

Introduction

The modern generation is going to be defendable on a computer and through the computer, we use the software. Hence, we are learning Python that's why we creating an application for managing pharmacy systems. By using this, we can serve patients, doctors, pharmacy clerks & pharmacists. Even managing drug stocks. Keeping their appropriate data to hold them the right drugs to save their life & soul. Mainly this application is used by pharmacy administration.

Motivation

Pharmacy is essential in the progress of the urgent need for drugs. In Bangladesh, senior citizens are now not too stable due to some basis of problems like high blood pressure, blackout, joint pain, gastric, etc. In most the equivalent case a smart solution can handle these kinds of circumstances. For smart development, we take a serious smart approach to reduce this kind of harm.

Objectives

The aim of this project is the smart development of a pharmacy system where we revolutionize the pharmacy management system. We digitalize the whole system so that the consistency between online and offline can be measured in such a way therefore from children to grand every can easily access it. Our project has some basic goals which are pointed out below:

- Developing a system that reduces online & offline boring complexity
 - Standing on the serial line
 - Waiting for the next call
 - Come up with children or a short-tempered person
- Strong database with easy-to-use functional interactivity
- Give reliable filter ability
- Avoid disrupting waiting for drugs
- Ecosystem approach to reach out to any doctor or pharmacist at any time
- Make sure a 24/7 service with modest communicator
- Eco-friendly UI to have a huge experience that makes sense to be own

Components or Technologies

To keep the whole system within thumb we are approaching high-level and latest component technology which helps this system to be more optimistic and lightweight. Whatever a pharmacy is large or small within our ecosystem any patient finds it as a basis-based pharmacy to have desired instruction. Following elaborate on the actual purpose of using technology:

Client-side

ReactJS, React-Bootstrap, React-Font-Awesome, React-Router, React-Leaflet, NPM for internal packages, React-helmet, React-day-picker, Date-fns & React-PDF.

Server-side

Node.js, Express.js, Next.js, MongoDB, Mongo Atlas, Mongo CRUD, NodeMon, JWT, and TorPrint for fingerprint, SQLite3 (final conversion).

Offline display

Using a Python module called ManagePy as a phaser which simply turns the ReactJS application into a Django project. Which contains a parent server file known as *manage.py*. There showing offline can give the same experience as online giving which replace the original repo. Finally, convert the MongoDB database to the SQLite3 database.

Challenges

- Encrypted chat system with an AES-19 encryption algorithm
- Ontime fingerprint approach for login and registration
- Admin side print segment information
- Connect the whole project direct to live
- Offline display project conversion from ReactJS to Django
- Make the project live on the internet with front-end and back-end

System design

Use-case diagram of pharmacy management system:

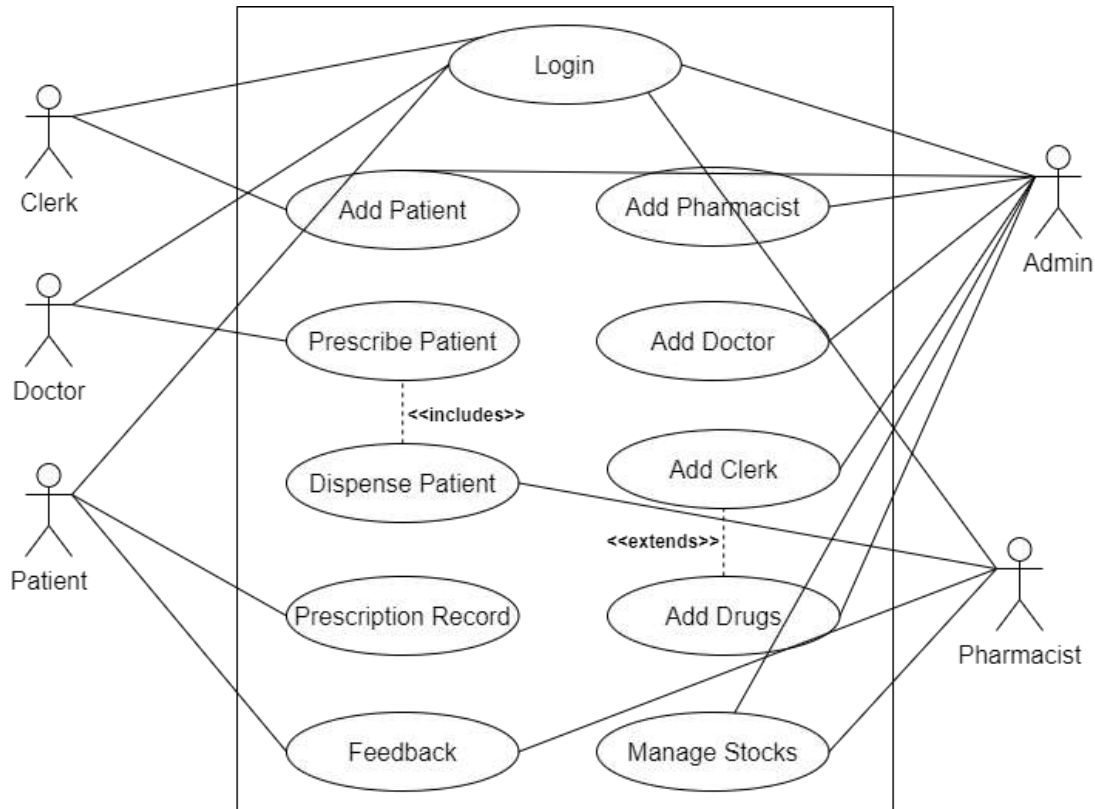


Fig. 4.1: use-case diagram of Pharmacy Management System

Context diagram of pharmacy management system:

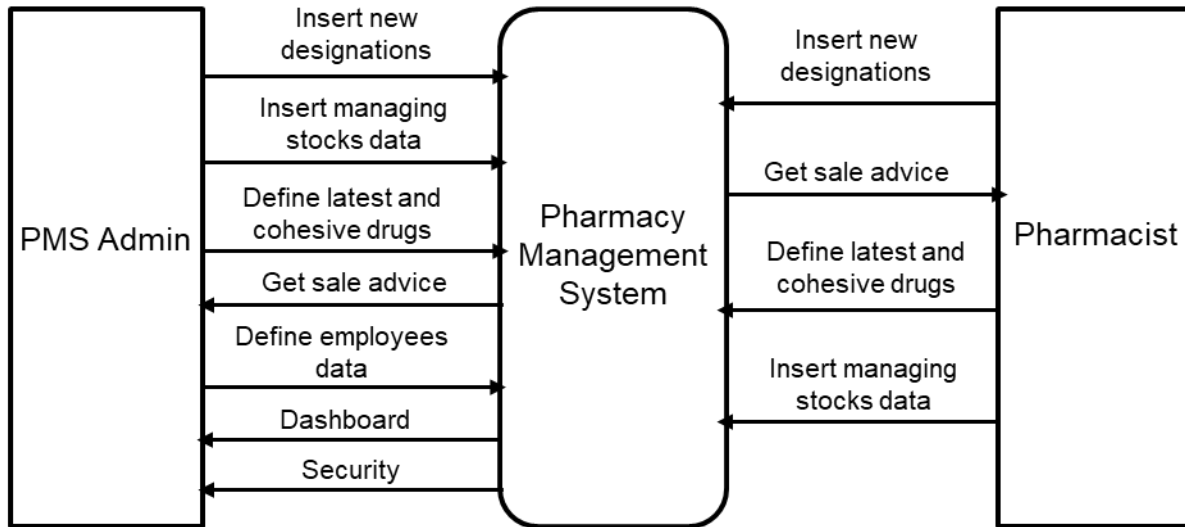


Fig. 4.2: context diagram of Pharmacy Management System

Level-1 diagram of pharmacy management system:

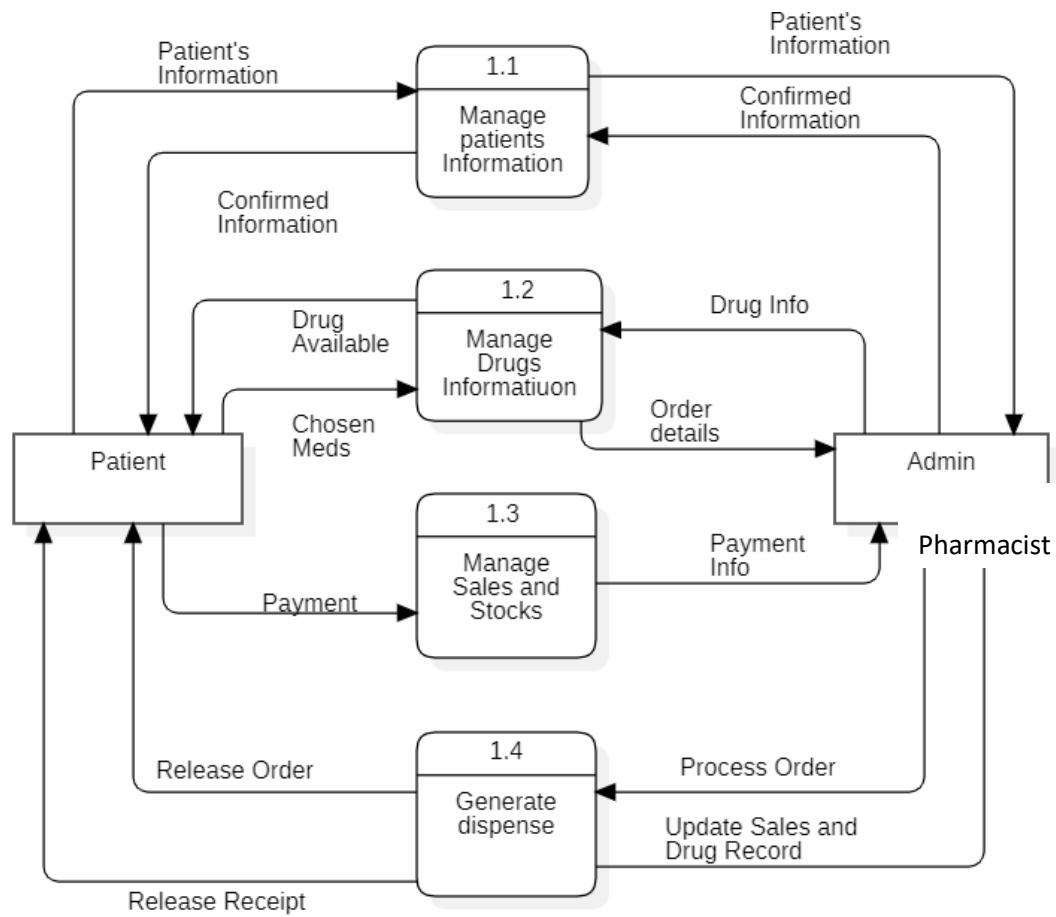


Fig. 4.2: level-1 diagram of Pharmacy Management System

Implementation & testing

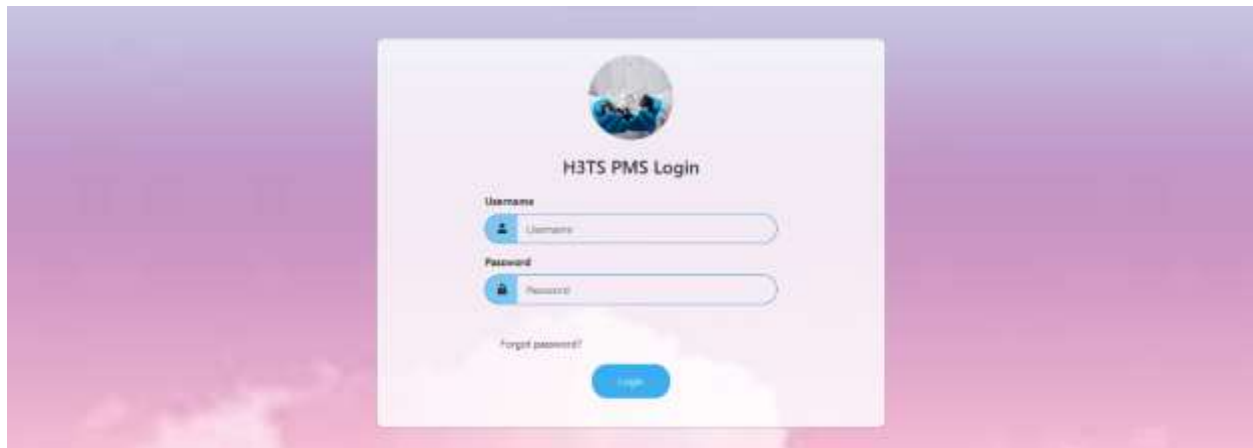
Back-end connectivity code:

```
DATABASES = {  
    'default': {  
        'ENGINE': 'django.db.backends.sqlite3',  
        'NAME': BASE_DIR / 'db.sqlite3',  
    }  
}
```

Test results and reports

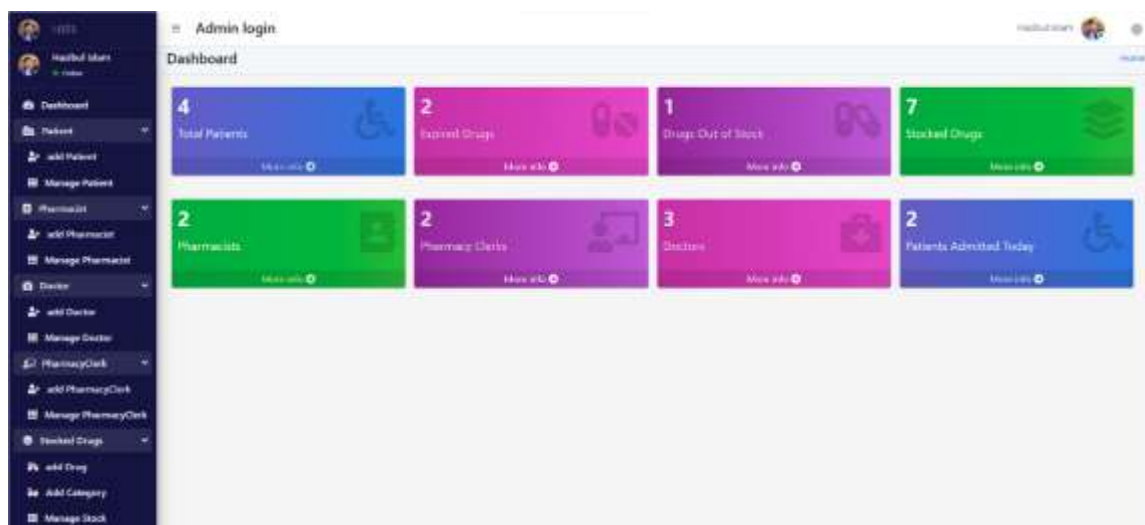
Operation name, an image for brief and brief description to elaborate a whole segment given following:

Login



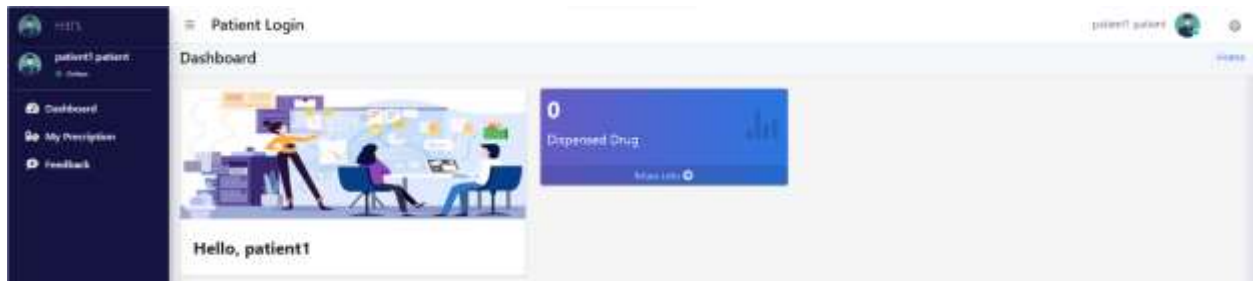
We have to log in first whereas in an entity a username or a password is needed. Along with if the device has any fingerprint that case it's going to be auto-detected.

Admin Dashboard



Consume all access of any patient, doctor, pharmacist & clerk. Although manage stocks etc.

Patient Dashboard



A basic interface or UI for the patient that displays patient events in a summary form.

Patient feedback panel with pharmacists



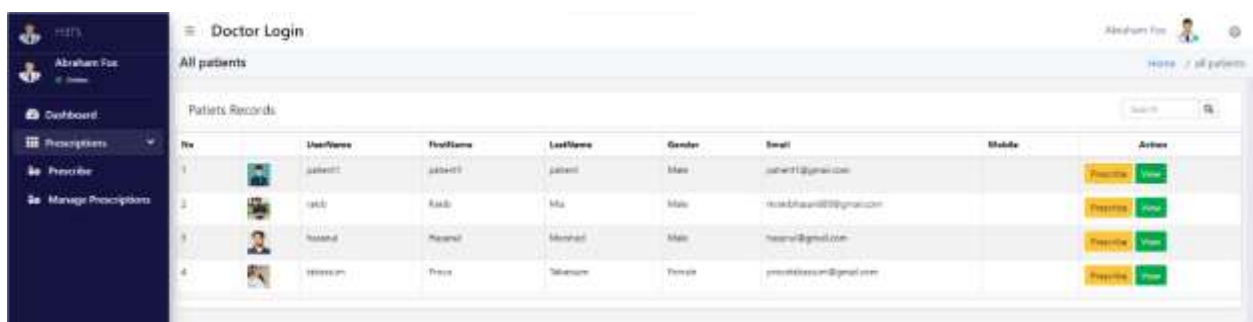
If a patient can be satisfied, then must have the right to give feedback through the pharmacist's reply.

Doctor Dashboard



Where the doctor gets all events of total prescriptions happened that occur with respect to our system.

Patient records



By watching patients list to prescribe them as well as.

Pharmacist Dashboard



Can observe how many patients are admitted, expired drugs, out stocks or, stocked drugs as a brief.

Prescription records

Pharmacist Login

All patients

Patients Records

ID	Patient Full Name	Dispensed Drug	Dispensed Quantity	Instructions	Date Prescribed	Action
1	Rashid, Ma	Ticarcillin-Cl	17	In infants, a rectal temperature, if feasible, is somewhat more accurate. When reporting a temperature to your health care provider,	June 10, 2022, 7:00 pm	Cancel
2	Arshad, Aslam	Levofloxacin	9	Right -> 2 after eating	June 10, 2022, 2:10 pm	Cancel

Pharmacists' prime documents to dispense a patient with proper drugs.

Clerk Dashboard



The clerk can admit new patients as a brief can observe through dashboard.

Update segment

Admin login

Hasibul Islam

Hasibul Islam
Pharmacy Admin / RMALE
hasibul.islam@gmail.com

About

Full Name	Hasibul Islam	Email	admin@gmail.com
Gender	Male	Mobile Number	
Birth Date	October 25th, 1998	Twitter	
Marital Status	Single	Skype	
Location		Website	

Any user whatever they are admin or patient or doctor or clerk or pharmacist can update their profile

Database screenshots

Database table

id	username	password	last_login	is_active	username	last_login	last_login	email
1	admin	admin	2022-06-20 08:01:23	1	admin	2022-06-20 08:01:23	2022-06-20 08:01:23	admin@gmail.com
2	patient	patient	2022-06-20 08:01:23	0	patient	2022-06-20 08:01:23	2022-06-20 08:01:23	patient@gmail.com
3	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
4	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
5	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
6	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
7	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
8	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
9	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
10	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
11	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
12	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
13	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
14	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com

Admin

id	username	password	last_login	is_active	username	last_login	last_login	email
1	admin	admin	2022-06-20 08:01:23	1	admin	2022-06-20 08:01:23	2022-06-20 08:01:23	admin@gmail.com

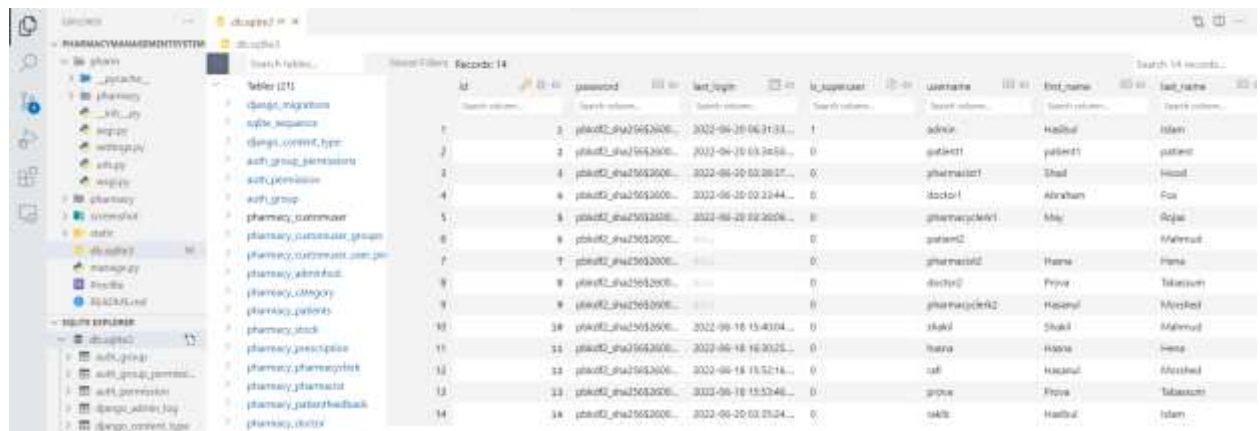
Drugs category

id	name	description
1	Theophylline	
2	Sildenafil	
3	Insulin	
4	Cannabidiol	
5	Depressants	
6	Opioids	
7	Steroids	
8	Hallucinogens	
9	Prescription	

Pharmacy clerk

id	username	password	last_login	is_active	username	last_login	last_login	email
1	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com
2	pharmacist	pharmacist	2022-06-20 08:01:23	0	pharmacist	2022-06-20 08:01:23	2022-06-20 08:01:23	pharmacist@gmail.com

Pharmacy customers



Pharmacy Management System - Pharmacy Customers

ID	password	last_login	is_superuser	username	first_name	last_name
1	pkad02_shu2565200...	2022-04-26 04:31:33...	1	admin	Hadiul	Islam
2	pkad02_shu2565200...	2022-04-26 03:34:58...	0	patient1	patient1	patient
3	pkad02_shu2565200...	2022-04-26 03:38:37...	0	pharmacist1	Shad	Hasid
4	pkad02_shu2565200...	2022-04-26 03:33:44...	0	doctor1	Abraham	For
5	pkad02_shu2565200...	2022-04-26 03:33:06...	0	pharmacysten1	Muj	Rajul
6	pkad02_shu2565200...		0	paten2		Mahmud
7	pkad02_shu2565200...		0	pharmaci2	Harna	Harna
8	pkad02_shu2565200...		0	doctor2	Priva	Takacum
9	pkad02_shu2565200...		0	pharmacysten2	Nasrul	Mahmud
10	pkad02_shu2565200...	2022-04-18 13:43:04...	0	shaki	Shaki	Mahmud
11	pkad02_shu2565200...	2022-04-18 16:30:25...	0	harna	Harna	Harna
12	pkad02_shu2565200...	2022-04-18 13:52:18...	0	raf	Nasrul	Mahmud
13	pkad02_shu2565200...	2022-04-18 13:53:46...	0	priva	Priva	Takacum
14	pkad02_shu2565200...	2022-04-20 03:25:24...	0	shaki	Hadiul	Islam

Patient dispenses



Pharmacy Management System - Patient Dispenses

ID	dispense_date	taken	stock_ref_no	instructions	dispense_at	drug_id
1		17	1		In infant, a special te...	2022-04-18 16:36:45...

Pharmacy doctors



Pharmacy Management System - Pharmacy Doctors

ID	emp_no	age	gender	mobile	address	profile_pic
1	1			+1 (746) 683-7423	John elgend gul st	doctor.png
2	2			01732704040	Sadhat, Garpur	shaki-mahmud.jpg
3	4			01732774944	Khegan, Achula	harna-harna.jpg

Patient feedback with the pharmacist



Pharmacy Management System - Patient Feedback

ID	feedback	feedback_reply	admin_created	created_at	updated_at	admin_id
1	I need more info	Contact with Pharma...		2021-09-19 08:38:01...	2022-04-18 16:38:40...	
2	Good service getting...	Thank		2022-04-18 16:25:52...	2022-04-18 16:29:16...	

Pharmacy patients



Pharmacy Management System - Pharmacy Patients

ID	emp_no	gender	first_name	last_name	dob	phone_number
1	1	Male	patient1	patient1	1990-03-08 21:00:00	
2	1	Male	Shaki	Mahmud	1990-04-09 21:00:00	01970215031
3	1	Male	Hadiul	Islam	1990-07-14 21:00:00	

Pharmacist



Pharmacy Management System - Pharmacist

ID	emp_no	age	gender	mobile	address	profile_pic
1	2			+1 (386) 488-1401	Door adpacing ka	image2.png
2	2			+681390415001	Khegan, Achula	image2.png

Patient prescription

id	description	prescribe	date_prescribed	patient_id
1	A fever is a temporary...	Addly clear effects Ca...	2022-06-10 16:01:42...	1

Pharmacy stocks and management

id	drug_name	drug_color	drug_shape	quantity	receive_quantity
1	BR 3	Fluocent 50	White	Round	11887
2	OPK 6	Lowest	Blue Brown	80	17549
3	B 047	Angiotensin and O...	Pink	(Riprat)Oval	8888
4	B 671	Clopidogrel Bisulfate	Pink	Capsule-shape	8888
5	A 101	Lithium Carbonate	Beige	Capsule-shape	1888
6	A 22	Paracetol	Yellow	Round	288
7	88	Morphine Sulfate Sal...	Orange	Round	8

Conclusion

This is a multi-time easy-to-use eco-friendly project from children to grand can access like nothing to anything. Each user has their own potential. Separate functionality with easy UI each portion can serve multiplication. As a doctor can prescribe a patient, the clerk can add new patients and manage their serial numbers, a patient can have their prescription seen and ability to give feedback, a pharmacist can have the ability to dispense through the prescription provided to a patient, and finally, come to the admin who has the full right to access and manage anything like CRUD operation else feedback.