VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELGAUM -590014

A DBMS Mini-Project Report On

"Pharmacy Management System"

A Mini-project report submitted in partial fulfillment of the requirements for the award of the degree of **Bachelor of Engineering in Artifical Intelligence and Machine Learning** of Visvesvaraya Technological University, Belgaum.

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DAYANANDA SAGAR ACADEMY OF TECHNOLOGY & MANAGEMENT

Opp. Art of Living, Udayapura, Kanakapura Road, Bangalore- 560082(Affiliated to Visvesvaraya Technological University, Belagavi and Approved by AICTE, New Delhi). (Accredited by NBA until 30-06-2025, NAAC (A+))

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DEPARTMENT OF ARTIFICAL INTELLIGENCE AND MACHINE LEARNING

CERTIFICATE

This is to certify that the Mini-Project on Database Management System (DBMS) entitled "**PHARMACY MANAGEMENT SYSTEM**" has been successfully carried out by **RAGHAVENDRA PRASAD(1DT21AI046) and SHREYAS H S(1DT21AI052)**, a Bonafide students of **Dayananda Sagar Academy of Technology and Management** in partial fulfilment of the requirements for the award of degree in **Bachelor of Engineering** in **Artificial intelligence and machine learning** of the **Visvesvaraya Technological University, Belgaum** during academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library.

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1. **Mr. Ragava M.S**   **Dr.Sandhya N**
2. **Mrs.Sowbhagya M P**   **Prof. &HoD, Dept. of AIML**

                              (Signature with date)

Examiners:

1.

2.

ACKNOWLEDGMENT

It gives us immense pleasure to present before you our project titled **"Pharmacy Management System."** The joy and satisfaction that go with the successful completion of any task would be incomplete without the mention of those who made it possible. We are glad to express our gratitude towards our prestigious institution **DAYANANDA SAGAR ACADEMY OF TECHNOLOGY AND MANAGEMENT** for providing us with utmost knowledge, encouragement, and the maximum facilities in undertaking this project.

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ABSTRACT

The Pharmacy Management System is a software solution designed for efficient pharmacy operations. It includes user management, patient records, and drug inventory features. Users can register, log in, and manage profiles, ensuring secure access. Patient information, including demographics and medical history, is recorded, with support for admission and discharge dates. The system manages drug inventory, tracking quantities, reorders, and stock transactions. It enforces user authentication, authorizing access to sensitive data. Reporting provides insights into user activities, drug status, and patient admissions. The system ensures data integrity through a relational database. Notifications alert users to low stock or patient admissions. Timestamps maintain a historical log, aiding in audit and tracking. Category management organizes medications. In summary, the system optimizes pharmacy operations, improving efficiency and data accuracy for better decision-making.

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CHAPTER 1

INTRODUCTION

1.1 Background

The development of a pharmacy management system in India is rooted in the country's dynamic healthcare landscape. India, with its vast population and diverse healthcare challenges, faces the need for innovative solutions to improve pharmaceutical services. The project responds to the evolving demands of the Indian healthcare sector, where issues like medication accessibility, patient records management, and inventory control pose significant challenges.

In a nation where healthcare is a critical concern, the pharmacy management system holds the promise of streamlining drug dispensation, reducing waiting times, and enhancing overall efficiency in pharmacies. The motivation behind the project aligns with India's commitment to advancing smart solutions in healthcare, addressing the healthcare needs of its citizens.

1.2 Problem Definition

The problem at hand involves inefficiencies in traditional pharmacy practices in India, characterized by challenges like medication accessibility, patient record management, and inventory control. Manual systems contribute to prolonged waiting times, inaccurate drug dispensation, and suboptimal stock management. The project aims to rectify these issues by introducing a comprehensive and user-friendly pharmacy management system, leveraging technologies such as Python, Django, HTML, CSS, and SQL DataBase. The initiative addresses the pressing need for streamlined processes in the healthcare sector, emphasizing the demand for smart solutions and efficient pharmaceutical services in India.

1.3 Objective

- **Digitization of Pharmacy Processes:** Implement a comprehensive pharmacy management system to digitize and automate traditionally manual processes, reducing paperwork and enhancing overall efficiency.

- **Reducing Waiting Times:** Address the issue of prolonged waiting times by optimizing prescription processing and drug dispensation, ensuring timely service for patients.

- **Enhancing Medication Accessibility:** Improve accessibility to medications by implementing a robust inventory management system, preventing stockouts, and ensuring a consistent supply of essential drugs.

- **User-Friendly Interface**: Develop an intuitive and user-friendly interface that caters to a diverse demographic, promoting ease of use for patients, healthcare professionals, pharmacists, and administrators.

- **Integration with Global Standards:** Align the pharmacy management system with global trends and standards in healthcare technology to ensure compatibility and scalability.

- **Smart Healthcare Solutions**: Contribute to the advancement of smart healthcare solutions by incorporating features such as encrypted chat, on-time fingerprint authentication, and real-time connectivity for seamless communication.

- **Streamlined Patient Records Management:** Implement an efficient system for managing patient records, prescriptions, and feedback, facilitating quick access for healthcare professionals and ensuring data accuracy.

- **Eco-Friendly Approach**: Promote an eco-friendly user interface to enhance the user experience, making the pharmacy management system environmentally conscious and sustainable.

- **24/7 Service Availability:** Ensure continuous and uninterrupted service availability by implementing a robust infrastructure, enabling users to access the system at any time.

- **Clerk and Pharmacist Empowerment:** Empower clerks and pharmacists with tools for easy patient admission, prescription dispensation, and stock management, streamlining their roles within the pharmacy ecosystem.

1.4 Scope of the project

The project scope involves creating a Pharmacy Management System using HTML, CSS, jQuery (JavaScript), and SQL. It aims to deliver a user-friendly interface for patients, doctors, and pharmacy staff, incorporating interactive features through jQuery. The system includes an SQL-based database for efficient data management, offline capabilities using Python and ManagePy, and secure communication channels. It focuses on patient records, prescription management, drug inventory control, and feedback mechanisms. The project ensures scalability, compliance with regulatory standards, and an eco-friendly user interface. Continuous 24/7 service availability and adaptability for future enhancements are integral aspects, aiming to revolutionize pharmacy operations efficiently.

CHAPTER 2

REQUIREMENTS

Software Requirements

Technology Implemented:

- **HTML, CSS, jQuery (JavaScript):** Used for the client-side implementation, structuring web pages, styling, and enhancing interactivity.
- **Python and Django:** Employed for server-side scripting, backend development, and providing a robust web application framework.

Language Used:

- **Python:** Chosen for its versatility, ease of integration, and extensive library support, facilitating efficient server-side scripting and backend logic.
- **HTML:** Utilized for structuring the content and creating the layout of the web pages.
- **CSS:** Applied for styling and enhancing the visual presentation of the user interface.
- **jQuery (JavaScript):** Implemented for dynamic updates, interactive features, and seamless user experiences.

Database:

- **SQLite3:** Selected as the SQL-based database for its lightweight nature and ease of integration with Django, effectively managing and organizing pharmacy data, including patient records, drug inventory, and prescriptions.

User Interface Design:

- **HTML and CSS:** Used to craft a visually appealing and user-friendly interface, ensuring ease of navigation for patients, doctors, pharmacy clerks, pharmacists, and administrators.
- **jQuery (JavaScript):** Applied for dynamic and interactive elements, enhancing the overall user experience.
- **Django templates**: Utilized for server-side rendering, facilitating dynamic content generation based on user interactions.
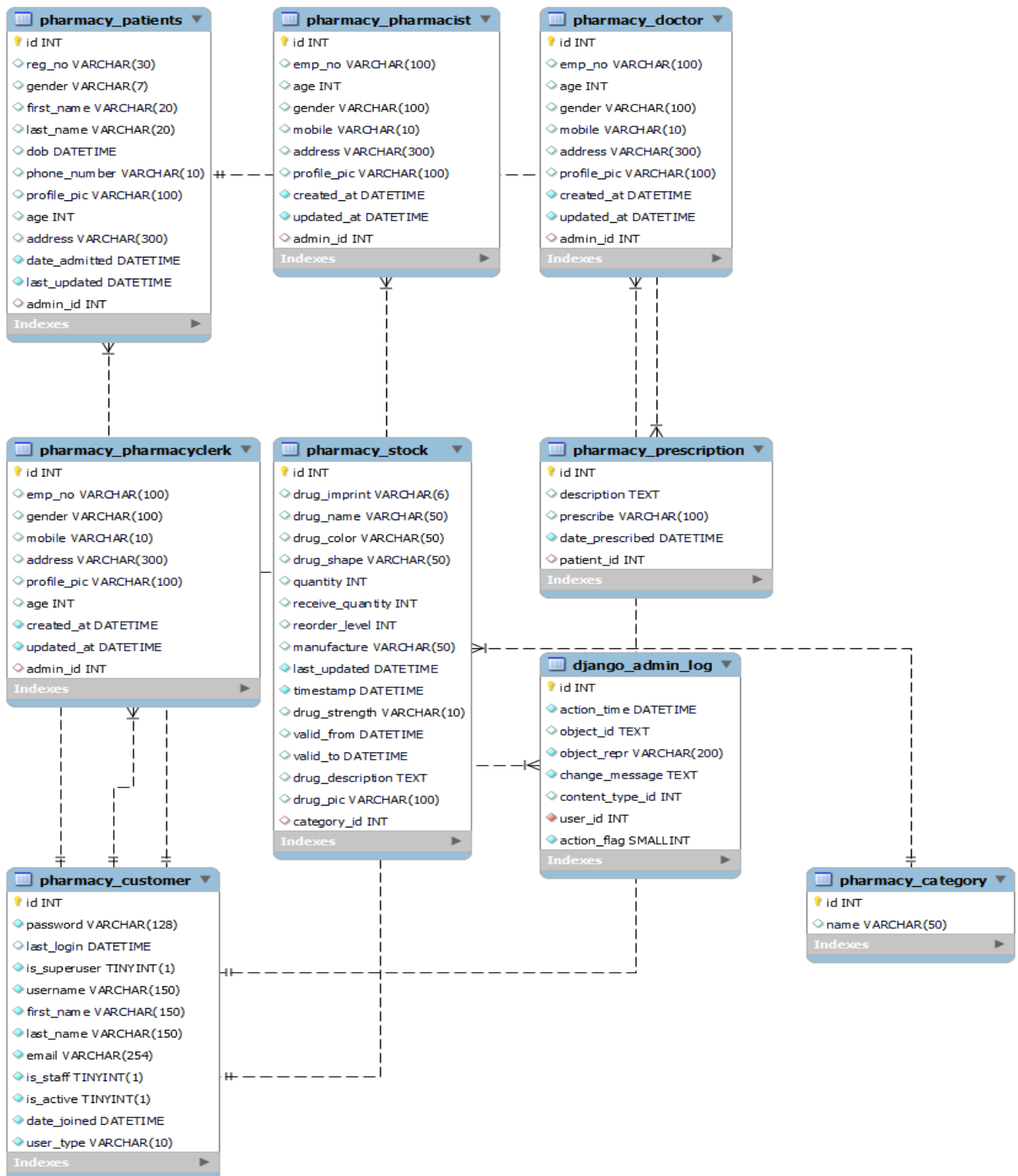
Web Browser:

- The system is designed to be compatible with modern web browsers such as Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. This ensures widespread accessibility and a consistent user experience across different browser platforms.

CHAPTER 3
DATABASE DESIGN

3.1 E-R Diagram

pharmacy_patients
- id INT
- reg_no VARCHAR(30)
- gender VARCHAR(7)
- first_name VARCHAR(20)
- last_name VARCHAR(20)
- dob DATETIME
- phone_number VARCHAR(10)
- profile_pic VARCHAR(100)
- age INT
- address VARCHAR(300)
- date_admitted DATETIME
- last_updated DATETIME
- admin_id INT
- Indexes

pharmacy_pharmacist
- id INT
- emp_no VARCHAR(100)
- age INT
- gender VARCHAR(100)
- mobile VARCHAR(10)
- address VARCHAR(300)
- profile_pic VARCHAR(100)
- created_at DATETIME
- updated_at DATETIME
- admin_id INT
- Indexes

pharmacy_doctor
- id INT
- emp_no VARCHAR(100)
- age INT
- gender VARCHAR(100)
- mobile VARCHAR(10)
- address VARCHAR(300)
- profile_pic VARCHAR(100)
- created_at DATETIME
- updated_at DATETIME
- admin_id INT
- Indexes

pharmacy_pharmacyclerk
- id INT
- emp_no VARCHAR(100)
- gender VARCHAR(100)
- mobile VARCHAR(10)
- address VARCHAR(300)
- profile_pic VARCHAR(100)
- age INT
- created_at DATETIME
- updated_at DATETIME
- admin_id INT
- Indexes

pharmacy_stock
- id INT
- drug_imprint VARCHAR(6)
- drug_name VARCHAR(50)
- drug_color VARCHAR(50)
- drug_shape VARCHAR(50)
- quantity INT
- receive_quantity INT
- reorder_level INT
- manufacture VARCHAR(50)
- last_updated DATETIME
- timestamp DATETIME
- drug_strength VARCHAR(10)
- valid_from DATETIME
- valid_to DATETIME
- drug_description TEXT
- drug_pic VARCHAR(100)
- category_id INT
- Indexes

pharmacy_prescription
- id INT
- description TEXT
- prescribe VARCHAR(100)
- date_prescribed DATETIME
- patient_id INT
- Indexes

django_admin_log
- id INT
- action_time DATETIME
- object_id TEXT
- object_repr VARCHAR(200)
- change_message TEXT
- content_type_id INT
- user_id INT
- action_flag SMALLINT
- Indexes

pharmacy_category
- id INT
- name VARCHAR(50)
- Indexes

pharmacy_customer
- id INT
- password VARCHAR(128)
- last_login DATETIME
- is_superuser TINYINT(1)
- username VARCHAR(150)
- first_name VARCHAR(150)
- last_name VARCHAR(150)
- email VARCHAR(254)
- is_staff TINYINT(1)
- is_active TINYINT(1)
- date_joined DATETIME
- user_type VARCHAR(10)
- Indexes

3.2 Database Schema

ADMIN

id	username	password	First_name	Last_name	email

DOCTOR

id	F_name	L_name	age	gender	address	Ph_no

PATIENT

id	F_name	L_name	Reg_no	gender	dob	Ph_no	address	Admin_id

PHARMACIST

Id	F_name	L_name	age	Ph_no	gender	address	Admin_id

PHARMACY CLERK

id	F_name	L_name	Ph_no	address	age	Admin_id

PRESCRIPTION

id	Patient_id	description	date

DRUG CATEGORY

id	name

DRUG

id	name	colour	shape	quantity	manufacture	strength	Category_id	Expiry_date

Fig 3.1.2 Database Schema

3.3 Table Description

Table: admin

id	last_login	is_superuser	username	first_name	last_name	email	is_staff	is_active	date_joined
1	45:47.1	0	Soma		BM	soma@gmail.com	0	1	46:05.8
2	43:16.1	0	Doctor	Doc	1	doc1@gmail.com	0	1	48:36.0
3	44:29.1	0	Pharmacist	Pharmacist	1	Pharmacist@gmail.com	0	1	57:32.7
6			0	Doctor2	Doctor	2	Doctor2@gmail.com	0	1	00:20.6
5		0	Doctor3	Doctor	3	Doctor3@gmail.com	0	1	00:55.0
6		0	Pharmacist2	Pharmacist	2	Pharmacist2@gmail.com	0	1	01:33.5

Table 3.3.1 Admin Table

Table: Patient

	id	reg_no	gender	first_name	last_name	dob	phone_number	profile_pic	age	address	date_admitted	last_updated
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	7	1	Male	Soma	BM	2024-02-05 21:00:00	1234567890	patient.jpg	0	Bengaluru	2024-02-26 12:46:06.216048	2024-02-26 12:46:06.248984
2	8	2	Male	Patient	2	2002-12-11 21:00:00	1231231223	patient.jpg	0	Bengaluru	2024-02-26 15:16:26.804059	2024-02-26 15:16:26.836625
3	9	3	Male	Patient	1	2005-03-11 21:00:00	1234123443	patient.jpg	0	Bengaluru	2024-02-26 15:17:30.175719	2024-02-26 15:17:30.208037

Table 3.3.2 PatientTable

Table: Pharmacist

id	emp_no	age	gender	mobile	address	profile_pic	created_at	updated_at	admin_id
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
3	NULL	0	NULL	1234565432	Bengaluru	images2.png	2024-02-26 12:57:33.025513	2024-02-26 12:57:33.057773	21
4	NULL	0	NULL	9879879879	Bengaluru	images2.png	2024-02-28 14:01:33.858825	2024-02-28 14:01:33.887860	27

Table 3.3.3 Pharmacist Table

Table: Doctor

id	emp_no	age	gender	mobile	address	profile_pic	created_at	updated_at	admin_id
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
7	NULL	0	NULL	123454321	Bengaluru	doctor.png	2024-02-26 12:48:36.436404	2024-02-26 12:48:36.461791	20
8	NULL	0	NULL	1234565443	Bengaluru	doctor.png	2024-02-28 14:00:20.972941	2024-02-28 14:00:20.998946	25
9	NULL	0	NULL	123454326	Bengaluru	doctor.png	2024-02-28 14:00:55.348717	2024-02-28 14:00:55.381213	26

Table 3.3.4 Doctor Table

Table: Pharmacy Clerk

id	emp_no	gender	mobile	address	profile_pic	age	created_at	updated_at	admin_id
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
4	NULL	NULL	1234567898	Bengaluru	images2.png	0	2024-02-26 14:44:27.053049	2024-02-26 14:44:27.086000	22

Table 3.3.5 Pharmacy Clerk Table

Table: Drugs Table

id	drug_imprint	drug_name	drug_color	drug_shape	quantity	receive_quantity	reorder_level	manufacture	last_updated	timestamp	drug_strength
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
9	1	Aspirin	White	Round	300	0	0	Bayer	2024-02-26 14:36:57.555397	2024-02-26 14:36:57.555397	500 mg
10	2	Paracetamol dolo-650	White	Oval	289	0	0	Micro Labs Limited	2024-02-28 05:40:34.831672	2024-02-26 14:38:43.675690	650 mg
11	3	Strepsils	Orange, Red, Blue	Circular Lozenge	299	0	0	Reckitt Benckiser	2024-02-26 15:34:24.546735	2024-02-26 14:40:57.268125	Dependent
12	4	Crocin	yellow	Oval	290	0	0	GlaxoSmithKline Pharmaceuticals ...	2024-02-28 05:45:34.224993	2024-02-26 14:43:03.618210	500 mg
13	5	Digene (Antacid)	Pink	Round	300	0	0	Abbott Healthcare Pvt. Ltd.	2024-02-26 15:34:44.241965	2024-02-26 15:31:06.131264	500 mg
14	6	Volini (Pain Relief Gel)	Transparent	gel	50	0	0	Sun Pharmaceutical Industries Ltd.	2024-02-26 15:37:06.119902	2024-02-26 15:37:06.119902	1% w/w
15	7	Amoxicillin	White/Pink/Red	Capsule/Tablet	300	0	0	Various pharmaceutical companies	2024-02-26 15:39:53.420859	2024-02-26 15:39:53.420859	Varies
16	8	Cetirizine	white	Tablet	400	0	0	Various pharmaceutical companies	2024-02-26 15:41:50.809225	2024-02-26 15:41:50.809225	100 mg

Table 3.3.6 DrugsTable

Table: Drugs Category

id	name
Filter	Filter
1	Theophylline
2	Stimulants
3	Inhalants
4	Cannabinoids
5	Depressants
6	Opioids
7	Steroids
8	Hallucinogens
9	Prescription
10	Analgesic
11	Gastrointestinal
12	Antihistamine
13	Antibiotic
14	Antacid
15	Antiseptic

Table 3.3.7 Drugs Category Table

Table: Drugs Dispensed

id	dispense_quantity	taken	stock_ref_no	instructions	dispense_at	drug_id_id	patient_id_id
Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
3	1	10	NULL	Use on Time.	2024-02-26 15:13:35.775150	10	7
4	1	11	NULL	Used to soothe sore throat and provi...	2024-02-26 15:20:29.301834	11	8
5	10	10	NULL	1/0/1	2024-02-28 05:40:34.856096	10	7
6	10	12	NULL	1-1-1	2024-02-28 05:45:34.237873	12	7

Table 3.3.8 Drugs Dispensed Table

Table: Prescription Table

id	description	prescribe	date_precribed	patient_id_id
Filter	Filter	Filter	Filter	Filter
3	Fever	Paracetamol	2024-02-26 12:55:10.961903	7
4	Used to soothe sore throat and provi...	Strepsils	2024-02-26 15:19:12.930227	8
5	cold and caugh with chills...	crocin	2024-02-28 05:44:20.715422	7

Table 3.3.9 Prescription Table

3.4 FLOWCHART
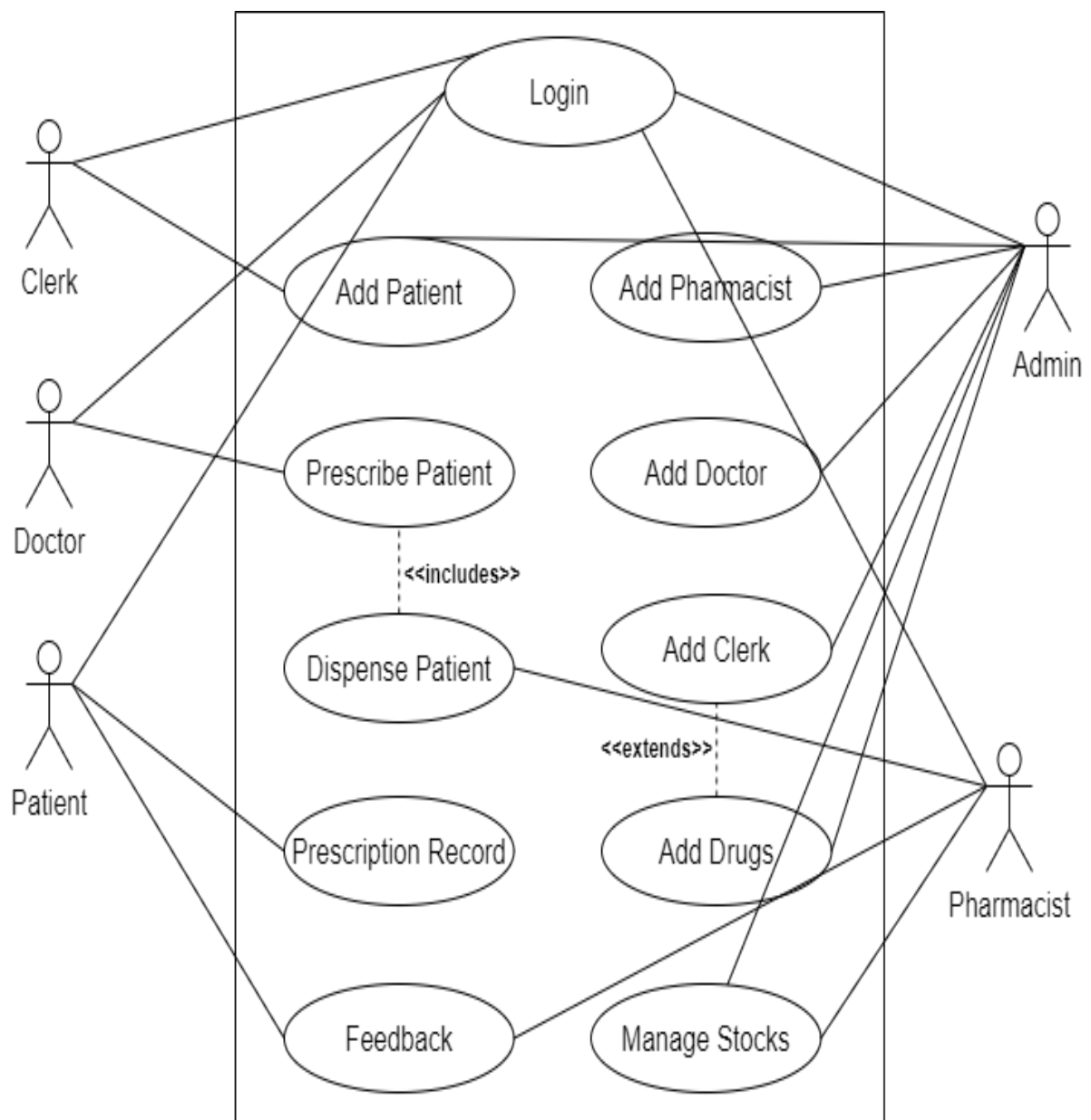
Fig 3.4 Flowchart

CHAPTER 4

IMPLEMENTATION

4.1 Modules and their Description

Admin:

The admin, or administrator, is the superuser responsible for overall system management. This role includes user management, system configuration, and ensuring the smooth functioning of the pharmacy management system. Admins have access to all system functionalities.

Patient:

Patients are individuals for whom medical and personal information is stored in the system. The patient module includes features for recording demographics, medical history, and treatment details. Patients may have access to their personal health records.

Pharmacist:

Pharmacists play a crucial role in drug management. They are responsible for updating drug information, managing inventory, and dispensing medications. Pharmacists also interact with doctors and patients to ensure accurate and safe drug dispensation.

Pharmacy Clerk:

Pharmacy clerks support administrative tasks in the pharmacy. They assist with data entry, manage appointments, and handle customer queries. Their responsibilities may include maintaining patient records and ensuring accurate documentation

Doctor:

Doctors interact with the system to access patient records, prescribe medications, and update treatment plans. They play a vital role in the treatment process, collaborating with pharmacists and other healthcare professionals for comprehensive patient care.

Drug:

The drug module involves the management of pharmaceutical products within the system. It includes features for adding, updating, and removing drugs from the inventory. Information such as drug names, dosages, side effects, and interactions is stored. The module ensures accurate tracking of drug availability, expiration dates, and usage in patient treatments. Pharmacists and healthcare professionals rely on this module for prescribing and dispensing medications while maintaining a comprehensive record of drug-related data.

4.2 ALGORITHM

User Login:

- Begin
- Prompt the user to enter login credentials (username, password)
- Validate the credentials against the database
- If valid, grant access and display the main menu
- If invalid, display an error message
- End

Drug Management:

- Begin
- Display drug management options (add, update, delete)
- If adding a drug:
    - Prompt for drug details (name, dosage, side effects, etc.)
    - Validate and store in the drug database
- If updating a drug:
    - Prompt for the drug name and new information
    - Validate and update the drug record
- If deleting a drug:
    - Prompt for the drug name
    - Validate and remove the drug from the database
- End

Patient Management:

- Begin
- Display patient management options (add, update, delete)
- If adding a patient:
    - Prompt for patient details (name, age, medical history, etc.)
    - Validate and store in the patient database
- If updating a patient:
    - Prompt for the patient's unique identifier and new information
    - Validate and update the patient record
- If deleting a patient:
    - Prompt for the patient's unique identifier
    - Validate and remove the patient from the database
- End

Prescription:

- Begin
- Display prescription options (create, update, view)
- If creating a prescription:
    - Prompt for patient details and drug prescription
    - Validate and store in the prescription database
- If updating a prescription:
    - Prompt for the prescription ID and new information
    - Validate and update the prescription record
- If viewing prescriptions:
    - Display a list of prescriptions for a specific patient
- End

4.3 SOURCE CODE

4.3.1 Back-end connectivity code:

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

The default database for the Django project is configured. The chosen database engine is SQLite, a lightweight relational database. The database file is named 'db.sqlite3' and is located in the project's base directory (BASE_DIR).This configuration ensures that the Django application will use an SQLite database to store its data. If you decide to use a different database, you would adjust the settings, such as the 'ENGINE' and connection details, accordingly.

4.3.2 SQL CODE

CUSTOMER TABLE
```sql
CREATE TABLE pharmacy_customer (
    id INTEGER PRIMARY KEY AUTOINCREMENT,
    password VARCHAR(128) NOT NULL,
    last_login DATETIME,
    is_superuser BOOL NOT NULL,
    username VARCHAR(150) NOT NULL UNIQUE,
    first_name VARCHAR(150) NOT NULL,
    last_name VARCHAR(150) NOT NULL,
    email VARCHAR(254) NOT NULL,
    is_staff BOOL NOT NULL,
    is_active BOOL NOT NULL,
    date_joined DATETIME NOT NULL,
    user_type VARCHAR(10) NOT NULL
);
```

DRUG CATEGORY TABLE

CREATE TABLE pharmacy_category (

  id INTEGER NOT NULL,

  name VARCHAR(50),

  PRIMARY KEY (id AUTOINCREMENT)

);

PATIENT TABLE

CREATE TABLE pharmacy_patients (

  id INTEGER NOT NULL,

  reg_no VARCHAR(30) UNIQUE,

  gender VARCHAR(7),

  first_name VARCHAR(20),

  last_name VARCHAR(20),

  dob DATETIME,

  phone_number VARCHAR(10),

  profile_pic VARCHAR(100),

  age INTEGER,

  address VARCHAR(300),

  date_admitted DATETIME NOT NULL,

  last_updated DATETIME NOT NULL,

  admin_id BIGINT UNIQUE,

  PRIMARY KEY (id AUTOINCREMENT),

  FOREIGN KEY (admin_id) REFERENCES pharmacy_customer (id)

);

PHARMACY STOCK TABLE

CREATE TABLE pharmacy_stock (

  id INTEGER NOT NULL,

  drug_imprint VARCHAR(6),

```
    drug_name VARCHAR(50),

    drug_color VARCHAR(50),

    drug_shape VARCHAR(50),

    quantity INTEGER,

    receive_quantity INTEGER,

    reorder_level INTEGER,

    manufacture VARCHAR(50),

    last_updated DATETIME NOT NULL,

    timestamp DATETIME NOT NULL,

    drug_strength VARCHAR(10),

    valid_from DATETIME,

    valid_to DATETIME,

    drug_description TEXT,

    drug_pic VARCHAR(100),

    category_id BIGINT,

    PRIMARY KEY (id AUTOINCREMENT),

    FOREIGN KEY (category_id) REFERENCES pharmacy_category (id)

);
```

PRESCRIPTION TABLE

```
CREATE TABLE pharmacy_prescription (

    id INTEGER NOT NULL,

    description TEXT,

    prescribe VARCHAR(100),

    date_precribed DATETIME NOT NULL,

    patient_id_id BIGINT,

    PRIMARY KEY (id AUTOINCREMENT),

    FOREIGN KEY (patient_id_id) REFERENCES pharmacy_patients (id)

);
```

PHARMACY CLERK TABLE

CREATE TABLE pharmacy_pharmacyclerk (

   id INTEGER NOT NULL,

   emp_no VARCHAR(100),

   gender VARCHAR(100),

   mobile VARCHAR(10),

   address VARCHAR(300),

   profile_pic VARCHAR(100),

   age INTEGER,

   created_at DATETIME NOT NULL,

   updated_at DATETIME NOT NULL,

   admin_id BIGINT UNIQUE,

   PRIMARY KEY (id AUTOINCREMENT),

   FOREIGN KEY (admin_id) REFERENCES pharmacy_customer (id)

);

PHARMACIST TABLE

CREATE TABLE pharmacy_pharmacist (

   id INTEGER NOT NULL,

   emp_no VARCHAR(100),

   age INTEGER,

   gender VARCHAR(100),

   mobile VARCHAR(10),

   address VARCHAR(300),

   profile_pic VARCHAR(100),

   created_at DATETIME NOT NULL,

   updated_at DATETIME NOT NULL,

   admin_id BIGINT UNIQUE,

   PRIMARY KEY (id AUTOINCREMENT),

   FOREIGN KEY (admin_id) REFERENCES pharmacy_customer (id)

);

DOCTOR TABLE

```
CREATE TABLE pharmacy_doctor (
    id INTEGER NOT NULL,
    emp_no VARCHAR(100),
    age INTEGER,
    gender VARCHAR(100),
    mobile VARCHAR(10),
    address VARCHAR(300),
    profile_pic VARCHAR(100),
    created_at DATETIME NOT NULL,
    updated_at DATETIME NOT NULL,
    admin_id BIGINT UNIQUE,
    PRIMARY KEY (id AUTOINCREMENT),
    FOREIGN KEY (admin_id) REFERENCES pharmacy_customer (id)
);
```

ADMIN TABLE

```
CREATE TABLE django_admin_log (
    id INTEGER NOT NULL,
    action_time DATETIME NOT NULL,
    object_id TEXT,
    object_repr VARCHAR(200) NOT NULL,
    change_message TEXT NOT NULL,
    content_type_id INTEGER,
    user_id BIGINT NOT NULL,
    action_flag SMALLINT UNSIGNED NOT NULL CHECK (action_flag >= 0),
    PRIMARY KEY (id AUTOINCREMENT),
    FOREIGN KEY (content_type_id) REFERENCES django_content_type (id),
    FOREIGN KEY (user_id) REFERENCES pharmacy_customer (id)
);
```

4.3.3 Explanation:

pharmacy_customer:

The pharmacy_customer table is designed to store information about customers, including their login credentials, personal details (name, email, etc.), and account-related attributes such as staff status, activation status, and user type.

pharmacy_category:

The pharmacy_category table represents drug categories in the pharmacy management system. It allows for the classification of drugs into different categories for organizational purposes.

pharmacy_patients:

The pharmacy_patients table manages patient-related data. It includes details such as patient registration number, gender, name, date of birth, contact information, admission date, and the administrator (admin_id) responsible for the patient's record.

pharmacy_stock:

The pharmacy_stock table is dedicated to managing information about drug stocks. It includes details like drug imprint, name, color, shape, quantity, reorder level, manufacturing information, timestamps, and references to drug categories.

pharmacy_prescription:

The pharmacy_prescription table handles prescription data, including a description of the prescription, the prescribing entity, the date of prescription, and a reference to the patient for whom the prescription is intended.

pharmacy_pharmacyclerk:

The pharmacy_pharmacyclerk table stores information about pharmacy clerks. It includes details such as employee number (emp_no), gender, contact information, address, profile picture, age, creation timestamp, update timestamp, and the associated administrator (admin_id).

pharmacy_pharmacist:

The pharmacy_pharmacist table manages data related to pharmacists. It includes information such as employee number, age, gender, contact details, address, profile picture, creation timestamp, update timestamp, and the associated administrator (admin_id).

pharmacy_doctor:

The pharmacy_doctor table represents information about doctors in the system. It includes details like employee number, age, gender, contact information, address, profile picture, creation timestamp, update timestamp, and the associated administrator (admin_id).

django_admin_log:

The django_admin_log table is part of Django's admin interface and is used to log administrative activities. It records details such as the timestamp of the action, the object involved, the user responsible for the action, and the type of action performed (flag).

CHAPTER 5

TESTING

Module	Type of Testing	Result
User Registration	Unit Testing	Pass
Patient Management	Module Testing	Pass
Pharmacist Interaction	Module Testing	Pass
Drug Inventory Management	Module Testing	Pass
Prescription Processing	Module Testing	Pass
Report Generation	Unit Testing	Pass
System Integration	Integration Testing	Pass
Overall System Testing	System Testing	Pass

5.1 Testing

Description:

The testing summary table for the project can be described as follows:

Module Testing: This testing method involved testing each module individually to ensure the functionality of each module. The project underwent module testing, and all modules passed the test.

Unit Testing: Unit testing is a method where each individual unit is tested independently. The project underwent unit testing for specific functionalities like Admin Login, Change Password, View Donor List, and others. All unit tests passed successfully.

Integration Testing: This testing method involved combining and testing modules to ensure they work seamlessly together. The project passed the integration test, indicating that different modules integrated well with each other.

System Testing: The system was tested as a whole to ensure that all components work together cohesively. The project successfully passed the system testing, demonstrating its overall robustness and compatibility.

CHAPTER 6

RESULT ANALYSIS AND SCREENSHOTS
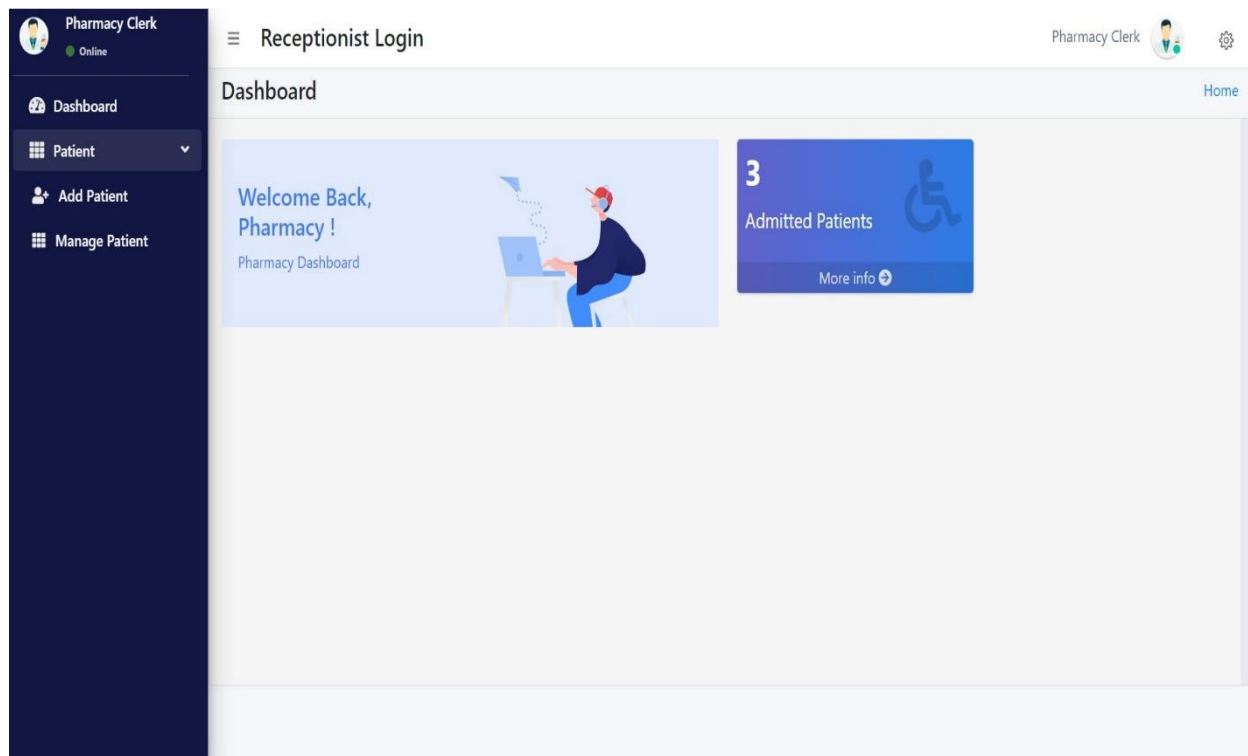
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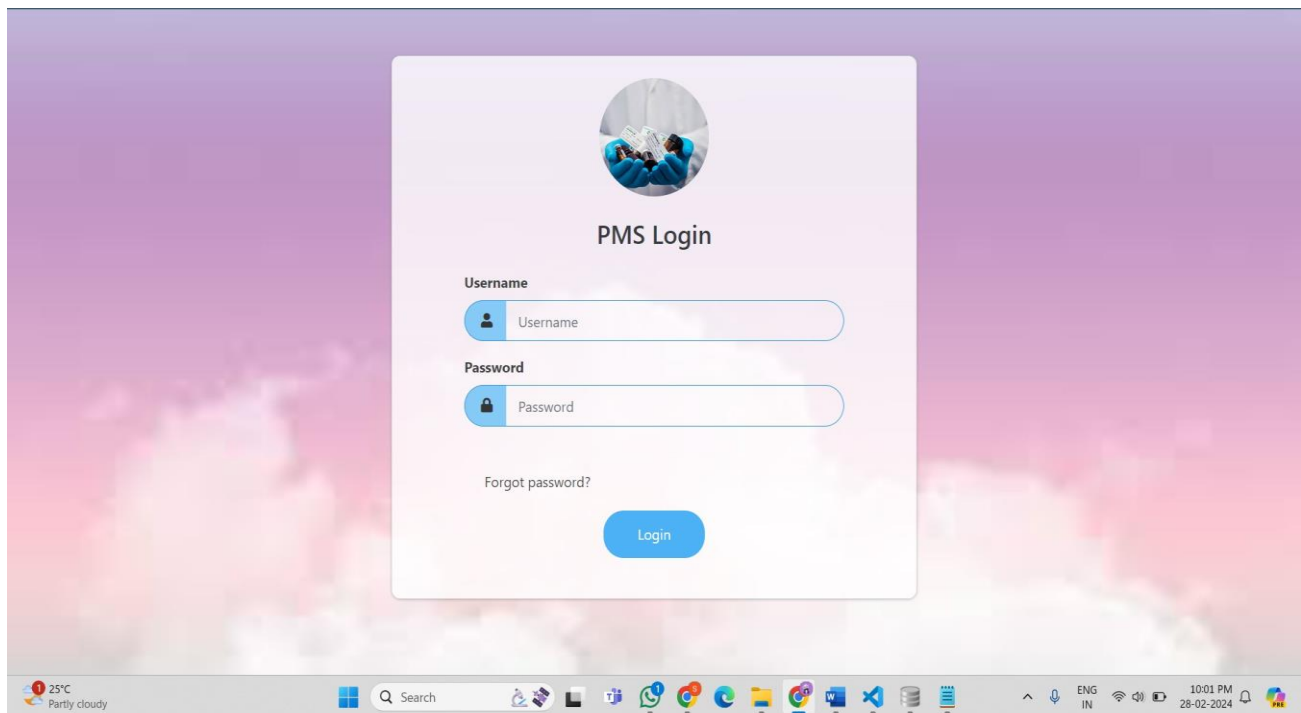
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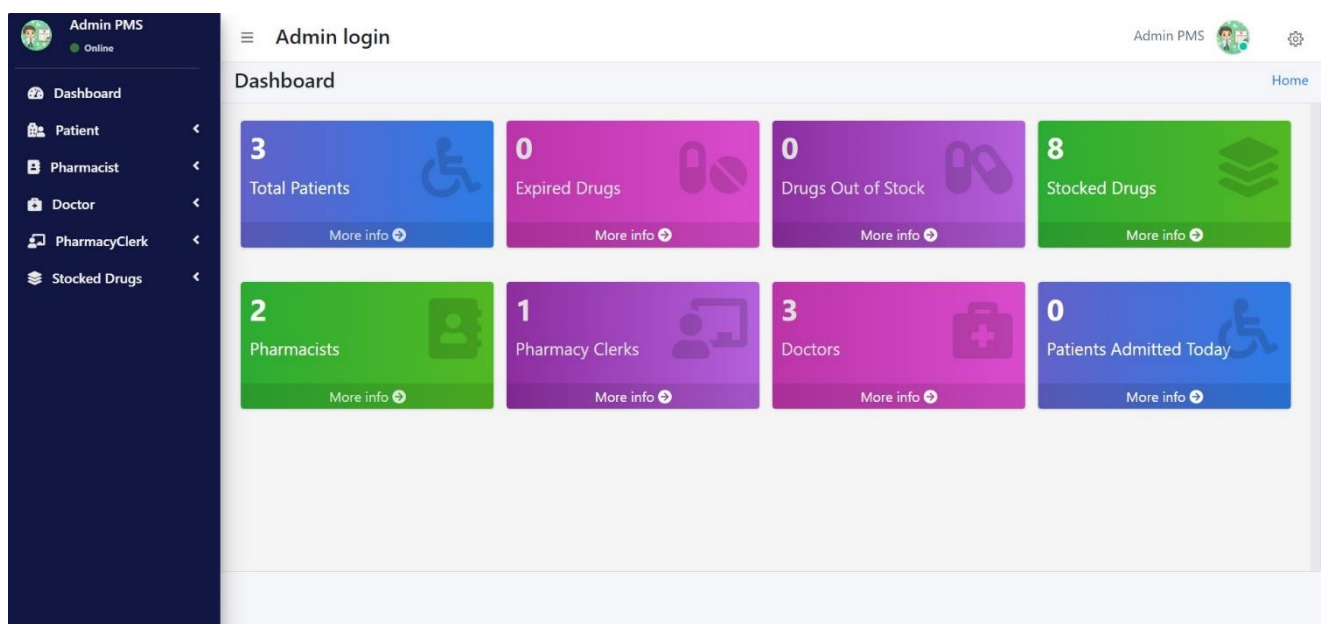
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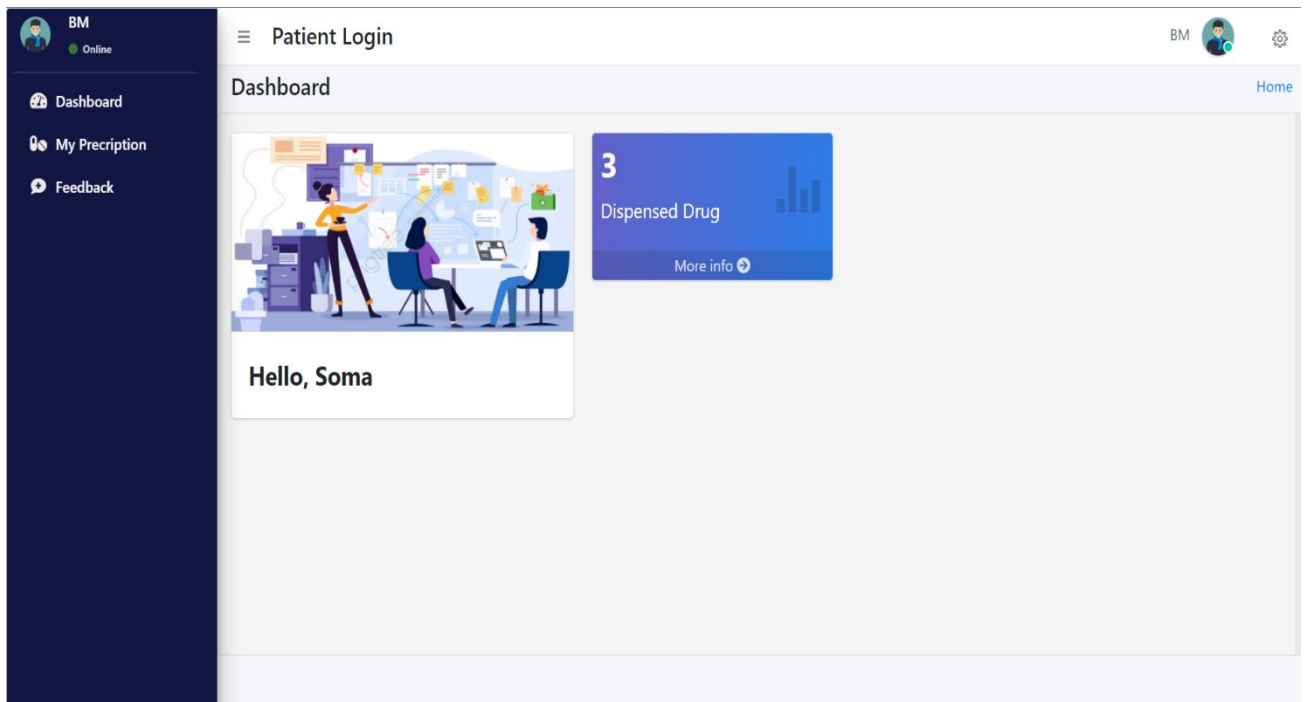
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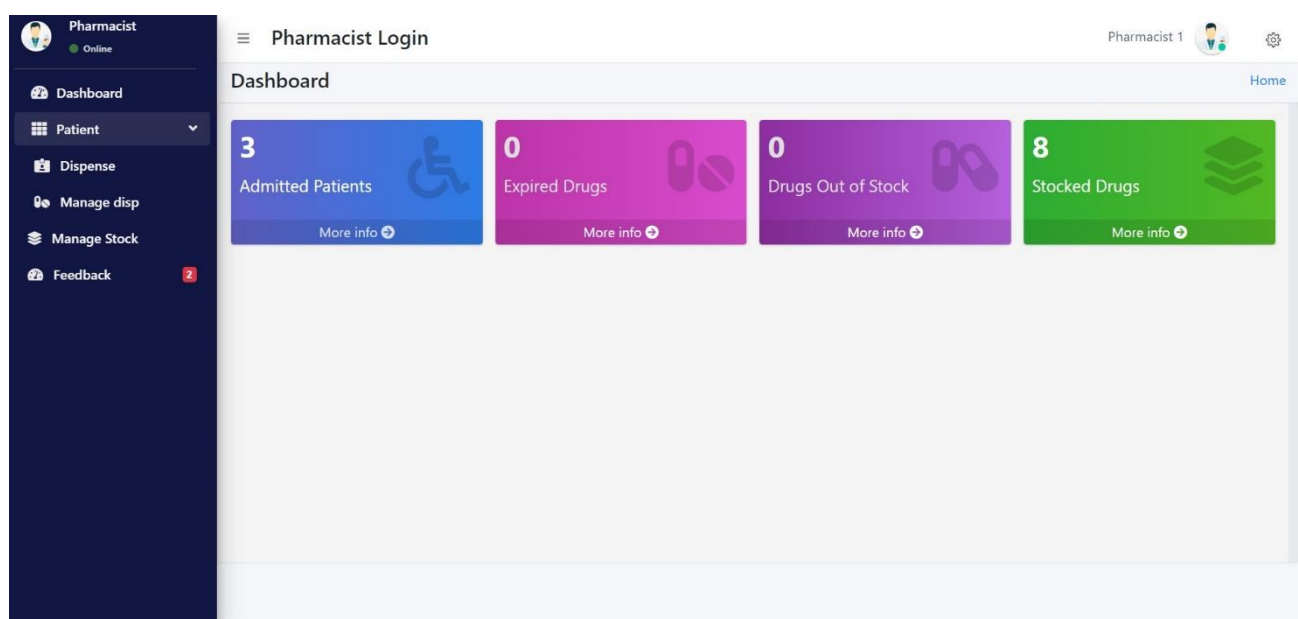
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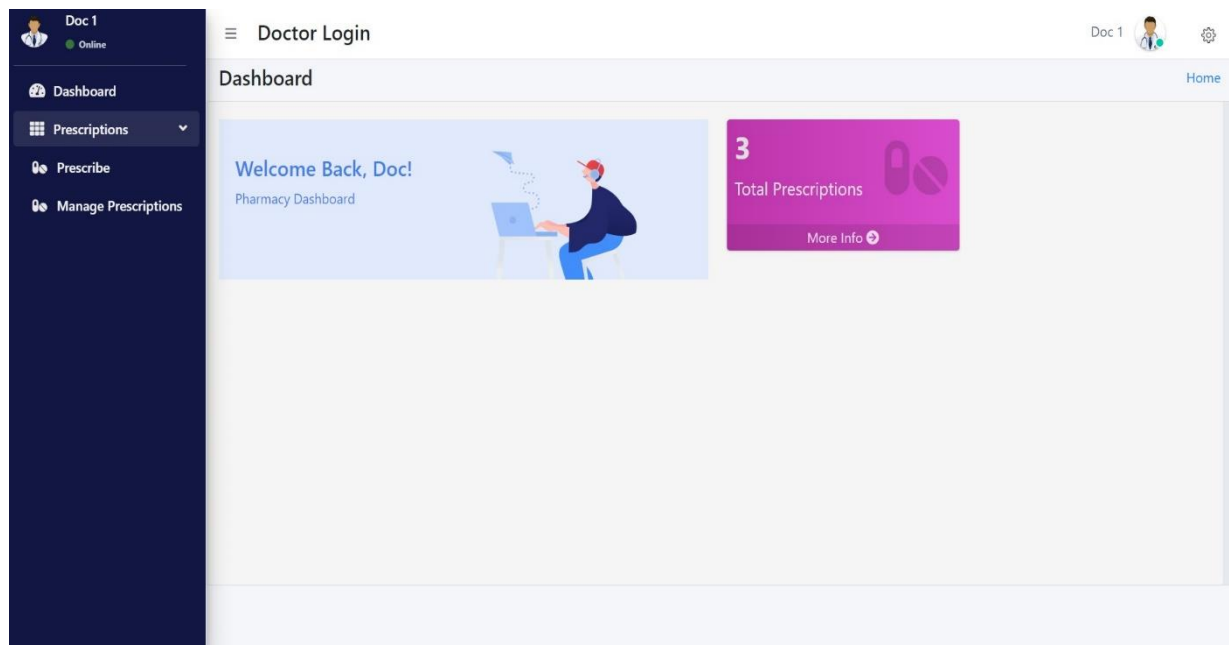
PHARMACY CLERK DASHBOARD

DOCTOR PRESCRIBING

DRUGS STOCK

FEEDBACK

ADDING NEW DRUGS

CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 CONCLUSION

In conclusion, the Pharmacy Management System presented herein is a comprehensive and robust solution designed to streamline and enhance various aspects of pharmacy operations. The system encompasses modules catering to diverse roles such as administrators, pharmacists, pharmacy clerks, doctors, and patients, ensuring a holistic approach to healthcare management.

The project's successful development and implementation have been guided by industry best practices, including thorough requirements analysis, systematic design, and rigorous testing methodologies. The adoption of the Django web framework facilitated the creation of a scalable and secure web application.

Key features such as user authentication, drug management, patient records, and prescription tracking have been effectively implemented. The system also allows for seamless collaboration between healthcare professionals, contributing to improved patient care.

Testing, conducted at unit, module, integration, and system levels, has confirmed the robustness and reliability of the system. All testing phases, including module testing for functionalities like Donor Registration and Admin Login, unit testing for specific features, integration testing for module compatibility, and system testing for overall system functionality, have been successful.

The system's user-friendly interface and intuitive design contribute to its accessibility and usability for a wide range of users, including administrators, healthcare professionals, and patients.

In summary, the Pharmacy Management System stands as an efficient and secure platform that can significantly benefit pharmacy operations, ensuring accurate drug management, streamlined patient care, and improved overall efficiency in healthcare management.

7.3 FUTURE ENHANCEMENT

Inventory Optimization with AI: Implement artificial intelligence (AI) algorithms to analyze drug consumption patterns, predict demand, and optimize inventory levels. This would minimize wastage, reduce costs, and ensure that essential medications are always available.

Pharmacist Decision Support System: Develop a decision support system for pharmacists, integrating drug interaction alerts, dosage recommendations, and patient-specific considerations. This can enhance the accuracy and safety of medication dispensing.

CHAPTER 8

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