# UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA (UET)

# **COMPUTER SCIENCE ENGINEERING DEPARTMENT**

# **Project**

# Clinic Management System - Revolutionizing Healthcare

For

Sixth Semester

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# CLINIC MANAGEMENT SYSTEM - REVOLUTIONIZING HEALTHCARE

#### **Problem Statement:**

Healthcare workers have several difficulties due to the manual handling of patient information, medical personnel, appointments, and administrative chores in medical clinics. These duties take an inordinate amount of time and effort, which results in inefficiencies and might lead to mistakes in patient care. The difficulty of managing several jobs at once raises the possibility of errors and delays. Furthermore, the use of spreadsheets and paper-based records makes data administration difficult and vulnerable to loss or misplacement. Information becomes fragmented in the absence of a centralized system, making it challenging for healthcare practitioners to access and exchange crucial data. These issues impede productivity, lower the standard of patient care, and call for a solution that may reorganize processes, boost productivity, and increase overall healthcare results.

# Aims/ Objectives:

By automating and streamlining clinic procedures, the Clinic Management System seeks to revolutionize healthcare operations. Its goals include maximizing overall healthcare results, increasing efficiency, strengthening patient care, simplifying financial management, and guaranteeing compliance with healthcare norms and standards. By fulfilling these goals, the system hopes to revolutionize how medical offices are run by minimizing manual labour, minimizing mistakes, and enabling medical staff to provide top-notch treatment while increasing productivity and patient happiness.

#### Abstract:

The Clinic Management System is a cutting-edge web-based technology that seeks to revolutionize the healthcare sector by managing medical clinics effectively and automatically. The system has several features, such as patient management, scheduling appointments, coordinating medical personnel, inventory control, and financial management. The system's painstakingly planned database management structure, which makes use of the capabilities of the SQL language and consists of 17 linked tables, is a noteworthy feature. With the help of this reliable database design, healthcare professionals can conduct flawless operations and make well-informed decisions since all essential data is organized, structured, and easily accessible.

## Introduction:

Do you find yourself drowning in a sea of paperwork and never-ending office responsibilities at your medical clinic? Prepare for a game-changing solution that will change the way you manage healthcare administration. The Clinic Management System, a cutting-edge web-based programme that is destined to revolutionize the healthcare business, is now available. Prepare to say goodbye to those massive file stacks and welcome to a new era of streamlined efficiency.

The Clinic Management System is a breath of new air in the world of healthcare software, with its clean and straightforward UI. Gone are the days of navigating a bewildering tangle of options and clumsy interfaces. This system has been painstakingly designed to give you a streamlined user experience, allowing you to effortlessly manage patient records, medical staff, appointments, and so much more.

But what truly sets the Clinic Management System apart is its powerful database management system, built using the renowned SQL language. Imagine having all your crucial information neatly organized within 17 interconnected tables. No more juggling multiple spreadsheets and sifting through endless documents. All your data is centralized by the Clinic Management System, making it simpler than ever to oversee and manage your clinic's daily operations.

Whether you need to deal with patient information, medical supplies, medications, or financial transactions, the Clinic Management System has you covered. Each table in the professionally constructed database of the system acts as a storehouse for critical information, ensuring that nothing falls through the cracks. Consider how much time and energy you will save if all your data is at your fingertips, ready to be viewed and modified with a few easy clicks.

But it goes beyond mere practicality. The Clinic Management System also places a high priority on data protection and security. You can be sure that your clinic's critical information is protected from prying eyes thanks to stringent access restrictions and strong encryption procedures. Concentrate on giving your patients the best possible treatment while knowing that your data is secure thanks to cutting-edge security safeguards.

The Clinic Management System is a game-changer in a world where efficiency and speed are crucial. Accept the future of healthcare administration and say goodbye to the tiresome office drudgery and onerous paperwork. Let the Clinic Management System provide you with the power to take charge of your clinic's operations so you can spend more time focusing on what matters most: the health of your patients. The greeting to a brighter, more streamlined future with the Clinic Management System.

# Methodology:

The Clinic Management System was developed using the following methodology:

#### 1. Requirements Gathering:

- ✓ Thorough analysis of clinic management requirements.
- ✓ Consultation with healthcare providers for input.

#### 2. Database Design:

- ✓ System architecture and database schema designed.
- ✓ SQL language used to create a 17-table database schema

#### 3. Implementation:

- ✓ PHP, HTML, CSS, and JavaScript used for development.
- ✓ XAMPP software used for database import and web server configuration.

#### 4. Testing:

- ✓ System testing performed.
- ✓ Issues identified and fixed.

#### 5. Deployment:

- ✓ System deployed on a web server.
- ✓ Healthcare providers granted access to the system.

#### 6. Dashboard Management:

- ✓ Customized dashboard created for easy management.
- ✓ Intuitive user interface for healthcare providers.
- ✓ Features include appointment scheduling, patient records management, and billing and payment processing.

# Database Design:

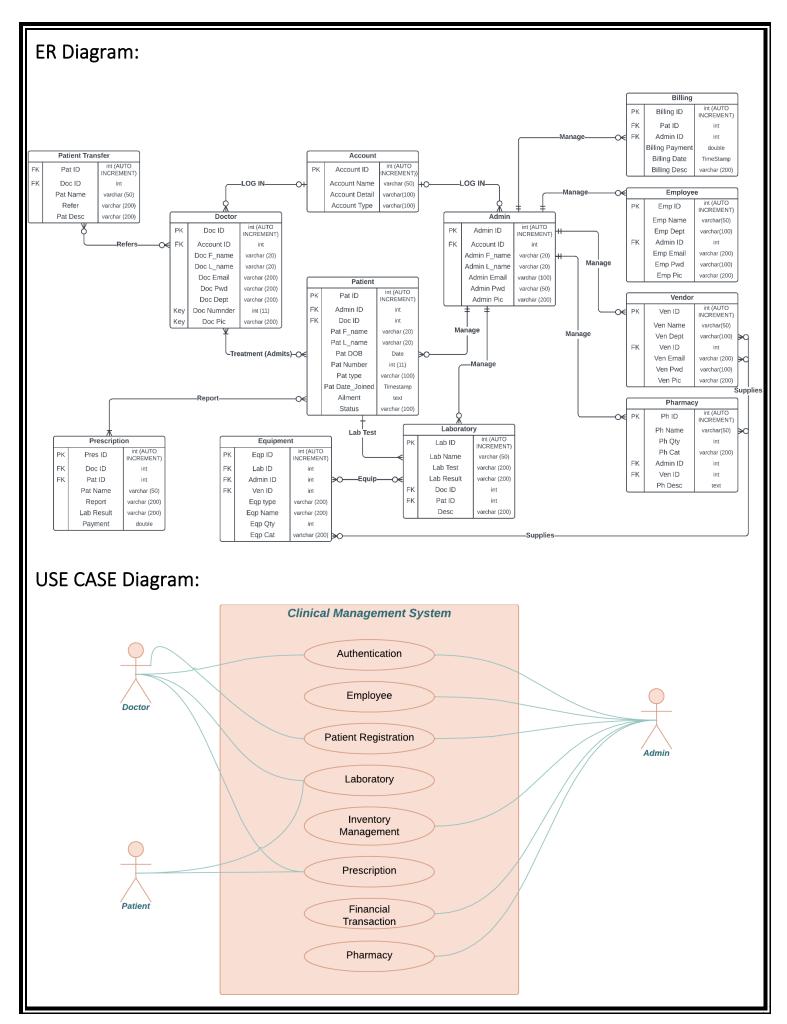
We'd like to introduce you to our Clinic Management System, a strong and safe tool for controlling every area of your clinic's operations. We guarantee that your patient information, medical staff records, equipment and pharmaceutical inventories, and financial transactions are saved in an organized and safe manner with the help of our carefully developed database design, which is made up of 17 tables and was created using the most recent SQL language.

Let's examine our tables in more detail to discover how they might improve the efficiency of your clinic management:

- 1. **his\_accounts-**All clinic-related financial transactions, including account names, details, kinds, numbers, and amounts, are kept in this table. You can simply follow the financial health of your clinic with this information and make wise decisions.
- 2. **his\_admin-**The clinic's administrators are included in this table along with their first and last names, email addresses, passwords, and display photos. This table allows you to control system access and guarantee that only authorized users have access to sensitive data.

- 3. **his\_assets-**The clinic's assets are included in this table along with their names, descriptions, suppliers, conditions, and departments. You can easily keep track of the whereabouts and state of your equipment with the use of this data, ensuring that it is properly maintained.
- 4. **his\_docs** This table contains the first and last names, email addresses, passwords, departments, and contact details, and displays pictures of the clinic's doctors. By using this table, you may keep track of the details about your medical staff and confirm that you have the supplies required to provide high-quality care.
- 5. **his\_equipment** The codes, names, vendors, descriptions, departments, statuses, and quantities of the clinic's equipment are all kept in this table. With this knowledge, you can manage your inventory of equipment with ease and avoid downtime brought on by malfunctions.
- 6. **his\_laboratory** The name, condition, number, tests, results, and date received for each patient are all included in this database together with information about the laboratory tests they had done. With this knowledge, you can easily handle the test data for your patients and make precise diagnoses.
- 7. **his\_medical\_records** -Information about patients' diagnoses, prescriptions, and receipt dates are kept in this table together with their numbers, names, and addresses. You may manage your patients' health information using this table and give them better treatment depending on their medical background.
- 8. **his\_patients** This table includes the patients' first and last names, dates of birth, ages, phone numbers, addresses, types, enrollment dates, diseases, and discharge statuses. You can use this table to record your patient's data to treat them with enhanced treatment.
- 9. **his\_patient\_transfers**-This table includes details concerning patient transfers to other hospitals, such as the hospital name, transfer date, patient name and identification number, and transfer status. You may use such data to observe your patients' progress and guarantee they get the proper treatment.
- 10. his\_payrolls-Employee payroll information is maintained in the following table, including payroll numbers, doctor names, phone numbers, email addresses, employee salaries, the date established, payroll statuses, and descriptions. You can quickly manage your employees' payroll information and guarantee that they are paid on time using this table.
- 11. his\_pharmaceuticals-The following table provides details on the clinic's pharmaceutical inventory, such as pharmaceutical names, descriptions, vendors, statuses, and amounts. This table allows you to monitor your pharmaceutical inventory and ensure you have the meds you need to offer effective treatment.

Finally, our Clinic Management System provides a complete solution for controlling all elements of your clinic's operations. You can simply maintain patient information, medical staff records, equipment and pharmaceutical stocks, and financial transactions in a safe and organized manner using our carefully constructed database comprised of 17 tables. Whether you run a small clinic or a large medical institution, our technology can help you streamline your procedures, boost efficiency, and give your patients better treatment.



#### **Database Code:**

```
CREATE DATABASE clinic:
-- Create table 'his accounts'
CREATE TABLE his_accounts (
acc id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
acc_name varchar(200) DEFAULT NULL,
acc_desc text,
acc_type varchar(200) DEFAULT NULL,
acc_number varchar(200) DEFAULT NULL,
acc amount varchar(200) DEFAULT NULL
);
-- Create table 'his_admin'
CREATE TABLE his_admin (
ad_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
ad_fname varchar(200) DEFAULT NULL,
ad_lname varchar(200) DEFAULT NULL,
ad_email varchar(200) DEFAULT NULL,
ad_pwd varchar(200) DEFAULT NULL,
ad_dpic varchar(200) DEFAULT NULL
-- Create table 'his_assets'
CREATE TABLE his_assets (
asst_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
asst name varchar(200) DEFAULT NULL,
asst_desc text,
asst_vendor varchar(200) DEFAULT NULL,
asst_status varchar(200) DEFAULT NULL,
asst_dept varchar(200) DEFAULT NULL
);
-- Create table 'his_docs'
CREATE TABLE his_docs (
doc_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
doc_fname varchar(200) DEFAULT NULL,
doc lname varchar(200) DEFAULT NULL,
doc_email varchar(200) DEFAULT NULL,
doc_pwd varchar(200) DEFAULT NULL,
doc_dept varchar(200) DEFAULT NULL,
doc_number varchar(200) DEFAULT NULL,
doc_dpic varchar(200) DEFAULT NULL
);
-- Create table 'his_equipments'
CREATE TABLE his_equipments (
eqp_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
eqp_code varchar(200) DEFAULT NULL,
egp_name varchar(200) DEFAULT NULL,
eqp_vendor varchar(200) DEFAULT NULL,
eqp_desc text,
eqp_dept varchar(200) DEFAULT NULL,
eqp_status varchar(200) DEFAULT NULL,
eqp_qty varchar(200) DEFAULT NULL
-- Create table `his_laboratory`
CREATE TABLE his_laboratory (
```

```
lab id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
lab_pat_name varchar(200) DEFAULT NULL,
lab_pat_ailment varchar(200) DEFAULT NULL,
lab_pat_number varchar(200) DEFAULT NULL,
lab_pat_tests text,
lab pat results text.
lab_number varchar(200) DEFAULT NULL,
lab_date_rec datetime2 DEFAULT GETDATE()
-- Create table 'his_medical_records'
CREATE TABLE his_medical_records (
mdr_id int IDENTITY(1,1) NOT NULL PRIMARY KEY,
mdr_number varchar(200) DEFAULT NULL,
mdr pat name varchar(200) DEFAULT NULL,
mdr_pat_adr varchar(200) DEFAULT NULL,
mdr_pat_age varchar(200) DEFAULT NULL,
mdr_pat_ailment varchar(200) DEFAULT NULL,
mdr_pat_number varchar(200) DEFAULT NULL,
mdr_pat_prescr text,
mdr date rec datetime2(4) NOT NULL DEFAULT GETDATE()
-- Create table 'his_patients'
CREATE TABLE his_patients (
pat_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
pat_fname varchar(200) DEFAULT NULL,
pat_lname varchar(200) DEFAULT NULL,
pat_dob varchar(200) DEFAULT NULL,
pat_age varchar(200) DEFAULT NULL,
pat_number varchar(200) DEFAULT NULL,
pat_addr varchar(200) DEFAULT NULL,
pat_phone varchar(200) DEFAULT NULL,
pat_type varchar(200) DEFAULT NULL,
pat_date_joined datetime2(6) NOT NULL DEFAULT GETDATE(),
pat_ailment varchar(200) DEFAULT NULL,
pat_discharge_status varchar(200) DEFAULT NULL
-- Create table 'his_patient_transfers'
CREATE TABLE his_patient_transfers (
t_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
t_hospital varchar(200) DEFAULT NULL,
t date varchar(200) DEFAULT NULL.
t_pat_name varchar(200) DEFAULT NULL,
t_pat_number varchar(200) DEFAULT NULL,
t_status varchar(200) DEFAULT NULL
-- Table `his_payrolls`
CREATE TABLE his_payrolls (
pay id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
pay_number varchar(200) DEFAULT NULL,
pay doc name varchar(200) DEFAULT NULL,
pay_doc_number varchar(200) DEFAULT NULL,
pay_doc_email varchar(200) DEFAULT NULL,
pay_emp_salary varchar(200) DEFAULT NULL,
pay_date_generated datetime2(4) NOT NULL DEFAULT GETDATE(),
pay_status varchar(200) DEFAULT NULL,
pay_descr text
);
```

```
-- Table `his pharmaceuticals`
CREATE TABLE his_pharmaceuticals (
phar_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
phar_name varchar(200) DEFAULT NULL,
phar_bcode varchar(200) DEFAULT NULL,
phar desc text.
phar_qty varchar(200) DEFAULT NULL,
phar_cat varchar(200) DEFAULT NULL,
phar_vendor varchar(200) DEFAULT NULL
);
-- Table 'his_pharmaceuticals_categories'
CREATE TABLE his_pharmaceuticals_categories (
pharm_cat_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
pharm_cat_name varchar(200) DEFAULT NULL,
pharm_cat_vendor varchar(200) DEFAULT NULL,
pharm_cat_desc text
);
-- Table `his_prescriptions`
CREATE TABLE his prescriptions (
pres_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
pres_pat_name varchar(200) DEFAULT NULL,
pres_pat_age varchar(200) DEFAULT NULL,
pres_pat_number varchar(200) DEFAULT NULL,
pres_number varchar(200) DEFAULT NULL,
pres_pat_addr varchar(200) DEFAULT NULL,
pres_pat_type varchar(200) DEFAULT NULL,
pres_date datetime2(4) NOT NULL DEFAULT GETDATE(),
pres_pat_ailment varchar(200) DEFAULT NULL,
pres_ins text
);
CREATE TABLE his_pwdresets (
id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
email varchar(200) NOT NULL
);
-- Table `his_surgery`
CREATE TABLE his_surgery (
s_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
s_number varchar(200) DEFAULT NULL,
s_doc varchar(200) DEFAULT NULL,
s_pat_number varchar(200) DEFAULT NULL,
s_pat_name varchar(200) DEFAULT NULL,
s_pat_ailment varchar(200) DEFAULT NULL,
s_pat_date datetime2(6) NOT NULL DEFAULT GETDATE(),
s_pat_status varchar(200) DEFAULT NULL
-- Table 'his vendor'
CREATE TABLE his_vendor (
v id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
v_number varchar(200) DEFAULT NULL,
v_name varchar(200) DEFAULT NULL,
v_adr varchar(200) DEFAULT NULL,
v_mobile varchar(200) DEFAULT NULL,
v_email varchar(200) DEFAULT NULL,
v_phone varchar(200) DEFAULT NULL,
v_desc text
```

```
-- Table `his_vitals`

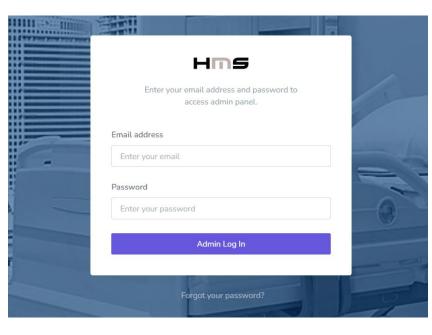
CREATE TABLE his_vitals (
vit_id int IDENTITY(1,1) PRIMARY KEY NOT NULL,
vit_number varchar(200) DEFAULT NULL,
vit_pat_number varchar(200) DEFAULT NULL,
vit_bodytemp varchar(200) DEFAULT NULL,
vit_heartpulse varchar(200) DEFAULT NULL,
vit_resprate varchar(200) DEFAULT NULL,
vit_bloodpress varchar(200) DEFAULT NULL,
vit_daterec datetime2(6) NOT NULL DEFAULT GETDATE()
);
```

# **Dashboard Management:**

"Revolutionize Your Clinic's Management with Our Customized Dashboard System"

Our Clinic administration System provides an all-in-one dashboard for convenient appointments, patient records, invoicing, and payment processing administration. Our dashboard is customizable and has a user-friendly layout that allows you to simply browse through all the features that are built to match the specific demands of your clinic.

The Login Panel is specially intended to guarantee that only authorized workers have access to private data at your clinic. You may regulate access and establish responsibilities to ensure that each member of your staff only has access to the information they need, making it easier to maintain the security of your clinic.



1. Login Panel

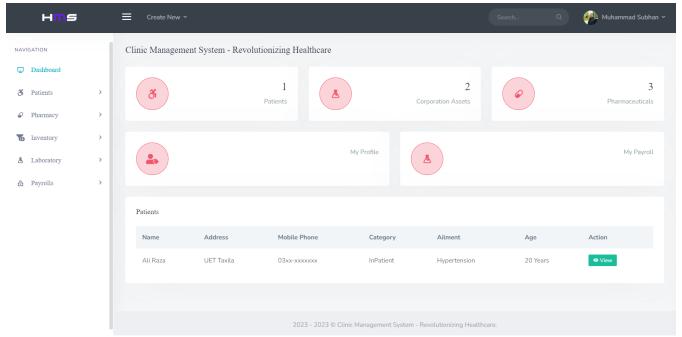
Failed

Access Denied. Please Check Your Credentials

OK

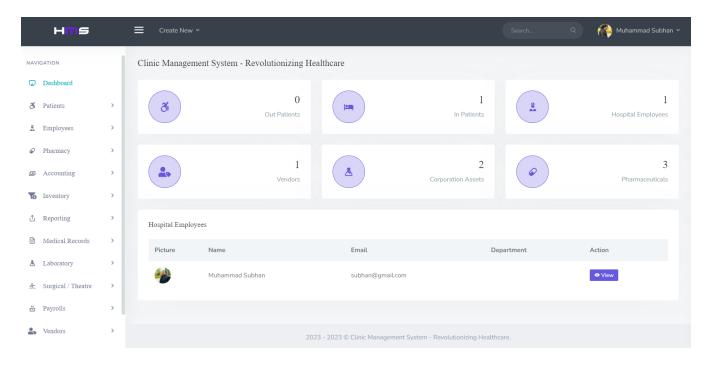
2. Wrong Login Credential

The Doctor Panel facilitates a simple for medical professionals to update patient records, retrieve patient information, and manage their schedules. This panel offers a user-friendly interface that enables clinicians to easily access and update patient information, which saves time and improves the standard of care provided to your patients.



3. Doctor Panel.

The Admin Panel provides complete control over all aspects of your clinic's management, including managing staff schedules, monitoring clinic finances, and keeping track of equipment and pharmaceutical inventories.



4. Admin Panel.

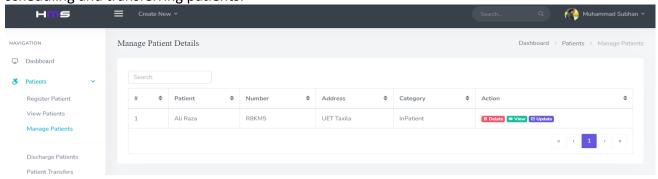
Our dashboard system is made to provide you with a thorough analysis of your clinic's activities and to make management simple. You can effortlessly access all the information you need and effectively manage your clinic's daily operations with a contemporary, user-friendly interface. Utilizing our personalized dashboard system will allow you to focus on providing your patients with high-quality treatment while saving both resources and time.

# **Key Features:**

The variety of features delivered by the Clinic Management System helps clinicians administer their clinics more effectively. These features include:

### 1. Patient Management:

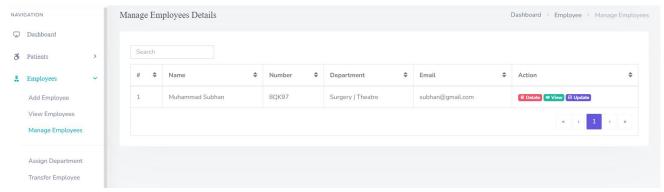
The system allows healthcare practitioners to maintain patient data such as demographic information, medical history, diagnoses, and treatment plans. The system also includes tools for scheduling and transferring patients.



5. Manage Patient.

## 2. Staff Management:

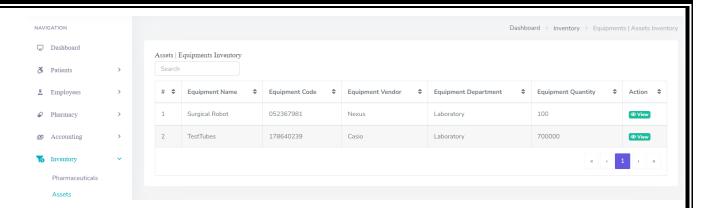
The system enables healthcare providers to manage their medical staff, which includes physicians, nurses, and administrative professionals.



6. Manage Staff

# 3. Inventory Management:

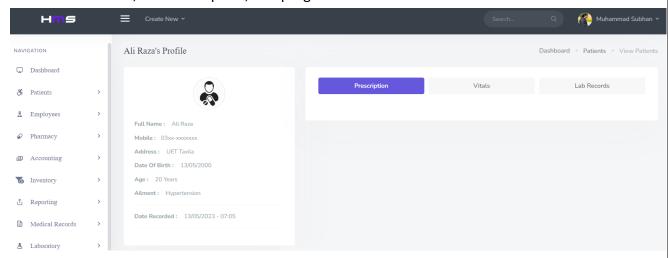
The system allows healthcare practitioners to manage their medical equipment and pharmaceutical inventory, such as tracking supplies, reordering, and maintaining ideal stock levels.



7. Inventory

# 4. Patient Report:

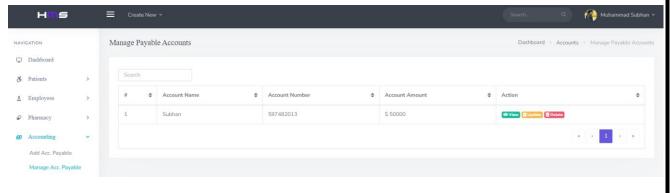
The system allows healthcare providers to generate patient reports based on their medical records, such as test results, treatment plans, and progress notes.



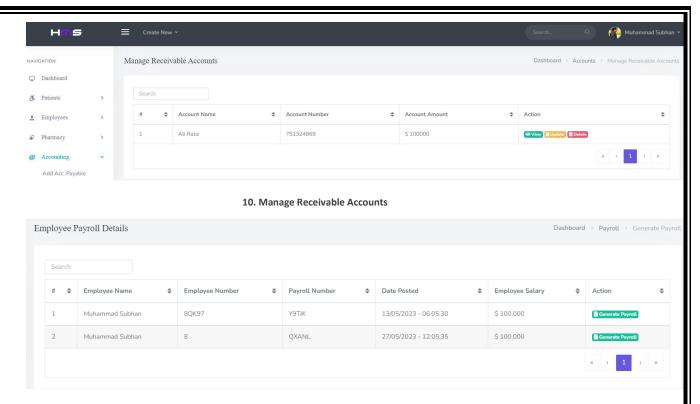
8. Patient Report

# 5. Financial Management:

The system provides financial management features, including tracking patient billing, processing payments, and generating financial reports.



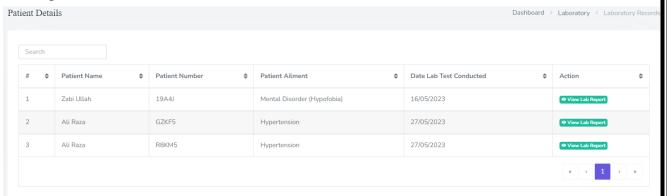
9. Manage Payable Accounts



11. Employee Payroll Management

## 6. Laboratory Management:

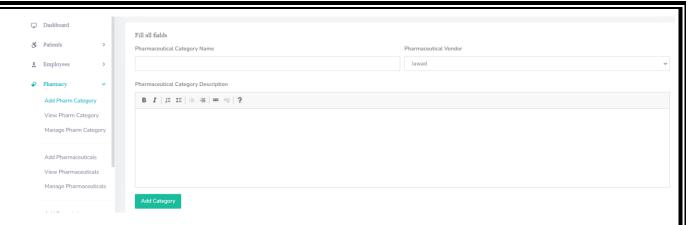
The system enables healthcare providers to manage laboratory tests, including ordering and tracking test results.



12. Laboratory Management

# 7. Pharmacy Management:

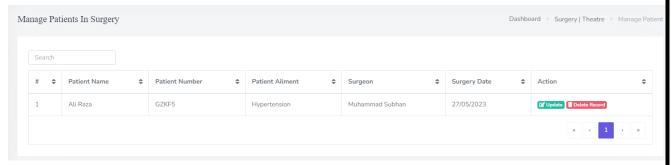
The system empowers healthcare practitioners to effectively manage their pharmacy inventory, including medical equipment and pharmaceuticals.



13. Add Pharmacy

# 8. Surgical / Theatre Management:

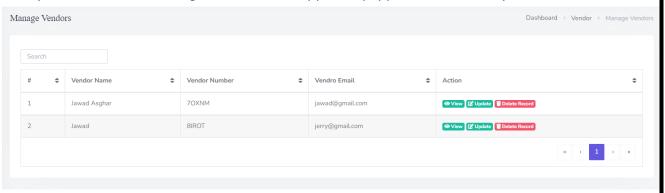
The system enables healthcare providers to manage Surgical tests, including ordering and tracking surgery results.



14. Manage Surgery

# 9. Vendor Management:

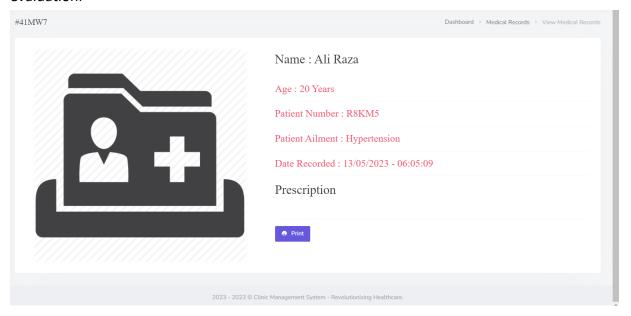
The system healthcare manages vendors for supplies equipped for Laboratory, Theater etc.



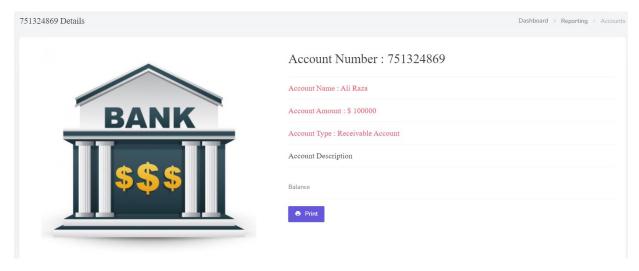
15. Vendor Management

# 10. Reports Management:

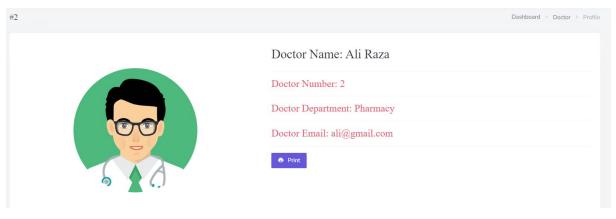
The system includes report management features, allowing healthcare practitioners to generate comprehensive reports and analytics for informed decision-making and performance evaluation.



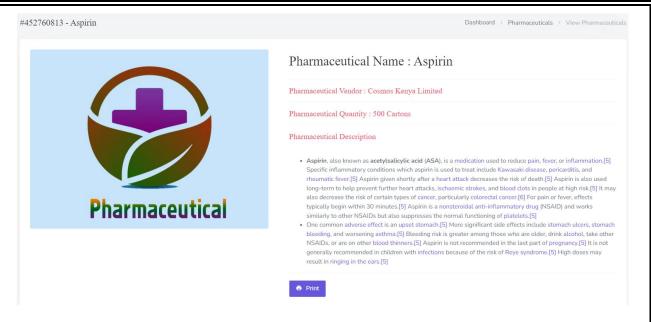
16. Patient Medical Report



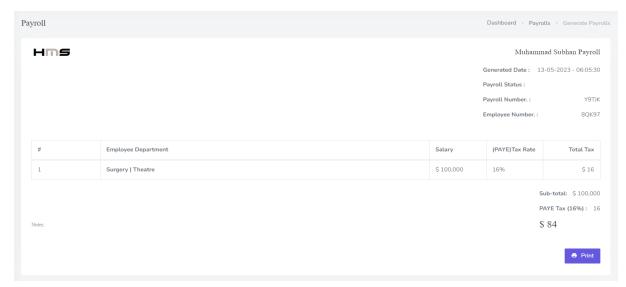
17. Account Report for Receivable and Payable



18. Employee Report



19. Pharmacy Item Report



20. Generate Payroll

Overall, the Clinic Management System offers a comprehensive set of features to enable healthcare providers to manage their clinic operations efficiently. From patient and staff management to inventory and financial management, the system provides a centralized platform to streamline clinic operations. The patient report and laboratory management features allow for effective diagnosis and treatment, while the surgery management module helps with scheduling and tracking surgical procedures. With this system, healthcare providers can optimize their clinic's operations, enhance patient care, and improve financial performance.

# Advantages and Benefits:

The Clinic Management System offers several advantages and benefits to healthcare providers, including:

- ✓ Improved Efficiency: Automated technology allows healthcare practitioners to improve their workflow, decrease manual processes, and reduce mistakes.
- ✓ Patient Management: The system assists healthcare practitioners in more efficiently and successfully managing patient records, appointment scheduling, treatment plans, and billing.
- ✓ **Financial Management:** The system enables healthcare providers to handle financial transactions, costs, and inventories, increasing profitability and reducing waste better properly.
- ✓ **Improved Patient treatment:** The technology makes administrative tasks for medical professionals simpler, allowing them to spend more time with patients and provide better care.
- ✓ Easy Access to Information: The system enables healthcare professionals to easily access patient information, medical records, and financial data from any place at any time.

### Conclusion:

The Clinic Management System is an innovation that aims to change patient care. Because of its comprehensive capabilities for handling patient data, medical staff, appointments, and transfers, this system is set to take healthcare to new heights. Healthcare personnel now have fast access to critical data, allowing them to provide patients with unparalleled care and the most effective medicines.

The Clinic administration System's capabilities for financial administration are another important advantage. The system enables healthcare providers to manage their money more effectively by giving them tools for monitoring patient billing, receiving payments, and producing financial reports. For medical clinics, this can result in considerable cost savings that can be put back into bettering patient care and increasing offerings.

Additionally, the Clinic Management System aids healthcare practitioners in upholding norms and laws in the industry. The system makes sure that all relevant data is saved safely and can be retrieved quickly and simply when needed by offering a centralized platform for managing patient records, medical personnel, and inventories. This can assist medical facilities in avoiding exorbitant fines and other consequences of non-compliance.

Overall, the Clinic Management System is an innovative and practical management tool for medical clinics. With its powerful database management system, user-friendly interface, and wide capabilities, the technology has the potential to revolutionize the healthcare business. The Clinic Management System may help healthcare providers improve patient outcomes while simplifying operations and lowering expenses. This is accomplished through improving efficiency, patient care, financial management, and adherence to regulations and standards.