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PMS - Software Engineering Term Project

Pharmacy Management System

Architectural Model

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Introduction

Architectural Model report will include:

Subsystems: Each small system that the main system will use

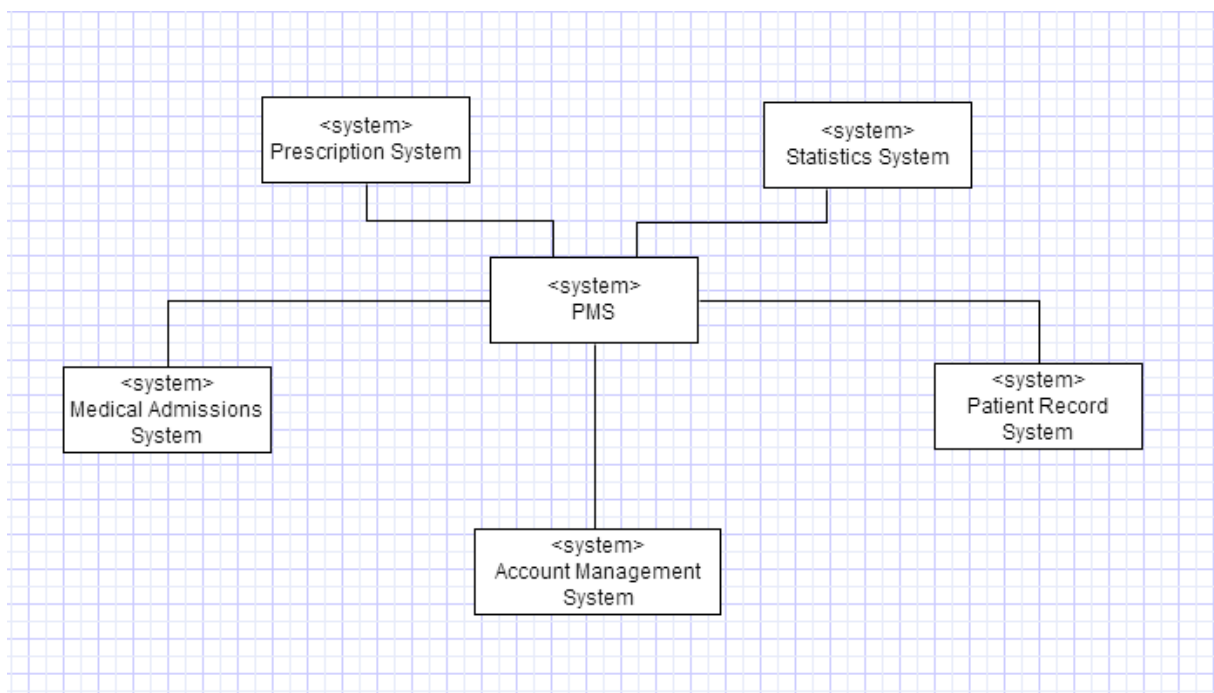
Architectural Model Schema: Subsystems and their relationships between them.

Class Definitions: Variables and Methods

UML Class Diagram: Classes, their methods and variables, relations between classes.

Dictionary: Explanations of some entities where necessary.

Architectural Model



What is Transaction Processing Model?

A transaction processing system processes user requests for information from a database or requests to update the database. Users make asynchronous requests for service which are then processed by a transaction manager.

Why do we use Transaction Processing Model?

In Transaction Processing Model, multiple transactions are considered as a single transaction. When the last transaction ends, the main transaction becomes completed and database is updated. This fits the needs of our solution to Pharmacy Management.

Subsystems

Prescription System accesses the Prescription Database and shows the requested prescription information. Accesses the Patient Database to attach the patient information to the requested prescription. Allows the Pharmacist to approve one or more medications listed on the requested prescription.

Account Management System accesses the User Database to check the user IDs, passwords and permissions. Also used for changing the passwords/permissions, adding new users.

Patient Record System accesses the Patient Database to read and write patients' personal information, medications bought before.

Statistics System uses Patient Record System to get sale amount of each medication to calculate sale statistics. For every patient it saves the medication sale log. For each pharmaceutical company it calculates the sale percentages.

Medical Admissions System uses Medical Data to recommend equivalents to drugs in the prescription or according to diagnosis.

Class Definitions:

User:

Attributes:

TcNo: double

Password: string

Name: string

Surname: string

Permission: int

Methods:

ViewPrescription(PrescriptionID:int,TcNo:double)

ApprovePrescription(PrescriptionID:string,TcNo:double)

ViewCompanyStatistics(CompanyName:string)

ViewPatientStatistics(TcNo:double)

ViewDrugStatistics(DrugID:int)

SearchDrug(DrugName:string)

Pharmacist extends User

AddUser(TcNo: double>Password: string, Name: string, Surname: string, Permission:
int)

ChangePermissions(TcNo: double)

Prescription

Attributes:

PrescriptionID: double

DoctorName: string

Diagnose: string

DrugList<String>: List

Status: boolean

PrescriptionType: string

DrugCount: int (if zero the prescription will be approved)

Drug:*Attributes:*

DrugID: double

DrugName: string

CompanyName: string

Indication: string

Patient:*Attributes:*

Name: string

Surname: string

TcNo: string

PhoneNumber: string

BoughtItems<String>: String List

Pharmaceutical Company:*Attributes:*

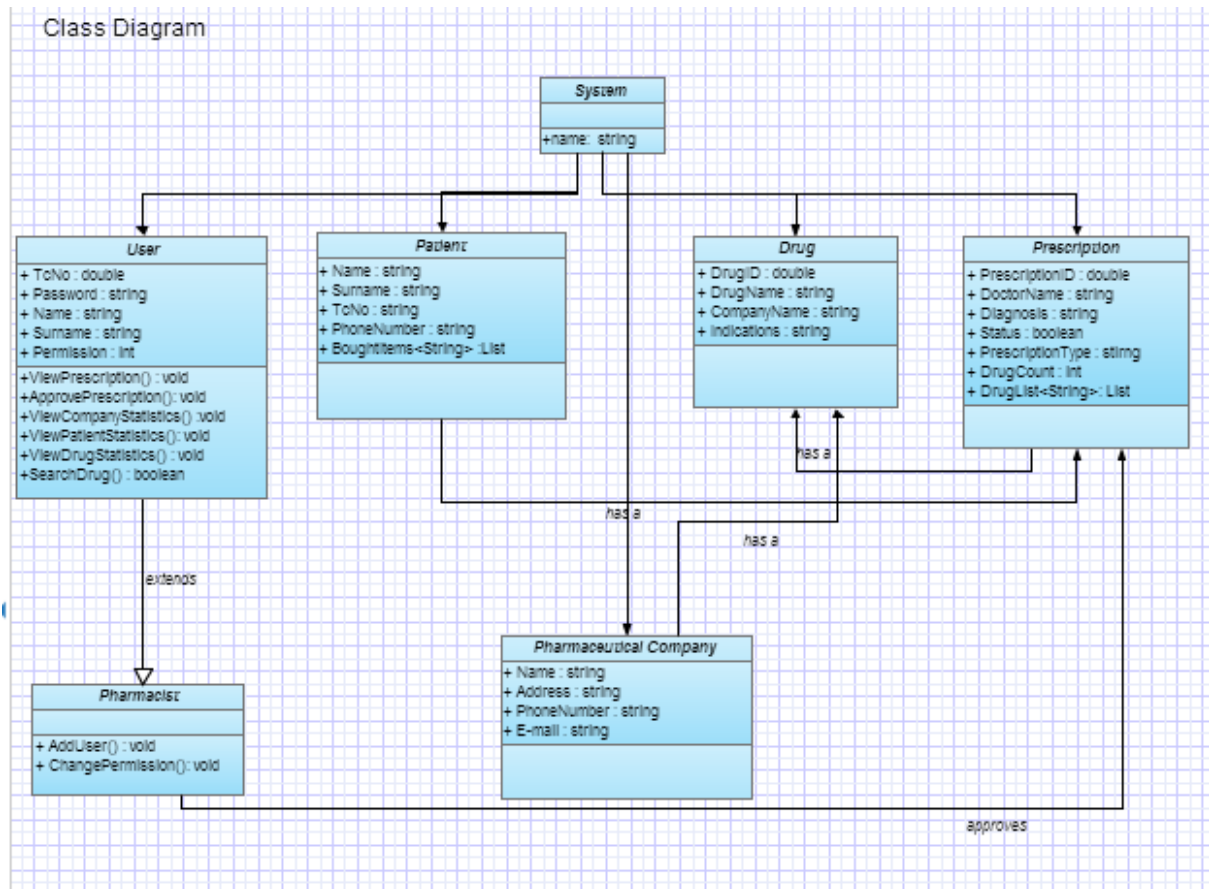
Name: string

Address: string

PhoneNumber: string

E-mail: string

UML Class Diagram:



Dictionary:

DrugCount: The remaining count of drugs in an active prescription. This will be used in ApprovePrescription method. If the unbought(active) drug count becomes zero, the prescription will be appropriate to be approved.

BoughtItems: All items that the patient bought from the Pharmacy. A string list will be used for this. It may be used in Statistics section.

Permission: User access level which will be held in an integer. For example: 111 means the user will have all of the permission rights: View/Change/Approve

Indications: Medical conditions which the drug will be appropriate to be used in.

Diagnosis: Doctor's written diagnosis about the patient in the prescription.

PrescriptionType: Type of prescription. For example: Red, green...

Conclusion

We have considered the Transaction Processing Model as a reference model to implement our system. Identified the subsystems and their relations, defined the classes and drawn the UML diagram to show class relations, their methods and variables.

With the architecture it will be easy to determine the division of work and assigning time intervals to each job.

All contributions are equal and %20.