

Database System **LAB FINAL**

June 10, 2023



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Project Category

A-Desktop Application/Information System B-Web Application/Web Application based Information System
C- Smartphone Application

1. Introduction

Pharmacy Management System is a software application developed to support the work of pharmacists and pharmacy technicians in managing the day-to-day operations of a pharmacy. The system aims to improve the efficiency and accuracy of the process of filling prescriptions, managing inventory, and processing orders. This project report presents the design and implementation of the Pharmacy Management System and its various features. It also discusses the testing and evaluation of the system, as well as its potential future developments. The report concludes with a summary of the benefits and limitations of the system and recommendations for its use in real-world pharmacy settings.

What problem does your software solve?

The problem that the Pharmacy Management System aims to solve is the inefficient and error-prone process of managing a pharmacy.

Currently, many pharmacies rely on manual methods for managing their operations, such as paper-based prescription records, manual inventory management, and manual order processing. These methods are time-consuming and prone to errors, such as missed orders, incorrect dosage calculations, and misplaced or expired medication. In addition, manual methods do not provide a centralized and easily accessible source of information for pharmacists and pharmacy technicians, making it difficult to track and manage the status of orders, inventory levels, and patient records.

The Pharmacy Management System addresses these problems by providing a digital platform for managing pharmacy operations. It automates the process of filling prescriptions, tracks inventory levels, and processes orders electronically, reducing the risk of errors and improving the efficiency of the pharmacy's workflows. The system also provides a centralized database of patient and medication information, enabling pharmacists and technicians to easily access and update records as needed. Overall, the Pharmacy Management System helps to improve the quality and safety of pharmacy services, as well as the overall efficiency and productivity of the pharmacy.

Skills:

This project will help you gain practical knowledge. Following skills can be developed:

- Member Management
- Employee Management

- Financial Management
- Data Management

2. Advantages/Benefits of Proposed System

- This proposed system allows to user to save record in database whereas existing system keep records in form of files.
- It is fast and ease of use, i.e., user friendly interface.
- Reduces the staff requirements.
- Saves administration time.
- It is Reliable.
- It is easy to use a click lets you access what you want whereas in existing system it will be difficult view information by reading pages.
- It reduces overheads, i.e., you have employed fewer staff.
- It efficiently manages members (i.e. doctors and patients).
- It Avoids data redundancy and inconsistency

3. Scope

Prescription management: The system allows pharmacists and technicians to enter and track prescription orders electronically, including patient information, medication details, and dosage instructions.

Inventory management: The system tracks the levels of medication in stock and alerts the pharmacy when it is time to reorder.

Order processing: The system automates the process of placing and receiving orders from drug wholesalers, eliminating the need for manual order forms and reducing the risk of errors.

Patient records: The system maintains a centralized database of patient records, including medical history and current medications, to support informed decision-making and patient care.

Reporting and analytics: The system generates reports on pharmacy operations, including prescription and inventory data, to support data-driven decision-making and continuous improvement.

The scope of the Pharmacy Management System does not include features related to financial management, such as billing and payment processing. These functions are typically handled by separate systems or manual processes.

4. Modules

Module 1: Signup

In this module, admin, doctors, and patients can create their account by providing their emails, usernames and passwords, birthdate, phone and address and login the system to use.

Module 2: Login

In this module, admin, doctor, and patients can login the system by using their usernames and passwords and use the system.

Module 3: Manage doctors

In this module admin can register, edit information, and can cancel registration of the doctors and can also view doctors' information.

Module 4: Register drug

In this module, admin can register the new drug or supplier can register themselves.

Module 5: Register Doctors

In this module admin can register doctors or doctors can register themselves.

Module 6: Manage drug

In this module, admin can view, reset all records or a specific record set.

Module 7: Manage drug information

In this module admin can edit information and can cancel registration of the drug and can also view drug information.

5. System Limitations/Constraints

- Errors are high.
- In case of lack of internet system will not respond.

6. Tools and Technologies

To build the hospital system we use different tools and technologies that are following

Table 1 Tools and Technologies for Proposed Project

Tools And Technologies	Tools	Version	Rationale
	Visual Studio Code	2022	IDE
	MS SQL Server, Mongo DB	2022	DBMS
	Draw.io	1	Design Work

	MS Word	2022	Documentation
	Technology	Version	Rationale
	Java	8.0	Programming language
	My SQL	2022	Query Language
	Java swing	5	Framework

7. Interfaces:

7.1. Home interface:

This interface enables provide an info about the hospital management system. It will have a home screen with get started button.



7.2. Login interface:

This interface enables admin, patient, and doctor to login the E-Hospital by entering email and password. User and doctor can register themselves by signup the E-Hospital.

SSN:

PASSWORD:

Login Now

Go Back

7.3. Signup interface

In this interface patients and doctors can register themselves by providing personal information on signup form and then login to E-Hospital from the login interface by entering email and password.

E-Hospital

ENTER YOUR SSN

ENTER YOUR FIRST NAME

ENTER YOUR MIDDLE NAME

ENTER YOUR LAST NAME

ENTER YOUR BIRTH DATE

ENTER YOUR GENDER

ENTER YOUR PHONE

ENTER YOUR EMAIL

ENTER YOUR ADDRESS

ENTER YOUR STATE NAME

ENTER YOUR AREA ZIP CODE

ENTER YOUR PASSWORD

CONFIRM YOUR PASSWORD

SUBMIT

HOME

Activate Windows
Go to Settings to activate Windows.

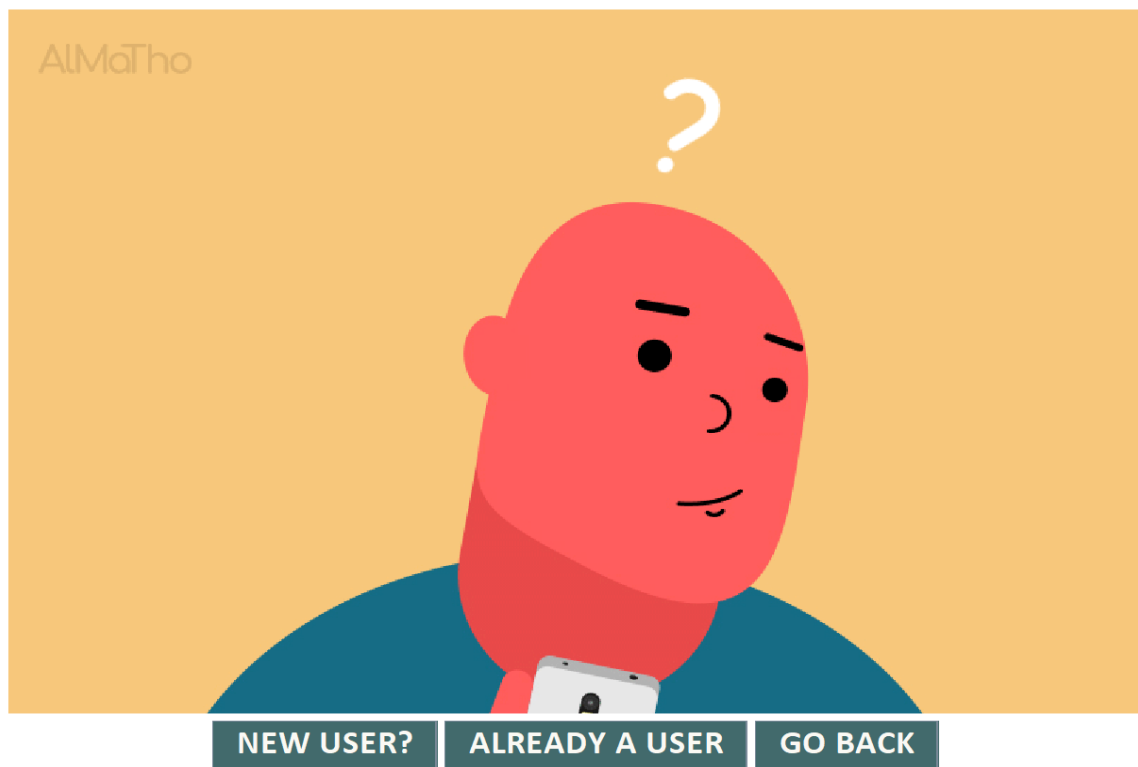
7.3. Opening Menu

WELCOME IN PHARMACY MANAGEMENT SYSTEM!

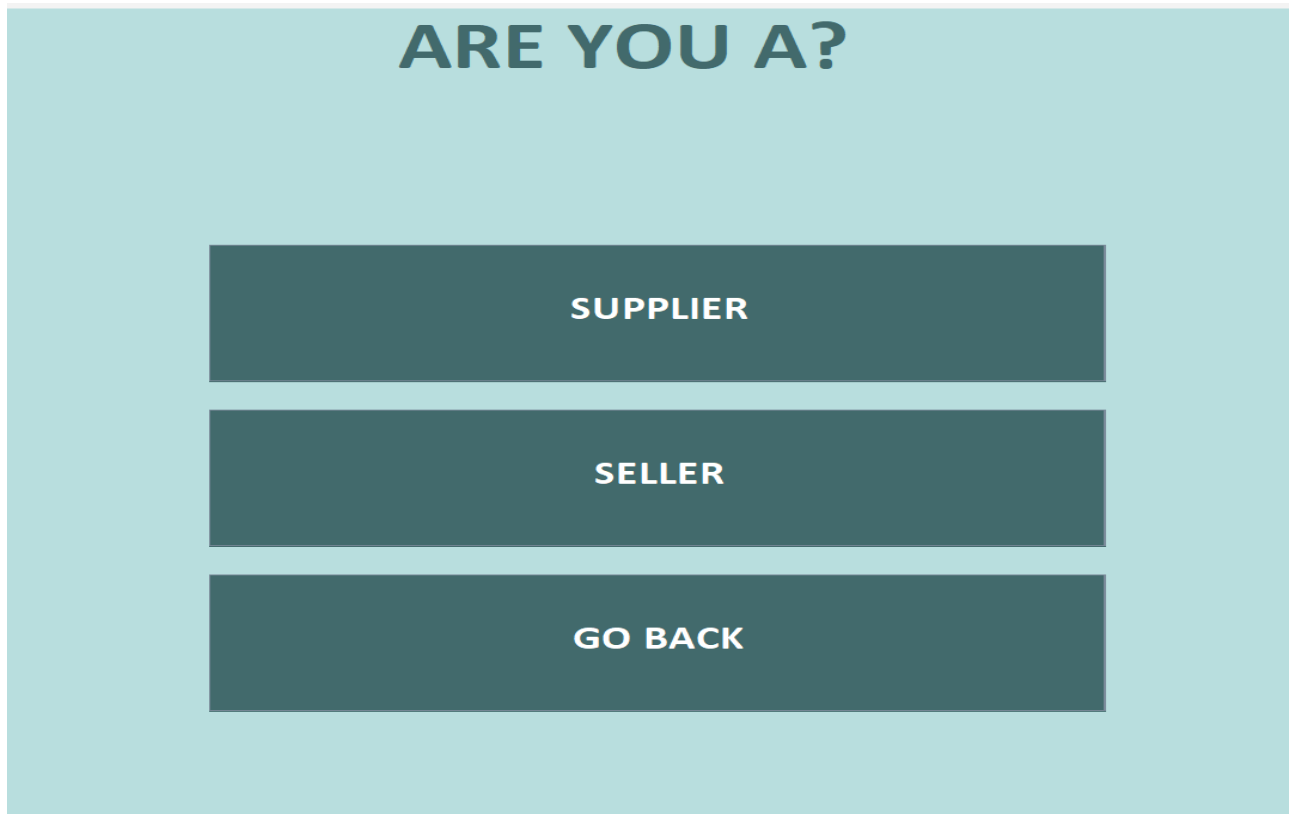


7.4. Check Occurrence Menu

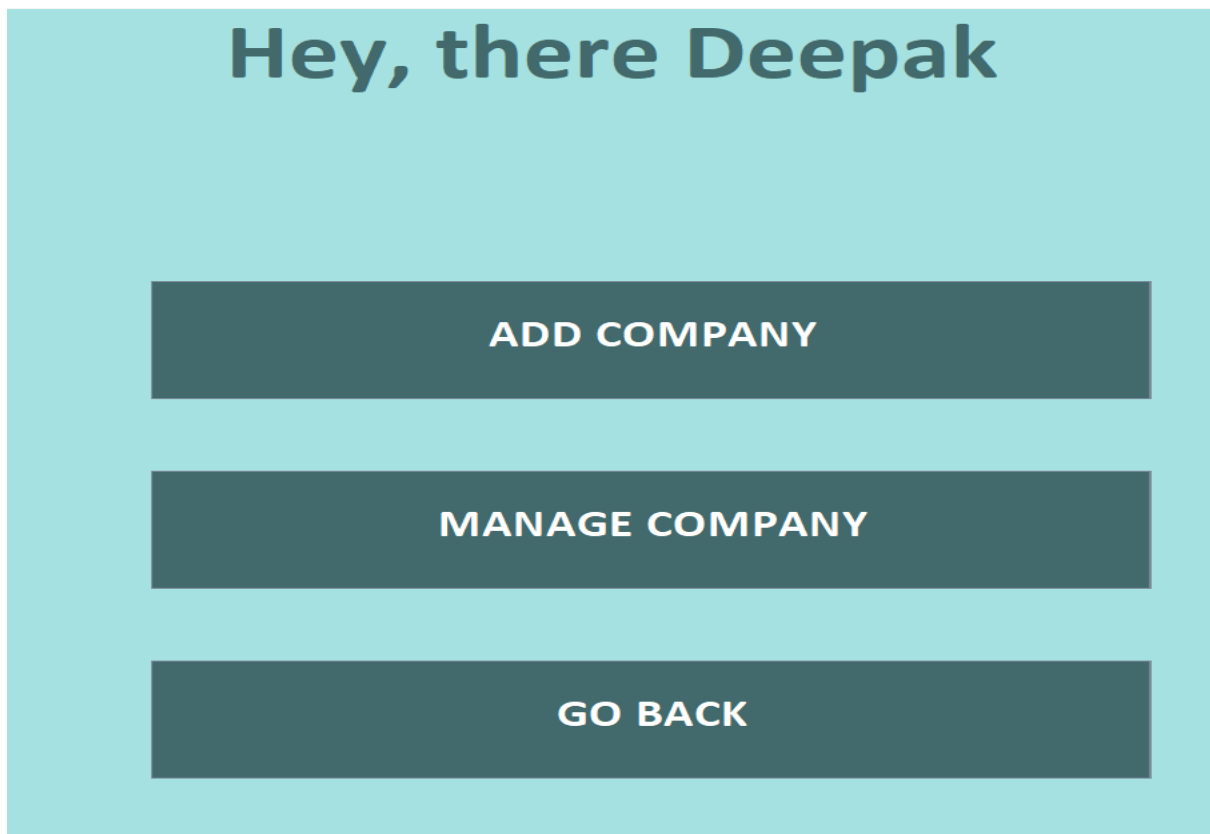
HEY THERE!



7.5. Employee Menu



7.5. Company Connector Menu



7.6. Add Company

Deepak, Please add correct details

ENTER COMPANY ID

ENTER COMPANY NAME

GO BACK **SUBMIT**

7.7. Company Menu

Deepak, what do you wanna do?

ADD DRUGS **SEARCH**

DELETE DRUGS **SELL DRUGS TO SUPPLIER**

VIEW **GO BACK**

9. Queries on Database:

Query 1:

```
SELECT drug.drug_name, drug.drug_id
FROM drug
JOIN company
ON drug.drug_id = company.drug_id
WHERE company.company_name = 'gsk';
```

EXPLANATION:

This query selects the drug_name and drug_id columns from the drug table, and joins the company table using the drug_id column as the join key. The WHERE clause then filters the results to only include rows from the company table where the company_name is 'gsk'. The resulting query returns all rows from the drug table with a matching drug_id in the company table and a company_name of 'gsk'.

OUTPUT:

	DRUG_ID	DRUG_NAME
1	3535	Regix
2	353545	Brufen
3	12345	Mefnac DS
4	453873	Kylie

Query 2:

```
SELECT *
FROM customer
JOIN purchase
ON customer.customer_id = purchase.customer_id
JOIN drug
ON purchase.drug_id = drug.drug_id
JOIN company
ON drug.drug_id = company.drug_id
WHERE drug.drug_name = 'brufen' AND company.company_name = 'gsk';
```

EXPLANATION:

This query selects the customer_name and customer_id columns from the customer table, and joins the purchase, drug, and company tables using the appropriate foreign keys as the join keys. The WHERE clause filters the results to only include rows where the drug_name in the drug table is 'brufen' and the company_name in the company table is 'gsk'. The resulting query returns all rows from the customer table with a matching customer_id in the purchase table, where the drug_id in

the purchase table matches a drug_id in the drug table with a drug_name of 'brufen', and where the drug_id in the drug table matches a drug_id in the company table with a company_name of 'gsk'.

OUTPUT:

	SSN	BDATE	EMAIL	USER_PASSWORD	PHONE	SEX	PERSONTYPE
1	44108	22-NOV-99	hamna@gmail.com	44108	3498639	Female	Doctor
2	44109	22-NOV-99	kashif@gmail.com	44109	36436456	Male	Distributor
3	58786	14-JUN-2002	jesarkamran@gmail.com	58786	03442136564	Male	Customer
4	21432	aadgsdgs	sgdsgdsg	21432	21432	sdgsdgs	Customer
5	61101	22-NOV-99	ibrar@gmail.com	61101	34985654387	Male	Doctor
6	37201	22-NOV-99	dauood@gmail.com	37201	3896543875	Male	Supplier
7	44105	22-NOV-99	kamran@gmail.com	44105	448756876	Male	Supplier
8	12345	22-NOV-22	deepak@gmail.com	12345	344394	Male	Company Connector
9	44016	22-NOV-99	mahaveer@gmail.com	44016	34856438	Male	Seller

Query 3:

```
SELECT doctor.doctor_ssn, doctor.doctor_name
FROM doctor
JOIN purchase
ON doctor.doctor_id = purchase.doctor_id
JOIN drug
ON purchase.drug_id = drug.drug_id
JOIN company
ON drug.drug_id = company.drug_id
WHERE drug.drug_name = 'regix' AND company.company_name = 'gsk';
```

EXPLANATION:

This query selects the doctor_name and doctor_id columns from the doctor table, and joins the purchase, drug, and company tables using the appropriate foreign keys as the join keys. The WHERE clause filters the results to only include rows where the drug_name in the drug table is 'regix' and the company_name in the company table is 'gsk'. The resulting query returns all rows from the doctor table with a matching doctor_id in the purchase table, where the drug_id in the purchase table matches a drug_id in the drug table with a drug_name of 'regix', and where the drug_id in the drug table matches a drug_id in the company table with a company_name of 'gsk'.

OUTPUT:

	SSN	FNAME	MNAME	LNAME
1	12345	Deepak	Kumar	khatr

5. MongoDB JSON Schema

```
{  
  "person": {  
    "bsonType": "object",  
    "required": ["ssn", "bdate", "email", "user_password", "phone", "sex", "personType"],  
    "properties": {  
      "ssn": {  
        "bsonType": "int",  
        "description": "unique identifier for a person"  
      },  
      "bdate": {  
        "bsonType": "string",  
        "description": "birth date of a person"  
      },  
      "email": {  
        "bsonType": "string",  
        "description": "email address of a person"  
      },  
      "user_password": {  
        "bsonType": "string",  
        "description": "password of a person"  
      },  
      "phone": {  
        "bsonType": "string",  
        "description": "phone number of a person"  
      },  
      "sex": {  
        "bsonType": "string",  
        "description": "sex of a person"  
      },  
    },  
  },  
}
```

```

    "personType": {
      "bsonType": "string",
      "description": "type of a person (e.g. employee, customer, etc.)"
    }
  },
  "name": {
    "bsonType": "object",
    "required": ["ssn", "fname", "mname", "lname"],
    "properties": {
      "ssn": {
        "bsonType": "int",
        "description": "unique identifier for a person",
        "foreignKey": "person.ssn"
      },
      "fname": {
        "bsonType": "string",
        "description": "first name of a person"
      },
      "mname": {
        "bsonType": "string",
        "description": "middle name of a person"
      },
      "lname": {
        "bsonType": "string",
        "description": "last name of a person"
      }
    }
  },
  "address": {

```

```
"bsonType": "object",

"required": ["ssn", "street", "state", "zip"],

"properties": {

  "ssn": {

    "bsonType": "int",

    "description": "unique identifier for a person",

    "foreignKey": "person.ssn"

  },

  "street": {

    "bsonType": "string",

    "description": "street address of a person"

  },

  "state": {

    "bsonType": "string",

    "description": "state where a person resides"

  },

  "zip": {

    "bsonType": "int",

    "description": "zip code of a person's address"

  }

}

},

"employee": {

  "bsonType": "object",

  "required": ["emp_id", "rank", "hiredate", "salary"],

  "properties": {

    "emp_id": {

      "bsonType": "int",

      "description": "unique identifier for an employee",

      "foreignKey": "person.
```

```
"supplier_drug_details": {  
  "bsonType": "object",  
  "required": ["supplier_drug_details_id", "drug_id", "drug_name", "drug_expiryDate",  
    "drug_ManufactureDate", "drug_manufactured_price", "drug_b2b_price", "drug_b2c_price",  
    "drug_manufacturer_company_id", "drug_manufacturer_company_name"],  
  "properties": {  
    "supplier_drug_details_id": {  
      "bsonType": "int",  
      "description": "unique identifier for supplier drug details"  
    },  
    "drug_id": {  
      "bsonType": "int",  
      "description": "unique identifier for a drug"  
    },  
    "drug_name": {  
      "bsonType": "string",  
      "description": "name of a drug"  
    },  
    "drug_expiryDate": {  
      "bsonType": "string",  
      "description": "expiry date of a drug"  
    },  
    "drug_ManufactureDate": {  
      "bsonType": "string",  
      "description": "manufacturing date of a drug"  
    },  
    "drug_manufactured_price": {  
      "bsonType": "int",  
      "description": "price at which the drug was manufactured"  
    },  
    "drug_b2b_price": {
```



```
"bsonType": "int",  
  
"description": "price at which the drug is sold to a business"  
  
},  
  
}
```

9. Conclusion

The Pharmacy Management System is a valuable tool for improving the efficiency and accuracy of pharmacy operations. It automates the process of filling prescriptions and managing inventory, reducing the risk of errors and improving the speed and quality of service. The system's centralized database of patient and medication information supports informed decision-making and patient care, and its reporting and analytics features enable pharmacies to track and optimize their performance. Overall, the Pharmacy Management System is a valuable asset for any pharmacy looking to improve its operations and better serve its patients.

10. References

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