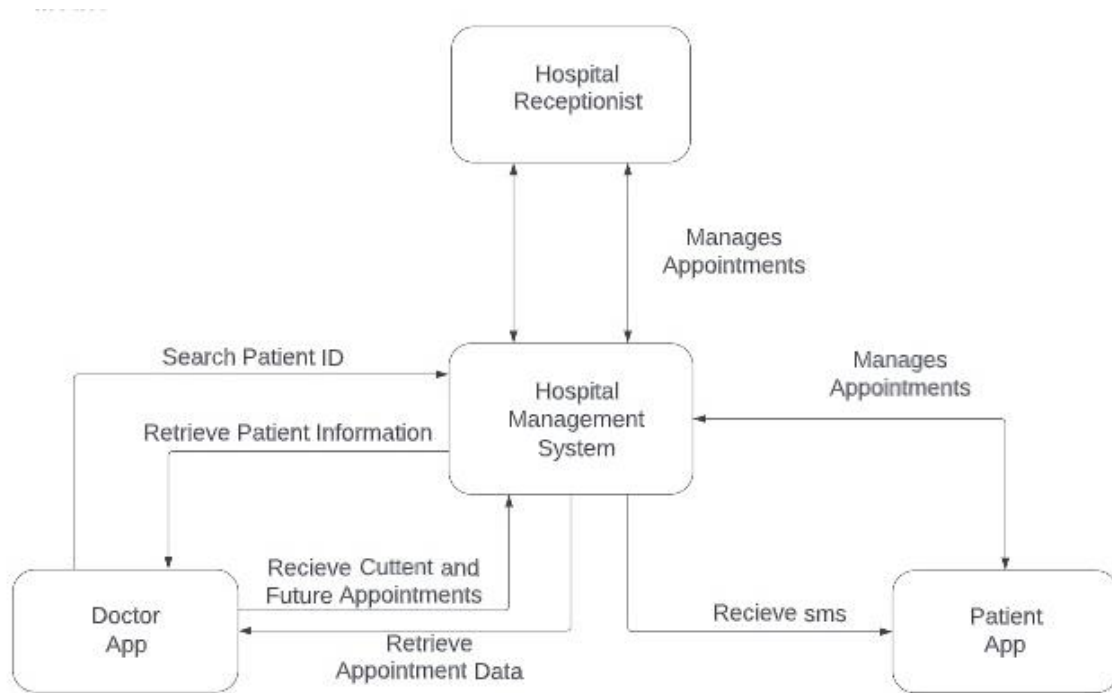


CSE2101 - Software Engineering Project Plan



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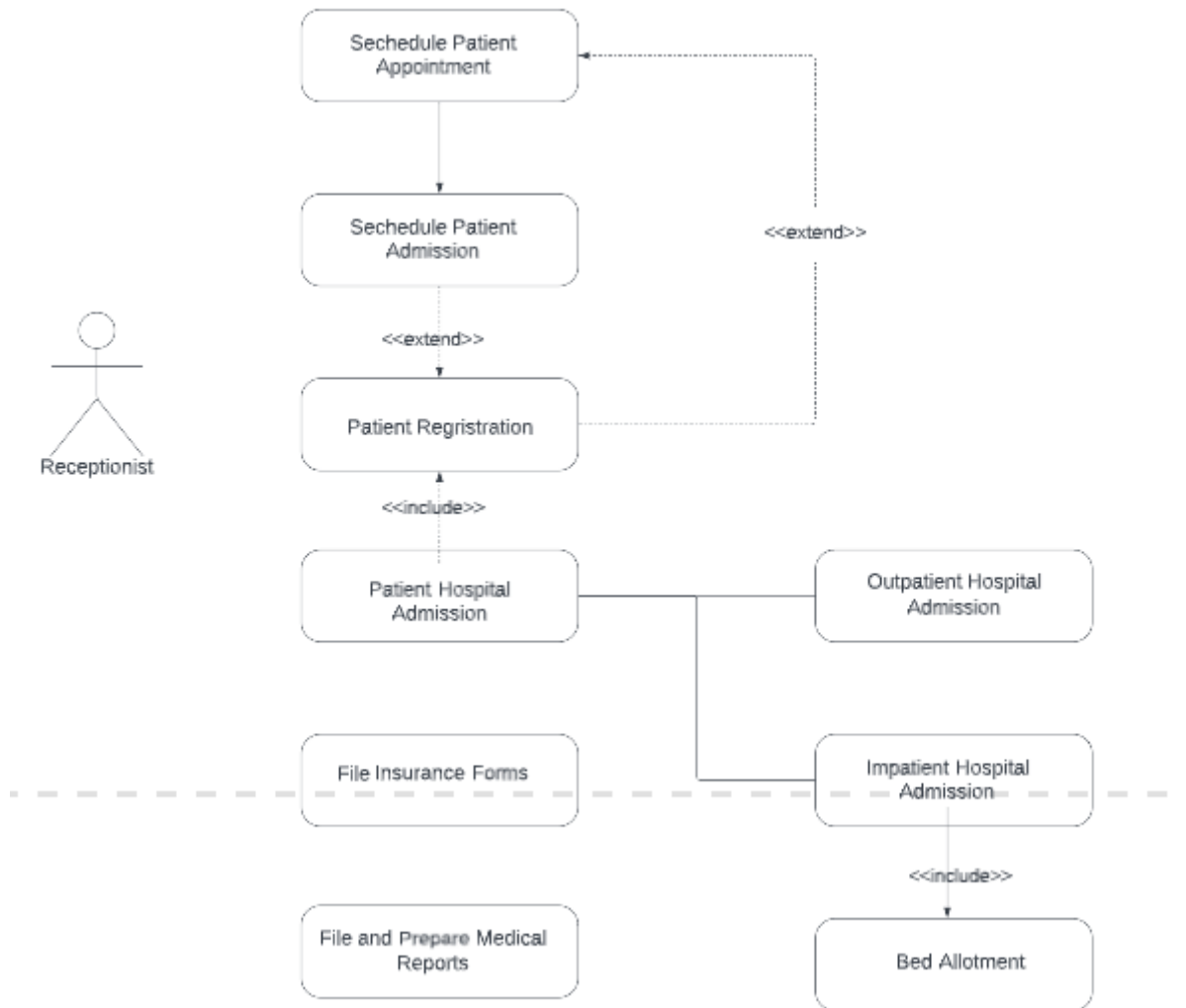
Context Model



Description

The context model above shows the relationship between the hardware aspect of our system and how it interacts with the external environment, which includes doctors, patients and the receptionist.

Use Case Model

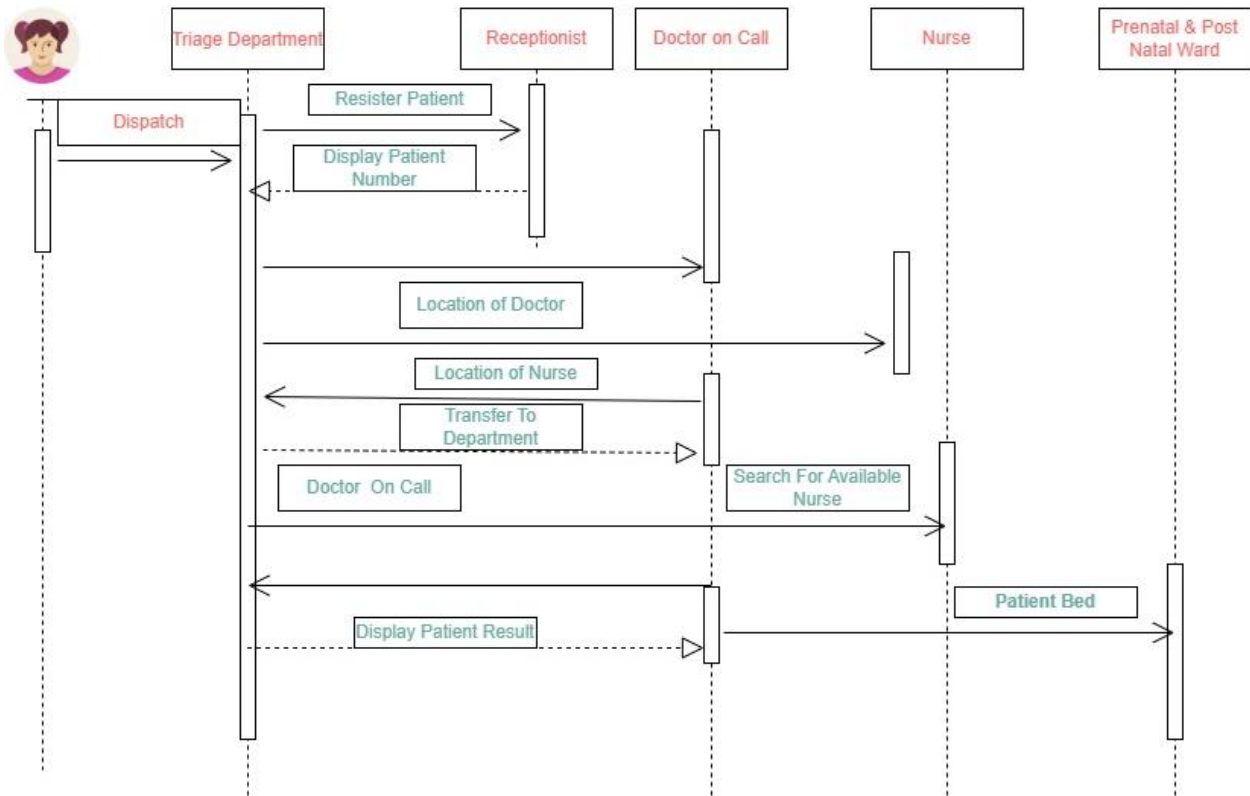


Use Case Table Scenario with descriptions

Use Case	Description
Scenario	Patient wants to view results of last appointment
Triggering Event	The patient has a future appointment and is checking the results from her last appointment to see if she is prepared.
Description	The patient will interact with the system to view medical updates

Actors	Patient
Other Actors involved	Doctor, Patient and receptionist
Preconditions	Higher blood pressure than normal, increased glucose content and iron deficiency
Postconditions	Patient has the option to view medical history related to her pregnancy
Flow of Activities	<u>Patient:</u> 1) Patient logs into system with their account 2) Patient navigates the app to view medical history 3) Patient views next appointment date <u>System:</u> 1) System is initialized and the user is authenticated 2) Displays medical records 3) System displays next appointment time

Sequence Diagram

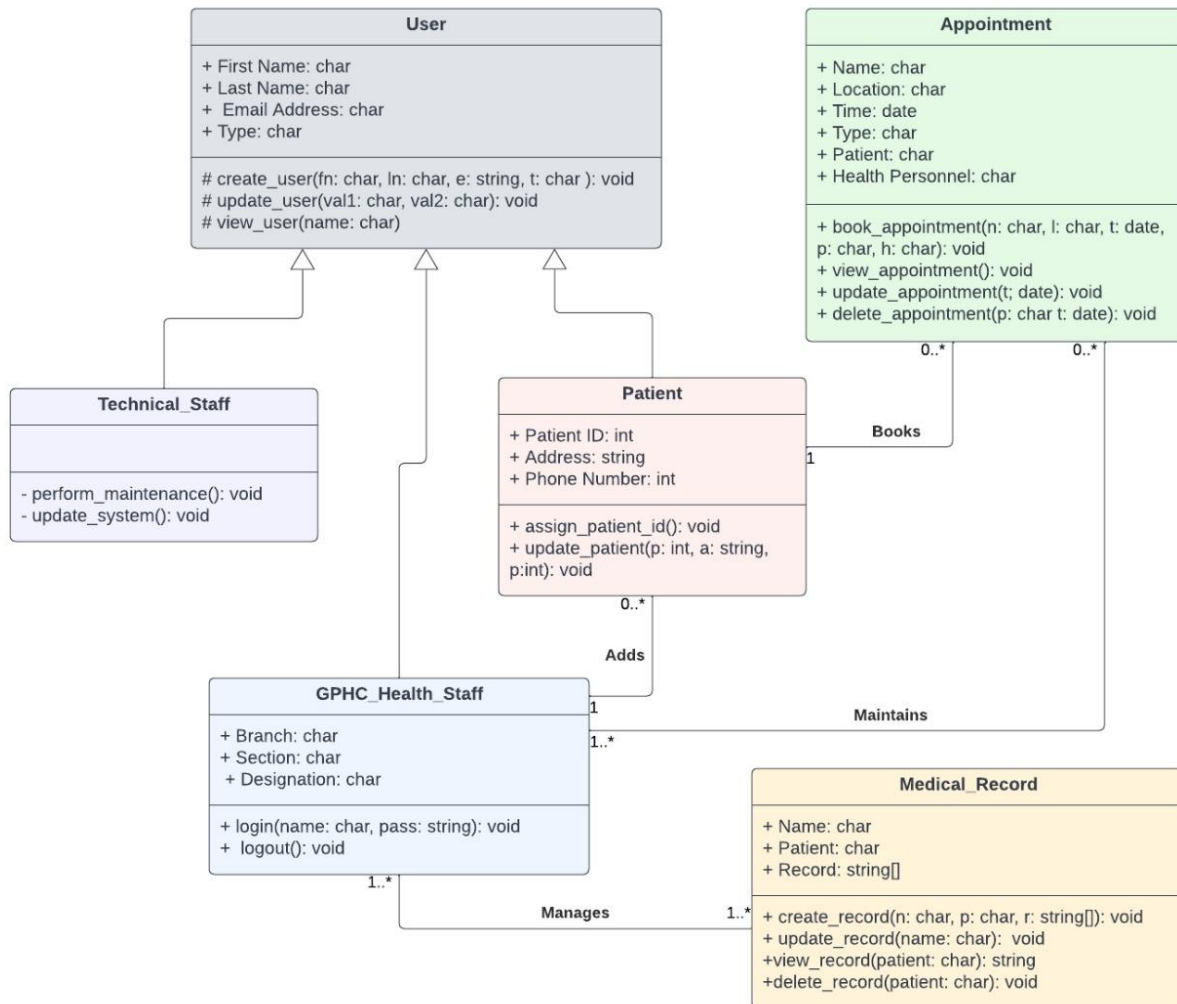


Description

The Sequence Diagram shows the detail of how the patient medical record system operation in the Maternity area of GPHC. Each step show from when the patients come in, when they are registered, then their given a number from there when their number is called a doctor is located and checks on the patients then their assigned a nurse and transferred to triage waiting area. From there another doctor examines the patient and a nurse takes over and wait with patients to receive their test result, once that is completed their transfer to the designated ward which the given a bed until their ready.

Class Diagram

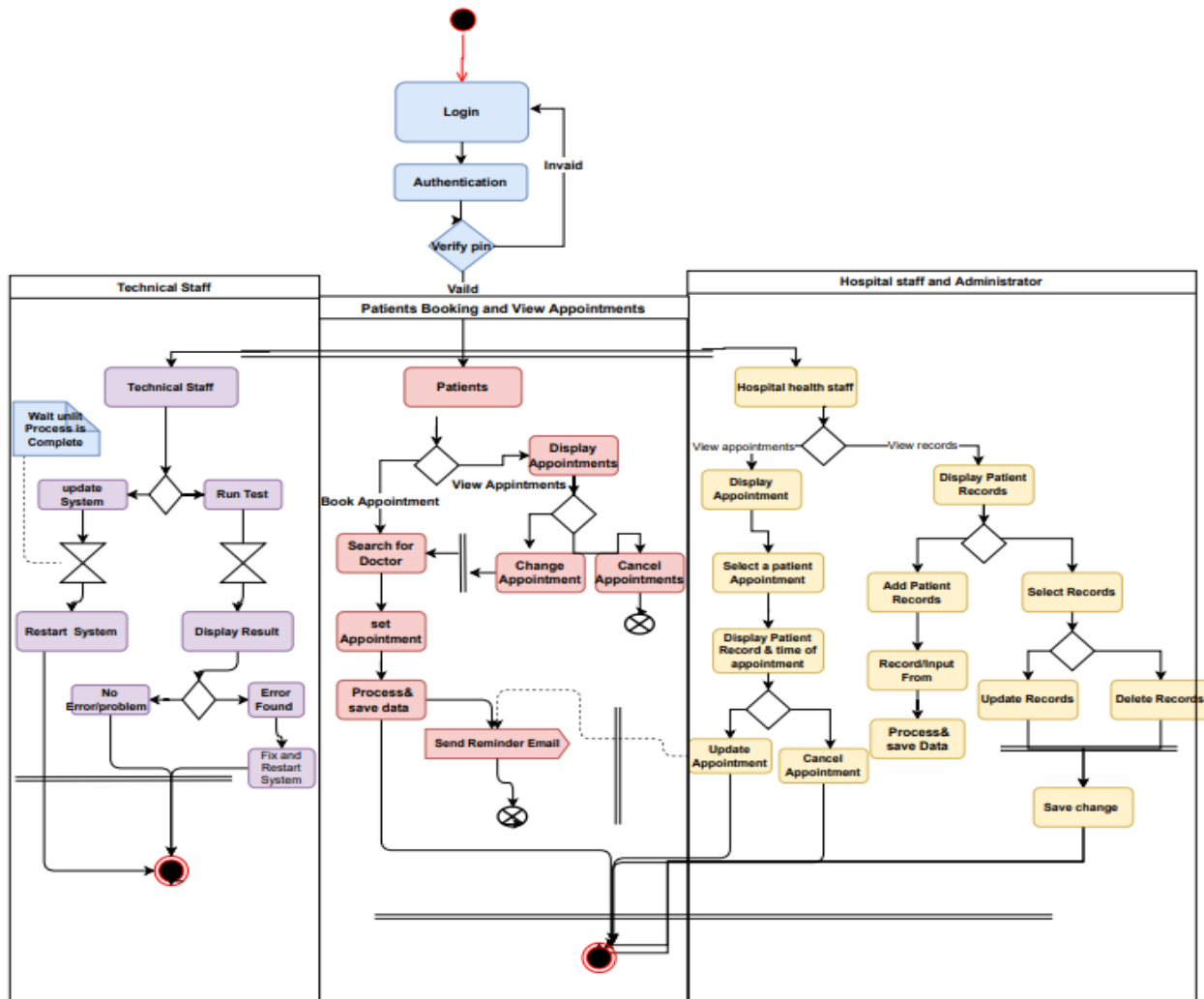
P.M.R.S Class Diagram



Description

The P.M.R.S class diagram below shows the major components of the system which consist of six (6) classes. Each class includes the relevant attributes and/or methods that can operate on that class. There is a medical record and an appointment class. There is also a user super class which capture basic information about each user of the system along with three user subclasses: technical staff, GPHC health staff (inclusive of doctors, receptionists, etc.) and patient which has additional attributes and/or methods of their own. The health staff class interacts with the appointment, patient and medical record classes to perform management of appointments, patient and their associated medical records. The patient class can only interact with the appointment class. This is to allow a patient to book and view appointments in the system as needed.

Activity Diagram



Description

This Activity diagram showcases the workflows of the Patient Medical Records System (P.M.R.S) and actions with support the choices the user made. It shows the users: Technical Staff, Patients, Hospital health staff, and administrator & also highlights what each user is authorized to access, what changes there can make, etc. Each user is color code to make it easy to identify.

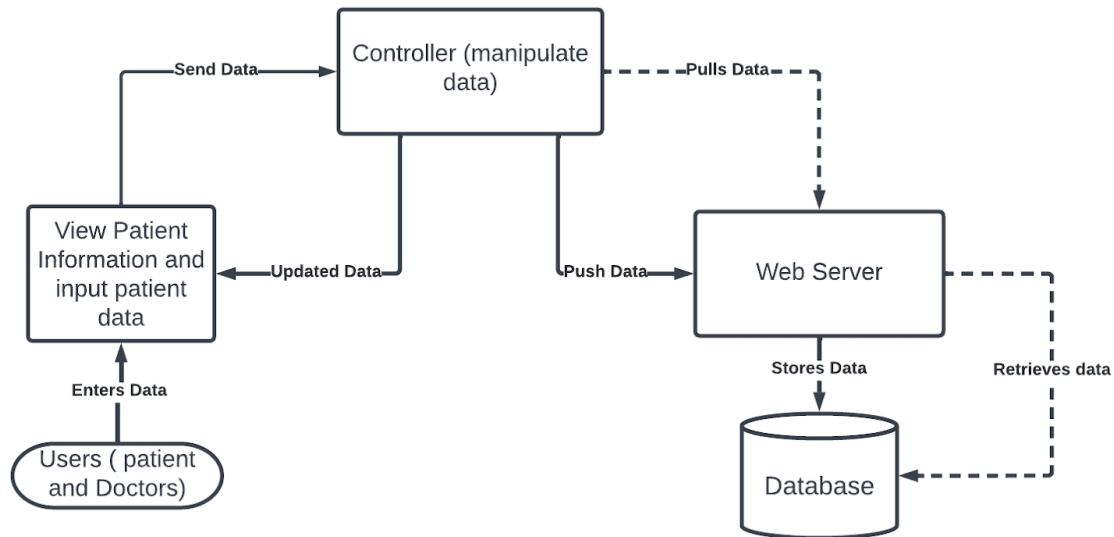
Key:

Technical Staff: Purple

Patients: Red

Hospital health staff and administrator: Yellow

System Architectural design



Description of each component

This architecture shows us the software aspect, which includes the Users, Patient information, input patient data, controller, web server and database in a simple format and each of these formats depends on the others in a phase to phase operations. Simply means that one format/ phase must be finished before moving on to the other.

Users (patients and doctors)

This is where both parties can log into the database to view, edit or add information based on the patient. The user is the patient, more specifically the pregnant woman. She interacts with this system from her end to view her medical status, appointment time, results of her checkups or tests and any new updates given. She views all of this on her user interface which can be a mobile app or personal computer.

Patients Info

This includes all of the patient's medical records to date, appointment times, doctor, current medication(s) being taken, name, address, phone number, and patient ID.

Input patient data

This is where the patient/doctor will input their data such as patient name, address, telephone number, patient identification number, medical records, appointments, current medication/medications, illness and treatments.

Controller (manipulate data)

This is where any deleting, editing and updating of data takes place.

Webserver and Database.

All data uploaded, edited, or accomplished will be recognized on the web server which is then stored in the hospital database.

Scenario

A returning pregnant patient of the GPHC's maternity ward has come in for her appointment just as scheduled. Before arriving however, she checks the app provided to her by the hospital to remind herself of the appointment time. As she enters the ward, she is greeted by the receptionist who warmly welcomes her and receives the patient's unique ID to retrieve the appointment data. When retrieved, the receptionist then confirms the appointment and provides her with further instructions such as directions to her doctor's office. The doctor is also notified of the appointment he has with her from his end of the system, and before she arrives to her doctor's infirmary, he retrieves all necessary medical information via her unique ID to be fully prepared for her session. When she finally arrives, the doctor welcomes her and proceeds to run the necessary tests and physical exams to ensure the unborn child's health. After the session, the doctor then updates her medical status on the admin end of the system, adding information such as the results of the test, medication she should or should not take and the appointment time for her next checkup. All of this data is added to the database for the doctor or patient to view.

Functional requirements explanation

Functional requirements are features integrated into the system that must be accomplished by the service to satisfy the user.

Non Functional requirements explanation

Non-functional requirements simply describe system attributes such as:

- Performance Requirements
- Compatibility
- Reliability and Availability
- Response time
- Usability
- Security

Performance Requirements

As the name states, performance requirements have to do with how the system performs.

Compatibility

The best-operating systems with the latest versions are needed to ensure the best quality results for our patient's safety.

Reliability and Availability

How often the system experiences failures, the time to repair those failures and the user availability are all accounted for in the database. If a system failure does occur, our team of experts organizes solutions immediately to service our patients since their health is our main concern.

Response time

Response time measures the performance of an individual transaction or query. Response time is typically treated as the elapsed time from when a user enters a command or activates a function until the application indicates that the command or function has been completed.

Usability

How easy and convenient it is for a patient to use our system is also very important for their safety because the faster they navigate through our system processes, the faster they get the medical attention they need.

Security

Data security requirements are needed to protect patient data from corruption, loss or unauthorized access that threaten to alter the data. Some security requirements needed to prevent these include:

- Backup
- Encryption
- Authentication
- Physical security
- Access control
- Auditing

(Changes made to this file:

Add title Description of each component

Add more information for User in the System Architectural Design

Improve the System Architectural design diagram)