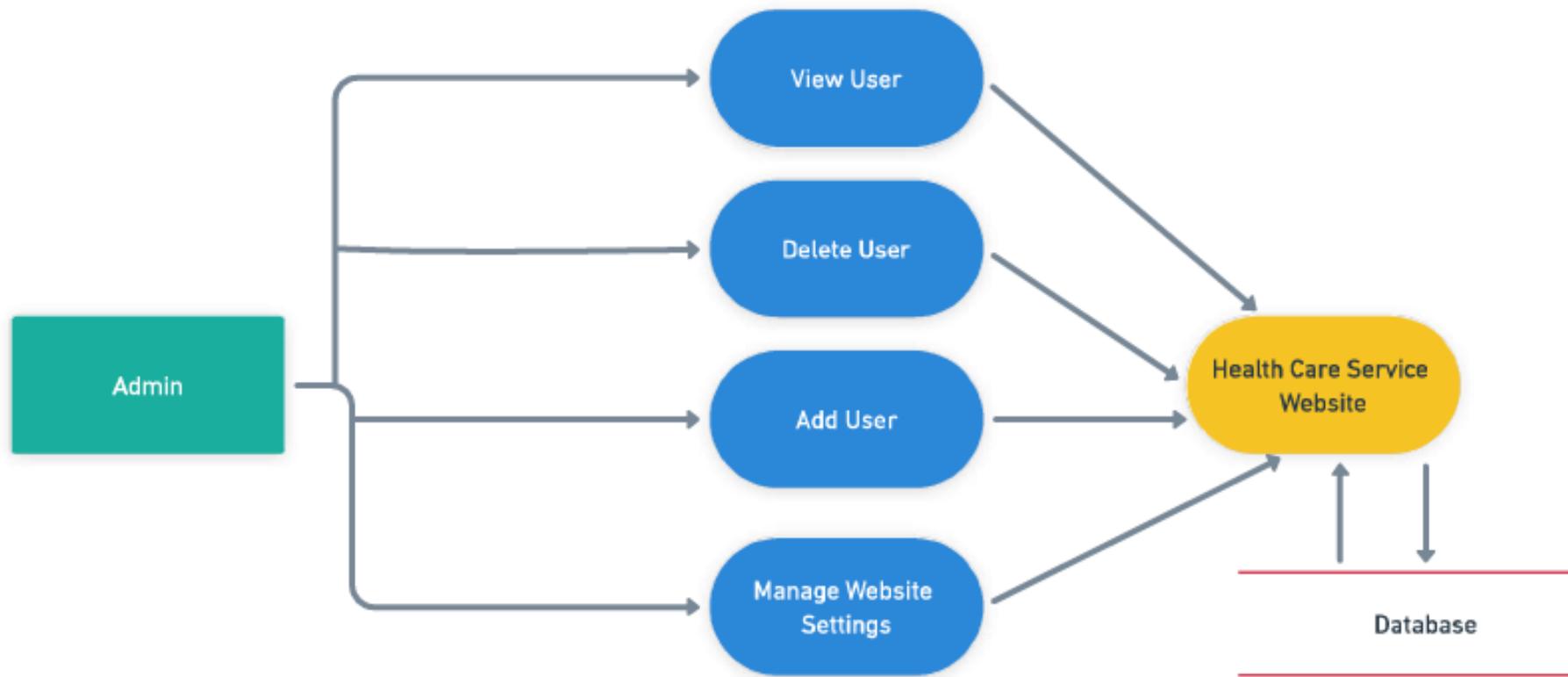
DFD Level 1



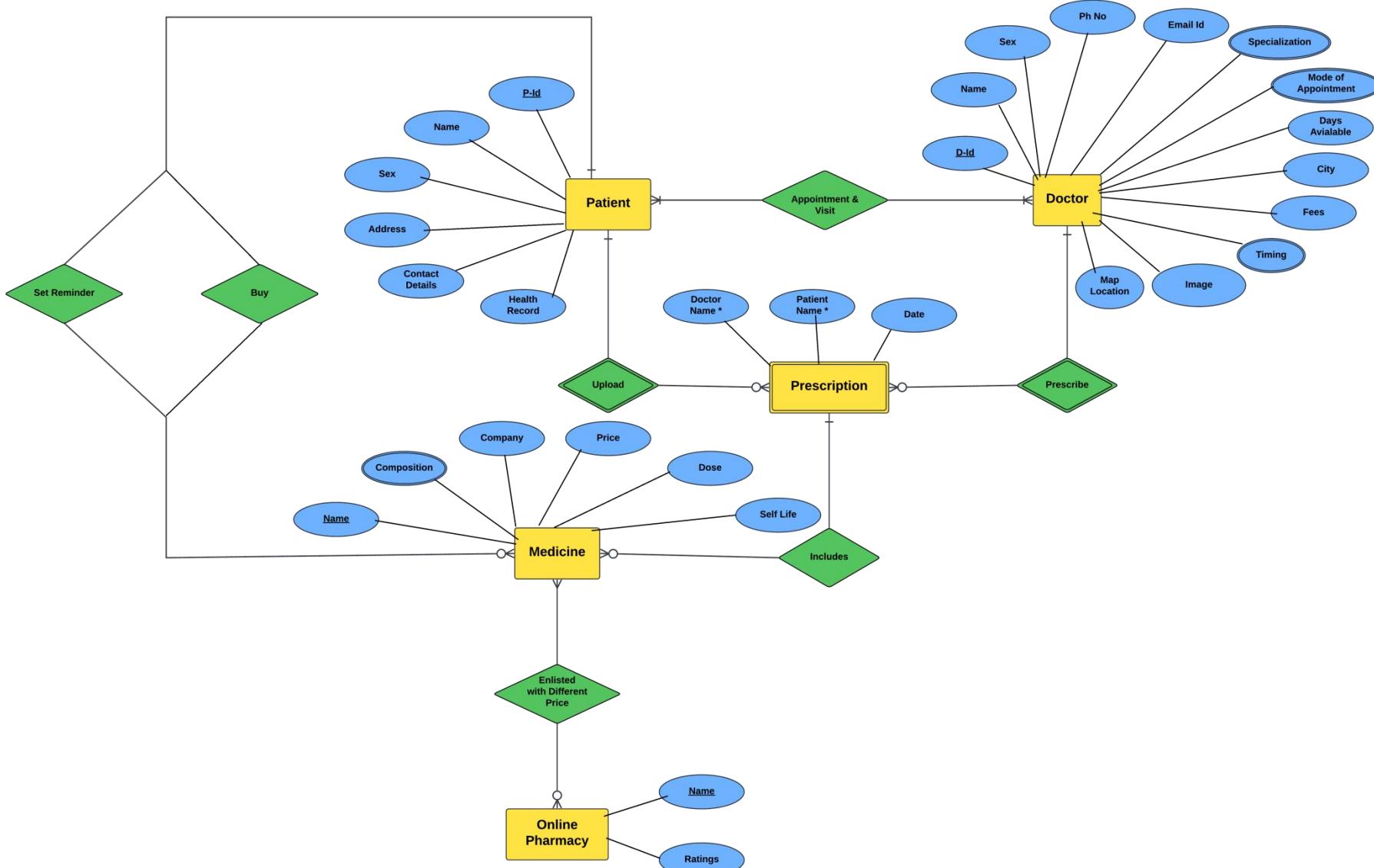
DFD Level 2 Registration



DFD Level 2 User



DFD Level 2 Admin



ER Diagram

# Result:

The figure displays three screenshots of the MedBuddy application interface. The top-left screenshot shows the homepage with a navigation bar on the left and a large 'MAKE IN INDIA' banner featuring a silhouette of India composed of gears. The top-right screenshot shows a Google sign-in page titled 'Choose an account' for continuing to Med Buddy. The bottom screenshot shows a local host version of the app ('localhost:5173') with a prescription form overlay showing fields for Patient Name, Address, Drug, Dosage, and Directions. The interface includes a sidebar with various features like Book Appointment, Medicine Reminder, etc., and a footer with social media icons.

Sign Up Page



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

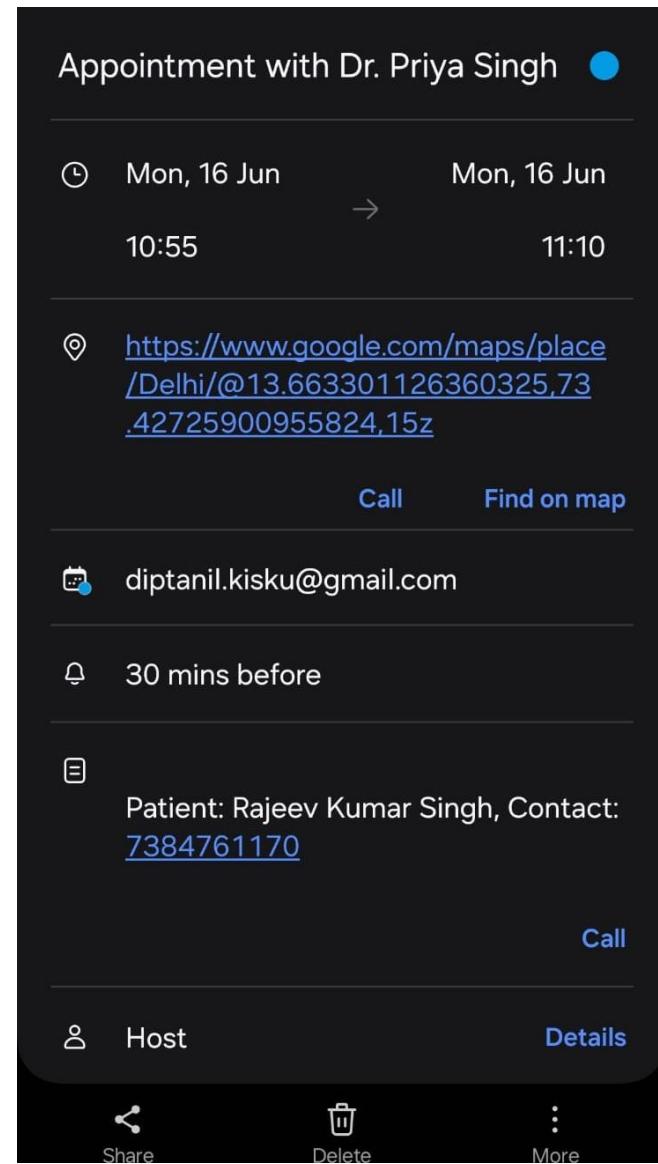
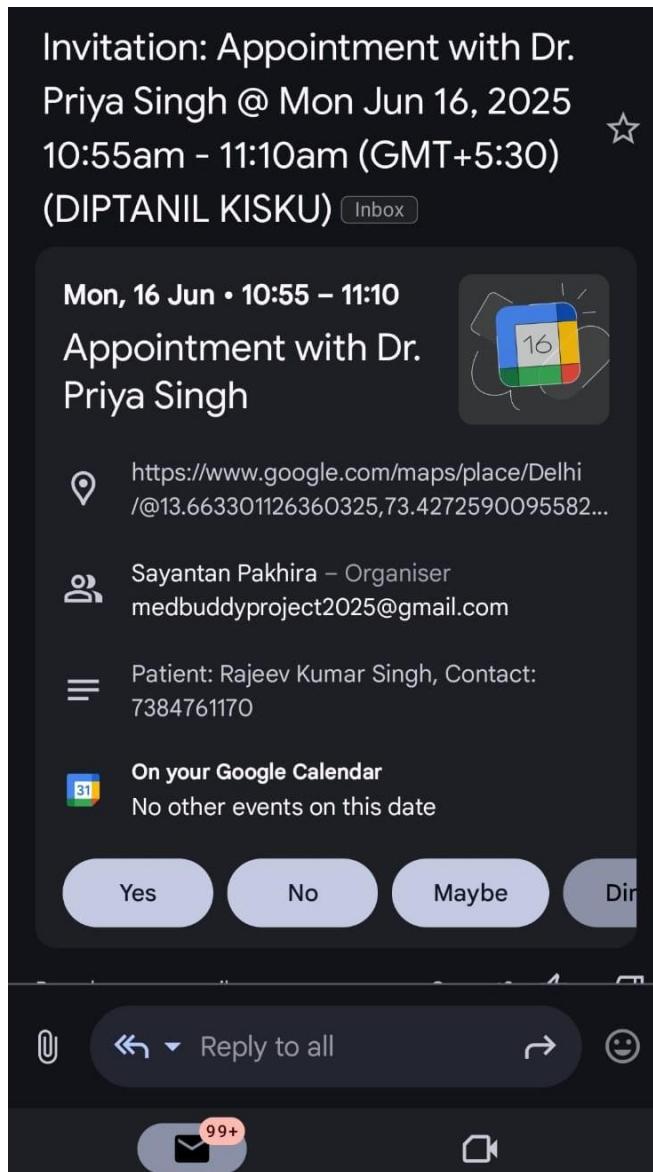
14-06-2025

09:16

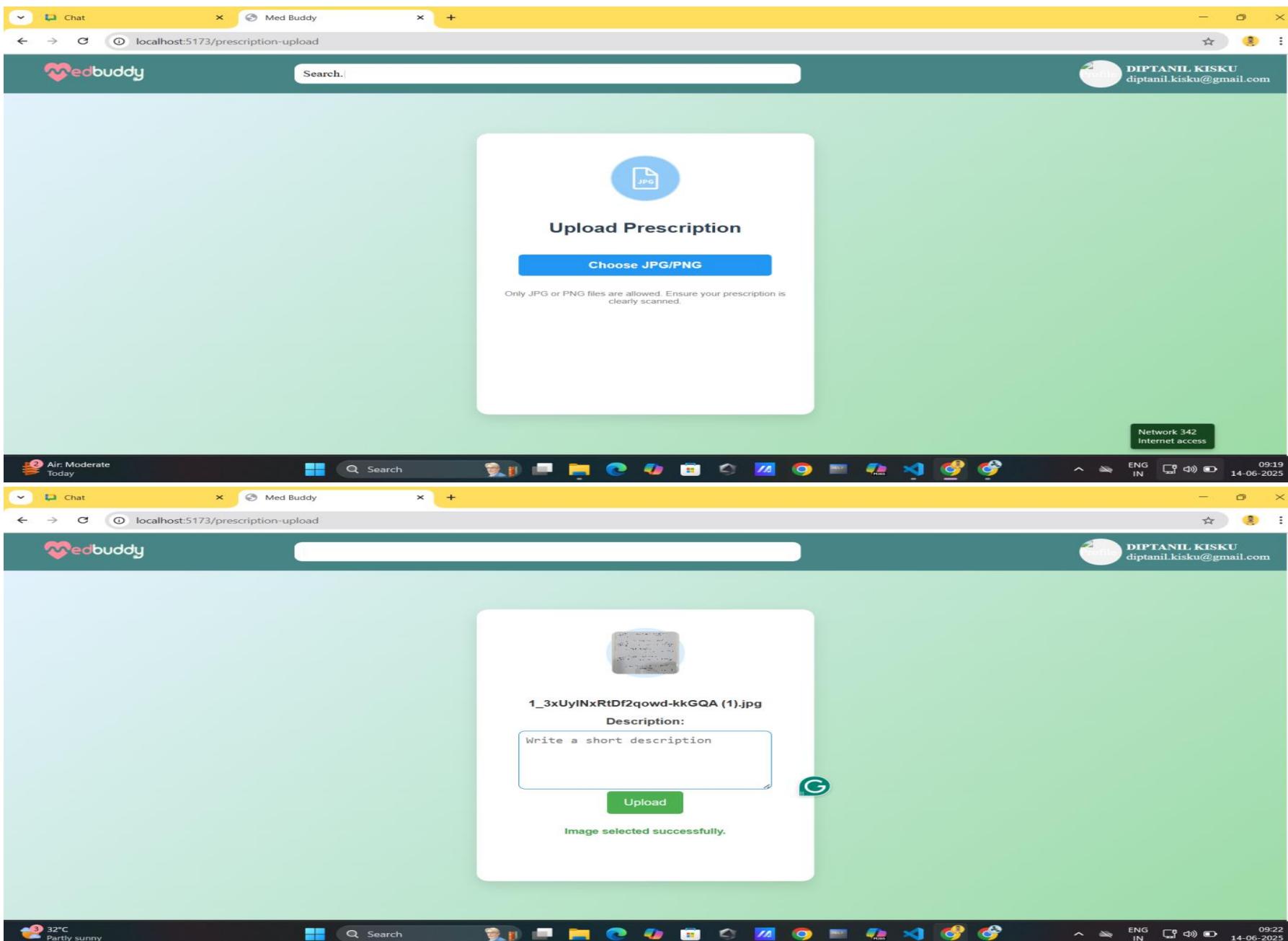
ENG IN

16

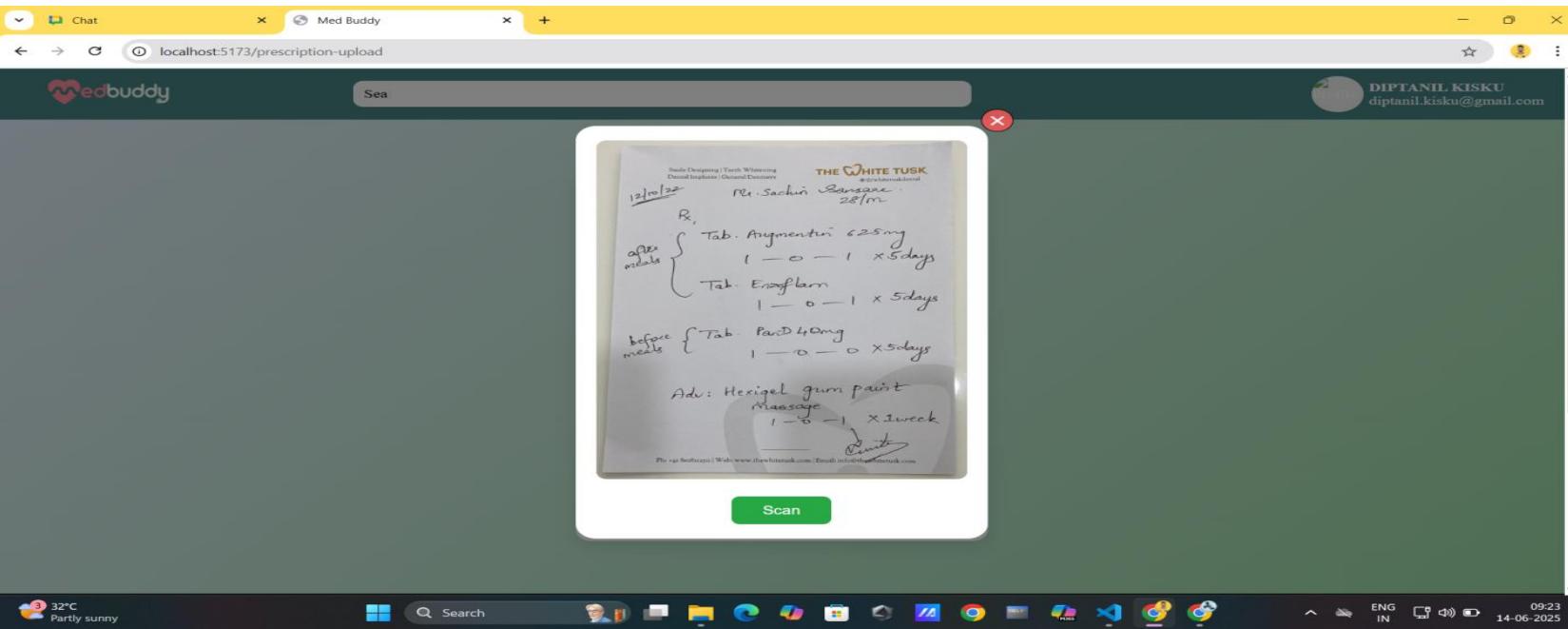
Doctor Appointment(appointment booking form)



Appointment booking confirmation(mail and calendar)



Upload Prescription Page

A screenshot of a Jupyter Notebook cell titled "EasyOCR Model Inference.ipynb". The code cell contains the following Python code:

```
[ ] image_path = '/content/pres1.jpg'  
[ ] result = reader.readtext(image_path)  
result
```

The output of the code is a large list of text snippets extracted from the prescription image, such as "fityu", "0.11437154112339845", and "0.2343715561, [300, 556], [300, 582], [236, 582]]".

19°C Mostly sunny 10:24 15 January

Uploaded prescription goes for scanning

Physics Wallah | List of Available Free | 15 years gate PYQ BC | Mathematics and Ap... | OCR\_MODEL.ipynb | Amazon Web Service | EasyOCR Model Infer...

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

**EasyOCR Model Inference.ipynb**

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

Code Text Copy to Drive Connect GPU Gemini

```

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

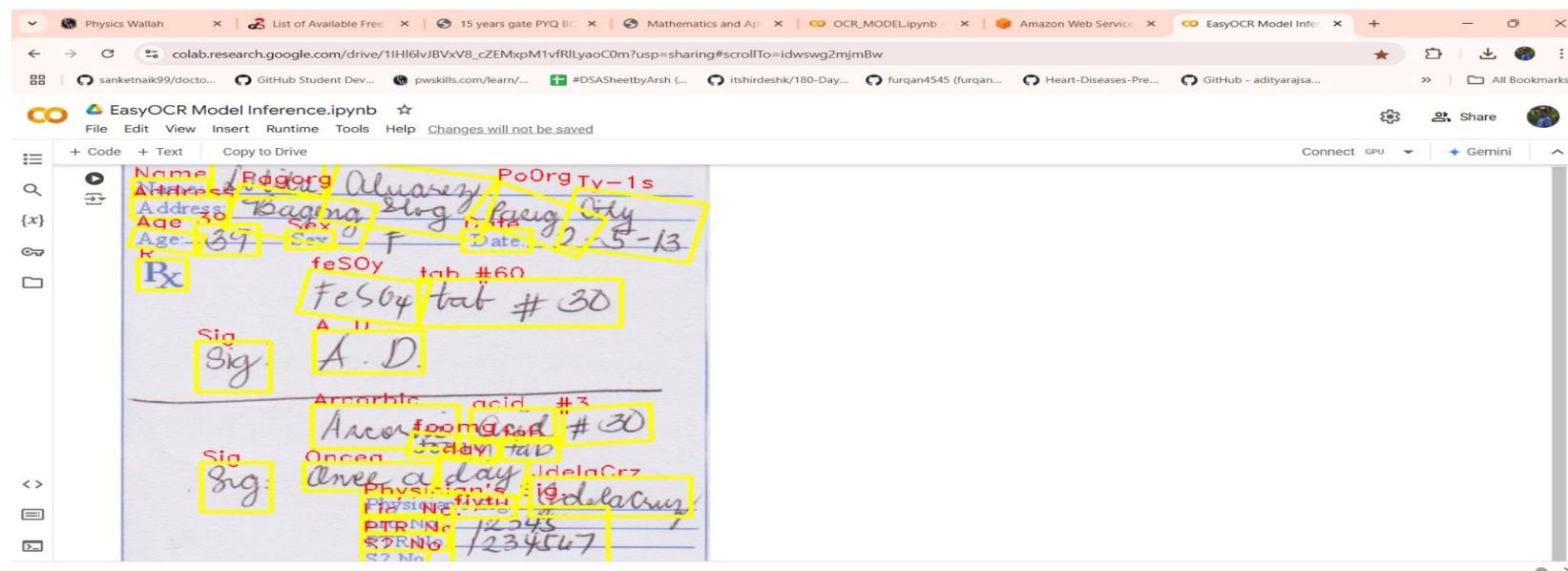
[ ] def draw_output(result, test_img, draw_text = False):
    for i in range(len(result)):
        bbox = result[i][0]
        text = result[i][1]
        if draw_text:
            cv2.putText(test_img, text, tuple(list(map(int, bbox[0]))), cv2.FONT_HERSHEY_DUPLEX, 0.8, (0,0,255), TEXT_THICKNESS)
  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

```

Name: Lulita Aluarez  
 Address: Bagong Brgy. Parig City  
 Age: 39 Sex: F Date: 2-5-13  
 Rx



The screenshot shows a Google Colab notebook titled "OCR\_MODEL.ipynb". The code in the notebook attempts to extract text from two image files: "pres10.jpg" and "pres4.jpg". The output of the first file shows a prescription for Agatha Peralta, age 14, sex F, dated 2-4-11, with instructions to take Bioquic 500mg tab (Paracetamol) #12 as needed. The physician's signature is also present. The second part of the code is commented out.

```
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:")
```

Connected to Python 3 Google Compute Engine backend

Air: Severe Now

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.



## Scanned Prescription: prescription.jpg

### Detected Medicines:

- Augmentin
- Enzflam
- Hexigel

[Compare](#)

Augmentin



## 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**

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[Terms & Conditions](#)  
[Privacy Policy](#)  
[Contact us](#)

**Contact Us**

 Email: [pakhirasayantan123@gmail.com](mailto:pakhirasayantan123@gmail.com)  
 Phone: [7478320320](tel:7478320320)  
 WhatsApp: [7478320320](https://wa.me/7478320320)

**Address**

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

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

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Old Prescription Page

Med Buddy

localhost:5173/medicine-reminder

**Set Medicine Reminder**

Medicine Name: \_\_\_\_\_

Date: dd-mm-yyyy

Number of Doses: 1

Dose 1 Time: --:--

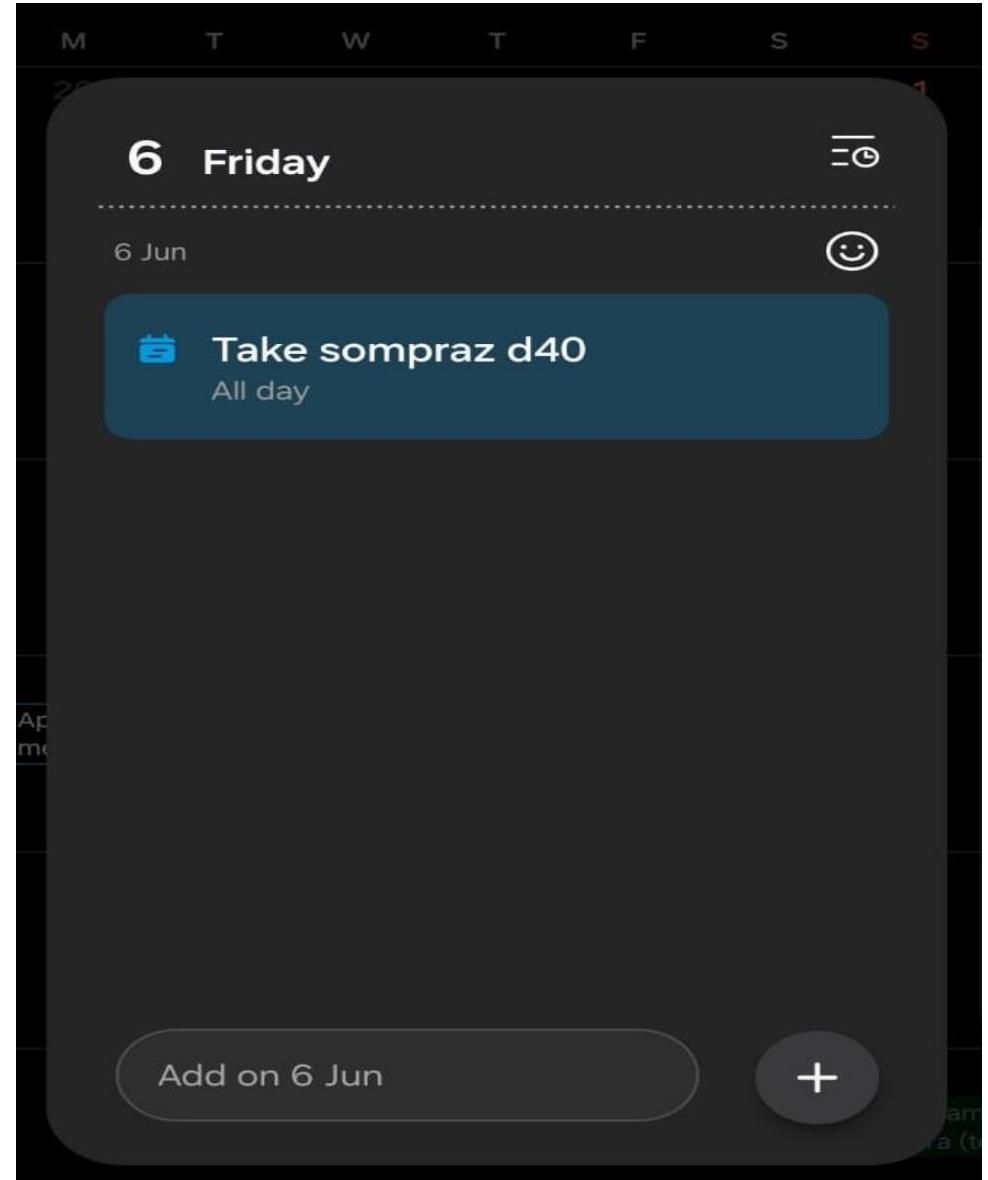
Repeat: No Repetition

**Set Reminder**

2 cm of rain Tuesday

Search

14-06-2025





## Search Medicine

Compare Medicine Prices From India's Top Pharmacies.

Calpol

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/T/GRP-5



## Search Medicine

Compare Medicine Prices From India's Top Pharmacies.

calpol

Search

### Results for: calpol



#### Calpol 250mg Paediatric Oral Suspension Strawberry - 60ml Oral Suspension

₹45.02

Accuracy: 100.00%

Visit ↗



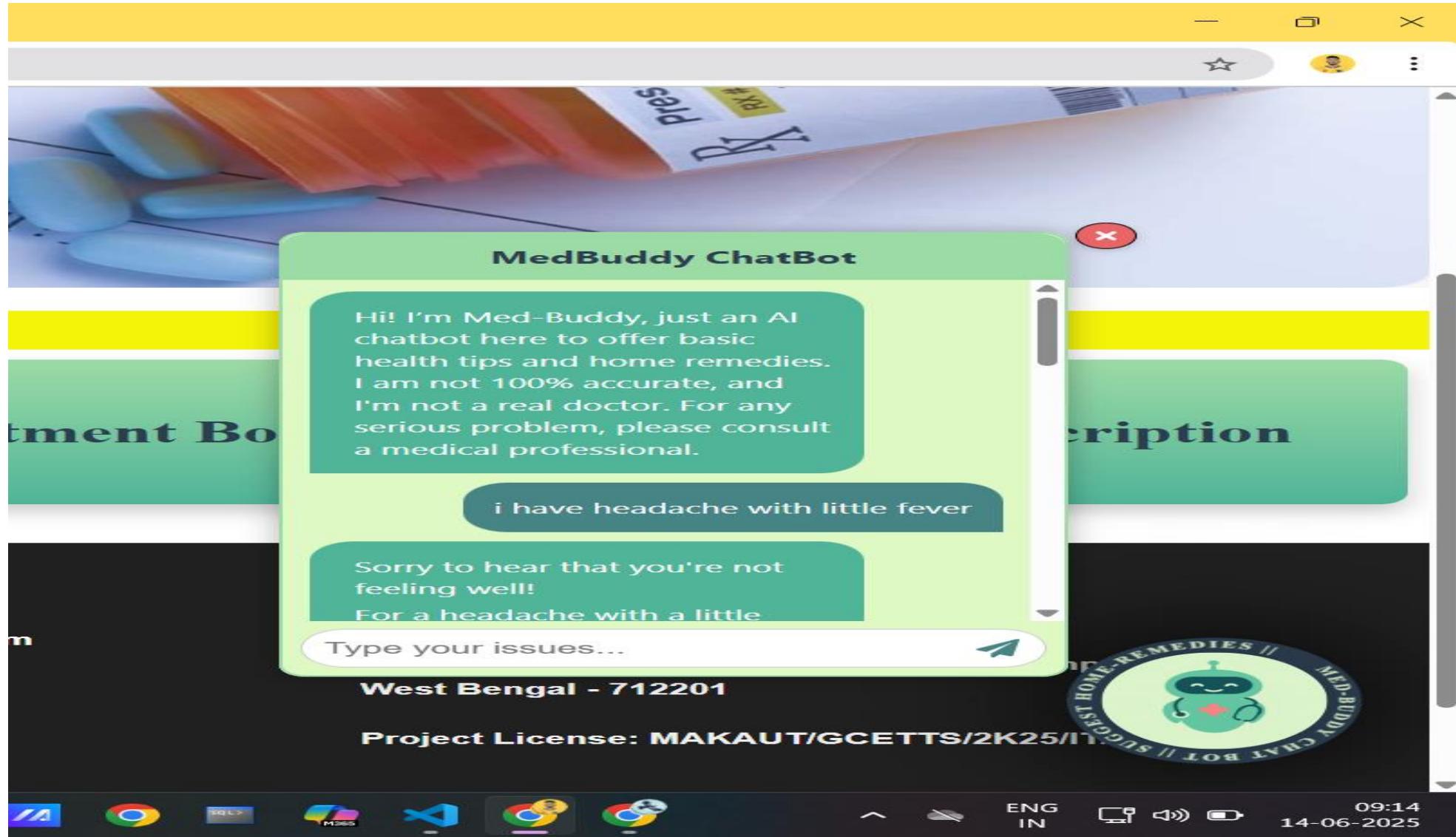
#### Calpol 650 + Tablet

₹28.1

Accuracy: 100.00%

Visit ↗

## Price Comparison



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

## 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. 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

20:40 14-06-2025

Health Record Page

## 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 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 pakhirasavantan123@gmail.com WhatsApp Us 7478320320

Google Map showing the location of Government College of Engineering & Technology in Serampore, India. The map includes labels for Serampore Rai Bari, The Denmark Tavern, BMRC Hospital, Aheli Caterer Bes Caterer in Kolkata, and various local landmarks like Dakshin Rajyadharpur, MANIKTALA, and TITAGARH. A red pin marks the college's location.

### Drop Us Your Query

Enter your name  
Enter your email  
Enter your Phone Number  
Write your message

SUBMIT NOW

MedBuddy https://wa.me/7478320320?text=Hello Support, I need help with... 33°C Partly sunny Search ENG IN 10:23 14-06-2025

Contact Us Email: pakhirasavantan123@gmail.com Address Amritalal Apartment. 1/F

Costumer Support Page And FAQs Page

The screenshot shows a Google Sheets document titled "My form". The top navigation bar includes "File", "Edit", "View", "Insert", "Format", "Data", "Tools", "Extensions", and "Help". A storage warning message is displayed: "74% of storage used You use storage when you save to Drive, back up to Google Photos and send and receive emails on Gmail. Get more storage – 74% off for 3 months." Buttons for "Manage storage" and "X" are shown. The toolbar below includes search, filter, print, and various format options like font size (14), bold, italic, underline, and alignment.

The spreadsheet has a single sheet named "Sheet1". The data is organized into columns A, B, C, and D. Column A contains row numbers from 1 to 14. Column B contains "name", "email", and "phone" headers. Column C contains "message" entries. Row 2 contains data for "SAYANTAN PAKHIRA" and his email. Row 3 contains data for "Diptanil Kisku" and his email. The "message" column for both rows contains their respective inquiries.

A	B		C	
1	name	email	phone	message
2	SAYANTAN PAKHIRA	shiksayantanpakhira74@gmail.com	7478320320	Hi I have a doubt on how to book the appointment
3	Diptanil Kisku	dreamshiksa69@gmail.com	7478320320	There are some problem i'm facing
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Excel sheet with sample data that is storing all the queries coming from contact us page

## **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!**