

THE OPEN UNIVERSITY OF SRI LANKA

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

BACHELOR OF TECHNOLOGY

EEX3417 - SOFTWARE DEVELOPMENT FOR ENGINEERS

MINI PROJECT - 2022/2023

PHARMACY MANAGEMENT SYSTEM



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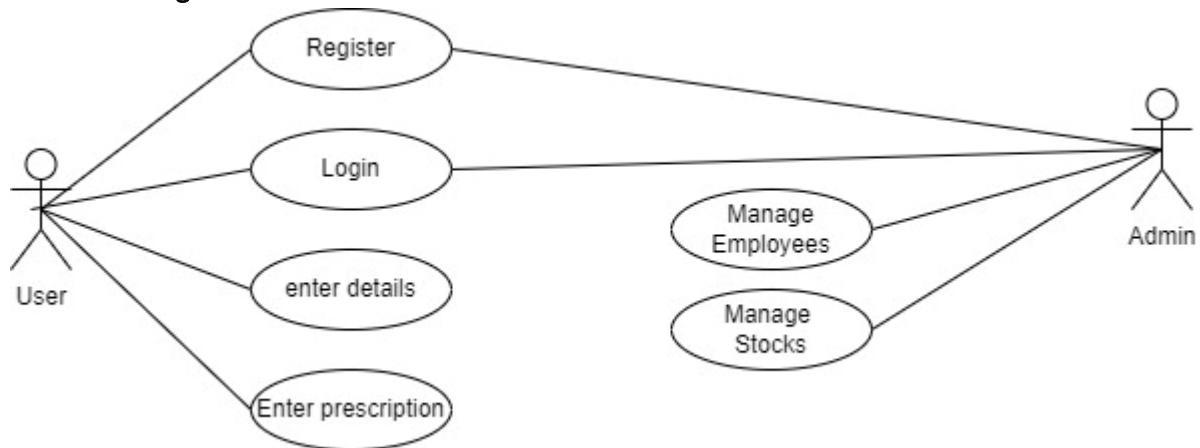
Introduction

System Overview

The pharmacy management system is designed to streamline and automate various processes within a pharmacy. It serves as a comprehensive solution for managing prescription details, employee data, and stock inventory. The key stakeholders involved include pharmacists, customers, and management personnel.

Requirement Analysis

Use Case Diagram



Functional Requirements

1. User Authentication:
 - The system should authenticate users (pharmacists and management) securely.
 - Users should be able to reset their passwords.
2. Prescription Management:
 - Capture and store customer details, prescription information, and medication details.
 - Ensure unique identification for each prescription.
3. Employee Management:
 - Store employee information, including staff ID, name, designation, and contact details.
 - Allow for the addition, modification, and deletion of employee records.
4. Stock Inventory:
 - Track stock levels of medications.
 - Generate alerts for low-stock items.
 - Facilitate stock replenishment.

Non-functional Requirements

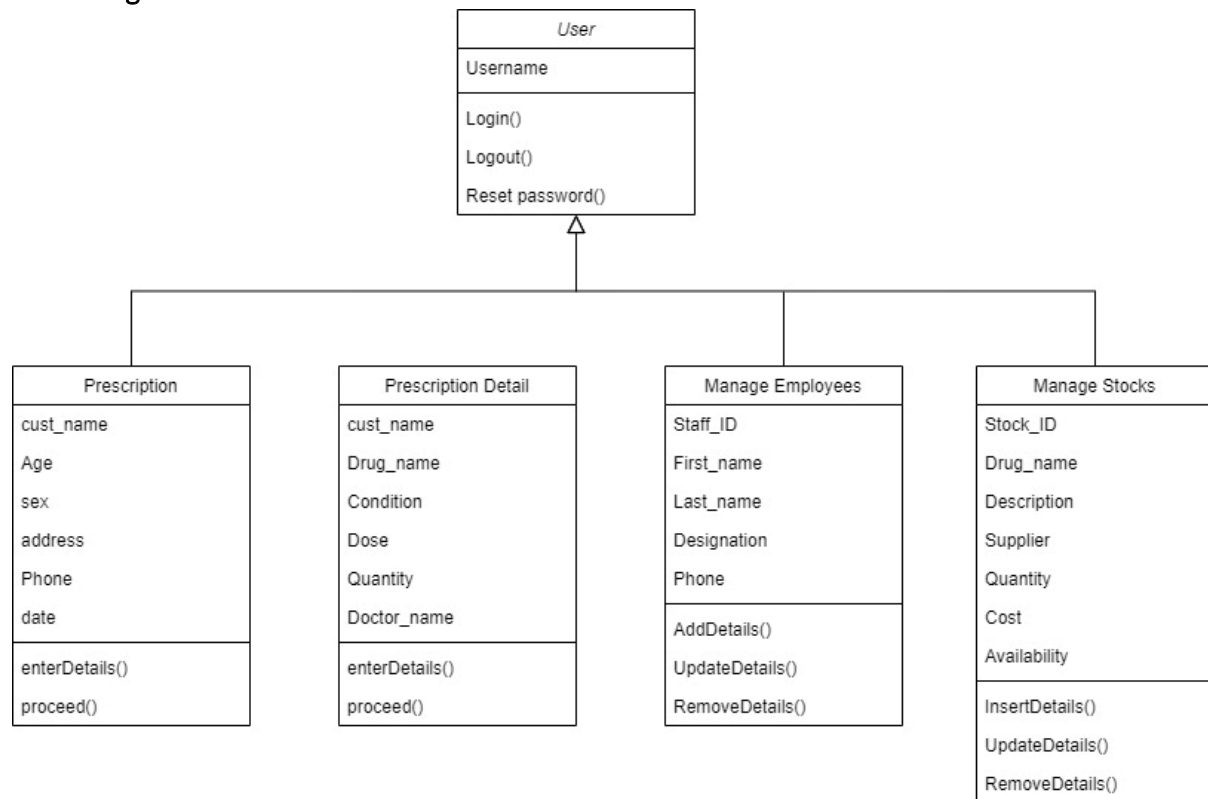
1. Performance:
 - The system should respond to user requests within two seconds.
 - It should handle concurrent user access without significant performance degradation.
2. Security:
 - User data and prescription details should be encrypted.
 - Access to certain functionalities (e.g., employee management) should be role-based.

3. Usability:

- The user interface should be intuitive.
- The system should provide helpful error messages and prompts.

High-level design

Class Diagram



Data Modelling

Business Rules:

- A customer must provide complete details for a prescription to be valid.
- Employees can only access and modify data relevant to their roles.

Entities And Tables:

1. Prescription_Detail Table:

- pres_id (Primary Key)
- cust_name (varchar, 50)
- drug_name (varchar, 50)
- condition_ (varchar, 100)
- dose (varchar, 20)
- quantity (int)
- doctor_name (varchar, 50)

2. Employee Table:

- staff_id (Primary Key)
- FirstName (varchar, 50)
- LastName (varchar, 50)
- Designation (varchar, 50)
- Phone_no (varchar, 15)
- DateJoined
- Salary

Attributes and Field Lengths:

1. Prescription_Detail Table:

- cust_name (varchar, 50)
- drug_name (varchar, 50)
- condition_ (varchar, 100)
- dose (varchar, 20)
- quantity (int)
- doctor_name (varchar, 50)

2. Employee Table:

- FirstName (varchar, 50)
- LastName (varchar, 50)
- Designation (varchar, 50)
- Phone_no (varchar, 15)

Relationships:

1. Prescription_Detail and Employee:

- There could be a relationship between the cust_name in the Prescription_Detail table and the FirstName and LastName in the Employee table. This could represent the employee responsible for a particular customer.
- This relationship could be established by having a foreign key in the Prescription_Detail table, referencing the staff_id in the Employee table. This would indicate which employee is associated with a particular prescription.

```
ALTER TABLE Prescription_Detail  
ADD FOREIGN KEY (staff_id) REFERENCES Employee(staff_id);
```

Here, staff_id in Prescription_Detail is a foreign key that references the primary key staff_id in the Employee table.

Normalization:

Normalization is a process that helps organize a database to reduce redundancy and dependency. The goal is to minimize data redundancy and ensure data integrity. Here's a simplified guide for the given tables:

Prescription_Detail Table:

1. First Normal Form (1NF):
 - All columns contain atomic values.
 - No repeating groups of data.
2. Second Normal Form (2NF):
 - 1NF is satisfied, and all columns depend on the primary key.
 - In this case, since pres_id is the primary key, all other columns should be fully dependent on it.
3. Third Normal Form (3NF):
 - 2NF is satisfied, and all columns are independent of each other
 - No transitive dependencies. Each non-primary key column must depend only on the primary key.
 -

Employee Table:

1. First Normal Form (1NF):
 - All columns contain atomic values.
 - No repeating groups of data.
2. Second Normal Form (2NF):
 - 1NF is satisfied, and all columns depend on the primary key.
 - In this case, since staff_id is the primary key, all other columns should be fully dependent on it.
3. Third Normal Form (3NF):
 - 2NF is satisfied, and all columns are independent of each other.
 - No transitive dependencies. Each non-primary key column must depend only on the primary key.

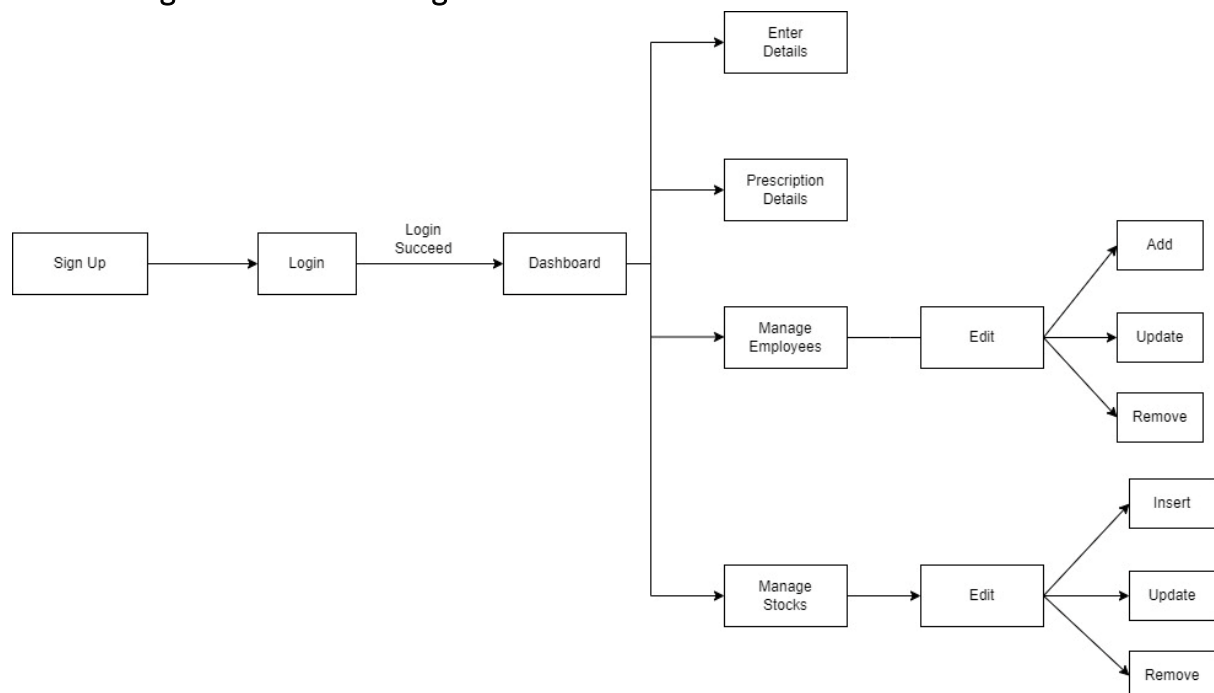
Normalization ensures that data is structured in a way that avoids redundancy and maintains data integrity. The specific normalization steps may vary based on the actual dependencies and business rules in your application. If you have more specific details or constraints, the normalization process could be adjusted accordingly.

Interacting Users of Attributes:

- Pharmacists interact with prescription details to fulfill customer orders.
- Management interacts with employee details for administrative purposes.

Detail design

Detail Design: Screen Flow Diagram



Test Results, Conclusion or Discussion References

Test Results

Login Test:

- Input: Valid username and password.
- Expected Output: Redirected to the respective dashboard.

Prescription Submission Test:

- Input: Valid prescription details.
- Expected Output: Confirmation message.

View Prescription Test:

- Input: Selection of a prescription.
- Expected Output: Displayed prescription information.

Stock Update Test:

- Input: Valid stock information.
- Expected Output: Confirmation message.

Employee Management Test:

- Input: Add, edit, or remove employee information.
- Expected Output: Database updated.

Conclusion or Discussion

Discuss the successes and challenges faced during the development process. Highlight any improvements or additional features that could be added in the future.

Output Screens

- **Login Screen**

Login

Please fill in your credentials to login.

Username

Password

[Login](#)

Don't have an account? [Sign up now.](#)

- **Dashboard**



- **ENTER YOUR DETAILS.**

DETAILS

Please fill this form to create an account.

cust_name

Age

sex

address

Phone

date

Submit

PROCEED.

- **PRESCRIPTION-DETAIL.**

PRESCRIPTION DETAILS

Please fill this form with prescription detail.

cust_name

drug_name

condition_

dose

quantity

doctor_name

Submit

PROCEED.

- **MANAGE EMPLOYEES .**

STAFF ID	FIRST NAME	LAST NAME	DESIGNATION	PHONE NO
s3	Agata	Andrews	manager	011-9811-39
s1	Haris	Ellis	administrator	683-0804-42
s8	Michael	Mitchell	accountant	903-9806-78
s4	Amanda	Johnston	sales person	156-4477-88
s9	Fiona	Mason	sales person	745-2631-44
s6	Alissa	Murphy	sales person	678-0832-55
s5	Emily	Henderson	assistant manager	623-5165-26
s2	Jack	Parker	marketing manager	834-7013-37
s7	Elian	Henderson	sales person	536-1675-30

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- **MANAGE STOCKS.**

STOCK-ID	DRUG NAME	DATE-SUPPLIED	DESCRIPTION	SUPPLIER	QUANTITY	COST	AVAILABILITY
101149	Lurasidone	2019-01-08	Bipolar Disorde	Ind-Swift Laboratories Ltd	54	7575	no
101371	Movantik	2019-12-07	Constipation, Drug I	Natco Pharma Ltd	252	23796	no
102941	BuSpar	2019-12-04	Anxiety	Ahicon Parenterals (India) Ltd	911	9193	yes
102969	Belviq	2019-04-13	Weight Loss	Intas Pharmaceuticals Ltd	409	12408	yes
103111	Dextromethorphan	2019-10-28	Pain	Organon (India) Ltd	811	7218	yes
103401	Bupropion	2019-08-28	High Blood Pressure	Nicholas Piramal India Ltd	307	13737	yes
104100	Elocon	2019-01-06	Psoriasis	Wanbury Ltd	684	13026	yes
104260	Augmentin	2019-01-23	Skin or Soft Tissue	Morepen Laboratories Ltd	473	21055	yes
104580	Afrezza	2019-09-22	Diabetes, Type 1	Flamingo Pharmaceuticals Ltd	440	6625	no
10485	Tramadol	2020-02-08	Chronic Pain	Indoco Remedies Ltd	682	15549	yes
105440	Tofacitinib	2019-01-15	Rheumatoid Arthritis	Mangalam Drugs & Organics Ltd	467	823	yes
10545	Spironolactone	2020-02-28	Acne	Morepen Laboratories Ltd	306	17694	yes
106073	Etonogestrel	2019-06-25	Birth Control	Granules India Ltd	419	24262	yes
106078	Omnicef	2019-03-30	Otitis Media	Blue Cross Laboratories Ltd	601	15519	yes
107660	Campral	2019-09-02	Alcohol Dependence	Syncom Formulations (India) Ltd	265	16319	yes
107693	Vyvanse	2019-06-09	ADHD	Emmellen Biotech Pharmaceuticals Ltd	277	715	yes

References

- <https://getbootstrap.com/>
- <https://www.w3schools.com/w3css/default.asp>