Report 1 Part 2

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Systems Implementation

Functional Requirement Specification

Stakeholders:

- Patients – Patients, Families

    - Goal – To access their medical records, and review provider instructions, notes, diagnoses, prescriptions, and treatment recommendations.

- Providers - Doctors, Nurses, Medical staff

    - Goal – To access patient records, appointment data, medical histories, diagnoses, prescription, and record or report any information related to the patients needs.

- Administrative Personnel - Management, IT

    - To manage the system, maintain the system, and access provider and patient information to complete tasks.

- Clerks – Receptionists, Billing Specialists, Office Staff

- Investors – Those with a financial stake in the medical provider facilities

   - Goal – To ensure the system is financially beneficial.

Actors & Goals

- Patients – The patient's goal is to access their current records, and medical history data, to view Provider diagnoses, prescriptions, appointment data, and labs.

- Providers – The providers include Doctors, Nurses, and other medical support staff. Their goals are to provide medical care to the patients and easily record each diagnosis, prescription, patient notes, and any related appointment or medical data.

- Administration – The administration, and Informaticists and IT staff that manage and maintain the system.

- Clerks - Includes those that work with the system in a business-related sense. This includes those who need to review provider and patient data. Such as billing specialists that need to access patient data, receptionists that create and edit appointments.

Use Cases

- User based Login System (Patients, Providers, Administrators)

    - The Login system should require a username and password, based on the identity of the user and whether they're a patient, provider or administrator should alter what version of the EMR they have access to.

- View patient records

- o   The view patient records portal should be accessible by each kind of user. The patient should only be able to view their records such as medical history, prescriptions, charts, labs, diagnoses, and treatment recommendations.

- Add/Remove/Edit Appointment Data

  - o   Appointment data should be editable by providers, patients and administrators. Though patients should only be able to edit their own appointment data. Providers, and administrators should be able to create new appointments and edit any existing appointments. They should be able to add times and dates of when a patient will appear in person in the practice.

- Add/Remove/Edit Patient Data

  - o   Patients, providers, and administrators should be able to view patient data, but only providers and administrators should be able to amend patient data. Patients should only be able to view their own data. Amending patient data allows providers to record related information from patient visits.

- Add/Remove/Edit Provider Data

  - o   Provider data should be viewable by other providers and administrators, but only administrators should be able to edit provider information. Provider data is for administrative and data keeping purposes.

- Add/Remove/Edit Medical History Data

  - o   Medical history data should be viewable by patients, providers, and administrators, but only editable by providers and administrators. Amending medical history data means being able to access and edit all previously recorded visits, and patient data from other providers such as hospital visits.

- Add/Remove/Edit Billing Data

  - o   Billing data should be accessible to providers and administrators, and editable by providers and administrators. Billing data is information billing specialists will use to send invoices to insurers to receive payment for services rendered.

Use Case Diagram
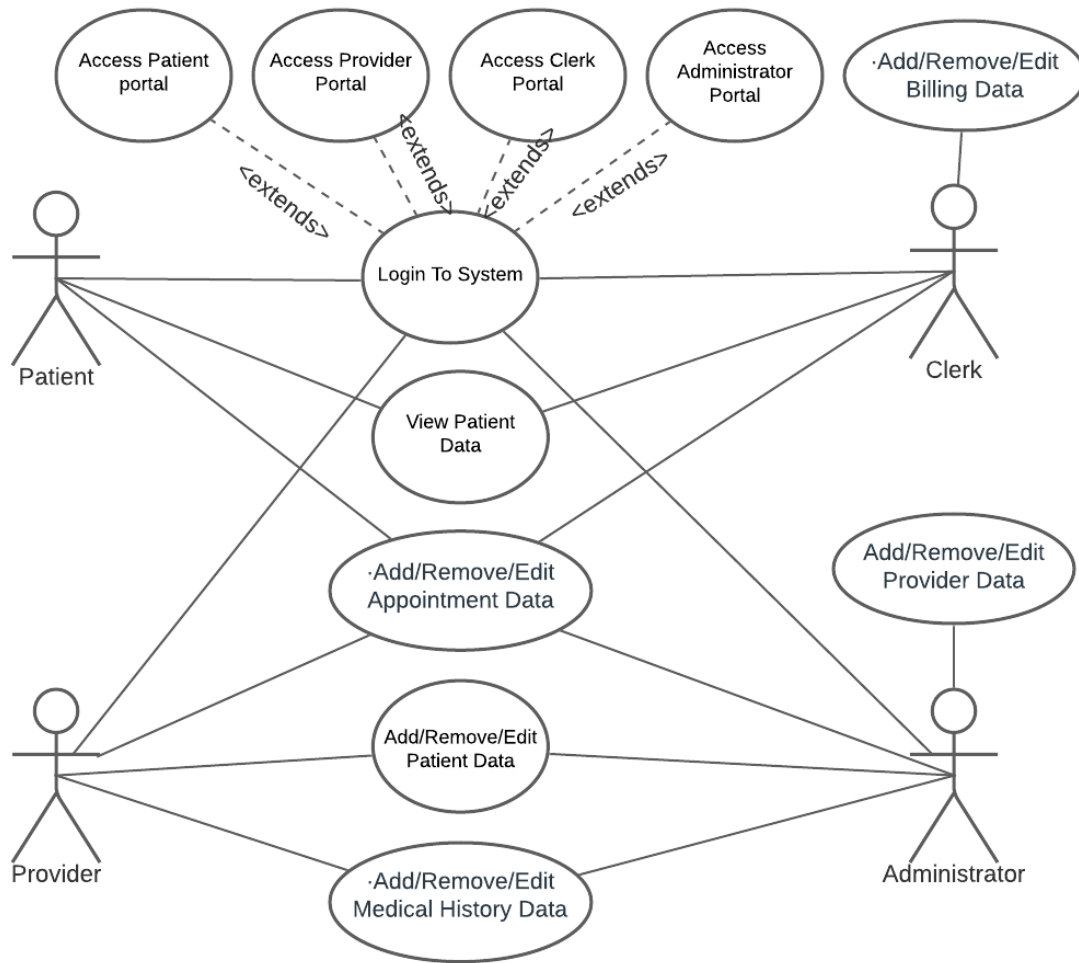
Traceability Matrix

Use Case ID	Requirement	Use Case Name	Description	Priority (1-5)
1.1	Login	Login	User uses username and password to access EMR system	1
1.2	Login	Logout	User quickly exits the system	1
2.1	View Patient Records	View Patient Portal	User sees most recent appointment data and current demographic data	4
2.2	View Patient Records	View Medical History	User can see a single patients medical history data	4
2.3	View Patient Records	View Prescriptions	User can see current and previous medication data	4
3.1	Add/Remove/Edit Appointment Data	Add Appointment Data	User can create new appointments in the system	1
3.2	Add/Remove/Edit Appointment Data	Remove Appointment Data	User can delete appointments	1

3.3	Add/Remove/Edit Appointment Data	Edit Appointment Data	User can amend existing appointment data, such as time, or provider info	1
4.1	Add/Remove/Edit Patient Data	Add Patient Data	User can create new patients	1
4.2	Add/Remove/Edit Patient Data	Remove Patient Data	User can delete existing patients	1
4.3	Add/Remove/Edit Patient Data	Edit Patient Data	User can edit existing patients	1
5.1	Add/Remove/Edit Provider Data	Add Provider Data	User can create new providers	3
5.2	Add/Remove/Edit Provider Data	Remove Provider Data	User can delete existing providers	3
5.3	Add/Remove/Edit Provider Data	Edit Provider Data	User can edit current providers information	3
6.1	Add/Remove/Edit Medical History Data	Add Medical History	Create a new medical history chart for a patient	2

6.2	Add/Remove/Edit Medical History Data	Remove Medical History	Delete an existing medical history chart for a patient	2
6.3	Add/Remove/Edit Medical History Data	Edit Medical History	Edit a patient's medical history	2
7.1	Add/Remove/Edit Billing Data	Add Billing Data	Create a new bill for patient	3
7.2	Add/Remove/Edit Billing Data	Remove Billing Data	Delete existing bill for patient	3
7.3	Add/Remove/Edit Billing Data	Edit Billing Data	Edit an existing bill for patient	3

Fully Dressed Description

Select some important use cases and elaborate them in detail. These important use cases are listed in your traceability matrix. Make the event flow clear and show each step that the user or initiating actor can perform in the use case.

Login – The first page the user will access is the system login screen. The user will input their username and password and click a button that activates the login function. Logging in will determine the portal the user has access to. A doctor will have provider access, while a patient will have Patient level access.

Logout – The system will include a "Logout" button on every page in the navigation bar. This is important for security standards, so the information doesn't get accessed by unwanted parties. The system should also timeout after 30 minutes of inactivity and automatically logout the user.

Add Patient Data – The system will need to support the creation of new patients. This should be in a form style and have required and not required inputs. The creation process should be through several forms, one for demographics, one for medical history, and one for prescription history.

Remove Patient Data – Deleting patient data is a process necessary for providers and administrators to maintain the system. If patients have accidentally been duplicated or are no longer needed in the system, they can be deleted through a button in the patients' chart.

Edit Patient Data – All patient data should be subject to change. A button on the patient chart should allow the user to amend each category of information in the patients forms.

Add Appointment Data – A critical use of the system is to create and schedule appointments. Each user should be able to access and appointments page and hit a button that pulls up a new appointment form, which can be submitted with another button.

Remove Appointment Data – Just as appointments can be created, they should easily be able to be removed by the user. A button on each appointment page should quickly and easily delete the appointment and the data it contained.
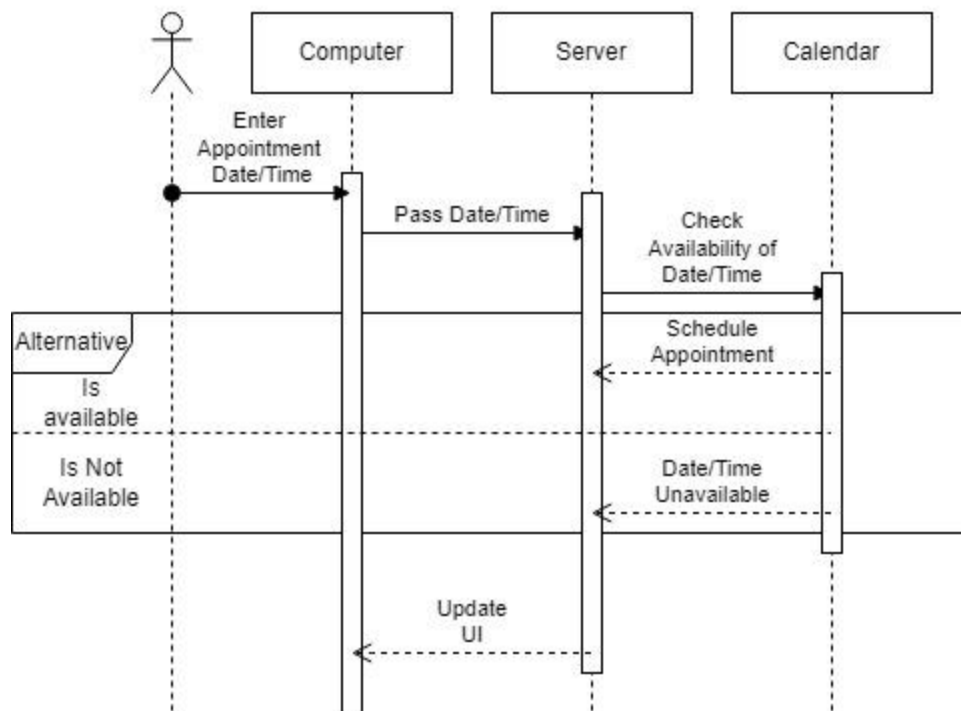
Edit Appointment Data – An edit appointment button should exist on the appointment page. The user can alter any information in the appointment form.

System Sequence Diagrams

Login/Logout
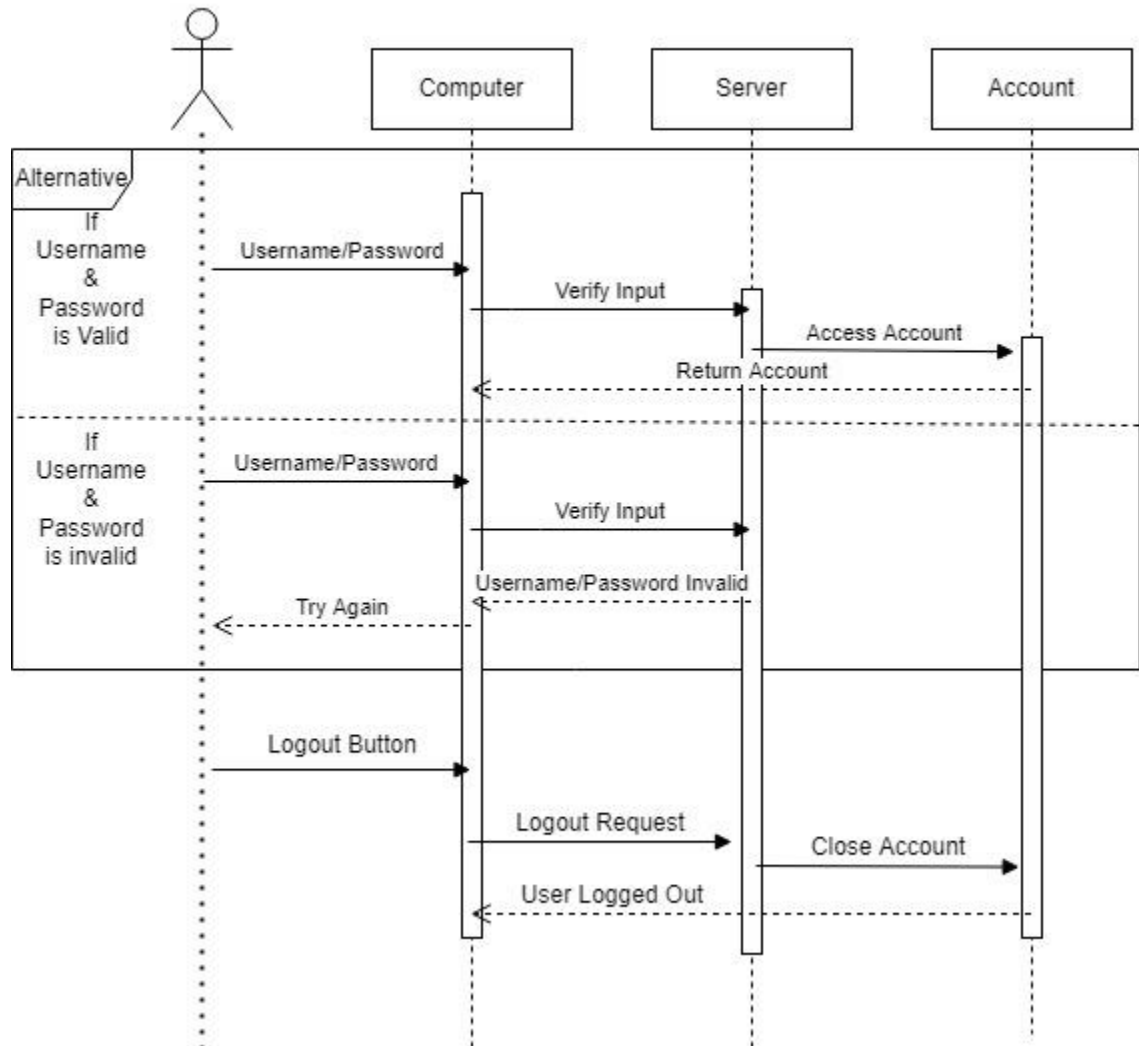
Add Appointment

User Interface Specification

Preliminary Design

Login – The login screen is the first screen the user will see upon loading the application.
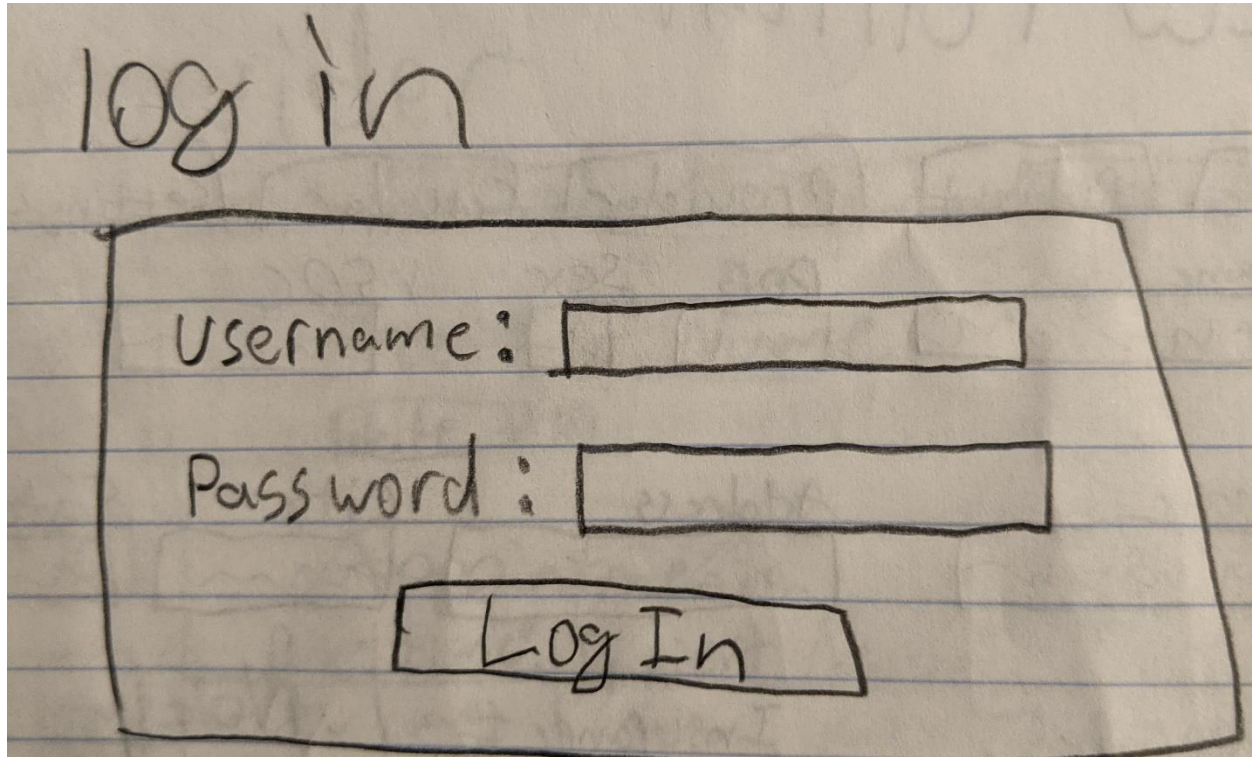
Home Page – Once logged in the user will see the home screen.
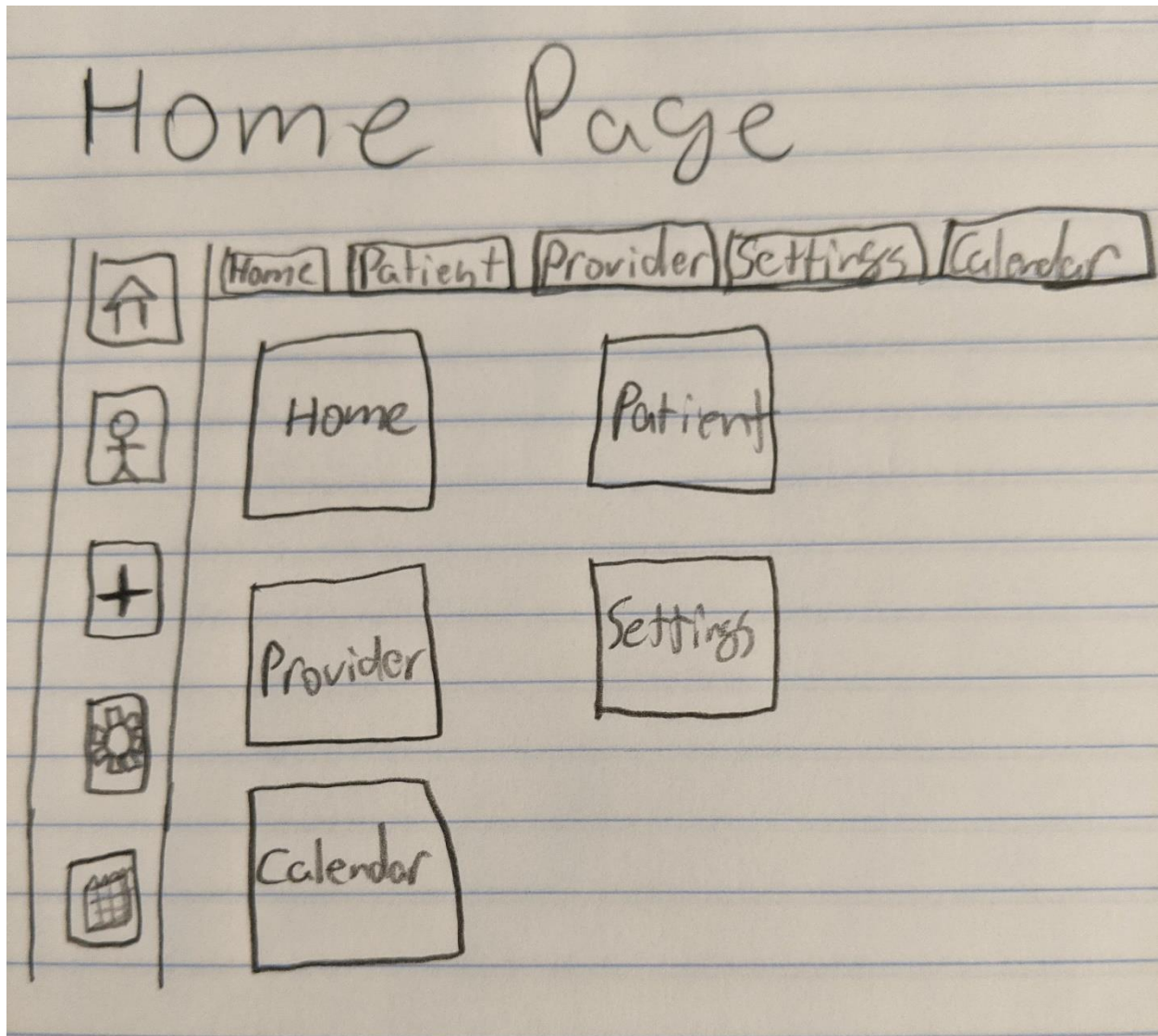
Create/Edit/Remove Appointment – An appointment can be created, edited, or deleted, by selecting buttons on the Calendar page, or patient page, or Provider page.
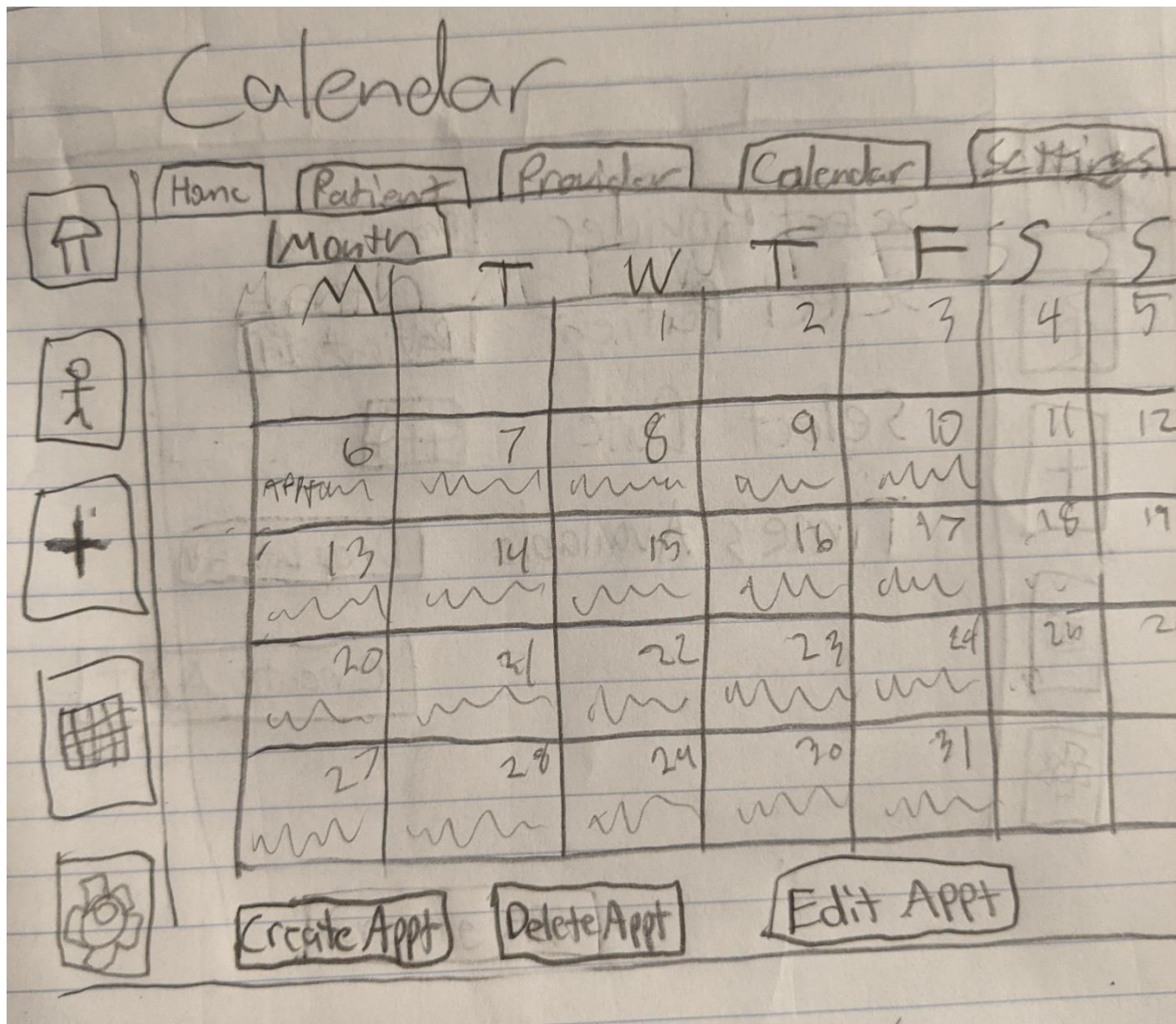
If the user is a provider, they can also access the appointment screens from the provider page.

Selecting an appointment can allow it to be deleted or edited. Selecting the create appt button will take the user to the create appointment screen.
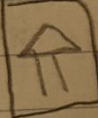
Create Patient – A patient can be created by selecting a button on the patient home page, and then entering the information on a separate page called "new patient".

Edit/Remove Patient – A patient can be edited or deleted by selecting the patient from the patient home page, and then either saving changes or selecting delete from the Edit/Delete Patient Info page.

User Effort Estimation

Task – Login

- Login

- Mouse Clicks = 1

Task – Create New Appointment

- Login > Home Screen > Calendar > Create Appointment
- Mouse Clicks = 4

Task – Edit/Delete Appointment

- Login > Home Screen > Calendar > Edit/Delete Appointment
- Mouse Clicks = 5

Task – Create New Patient

- Login > Home Screen > Patient Home > New Patient Page
- Mouse Clicks = 4

Task – Edit/Delete Patient

- Login > Home Screen > Patient Home > Specific Patient Page
- Mouse Clicks = 5

Task – Logout

- Current Page > Home Page
- Mouse Clicks = 2