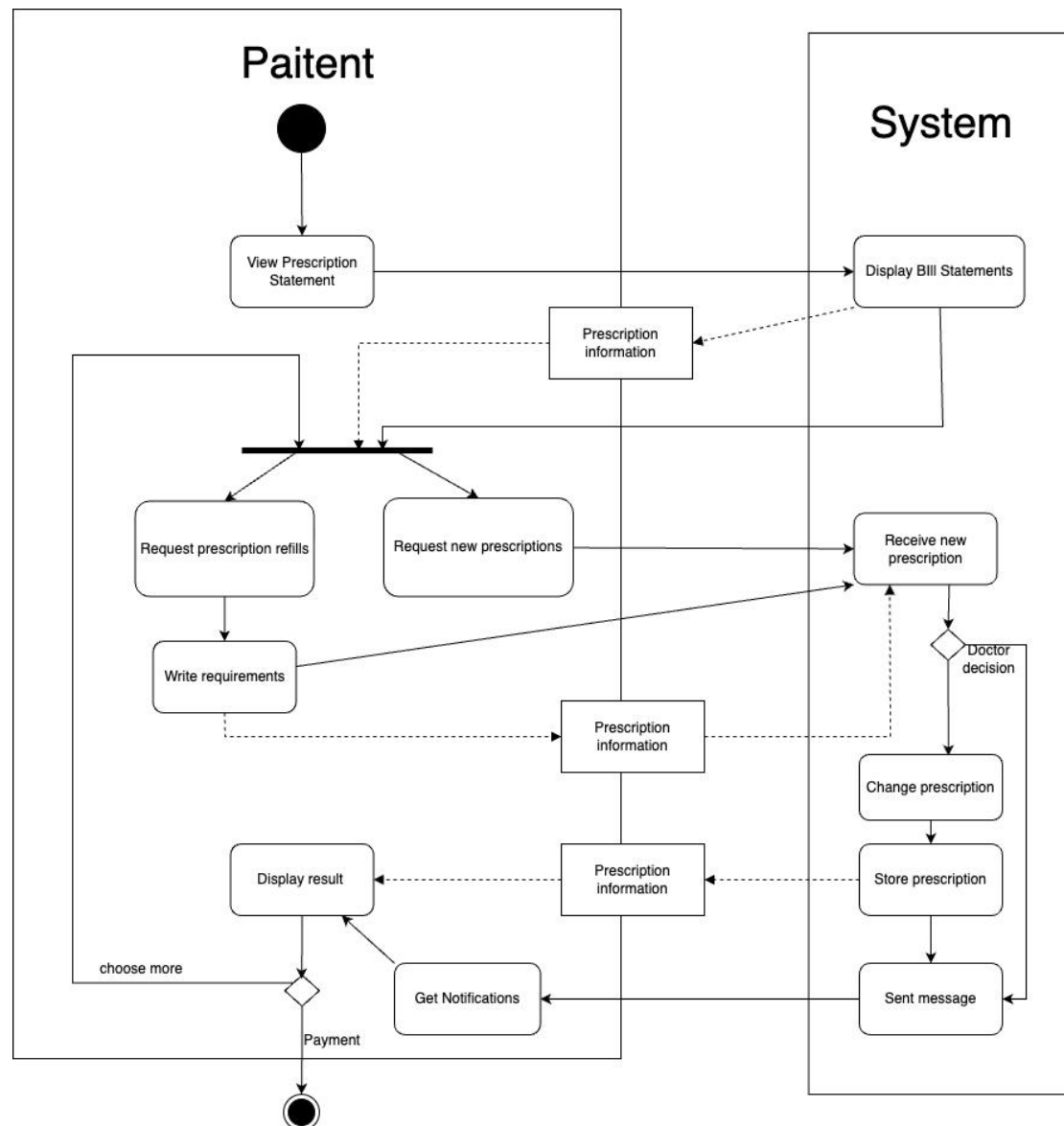
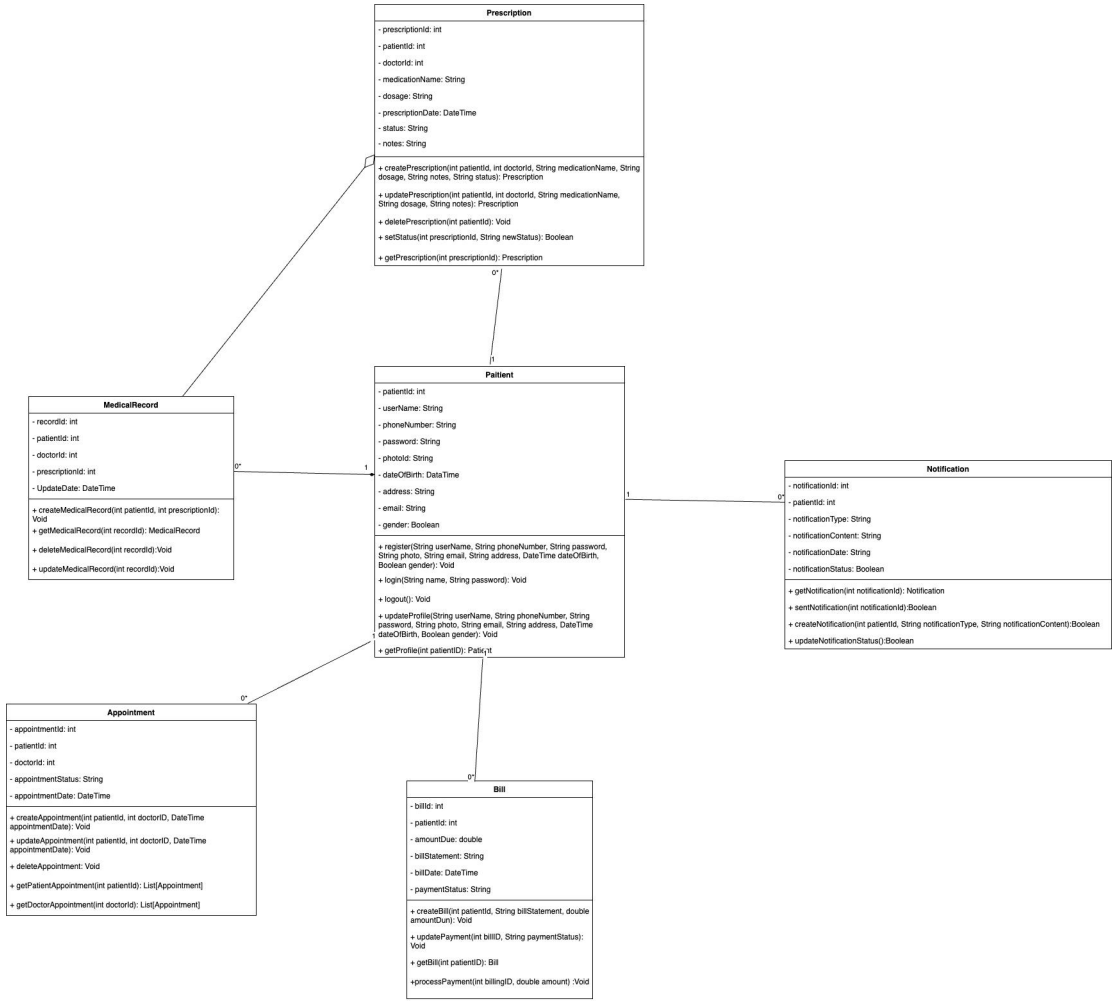


Task 1: Software Modelling and Specification

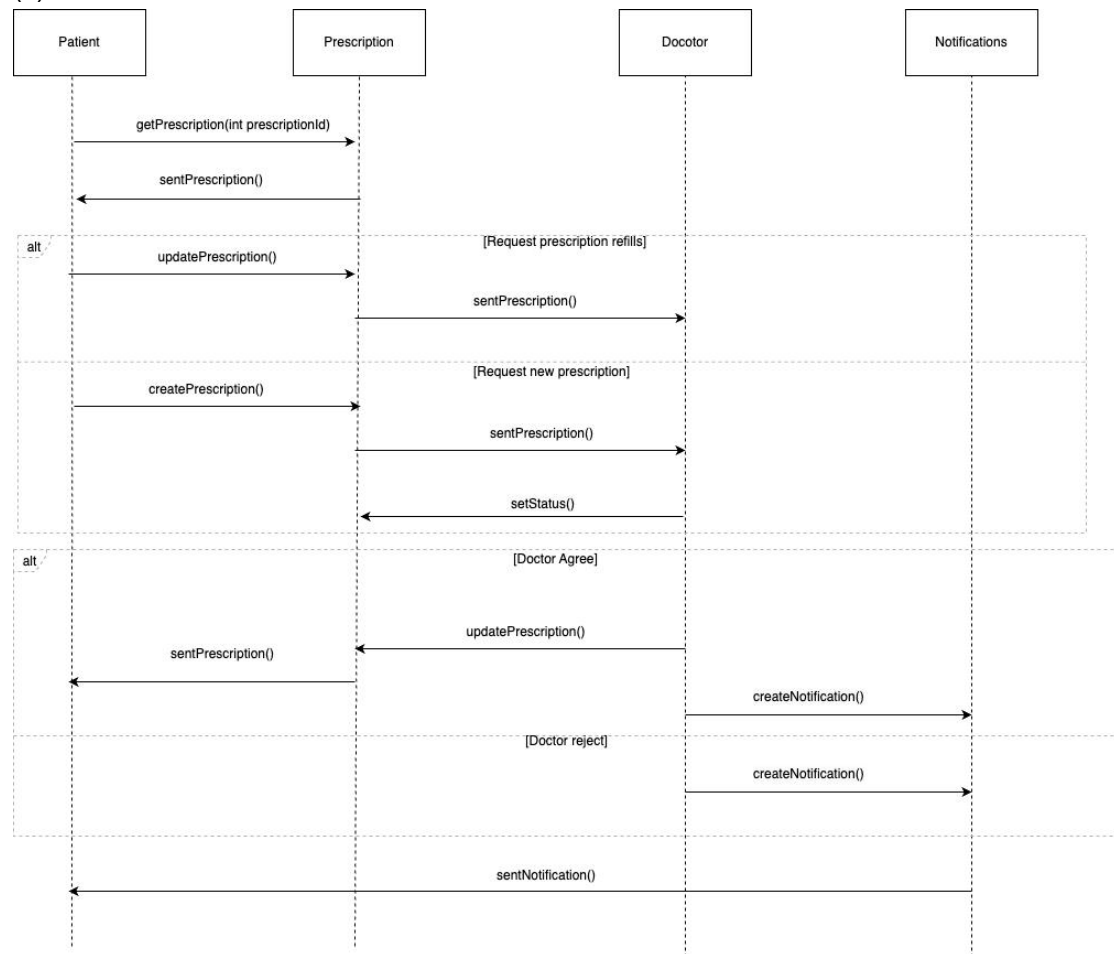
(b) Activity Model



(c) Structural Model

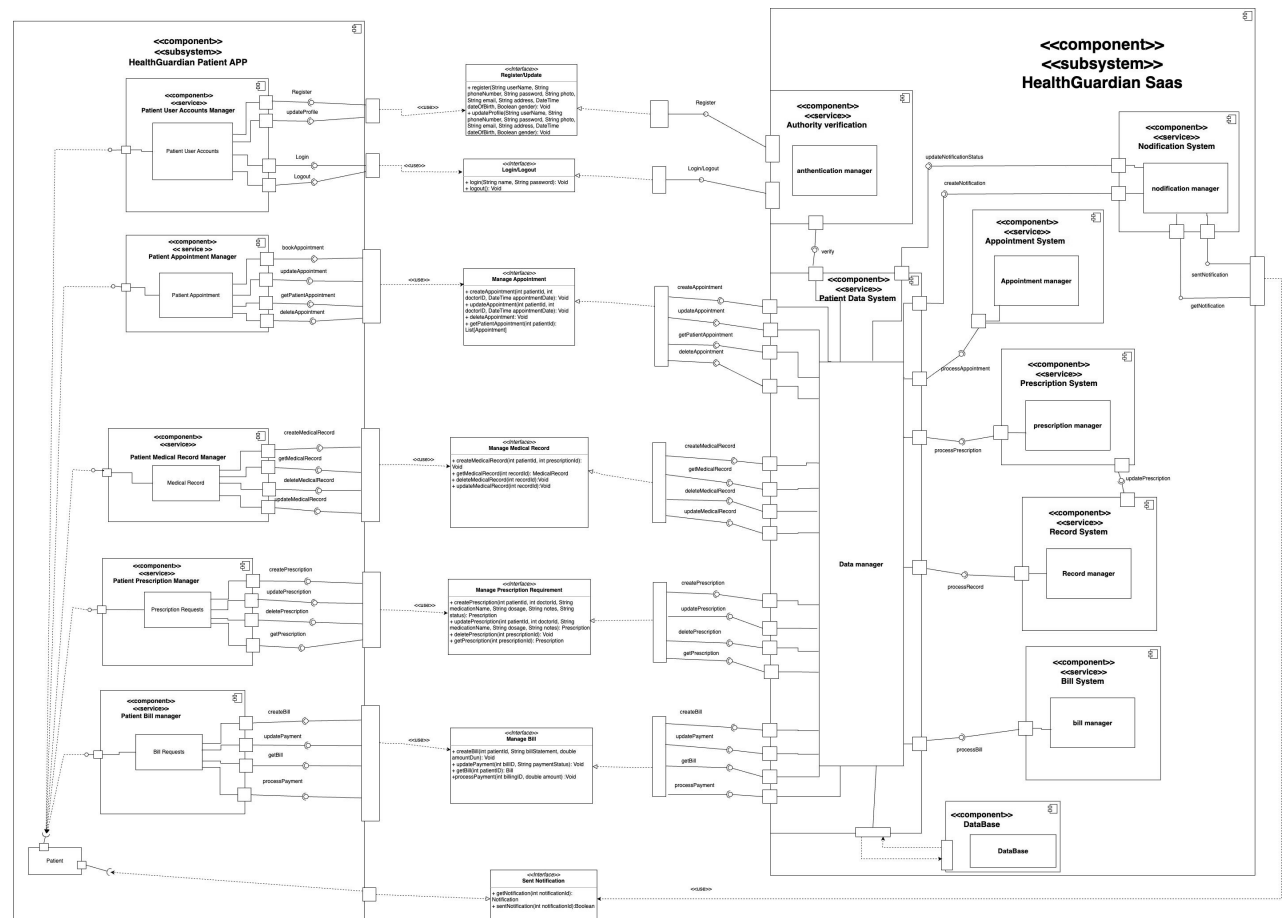


(d) Behaviour Model



Task 2: Software Architectural Design

(b) Architecture of the subsystem



Task 3: Software Testing

(a) . Unit test plan:

The test case interface

<<Interface>> Manage Prescription Requirement	
+ createPrescription(int patientId, int doctorId, String medicationName, String dosage, String notes, String status): Prescription + updatePrescription(int patientId, int doctorId, String medicationName, String dosage, String notes): Prescription + deletePrescription(int prescriptionId): Void + getPrescription(int prescriptionId): Prescription	

Test case:

Test Case	Method and Parameters	Expected output
Prescription Creation Successful	createPrescription(0111, 223, "Amoxicillin", "500mg", "None", "New")	Create prescription by new valid ID
Prescription Creation with empty data	createPrescription(0111, 223, "", "", "None", "New")	Filed to create prescription, error message.
Prescription Creation with Invalid Patient ID	createPrescription(-3, 223, "Amoxicillin", "500mg", "None", "New")	Filed to create prescription, error message.
Prescription Update Successfully	updatePrescription(0111, 223, "Amoxicillin", "300mg", "take one pills one day")	Update prescription by valid ID
Prescription Update failed	updatePrescription(99999999, 223, "Amoxicillin", "300mg", "Non-existing prescription")	Filed to create prescription, error message.
Prescription Deletion Successfully	deletePrescription(0111223)	Deletion confirmation and successful.
Delete Non-existing Prescription	deletePrescription(9999999)	Filed to delete prescription, error message.
Retrieve Existing Prescription	getPrescription(0111223)	Prescription object with ID 0111223
Retrieve Non-existing Prescription	getPrescription(9999999)	Filed to get prescription, error message.

(b) System test plan:

Use case: prescriptionRequests

Scenario: Requesting a New Prescription

Test Progress:

Patient	System
1. Patient requests a new prescription using the app interface.	2. System validates the patient ID and retrieves the associated doctor.
3. Patient submits medication details and notes for the prescription request.	4. System processes the request and notifies the healthcare provider.
5. Patient awaits confirmation of the prescription request.	6. Doctor reviews the request and change prescription in the system.
	7. System logs the transaction and updates the patient's records.
8. Patient receives the prescription details and ID.	

Test data:

Input: patientID = 0111, doctorID = 233, medicationName = "Amoxicillin", dosage = "500mg", notes = "None"

Expected Output: Prescription ID and details

Scenario: Refilling a Prescription

Test Progress:

Patient	System
1. Patient selects an existing prescription and requests a refill.	2. System verifies the prescription's validity and refill eligibility.
	3. System notifies the healthcare provider of the refill request.
4. Patient confirms the refill request.	
5. Patient awaits confirmation of the refill.	6. Provider approves the refill request and updates the prescription status.
	7. System updates the records and logs the refill transaction.
8. Patient receives confirmation of the prescription refill.	

Test Data:

Input: prescriptionID = 0111233

Expected Output: Confirmation of prescription refill