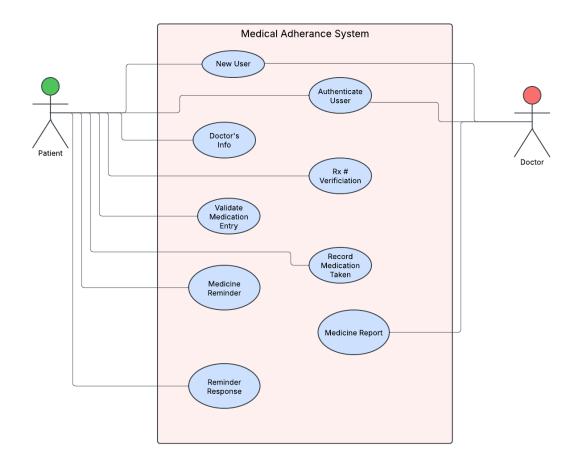
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Medical Adherence System Requirements and Use Cases

Use Case Diagram



1.1 New User

Process:



Initial Assumptions: This is the User's first time logging in

Normal Process:

- User selects the New User option
- User creates and enters a username and password
- Process 1.2 will check if username and password already exist.
 - a. If it does not already exist in the system, the username and password are stored
 - b. If it exists, the user will be notified of it existence and asked to log in
- Confirmation of username and password storage is sent back to the user
- User provides first and last name and date of birth
- First and last name and date of birth is stored
- 7. Confirmation of storage is sent to user

What Can Go Wrong:

Login already exists, in which case the system will notify the user of the existence of a previous account

1.2 Authenticate User / User Log In

Process:

Authenticate Login / User Login

Initial Assumptions: User is returning and has login information

Normal Process:

1. User selects login option

- 2. User enters username and password
- Username and password are used to check if they have a match in the User data store
 - a. If username and password match, then confirmation is sent to user
 - If username and password do not match, then user is notified that username or password is not a match, and asked to try again

What Can Go Wrong:

User can forget their password, in which case user is asked to enter their first, last name, and date of birth

2.1 Doctor's Info

Process:

Doctor's Info

Initial Assumptions: User can provide Doctor's Name

Normal Process:

1. User inputs doctor's information

2. Doctor's information is stored in the

system

What Can Go Wrong: User can forget or misspell the name they

originally entered as their doctor. There could be duplicate doctors with the same first and

last name.

State on Completion: If valid response, user is able to input their

doctor's first and last name. User is also able to find medication based on the

doctor they input.

2.2 Rx Number Verification

Process:

Rx Number Verification

Initial Assumptions:

User has input their Doctor's name, medication time information, and has their Rx number.

Normal Process:

- 1. User selects one of the menu options.
 - a. User adds a new Rx number
 - b. User wants to access medications
 - c. User wants to exit the retrieval
- If 1.a, the user is prompted to enter their medication name, Rx number, and doctor instructions to be stored in the system.

If 1.b, the user is prompted to type the Rx number, if it exists, then it will be retrieved.

What Can Go Wrong: User can forget their Rx number.

State On Completion:

- a. The Rx and medication information is stored.
- The medication name and times to be taken are printed to the user.

3.1 Validate Medication Entry

Process:

Validate Medication Entry

Initial Assumptions:

User is logging the medicine they just took

Normal Process:

- 1. User enters name of the medication taken
- Name of medication is used to check if the medicine has a match in the Medicine data store
 - a. If the name of the medicine has a match, then the confirmation is sent to the user.
 - b. If the name of the medicine does not match then the rejection is sent to the user.

What can go wrong:

User can forget or misspell the name of the

medicine.

State of Completion:

The medication is verified, and the user is given a

confirmation.

3.2 Record Medication Taken

Process:

Recorded Medication Taken

Initial Assumptions:

The user is logging the time the medicine has been taken

Normal Process:

- 1. Users enters the time the medicine has been taken.
- The time has been taken to verify if the user has been taken the medicine at the correct time.
 - a. If the time that is taken matches the correct time, then it is stored as positive in the medication log.
 - b. If the time that is taken doesn't match the correct time, then it is stored as negative in the medication log.

What can go wrong:

User can be just a little bit off of the correct time and

it stores as negative.

State of Completion:

The time verified and is stored in the medication

log.

4.3 / 4.5 Medication Reminder

Process:

Medication Reminder

Initial Assumptions:

The system has received the patient's medication schedule and has a method to contact the patient.

Normal Processes:

- A reminder is generated based on the patient's medication schedule.
- The system chooses the patient's preferred contact method.
- Reminder is sent via text, email, or app notification.
- System logs when the reminder was sent.

What Can Go Wrong:

System could fail sending the notification to due connectivity issues, or incorrect/out of date contact information.

State on Completion:

If successful, the patient receives the notification, if unsuccessful, the system retries, or logs a failure.

4.4 Reminder Response

Process:

Reminder Response

Initial Assumptions:

The patient has received the reminder and the system is actively tracking the patient's response.

Normal Processes:

- The patient responds by confirming whether or not they took the medication.
- System records response in the Medicine Log.
- If the response is "taken", the system updates the log and exits.
- If response is "not taken" the system logs the missed dose and resend the notification after a period of time.

What Can Go Wrong:

The patient forget to respond, the systems fails to receive the response due to technical issues, or the patient gives an invalid response.

State on Completion :

If a valid response is received, the system updates the medicine log. If no response is received the reminder is resent after a period of time.

5.0 Medicine Report

Process:

Medicine Report

Initial Assumptions:

- User (patient or doctor) has been authenticated and has access to the medical adherence system.
- System has data recorded about patient's medication intake.
- Patient's medication history and adherence record are properly stored in the system.

Normal Processes: 1.

- User selects medical report option.
- System retrieves patient's medication intake history.
- System compiles relevant data:
 - a. Medication names, dosages, and schedule
 - Adherence records
 - Logged side effects and/or responses to medication
- System generates a summary report detailing the medication adherence data.
- User is notified when report is ready to review
- 6. User can view, download, or print report as needed
 - If user is a doctor, they may provide recommendations based on the report.

What Can Go Wrong:

- Authentication issues
- System errors in compiling or retrieving data
- Patient may not have access to certain reports
- 4. Data inconsistencies

State on Completion :

Medical report is successfully generated for patient or doctor access to print, review, or download. Doctor is able to provide recommendations. Data is correct and consistent.