



CCSW315

SOFTWARE PROCESS MODEL ELECTRONIC MEDICAL PRESCRIPTION

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Project Definition

In line with Vision 2030, technology will play a pivotal role in the coming years, especially in the healthcare sector, and the Corona pandemic has accelerated the pace of this change.

Prescriptions are the language of dialogue between a doctor and a pharmacist. According to a recent study prepared by the National Institute of the College of Medicine and Physicians in the United States of America, it has shown that illegible handwriting can cause fatal errors, and the study stated that more than 7,000 people die annually in America due to medical errors caused by illegible handwriting. In addition to spelling errors, patients suffer from the inability to find some medicines in pharmacies, or the inability to know the specific doses and some medical details that interest the patient and help him in the treatment phase.

Here arose the need for electronic prescriptions, in a technical framework in which doctors and medical practitioners are allowed to share prescriptions with patients and pharmacies. The importance of the electronic prescription also lies in being an effective means in developing the management style of clinics, hospitals and medical centers.

Purpose of The Project

1. The Problem

In line with Vision 2030, technology will play a pivotal role in the coming years, especially in the healthcare sector. The pharmacist has difficulty understanding the content of the paper prescription. Patients also suffer from not being able to find some medicines in pharmacies, or not being able to know the exact dosages and some medical details. Here arose the need for electronic prescriptions to solve many problems.

2. Findings

- Paper prescription is easy to spoil
- There is no system for keeping records of medications dispensed to the patient
- Difficulty understanding the content of the prescription
- Ease of being falsified or misused.

3. Recommendation or Proposed Solution

It was suggested that this system exists because it contains a lot of benefits including a low rate of medical errors that may occur, maintaining the presence of all medicines in the patient's records so that it is easier for the doctor to treat the patient, saves time and effort for all parties

1.1. Problem definition:

Users of the current paper-based drug dispensing system face several problems, including the reliability of paper prescriptions and the ease of forging them, and the ease of losing and spoiling them is one of the biggest problems facing users of this system, and paper prescriptions are difficult to understand and do not contain adequate information for the beneficiary, and the technical development in the sector It is necessary to convert the paper-based transaction system to electronic, easy and fast to use.

1.2. Scope Objectives of “new system”:

(Wasfaty) is an electronic system that transforms the paper-based drug dispensing system into an electronic system that serves several beneficiaries, including the Ministry of Health, doctors, pharmacists and patients in general, as the system provides an easier, faster and more reliable use in dispensing medicines. What he aspires to by designing an easy-to-use program and development to keep pace with the changes of the times.

What distinguishes the electronic drug dispensing system from paper is that

- Easy and fast to use
- Ease of access
- The reliability of the electronic system is high
- It contains complete information and is easy to read

1. 3The scope of the work

The Current Situation

- Content
The current drug dispensing system, in addition to circulation files and prescriptions, which are difficult to manage and maintain and can be falsified
- Motivation
Converting the drug dispensing system into paper and electronic exchange has many benefits such as the ease of organizing the dispensing of medicines, reducing the long-term reduction, ease of communication between the patient and the doctor, the pharmacist and the hospital, facilitating the sewage process, fewer medical errors due to bad handwriting, and the identity of the prescription holder, reducing the rates of forgery and more.

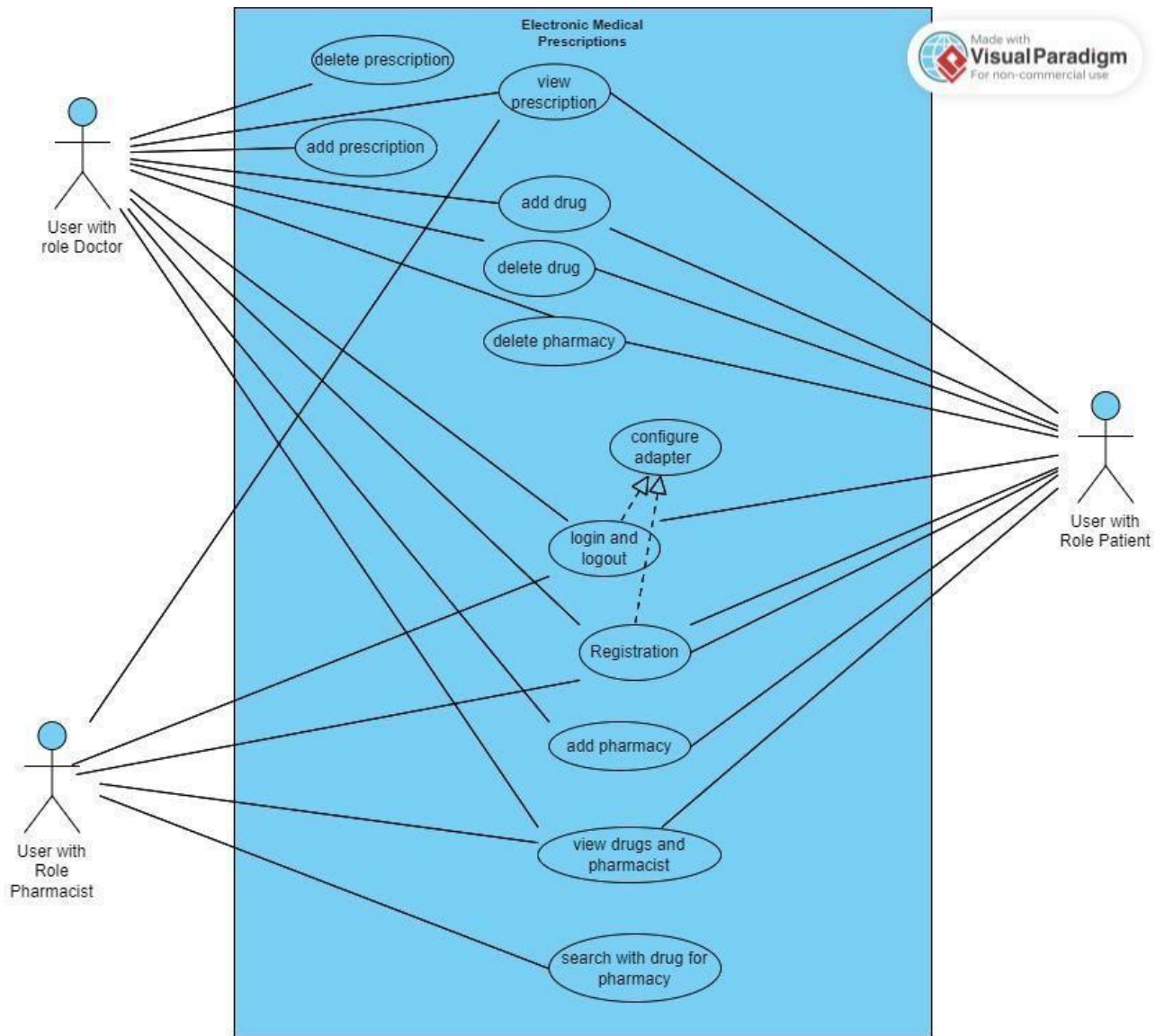
Project's Functional Requirements

ID	Requirement Definition
FR1	Login validity
FR1.1	System checks if the login information of the user is valid, if not then user won't be allowed to enter the system
FR2	Search for prescriptions
FR2.1	The patient can search for his previous medical prescriptions
FR3	Prescription utilization
FR3.1	The system must provide an icon of how to use the medicine written in the Prescription
FR4	Writing prescriptions
FR4.1	The system allows the doctor to write the patient's health data so that the patient can follow up on his condition
FR5	Medicines refill requests
FR5.1	The system allows patient to request a medicines refill
FR6	Search for medicines availability
FR6.1	The system shall allow the patient to search for the availability of the medicines in the Pharmacy
FR7	Prescriptions accession
FR7.1	The system shall allow pharmacy and doctor to insert and access previous prescriptions of the patient
FR8	Prescriptions receiving method
FR8.1	The system allows the patient to choose the prescriptions receiving method
FR9	Edit medicines information
FR9.1	The system shall allow the pharmacy to enter, delete, sort and price medicines
FR10	File sharing
FR10.1	The system shall allow users to share their own files

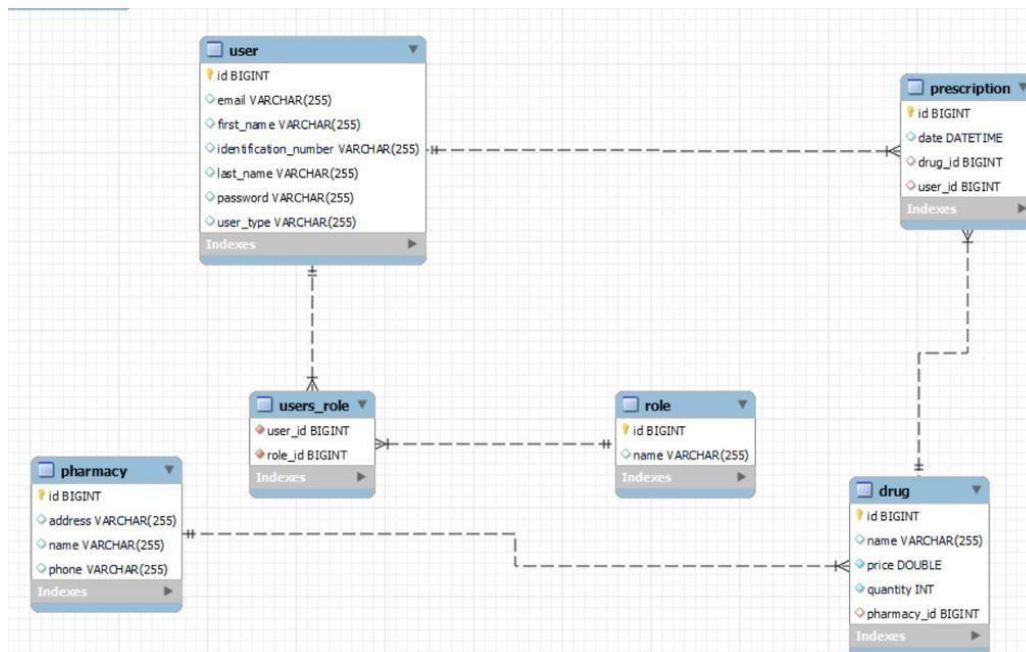
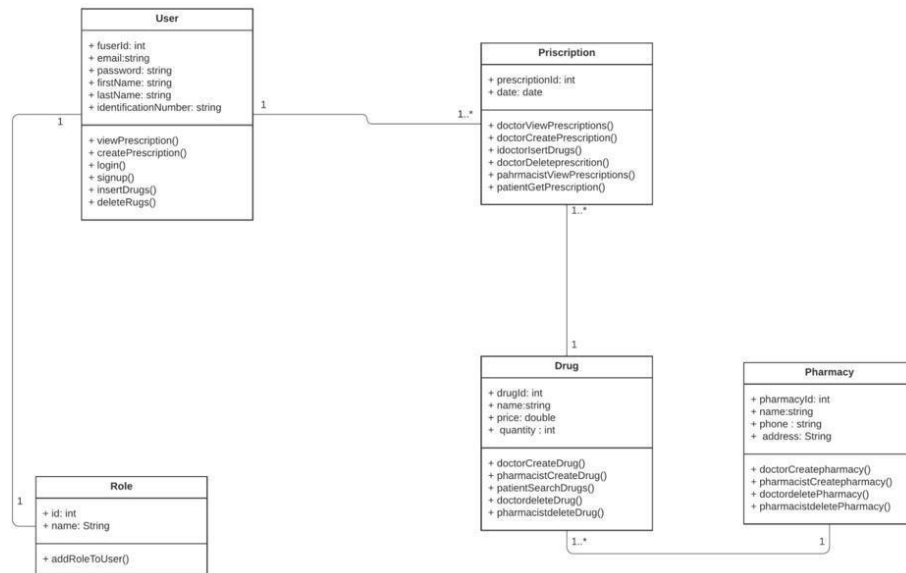
Project's Non-Functional Requirements

ID	Requirement Definition
NF1	Efficiency requirements
NF1.1	The system shall be able Medicines sales to customers are quick and easy
NF2	Reliability requirements
NF2.1	The system shall be able offers patients, doctors, and pharmacies a trustworthy and reliable environment. Without any mistakes, all prescriptions should reach the pharmacy.
NF3	Availability requirement
NF3.1	This system shall be able will be available 24/7
NF4	Usability requirements
NF4.1	This system must be able is designed to be easy to use
NF5	Login
NF5.1	The system shall allow to all actors to gain the system throw supposed user name and password.
NF6	Database security
NF6.1	The user shouldn't get to the board and data set, and don't peruse and compose the data.
NF7	Implementation requirements
NF7.1	The system shall be able Implementation of the system using Html, css and Javascript in front end with PHP.
NF8	Back end
NF8.1	The system must be using the back end for database connectivity and developing it by using My SQL
NF9	Interface requirements
NF9.1	The system shall serve up to 5000 users at the same time
NF10	Receive activity
NF10.1	The patient must receive prescription within a minute of sending it, when the doctor attaches the prescription

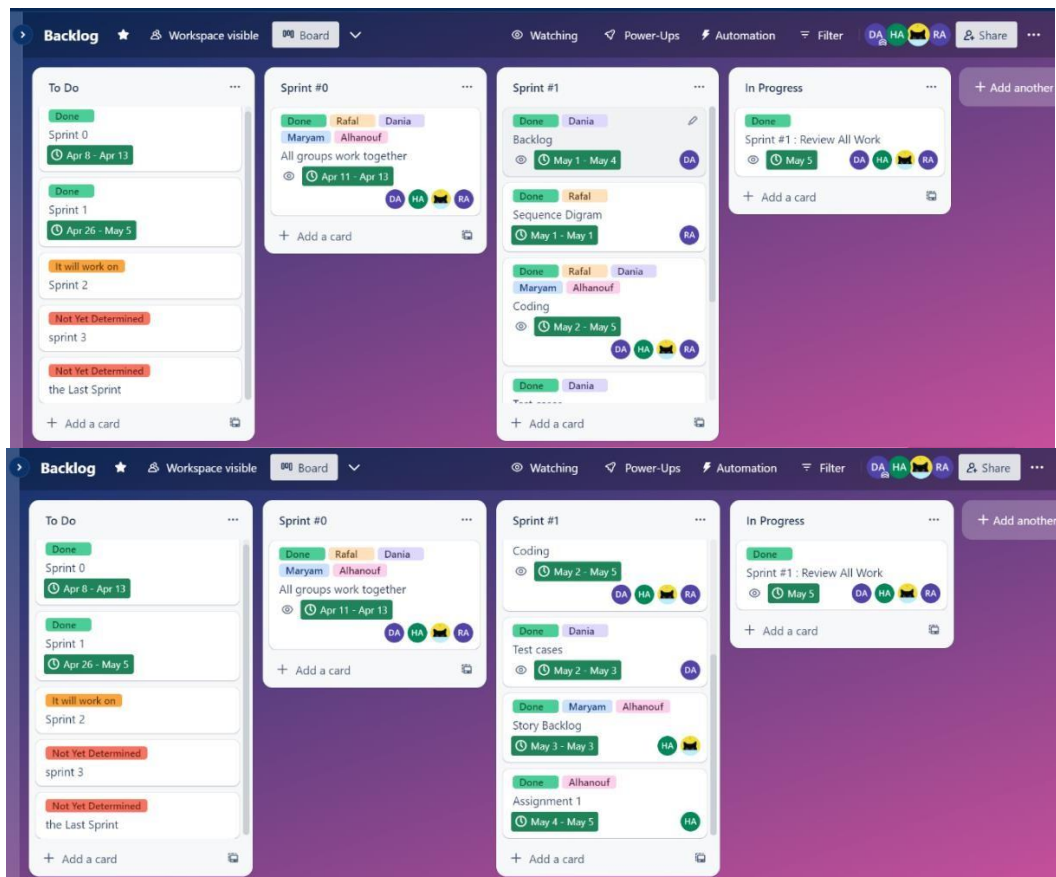
Use Case Diagram:



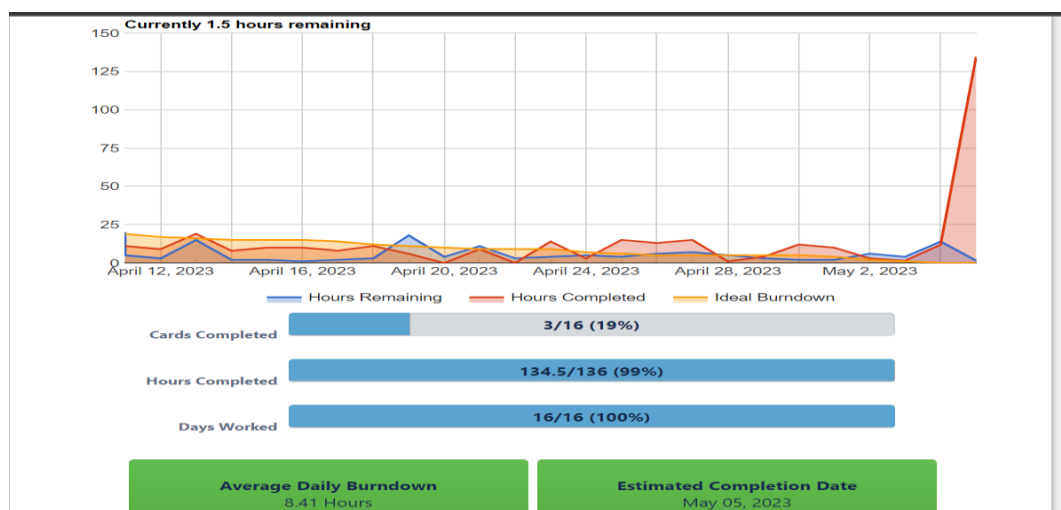
Class Diagram:



SPRINT1



Burndown Chart



Component Name: Login validity

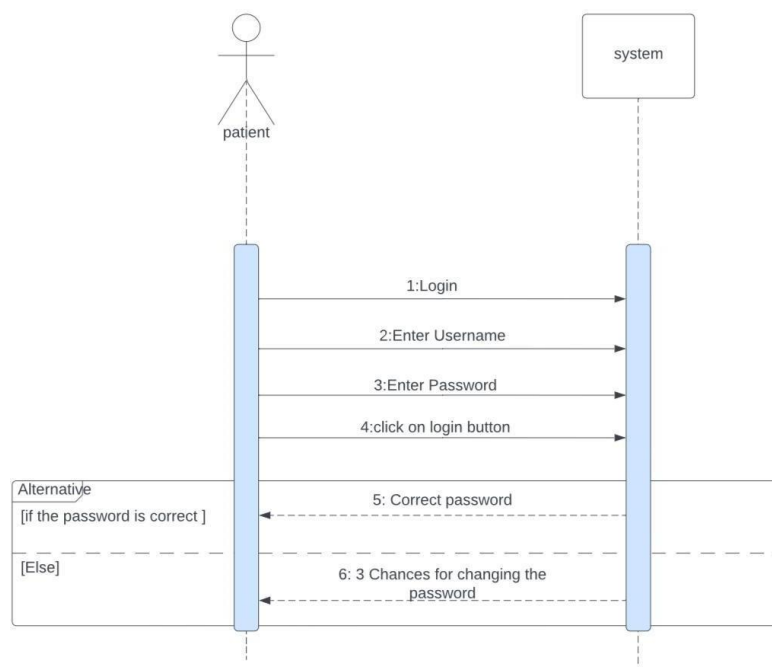
Story Name: Login validity

Story Sequence: 001

Story Short Description: The process of logging in to the system with the ID number and password.

Story Long Description: The process of logging in to the system for the doctor, patient, pharmacist, and whoever has access using the ID number and password.

Sequence Diagram :



Story Backlog :

Component name: User Registration

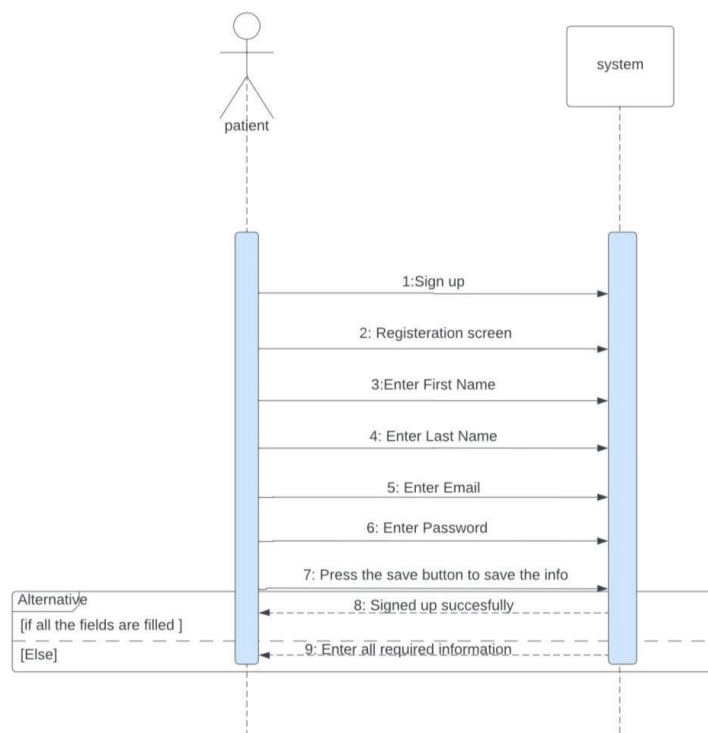
Story name: Sign up for an account

Story sequence: 1

Story short description: As a new user, I want to be able to sign up for an account so that I can access the electronic medical prescription system.

Story long description: A user should be able to access the registration page and enter their personal details, such as their full name, email address, password, and contact information. The system should validate the user's information then the system should create a user profile.

Sequence Diagram :



Test Case Name: [Sprint 1 – Registration]

Test Case Id: [Electronic Medical
Prescriptions – Registration]

Test Case No.	Test Case Description	Expected Results	Outcome (Pass / Fail / Other (Comments))
FR 2	The user selects the Sign up button on the main screen	Redirect the user to the registration page	Pass
FR 2.2	The user leaves all fields blank and presses the SIGN UP button.	A message appears telling the user to enter their first name	Fail
FR 2.2	User enters First Name on Registration screen and click SIGN UP button.	A message appears telling the user to enter their last name	Fail
FR 2.2	User enters First Name and Last Name and click SIGN UP button.	A message appears telling the user to enter their email	Fail
FR 2.2	User enters First Name, Last Name, Email click SIGN UP button.	A message appears telling the user to enter their password	Fail
FR 2.2	User enters First Name, Last Name, Email and Password and click SIGN UP button.	Display a message to the user stating "Registered successfully". The user will be taken to the login screen.	Pass

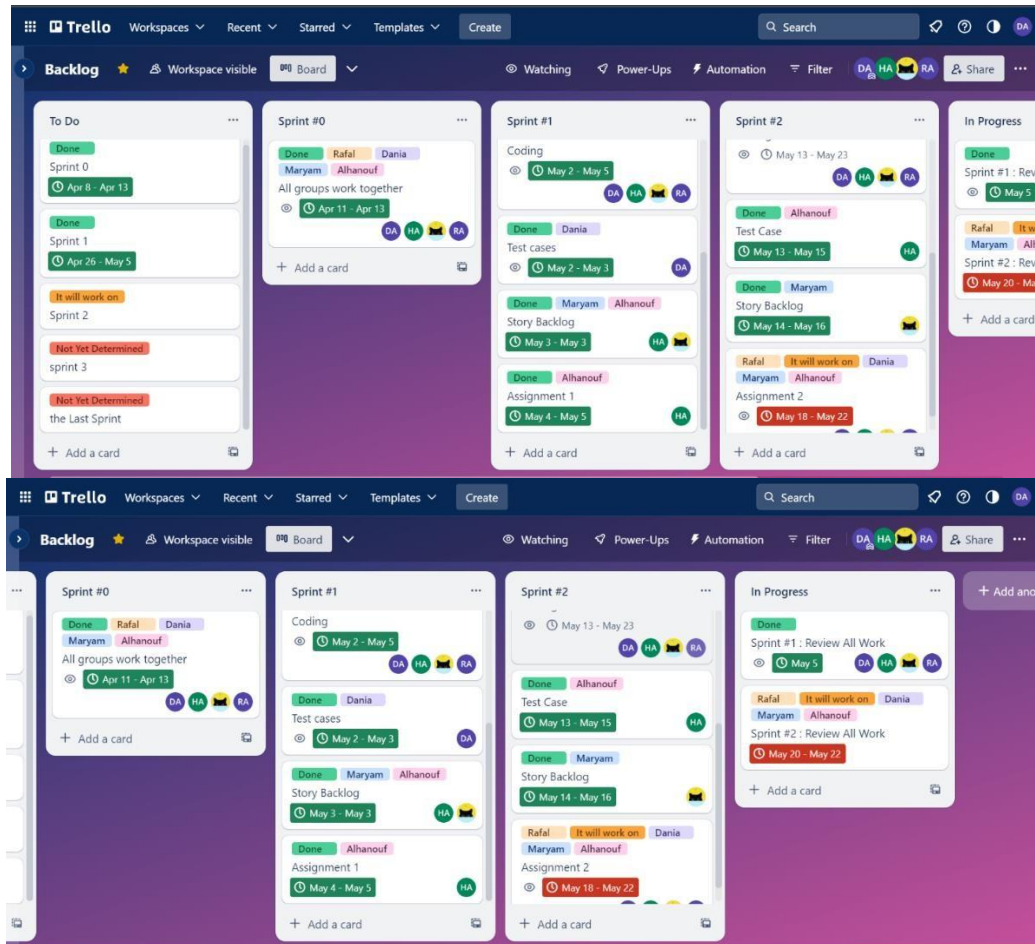
Test Case Name: [Sprint 1 – Login]

Test Case Id: [Electronic Medical Prescriptions– Login]

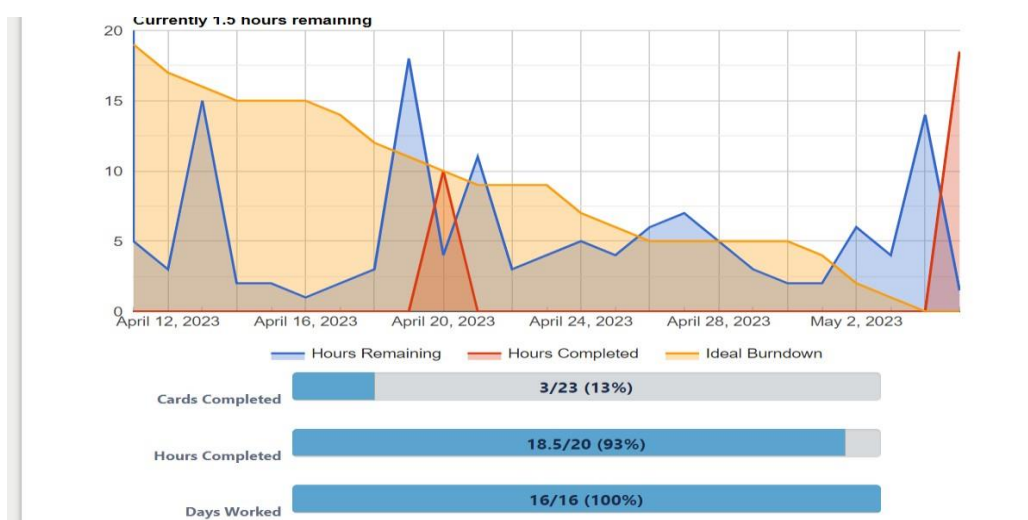
Test CaseNo.	Test Case Description	Expected Results	Outcome (Pass/Fail/Other (Comments))
FR 1	The user selects the login field	A message appears stating that a correct email and password mustbe entered	Pass
FR 1.1	User enters an invalid email.	A message appears to the user stating that you must enter a validemail	Fail
FR 1.1	User enters a valid email andinvalid password.	A message will appear to the userstating that the password was typed incorrectly and must be entered correctly	Fail
FR 1.1	User enters invalid email and anvalid password.	A message will appear to the userstating that the email was writtenincorrectly and must be entered correctly	Fail
FR 1.1	User enters a valid username anda valid password.	User should be taken to Homescreen.	Pass

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Backlog (Trello) SPRINT2



Burndown Chart



Story Backlog:

Component Name : Search for prescriptions

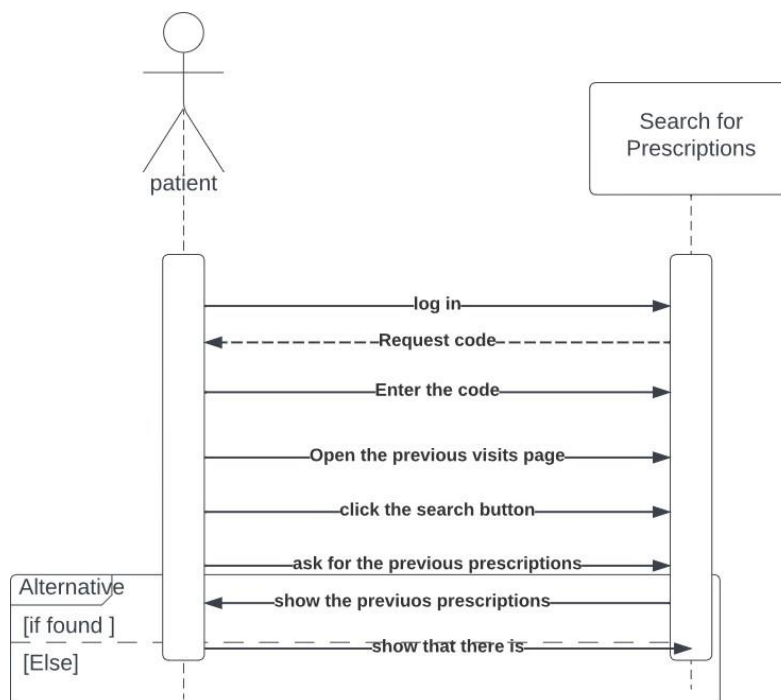
Story Name : Search for prescription

Story sequence:003

Story short description: The patient can search for his previous medical prescription.

Story long description: The patient can search for the medical prescription by the name of medicine, In this case, he can see all previous prescriptions and medications.

Sequence Diagram :



Story Backlog:

Component Name : add prescription

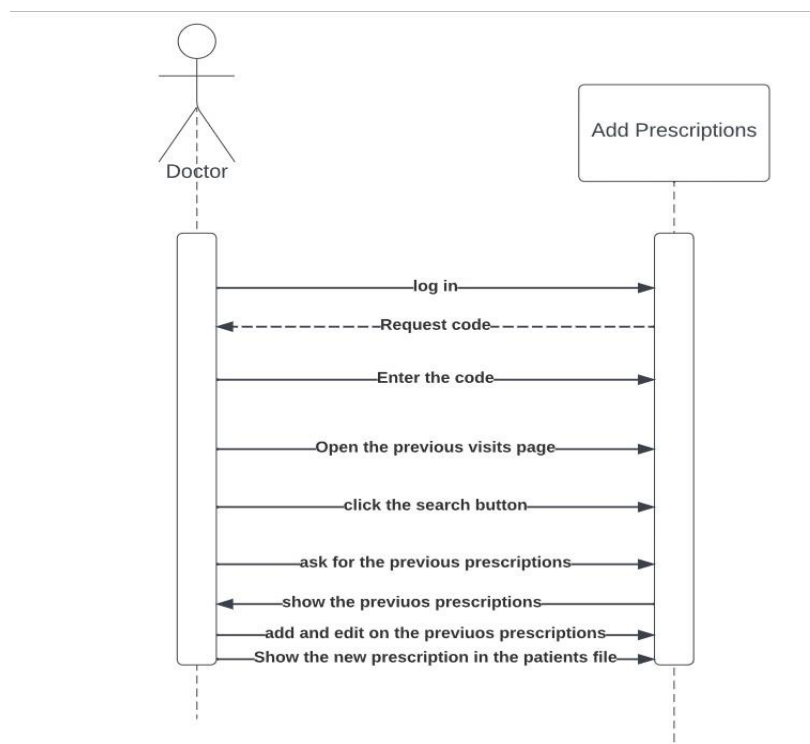
Story Name : add prescriptions

Story sequence:004

Story short description: The doctor can write the prescription for each patient by the patient ID number

Story long description: The doctor can add to each patient a prescription that includes the medication, the number of doses, and the date and day of the prescription. The doctor, pharmacist, and patient can refer to the prescription

Sequence Diagram :

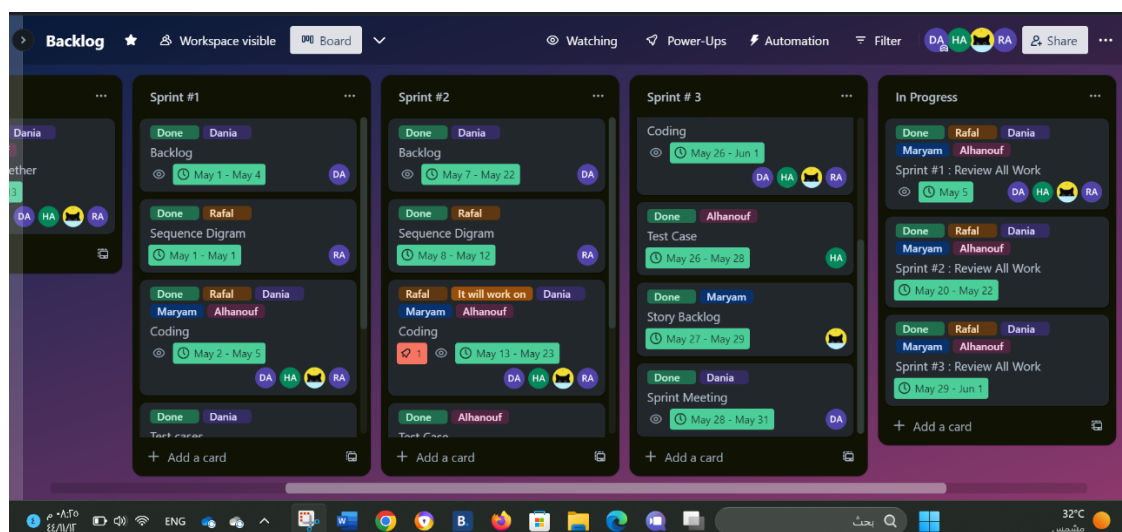
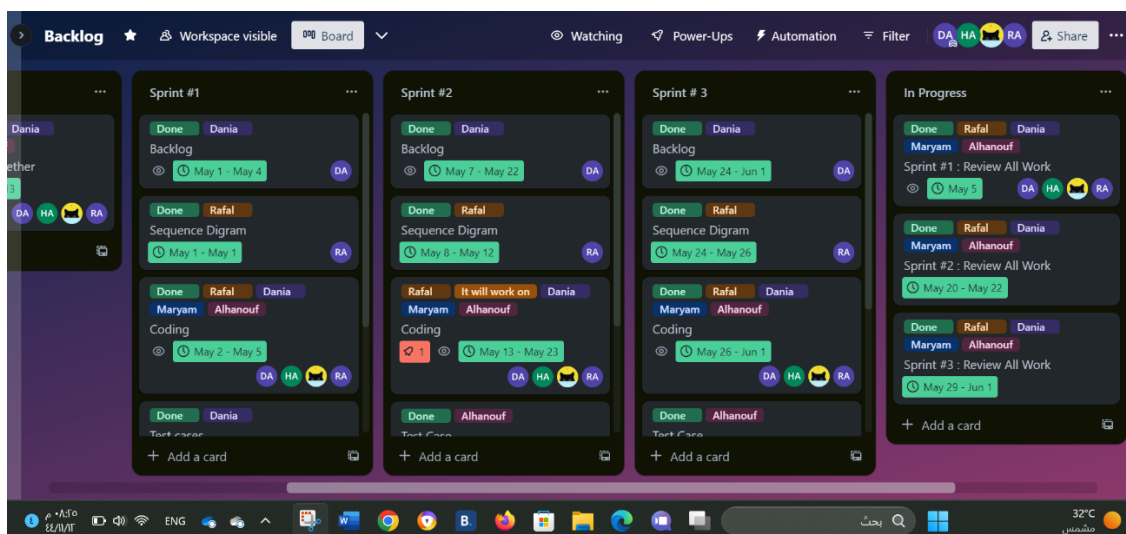
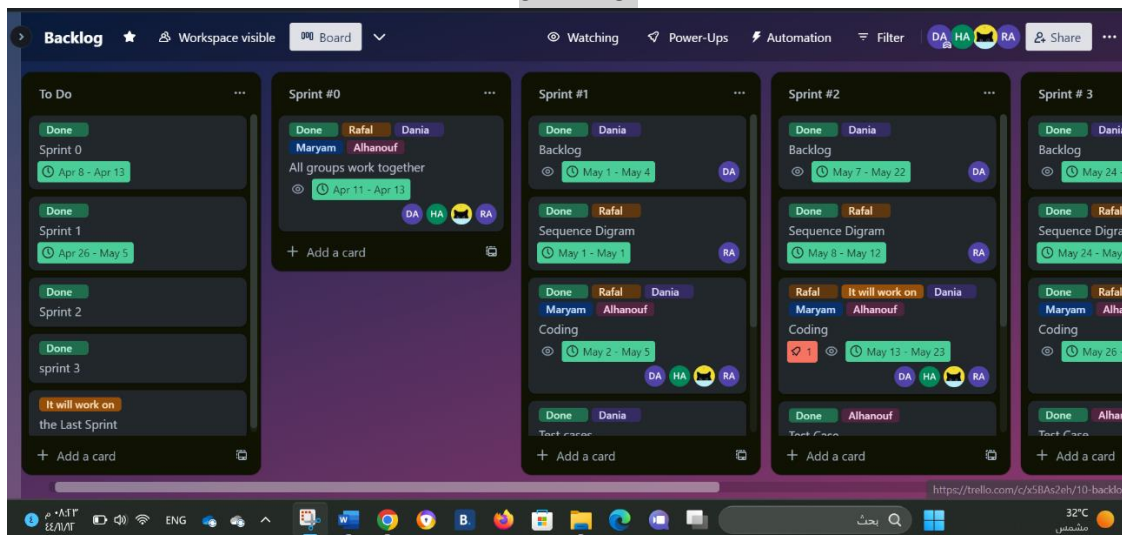


Test Case ID	Test Case#	Test Title	Test Steps	Test Data	Expected Result	Actual Result	Status
FR2.1	To verify that a user can search for prescriptions by entering a patient name in the search field	Search for prescription by patient name	1. Login to the system 2. Navigate to the prescription search page 3. Enter the patient name in the search field 4. Click on the search button	Valid patient name	The system should display a list of prescriptions that match the patient name entered in the search field. The list of prescriptions should include the patient name, prescription details, and prescribing doctor information	Serach done successfully	pass
FR2.1	To verify that a user can search for prescriptions by entering a patient name in the search field	Search for prescription by patient name	1. Login to the system 2. Navigate to the prescription search page 3. Enter the patient name in the search field 4. Click on the search button	Valid patient name	The system should display a message if no prescription matches the patient name entered in the search field	Serach done successfully	pass
FR2.1	To verify that a user can search for prescriptions by entering a patient name in the search field	Search for prescription by patient name	1. Login to the system 2. Navigate to the prescription search page 3. Enter the patient name in the search field 4. Click on the search button	Invalid patient name	The system should display a error message if theis no matches to the patint name	Error : please enter your name correctly	Fail

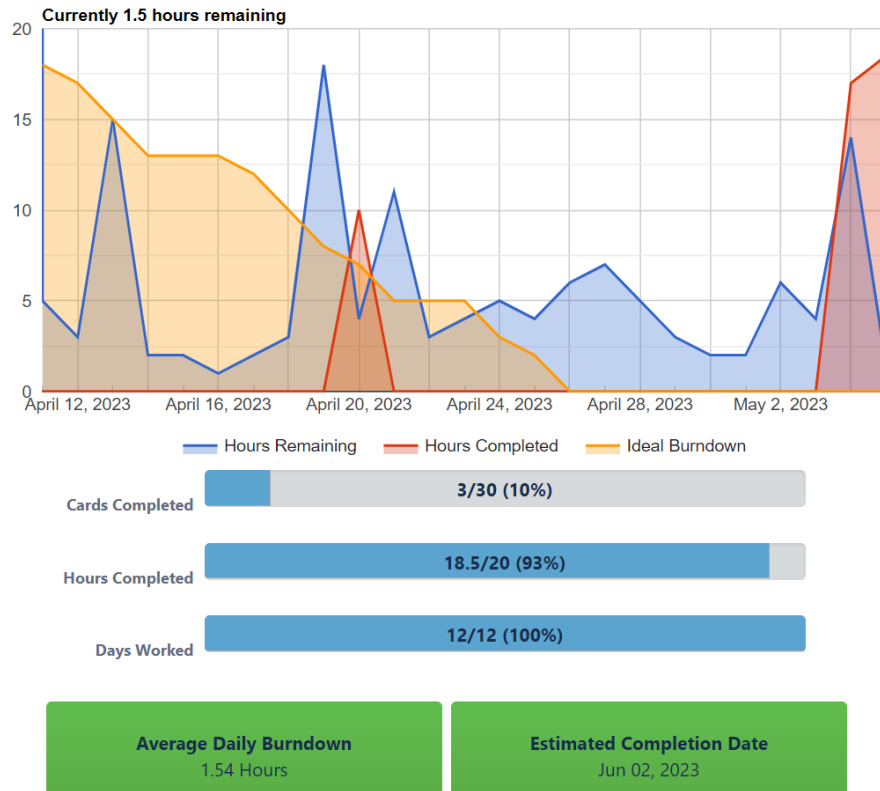
Test Case ID	Test Case#	Test Title	Test Steps	Test Data	Expected Results	Actual Result	Status
FR7.1	to verify that the doctor is able to add and view previous prescriptions in the Electronic Medical Prescription system	add and view previous prescriptions	1. application using doctor credentials 2. Navigate to the patient's record 3. Click 'Add prescription' button to add a new prescription 4. Fill in the prescription details (name, dosage, route, frequency, duration, instructions) 5. Save the prescription by clicking on the "Save" button 6. Navigate to the "Previous Prescriptions"	1- Doctor login credentials 2- Patient record with a previous prescription 3- Prescription details	the doctor has the ability to add a new prescription and view previous prescriptions of the patient.	Sueccsfully add and view previous prescriptions	pass
FR7.1	to verify that the doctor is able to add and view previous prescriptions in the Electronic Medical Prescription system	add and view previous prescriptions	1. Log in to the system as a doctor. 2. Attempt to add a new prescription 3. Verify that the system displays an error message and does not allow the prescription to be added. 4. Attempt to view a previous prescription with a known failed outcome. 5. Verify that the prescription is not	1- Doctor login credentials 2- Patient record with a previous prescription 3- Prescription details	1-The system should display an error message indicating the prescription could not be added, 2- The system should not display the prescription and the system should display an error message indicating the prescription cannot be viewed	the system behaves according to the expected results	Fail

Backlog (Trello)

SPRINT3:



Burndown Chart



Story Backlog:

Component Name: View prescription

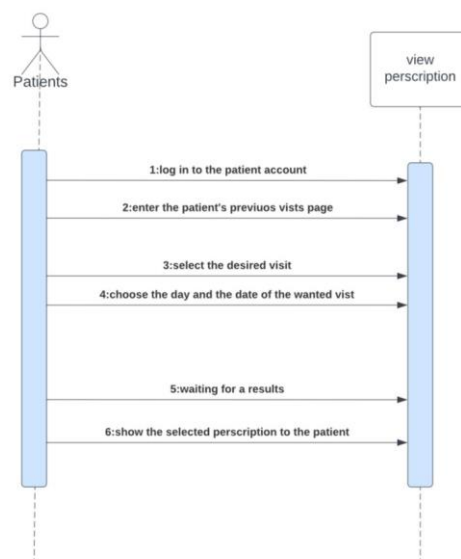
Story Name: View drugs

Story Sequence: 005

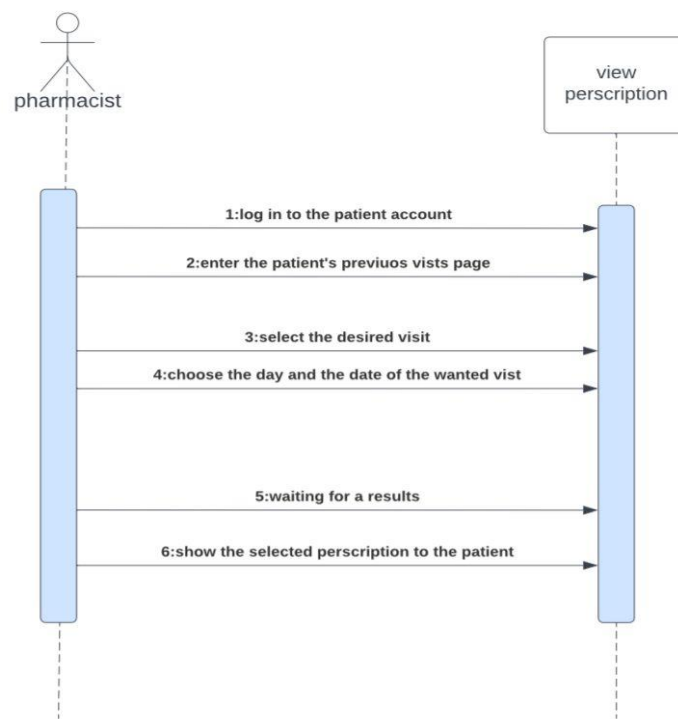
Story Short Description: The process that makes the doctor, pharmacist and patient see the medicines that are in the prescription

Story Long Description: The process that makes the doctor, pharmacist and patient see the medicines that are in the prescription but the doctor and pharmacist can modify it, the patient cannot.

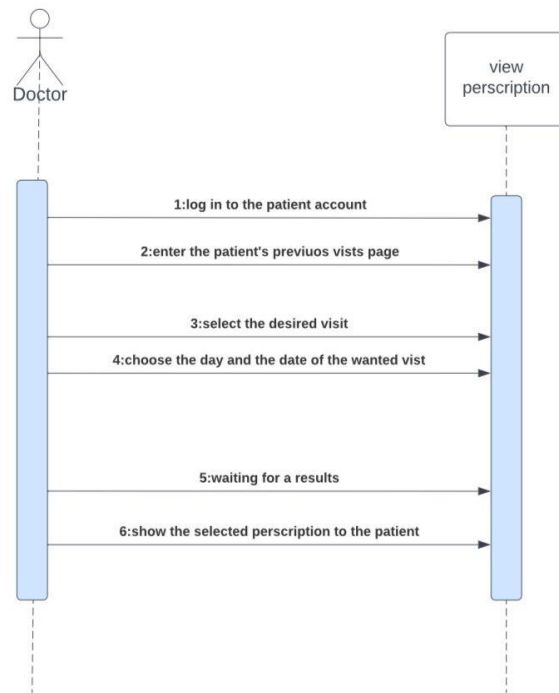
Sequence Diagram :



Sequence Diagram :



Sequence Diagram :



Sprint Meeting(s)

Project Name: Electronic Medical Prescriptions

Project Members: Dania Aljedani – Rafal Amir – Maryem Shami – Alhanouf Alsolami

Sprint #2,1 Stand up Meeting - [DATE][Sprint 2,1 meeting]

Sprint Duration: 3 week

Scrum Master: Dania

Client: Doctor , Pharmacist , Patient

Pair Programmers: Maryem Shami – Alhanouf Alsolami

Stories: [List all stories for that sprint below]

Component Name	Story Sequence Number	Use Cases (e.g., functionalities)
Login validity	001	The process of logging in to the system for the doctor, patient, pharmacist, and whoever has access using the ID number and password.
Sign up for an account	002	A user should be able to access the registration page and enter their personal details, such as their full name, email address, password, and contact information. The system should validate the user's information then the system should create a user profile.
Search for prescriptions	003	The patient can search for the medical prescription by the name of medicine, In this case, he can see all previous prescriptions and medications.
Add prescription	004	The doctor can add to each patient a prescription that includes the medication, the number of doses, and the date and day of the prescription. The

		doctor, pharmacist, and patient can refer to the prescription
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Follow-up meeting questions: [Rafal]:

1. What has been completed since the last meeting?
2. What are you going to be working on next?
3. Do you have any issues/impediments?

Scrum's Master comments based on the above questions:

Q1 : We added some modifications to the graphics, and we also added the search feature for the prescription in the name of the medicine, and in this case he can view all previous prescriptions and medicines

Q2: Before the next meeting, we want to add the feature of seeing the prescription by the doctor, pharmacist, and patient

Q3 : We're having some issues executing our code

Sprint #3 Test Cases

TEST CASE

Test Case Name: [Sprint 3 –view prescriptions]

Test Case Id: [Electronic Medical Prescriptions–view prescriptions]

Test Case ID	Test Case#	Test Title	Test Steps	Result	Status
FR7.1	To verify that a patint can view the prescriptions	View prescription by patient	Step 1: The patient logs in to the system using their credentials. Step 2: The patient selects the "View Drugs" option from the main menu. Step 3: The system displays a list of all the drugs prescribed to the patient, along with their dosage, frequency and any special instructions	View done successfully	pass
FR7.1	To verify that a patint can view the prescriptions	View prescription by patient	Step 1: The patient logs in to the system using their credentials. Step 2: The patient selects the "View Drugs" option from the main menu. Step 3: The system displays an error message stating that there was an issue retrieving the patient's prescription information	The patient is not able to view their prescription details due to a system error or technical issue.	fail

FR7.1	To verify that a doctor can view the prescriptions	View prescription by doctor	Step 1: The doctor logs in to the system using their credentials. Step 2: The doctor selects the "View Drugs" option from the main menu. Step 3: The system displays a list of all the drugs prescribed to their patients, along with their dosage, frequency and any special instructions.	The doctor is able to view the list of drugs prescribed to their patients with all the relevant details.	pass
FR7.1	To verify that a doctor can view the prescriptions	View prescription by doctor	Step 1: The doctor logs in to the system using their credentials. Step 2: The doctor selects the "View Drugs" option from the main menu. Step 3: The system displays an error message stating that there was an issue retrieving the patient's prescription information	The docotr is not able to view their prescription details due to a system error or technical issue.	fail

FR7.1	To verify that a pharmacist can view the prescriptions	View prescription by pharmacist	<p>Step 1: The pharmacist logs in to the system using their credentials.</p> <p>Step 2: The pharmacist selects the "View Drugs" option from the main menu.</p> <p>Step 3: The system displays a list of all the drugs prescribed to patients, along with their dosage, frequency and any special instructions</p>	The pharmacist is able to view the list of drugs prescribed to patients with all the relevant details	pass
FR7.1	To verify that a pharmacist can view the prescriptions	View prescription by pharmacist	<p>Step 1: The pharmacist logs in to the system using their credentials.</p> <p>Step 2: The pharmacist selects the "View Drugs" option from the main menu.</p> <p>Step 3: The system displays an error message stating that there was an issue retrieving the patient's prescription information</p>	The pharmacist is not able to view their prescription details due to a system error or technical issue.	fail