NOT DISCOVERY

THE ONLY MEDICAL PLATFORM YOU CAN TRUST

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TABLE OF CONTENTS

Software Design and System Architecture

Software Design

We were tasked with the development of a mobile application and website for viewing and managing patient data. The platform (in this context platform refers to the mobile or web application) has two users, doctors, and patients respectively. The platform is designed to help doctors see the medical history of their patients while patients can book an appointment with the doctor of their choice for any medical issues they may be experiencing. When a patient books an appointment with a particular doctor, the doctor will be able to accept or reject this appointment. If the doctor rejects an appointment the patient will be notified immediately, and he/ she can either reschedule the appointment or find another doctor on the platform. If the doctor accepts the appointment, the patient will be notified and once the appointment has taken place, the doctor can generate an appointment form. This appointment form will include the patients name, disease/ medical history, medication administered, date of the appointment, consultation notes and treatment costs, etc. These appointment forms get stored in the database along with patients' personal information. The patient will be able to see any prescribed medication or important notes from the appointment can book for a check-up if necessary.

System Architecture

Doctors will be able to log into the app from their smartphones or log into the website from their laptop / desktop and enter relevant information about their patients. If the doctor were to enter the incorrect user credentials, he/ she will be denied access to the system. A doctor who is not registered on the platform, will be able to register by entering their respective name, age, field of specialization (i.e., optometrist, dentist, surgeon, etc.), qualifications, years of experience, email address and password. Once logged in a doctor will be able to see their last appointment and any upcoming appointments on the home page of the platform. Doctors also have the ability to continually update the progress of a patient on the system by entering the latest medical data of their patients. This information is then saved on the system (i.e., in the database), and will be stored for the perusal of doctors for their future cases. For example, if a patient comes for a follow-up routine or check-up, doctors can immediately check up on their medical history and provide the necessary medical treatments.

Not Discovery is also designed to help patients find doctors to assist them with any medical issues they may be experiencing. Patients will be able to login with their respective email address and password. If the patient were to enter the incorrect user credentials, he/ she will be denied access to the system. A patient who is not registered, can register on the app by entering their respective name, age, identification number, place of residence (some address field), email address, field for pre-existing medical conditions and password. Once in the system patients will be able to view their previous appointments with a doctor, book for a new appointment and keep track of their recovery process if they are fighting a serious disease / illness.

Some of our feature include:

- Doctor login / registration
- Patient login / registration
- All user information is stored securely in the database
- Password hashing for extra security
- A welcome page for doctors where they can see notes from their last appointment
- A welcome page for patients where they can see the last appointment they booked with a doctor
- Doctors have the ability to generate an appointment form on the platform.
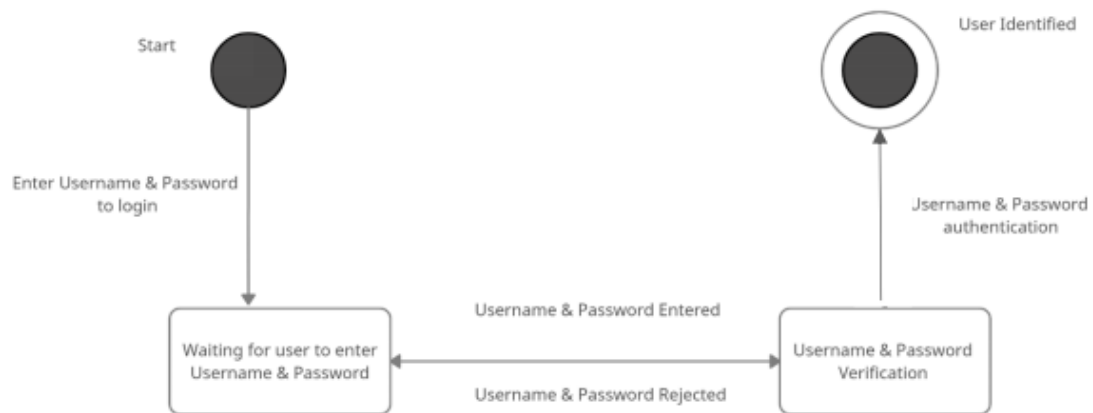
Logic View

State Diagram

Figure – A state diagram for user login

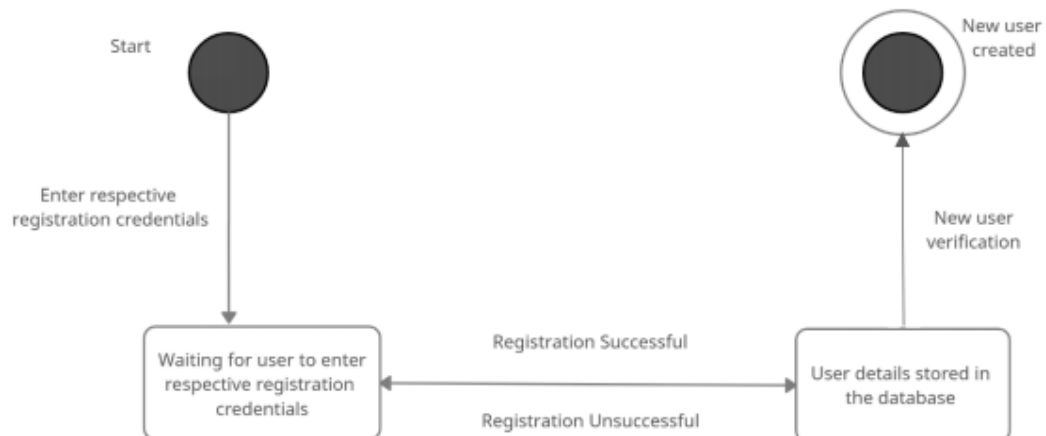This diagram is applicable to both patients and doctors.

Figure – A state diagram for user registration

This diagram is applicable to both patients and doctors.

SPRINT 1

User Stories

1. User Login App
    As a user, I want to be able to login to the app with my email address / username and password so that I can use the app.

    This includes:
    - Creating the respective tables
    - Login with username and password
    - Incorrect username or password should deny access to the system
    - Password must be hashed for security purpose

2. User Login Website
    As a user, I want to be able to login to the website with my email address / username and password so that I can use the website.

    This includes:
    - Creating the respective tables
    - Login with username and password
    - Incorrect username or password should deny access to the system
    - Password must be hashed for security purpose

3. New User Registration App
    As a user, I want to be able to register with the app, so that I can use the app.

    This includes:
    - A registration for doctors and a registration for patients
    - Patients must provide their name, age, identification number, place of residence, email address, pre-existing conditions, and password
    - Doctors must provide their field of specialization, qualifications, years of experience, email address and password

4. New User Registration Website
    As a user, I want to be able to register on the website, so that I can use the website.

    This includes:
    - A registration for doctors and a registration for patients
    - Patients must provide their name, age, identification number, place of residence, email address, pre-existing conditions, and password
    - Doctors must provide their field of specialization, qualifications, years of experience, email address and password

5. Landing page / screen (one for the app and one for the website)
   As a user, after successfully logging-in I want to be directed to a "home" page so that I can start using the system for all my medical needs and appointments.

   - Note: The doctors landing page and patients User interface should not look the same. The patient should see his/ her last appointment with a doctor and a doctor should see his/her last appointment with a patient

6. Template form for a doctor to record information after / during a patient visit on App
   As a doctor, I want to be able to generate an appointment form for patients so that I can keep a record with all the important information from that appointment.

   This includes:
   - Name of patient
   - Date of visit
   - Notes from the appointment
   - Prescribed medication
   - Save button

7. Template form for a doctor to record information after / during a patient visit on Website
   As a doctor, I want to be able to generate an appointment form for patients so that I can keep a record with all the important information from that appointment.

   This includes:
   - Name of patient
   - Date of visit
   - Notes from the appointment
   - Prescribed medication
   - Save button

Acceptance Criteria

1. User Login App
   As a user, I want to be able to login to the app with my email address / username and password so that I can use the app.

   Acceptance Criteria:

   - ✓ Given that I am a doctor, when I log onto the app with my respective email address / username, then I should be taken to the home screen off the app. When I type in the incorrect login details, then I should not be taken to the home screen of the app.
   - ✓ Given that I am a patient, when I log onto the app with my respective email address / username, then I should be taken to the home screen off the app. When I type in the incorrect login details, then I should not be taken to the home screen of the app.
   - ✓ Both the doctor and the patient will be required to login with their respective email address / username and password, if either of these credentials are incorrect the user will be denied access to the app.

2. User Login Website
   As a user, I want to be able to login to the website with my email address / username and password so that I can use the website.

   Acceptance Criteria:

   - ✓ Given that I am a doctor, when I log onto the website with my respective email address / username, then I should be taken to the home page off the website. When I type in the incorrect login details, then I should not be taken to the home page of the website.
   - ✓ Given that I am a patient, when I log onto the website with my respective email address / username, then I should be taken to the home page off the website. When I type in the incorrect login details, then I should not be taken to the home page of the website.
   - ✓ Both the doctor and the patient will be required to login with their respective email address / username and password, if either of these credentials are incorrect the user will be denied access to the website.

3. New User Registration App
   As a user, I want to be able to register with the app, so that I can use the app.

   Acceptance Criteria:

   - ✓ Given that I am a doctor, when I register on the app, then I should be able to fill out all the necessary information required before I can use the app.
   - ✓ Given that I am a patient, when I register on the app, then I should be able to fill out all the necessary information required before I can use the app.
   - ✓ Patient registration should include name, age, identification number, place of residence (some address field), email address, field for pre-existing medical conditions and password.
   - ✓ Doctor registration should include name, age, field of specialization (i.e. optometrist, dentist, surgeon, etc.), qualifications, years of experience, email address and password.

4. New User Registration Website
   As a user, I want to be able to register on the website, so that I can use the website.

   Acceptance Criteria:

   - ✓ Given that I am a doctor, when I register on the website, then I should be able to fill out all the necessary information required before I can use the website.
   - ✓ Given that I am a patient, when I register on the website, then I should be able to fill out all the necessary information required before I can use the website.
   - ✓ Patient registration should include name, age, identification number, place of residence (some address field), email address, field for pre-existing medical conditions and password.
   - ✓ Doctor registration should include name, age, field of specialization (i.e., optometrist, dentist, surgeon, etc.), qualifications, years of experience, email address and password.

5. Landing page / screen (one for the app and one for the website)
   As a user, after successfully logging-in I want to be directed to a "home" page so that I can start using the system for all my medical needs and appointments.

   Acceptance Criteria:

   - ✓ Given that I am a doctor, when I login successfully and see the home screen of the app, then I should be able to see my most recent patient form.
   - ✓ Given that I am a patient, when I login successfully and see the home screen of the app, then I should be able to see my most recent appointment with a doctor.
   - ✓ For now, this can be a template form / dummy form saved in the database.

- ✓ Details of the patient form should include patient name, date of visit, notes form the appointment and any prescribed medication.
- ✓ NOTE! Important to also save the relationships between patients and doctors in the database.

6. Template form for a doctor to record information after / during a patient visit on App
As a doctor, I want to be able to generate an appointment form for patients so that I can keep a record with all the important information from that appointment.

Acceptance Criteria:

- ✓ Given that I am a doctor, when I click to generate an appointment form, then I can record all the important information from that appointment.
- ✓ For now, this can be a template form / dummy form saved in the database.
- ✓ Details of the patient form should include patient name, date of visit, notes form the appointment and any prescribed medication as well as a save button so that the information can be stored in the database.
- ✓ NOTE! Important to also save the relationships between patients and doctors in the database.

7. Template form for a doctor to record information after / during a patient visit on Website
As a doctor, I want to be able to generate an appointment form for patients so that I can keep a record with all the important information from that appointment.

Acceptance Criteria:

- ✓ Given that I am a doctor, when I click to generate an appointment form, then I can record all the important information from that appointment.
- ✓ For now, this can be a template form / dummy form saved in the database.
- ✓ Details of the patient form should include patient name, date of visit, notes form the appointment and any prescribed medication as well as a save button so that the information can be stored in the database.
- ✓ NOTE! Important to also save the relationships between patients and doctors in the database.