Product Requirements

SWEN261-TEAM-D

Revision Number	Revision Date	Summary of Changes	Author(s)
0.1	02/02/2017	Initial revision	Michael Hopkins(MH), Bryan Camp (BC), Tyler Collins (TC), Yancarlos Diaz (YD), Moisés Lora Pérez (MP) (MILA)
1.0	03/05/17	Updates to users profiles, system requirements, various feature requirements, and various use cases Changes the layout of document	MILA
1.1	03/06/17	Updated diagramas to reflect changes in implementation	MILA
1.2	03/27/17	Addes Use Case Diagrams for R2	MILA
1.9	05/03/17	Updated all diagrams to reflect changes in implementation and change in requirements	MILA
2.0	05/06/17	Final R2 Revision	MILA

Brief problem statement

We represent a funding group (HAccelerator) chartered to create applications for the benefit of health-care across the country, going to be named **HealthNet**   . It

will   be a program easy navigable and accessible to both patients and doctors allowing for easier assignments of appointments and procedures. There will be internal statistical analysis helping with this process. It will also be utilized for managing employees, getting medical records, and other materials necessary for doctors and patients. Ultimately this program will improve communication between hospitals, doctors, and patients.

Stakeholders

HAccelerator Board of Directors – oversee the project's funding and expenses. Have vested interest in the proven success of the product but are not involved in the planning and execution.

HAccelerator Product Owner – will act as principal representative for HealthNet product needs. He/she champions the product with the Board of Directors, helps facilitate product decisions and has the ultimate say on when and what features should be released.

Software Engineering Team – is responsible for the day-to-day operations and coordination of all aspects related to the software product's life-cycle. This include, among others: planning and delegation of team roles and responsibilities; elicitation and clarification of requirements; analysis and design; implementation, testing and release of all software components.

Beta Testing Team – represent the target user base for HealthNet. Will be available in later phases of the project to conduct acceptance testing and provide feedback on product release.

Employees – directly use Healthnet to create profiles so that hospitals can manage and access their information easily

Patient – easily sign up as patients so that hospitals can manage their procedures and appointments

Users profile

The target user must:
- Have a device with internet access.
- Have experience using a website and navigating a website to obtain needed info or service.
- Have an idea of what service or info they need to obtain from the website.
- Willing to give personal info such as address,contact information, and medical records for exchange for function.
- Have a medical need, question, or interest that needs medical related info that can be found through interacting to a hospital's website.
- Has access to or knows basic medical information about them self.

Patients
- Up to date insurance records.
- Ability to create and modify appointments
- Can view calendar
- Can view log of medical information

Doctors/Nurses
- Can update patients medical status
- Can Create and Cancel appointments
- Add prescriptions
- Can View test results
- Anything else that can influence their job/patients.

System requirements

This project will be source controlled in SVN. Django using python to run the system, sqlite to manage the database and needs to be compatible with the latest browsers.

Feature requirements (user stories)

The following list of user stories is neither final nor comprehensive. You must consider it your responsibility to maintain its relevance, clarify any misunderstandings and keep it up-to-date. Any changes must be discussed with the Product Owner for approval.

No.	User Story Name	Description	Release
1	Patient Registration	Users sign up to become a Patient by providing their personal contact information, proof of insurance and unique login credentials. Additionally, a patient should provide the system with some basic medical profile information, a choice of preferred hospital and emergency contact information (linked to another patient if they are already in the system).	**R1**

2	Administrator Registration	Doctors, Nurses, and Administrators will be added to the system by other administrators. All information for creating these new accounts will be done through an administrator account.	**R2**
3	Update Patient Profile Information	Patients can update their profile information.	**R1**
4	Update Patient Medical Information	Doctors and Nurses can update patient medical information.	**R2**
5	Export Information	Patients will be able to export their information and their test results from the system with relevant privacy warnings.	**R2**
6	Create or Update Patient Appointment	Patients, doctors and nurses can create or update an appointment with a doctor and at one of the doctor's available locations. If the patient or doctor already has an appointment at the time selected, then the system will not allow for the appointment.	**R1**

7	Cancel Patient Appointment	Patients can cancel their existing appointments. Doctors can cancel their existing appointments. Nurses cannot cancel (only modify) existing appointments.	**R1**
8	Appointment Calendar	Doctors and patients will easily be able to view all of their appointments in a calendar view. Nurses will be able to see all appointments for the day and week between Patients and Doctors.	**R1**

9	Add/Remove Prescriptions	Doctors can add or remove a prescription to a patient record. Patients can view their prescriptions from their account.	**R2**
10	Viewing Patient Medical Information, Prescriptions and Tests and Results	Doctors and Nurse can view all medical information for any patient in the system (regardless of Hospital). Patients can view their tests (pending or completed) and view the corresponding results for those tests that have been released by the doctor. Prescriptions and other non-sensitive information is viewable by the patient without a need for doctor's release.	**R2**
11	Release Test Results	Doctors (within the patient's hospital) can, upon evaluating a patient's test results, release them for view by that patient. Comments may be added to the specific test result for view by the patient.	**R2**
12	Logging System Activity	For security, many actions in the system will be logged for review at a later date. Some examples of actions to be logged include but are	**R1**

		not limited to updating of a Patient's information, viewing of a Patient's information/records, and transfers of a Patient from one hospital to another.	

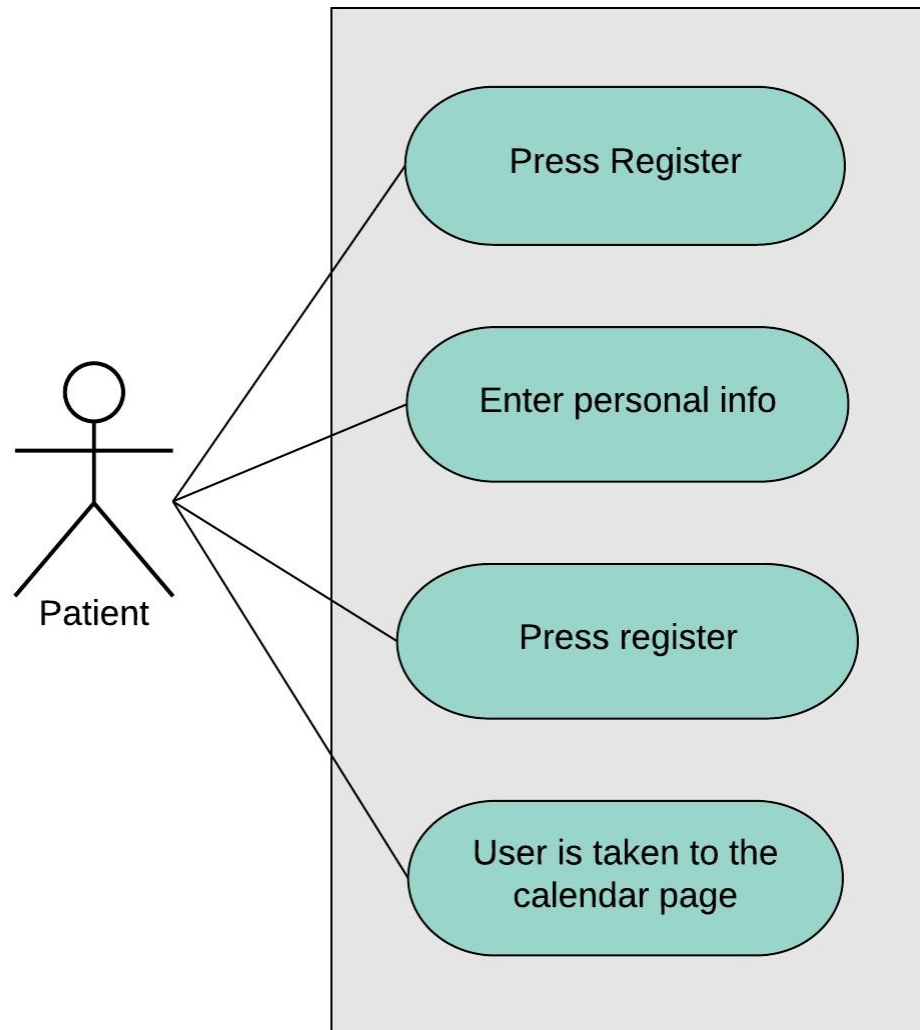| 13	Admission and Discharge to/from Hospital	Doctors and Nurses can admit a patient to the hospital for an extended stay (reasons could be: emergency, observation, surgery, etc.). These are typically unexpected visits but can result from a decision made after a scheduled appointment. This event is recorded by the system. Doctors and Nurses can also discharge patients	**R2**
14	Viewing Activity Log	Administrators will be able to view the logs of all system activity at their hospital. Some examples of this might be: - breakdown of the viewing activity of patient records or by system user - most common system activities (or by user)	**R1**
15	Viewing System Statistics	Administrators will be able to view compiled statistics for a given time-frame at their hospital. Some examples of this might be: - number of patients visiting the hospital - average number of visits per patient - average length of stay (from admission to discharge) - most common reasons for being admitted to the hospital - prescription statistics	**R2**
16	Patient Transfer	Patient can be transferred between hospitals. Transfers can be carried out by either administrators or by doctors (ones who are at the receiving hospital).	**R2**

17	Notification System	Users will be able to receive notifications for actions including but not limited to: - Messages - New Test Results - New Appointments	**R2**
18	Send Private Message	Doctors, nurses, and patients can send private messages of limited length via the system.	**R2**

Use Case Detail

Patient Registration

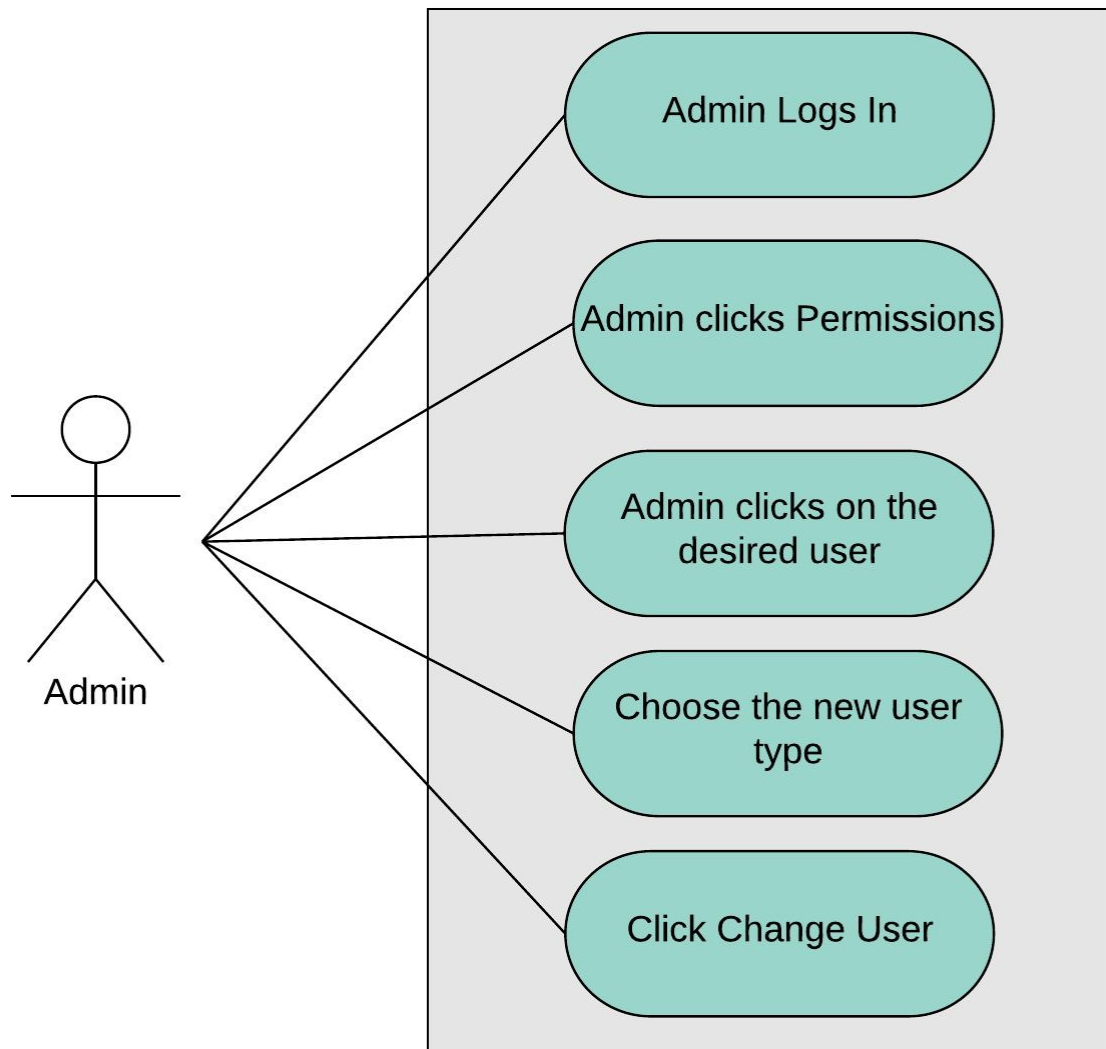| Use Case Number:	UC-R1-01
Use Case Name:	Patient Registration
Overview:	Users sign up to become a Patient by providing their personal contact information, proof of insurance and unique login credentials.
Primary Actor(s):	Patient
Secondary Actor(s):	None
Pre-condition(s):	Internet is working. The patient is at the HealthNet website.
Main Flow of Events:	*Main (success) Flow:* 1. The user presses the register button. 2. They enter their username, password, name, email, phone number, date of birth, last physical, primary hospital, and sex 3. They press the register button. 4. They are taken to the calendar page.
Alternate Flow of Events:	*Alternate Flows:* The user left one or more of the information fields blank The user enters an unusable password The user doesn't have a valid health care account

Diagram for UC-R1-01

Administrator Registration

Use Case Number:	UC-R2-02
Use Case Name:	Administrator Registration
Overview:	Admins can add Doctors, Nurses, and other admins to the system
Primary Actor(s):	Admin
Secondary Actor(s):	None
Pre-condition(s):	Admin has superuser powers The future Doctor/Nurse must have an existing Patient account
Main Flow of Events:	*Main (success) Flow:* 1. Admin logs in 2. Admin clicks Permission 3. Admin clicks on the desired user 4. Choose the new user type 5. Click Change User
Alternate Flow of Events:	*Alternate Flows: None*

Diagram for UC-R2-02

Admin

Admin Logs In

Admin clicks Permissions

Admin clicks on the desired user

Choose the new user type

Click Change User

Update Patient Profile Information

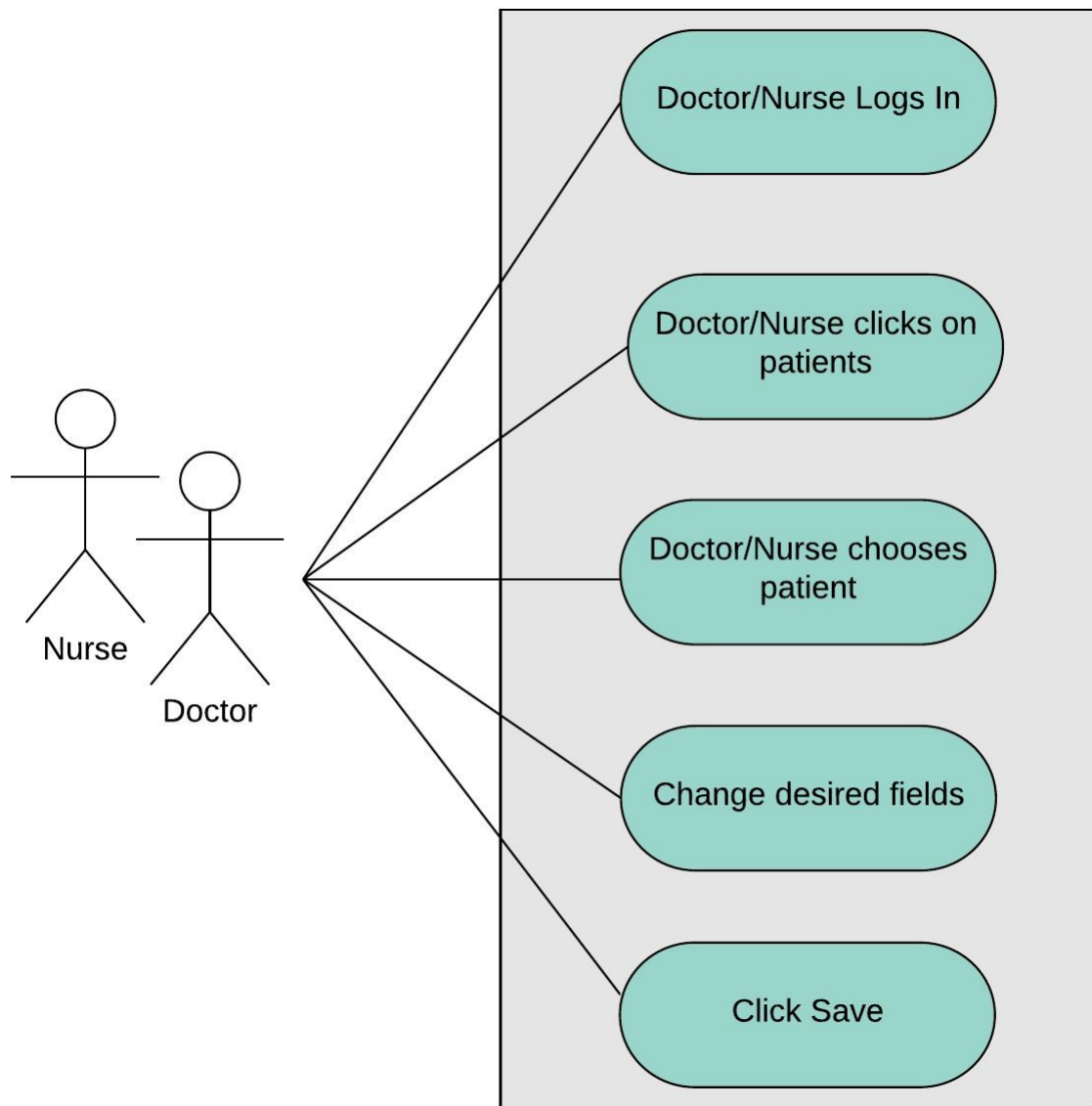| Use Case Number:	UC-R1-03
Use Case Name:	Update Patient Profile Information
Overview:	Patient can update their information on their profile.
Primary Actor(s):	Patient
Secondary Actor(s):	None
Pre-condition(s):	Internet is working. The patient is at the HealthNet website. The patient is currently logged in to their account.
Main Flow of Events:	*Main (success) Flow:* 1. The user clicks on the user dropdown menu. 2. The user clicks the edit profile button. 3. The user picks a field to update and replaces the current info. 4. The user clicks the save changes button. 5. Changes are saved
Alternate Flow of Events:	*Alternate Flows:* 1. The user left one or more of the information fields blank

Diagram for UC-R1-03

Update Patient Medical Information

Use Case Number:	**UC-R2-04**
Use Case Name:	**Update Patient Medical Information**
Overview:	**Doctors and Nurses can update patient medical information.**
Primary Actor(s):	**Doctors and Nurses**
Secondary Actor(s):	**None**
Pre-condition(s):	**Doctors and Nurses have respective powers**
Main Flow of Events:	*Main (success) Flow:* 1. **Doctor/Nurse logs in** 2. **Doctor/Nurse clicks on patients** 3. **Doctor/Nurse chooses patient** 4. **Change desired fields** 5. **Click save changes**
Alternate Flow of Events:	*Alternate Flows: None*

Diagram for UC-R2-04

Export Information

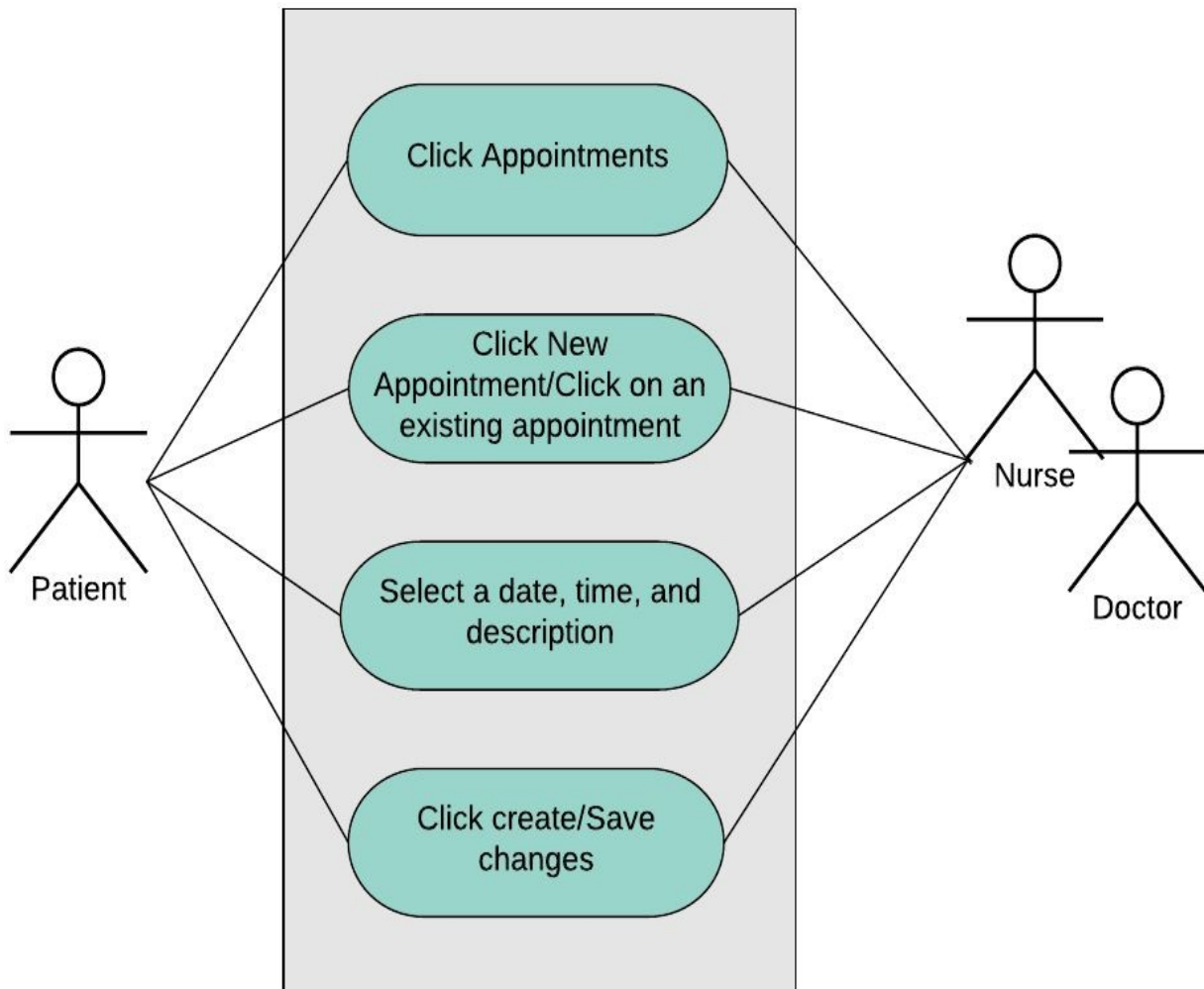| Use Case Number:	UC-R2-05
Use Case Name:	**Export Information**
Overview:	**Patients can export their information and test results.**
Primary Actor(s):	**Patient**
Secondary Actor(s):	**None**
Pre-condition(s):	**Patient has an account. Patient understands privacy issues**
Main Flow of Events:	*Main (success) Flow:* 1. **User logs in to HealthNet** 2. **User clicks Export** 3. **Patient confirms after privacy warning** 4. **Patient receives a document with the requested information**
Alternate Flow of Events:	*Alternate Flows:* 1. **Patient decides to backup after privacy warning** 2. **Patient clicks cancel**

Diagram for UC-R2-05
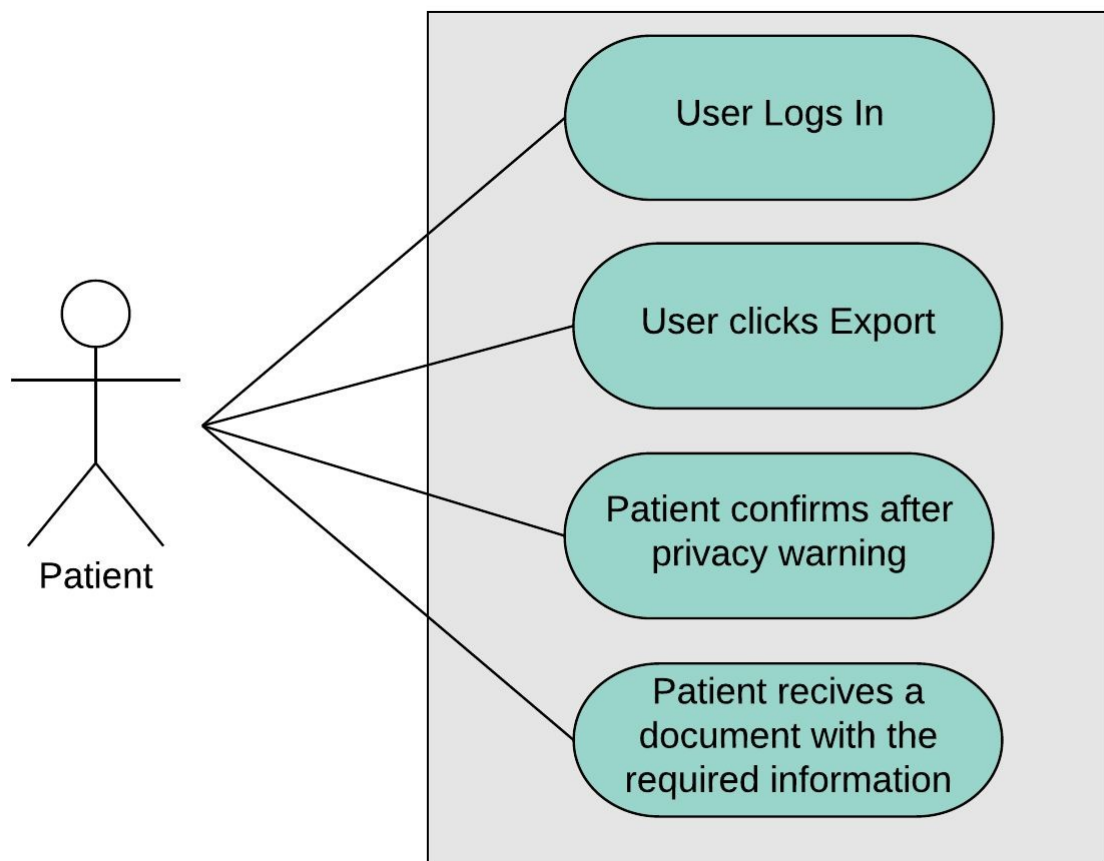
Create or Update Patient Appointment

Use Case Number:	*UC-R1-06*
Use Case Name:	*Create or Update Patient Appointment*
Overview:	*Patient will be able to create Appointment or update based upon a in program calendar.*
Primary Actor(s):	*Patient*
Secondary Actor(s):	*None*
Pre-condition(s):	*-System is online and functional* *-Patient is already registered correctly* *-Patient is already logged in* *-Patient is at the home screen of the program*

Scenario Flow:	Create Appointment
	1. Click Appointments 2. Click New Appointment 3. Select a Date 4. Choose a doctor, a time, and provide a description 5. Click create Update Appointment 1. Click Appointments 2. Click View Appointments 3. Select an appointment 4. Edit fields 5. Click Save changes
Alternate Flows:	#1 - If the patient does not have any current appointments they option for "Change an Appointment" will be disabled, or will display a message that you have no appointments. #2 - At anytime the Patient can cancel the whole process with a cancel button, This will bring the patient back to the home menu.

Diagram for UC-R1-06

Cancel Patient Appointment

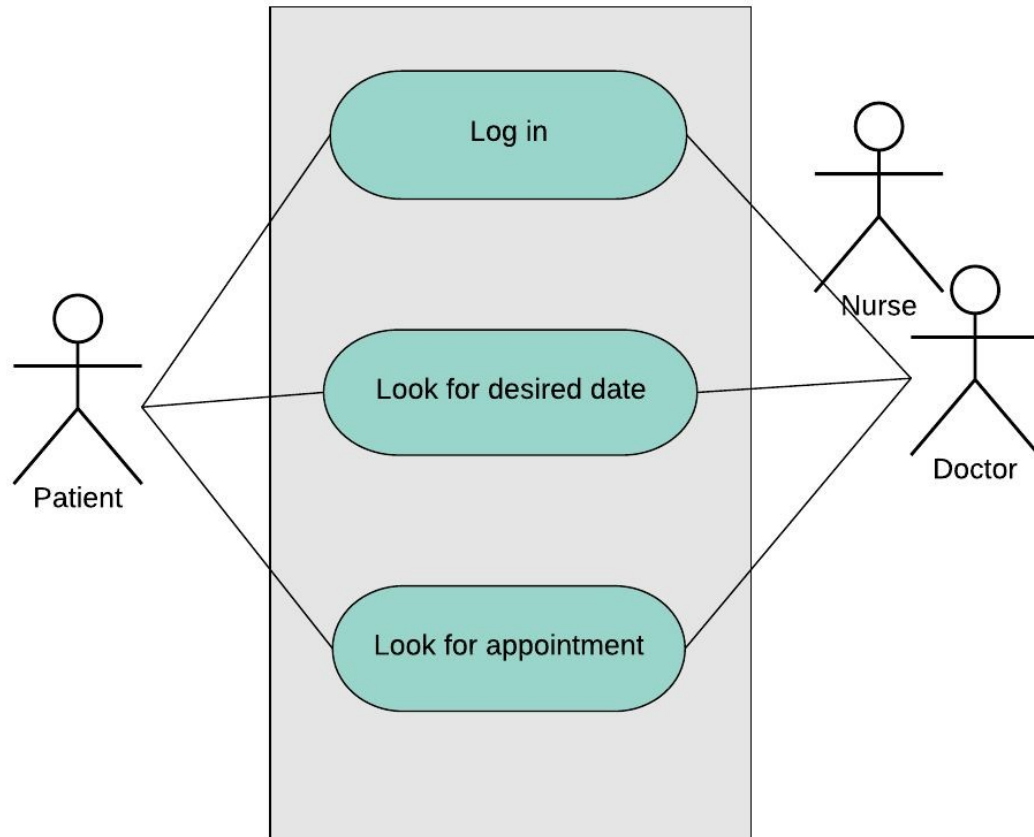| Use Case Number:	UC-R1-07
Use Case Name:	**Cancel Patient Appointment**
Overview:	**Patients can cancel their appointment. Doctors can cancel their appointments with patients**
Primary Actor(s):	**Patients**
Secondary Actor(s):	**<NONE>**
Pre-condition(s):	**- Actor has an account** **- Actor has logged in**
Scenario Flow:	1. **Click Appointments** 2. **Click View Appointments** 3. **Select an appointment** 4. **Click delete appointment**
Alternate Flows:	1. **If the actor is a Nurse, he/she will not be able to cancel the appointment** 2. **The actor can cancel the process at anytime returning them to "Make/Change Appointments" page.**

Diagram for UC-R1-07
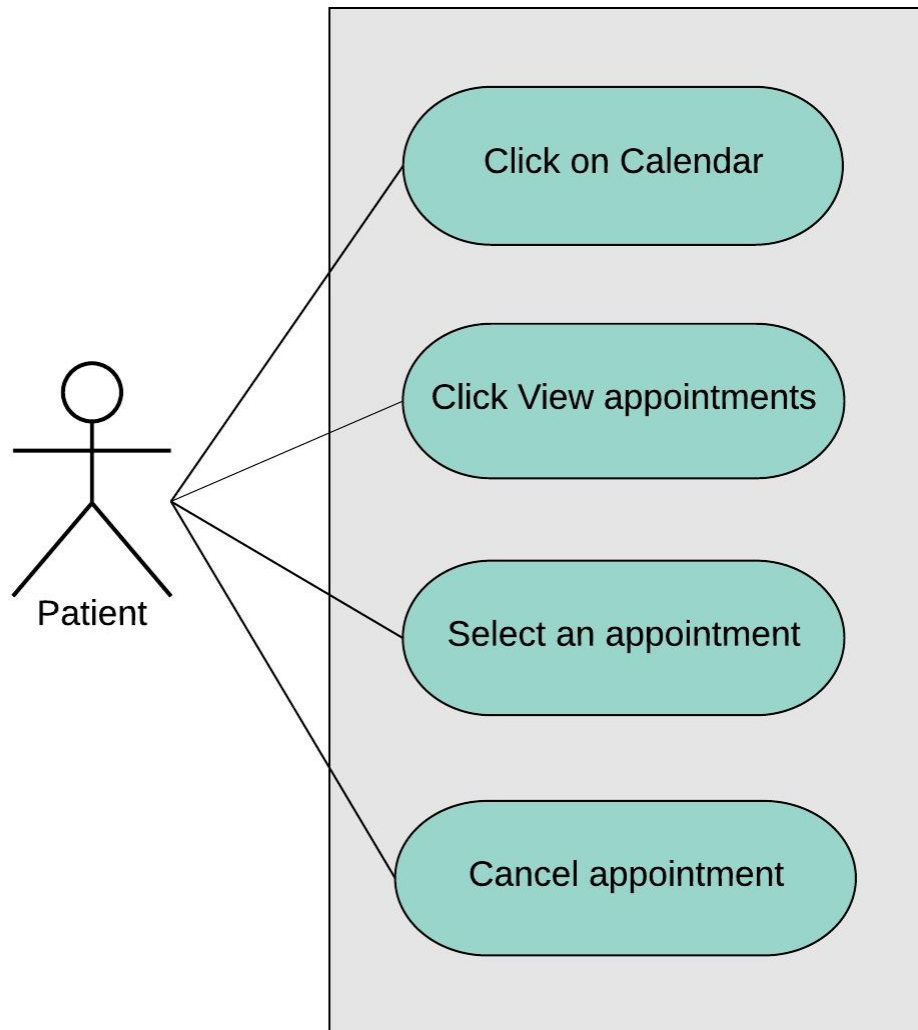
Appointment Calendar

|	
Use Case Number:	*UC-R1-08*
Use Case Name:	*Appointment Calendar*
Overview:	*The Appointment calendar allows the user to see the upcoming appointments*
Primary Actor(s):	*Patient*
Secondary Actor(s):	*Doctor,Nurse*
Pre-condition(s):	*- Website Is up* *- User is logged in* *- Registrant has accessed website via URL* *-User has an account* *-User has made or has a patient with an appointment*
Scenario Flow:	*Main (success) Flow:* *1. User goes to the website.* *2. Website asks for login.* *3. User logs in.* * 6. User finds appointment and is reminded of date or time.*
Alternate Flows:	*Alternative Flow #2: No appointment made* * 1.Appointment is not shown on the calendar and a button can be seen to make an appointment.*

Diagram for UC-R1-08

Add/Remove Prescriptions

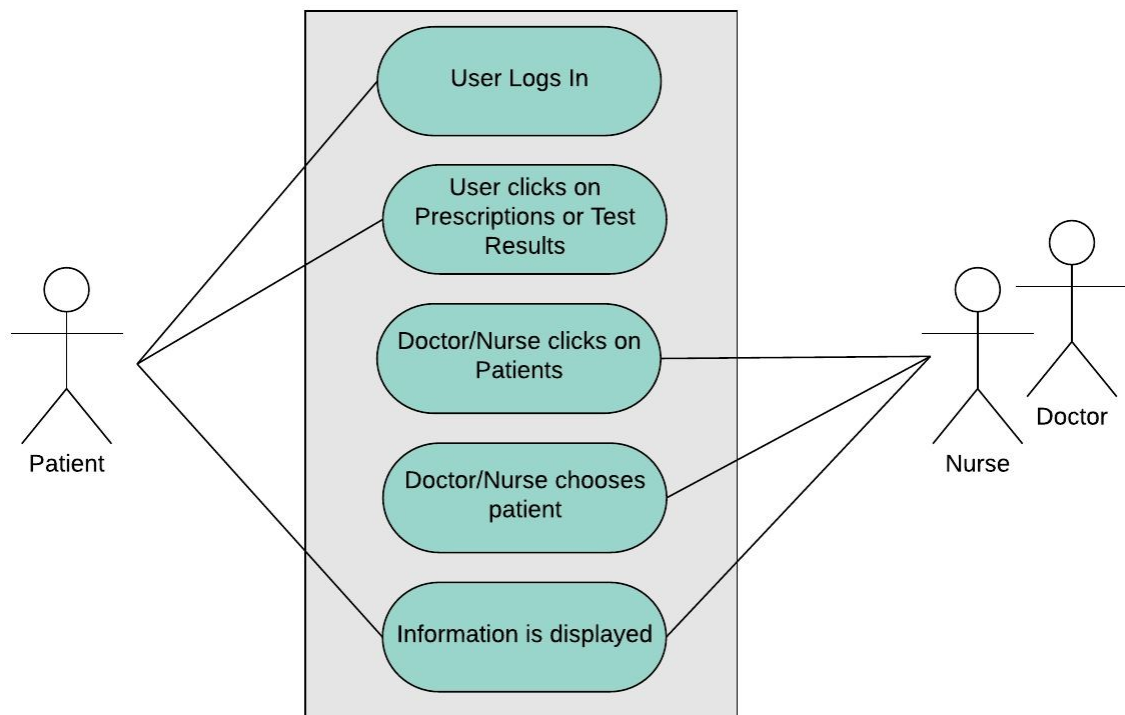| Use Case Number:	UC-R2-09
Use Case Name:	Add/Remove Prescriptions
Overview:	Doctors can add or remove a prescription to a patient record.
Primary Actor(s):	Doctors and Patients
Secondary Actor(s):	None
Pre-condition(s):	User has an account
Main Flow of Events:	*Main (success) Flow:* 1. **User logs into HealthNet** 2. **User clicks on Prescriptions** 3. **Patient can see his/her prescriptions** 4. **Doctor clicks on Medications** 5. **Doctor can click Prescribe** 6. **Doctor fills out every field and clicks prescribe** 7. **Doctor can click Remove** 8. **Doctor selects Prescription and selects remove medication**
Alternate Flow of Events:	*Alternate Flows: None*

Diagram for UC-R2-09
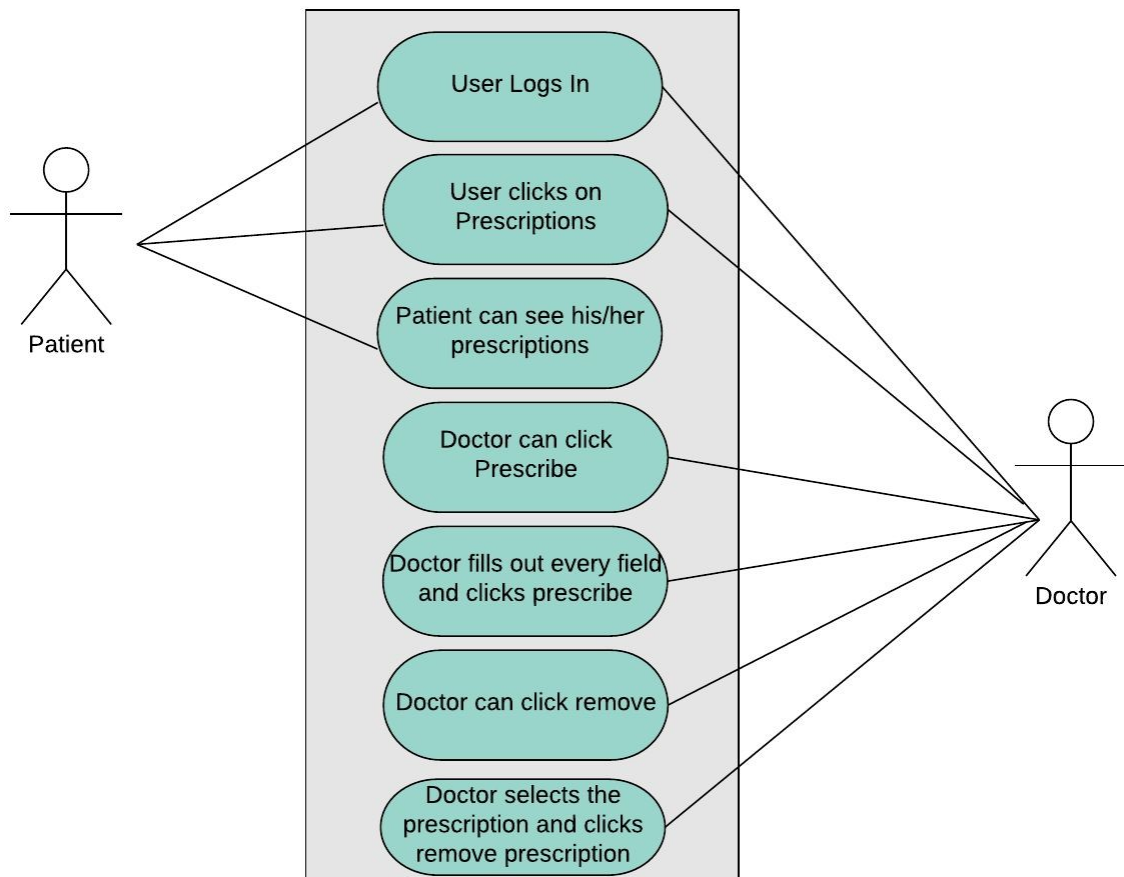
Viewing Patient Medical Information, Prescriptions and Tests and Results

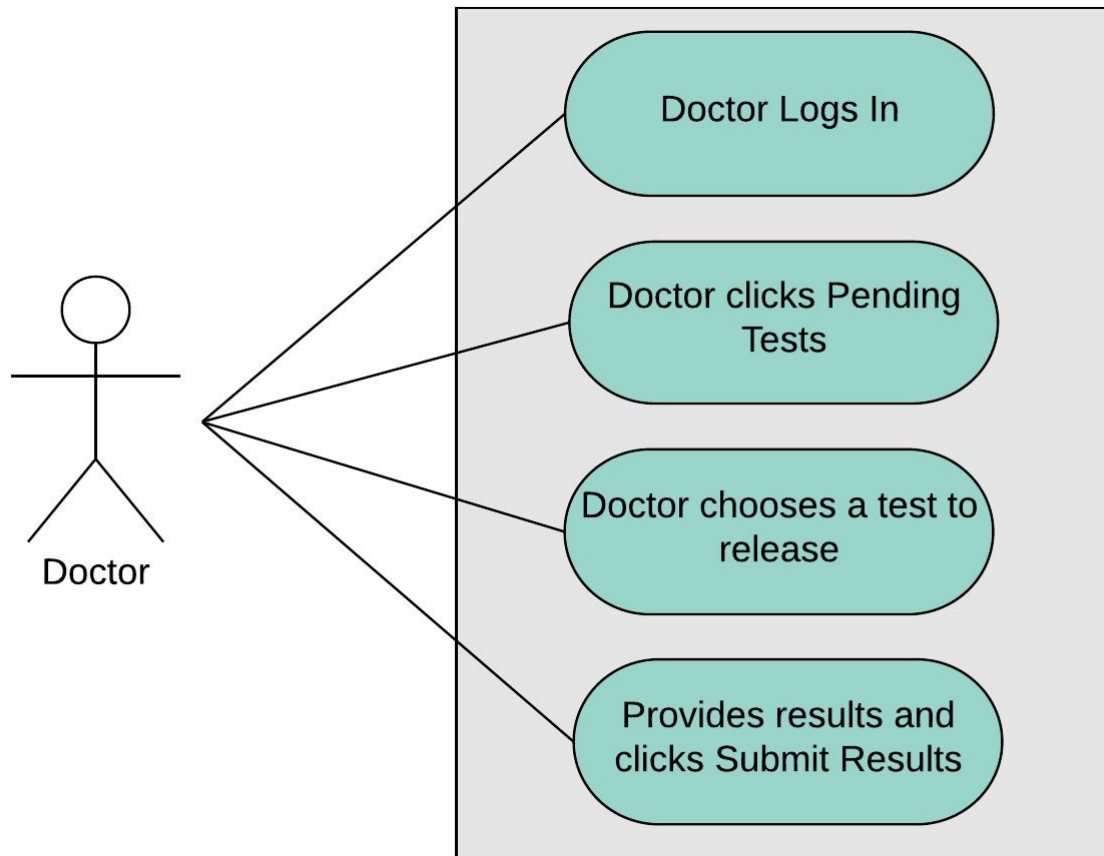| Use Case Number:	UC-R2-10
Use Case Name:	**Viewing Patient Medical Information Prescriptions and Tests and Results**
Overview:	**Doctors can view all medical information for any patient in the system** **Nurses can only view patient medical information in the hospital they work for** **Patients can view their tests and prescriptions**
Primary Actor(s):	**Doctors, Nurses, Patients**
Secondary Actor(s):	**None**
Pre-condition(s):	**Doctors and Nurses have respective powers**
Main Flow of Events:	*Main (success) Flow:* 6. **User logs in** 7. **Patient clicks on Prescriptions or Test Results** 8. **Doctor/Nurse clicks on patients** 9. **Doctor/Nurse chooses patient** 10. **Information is displayed**
Alternate Flow of Events:	*Alternate Flows: None*

Diagram for UC-R2-10

Release Test Results

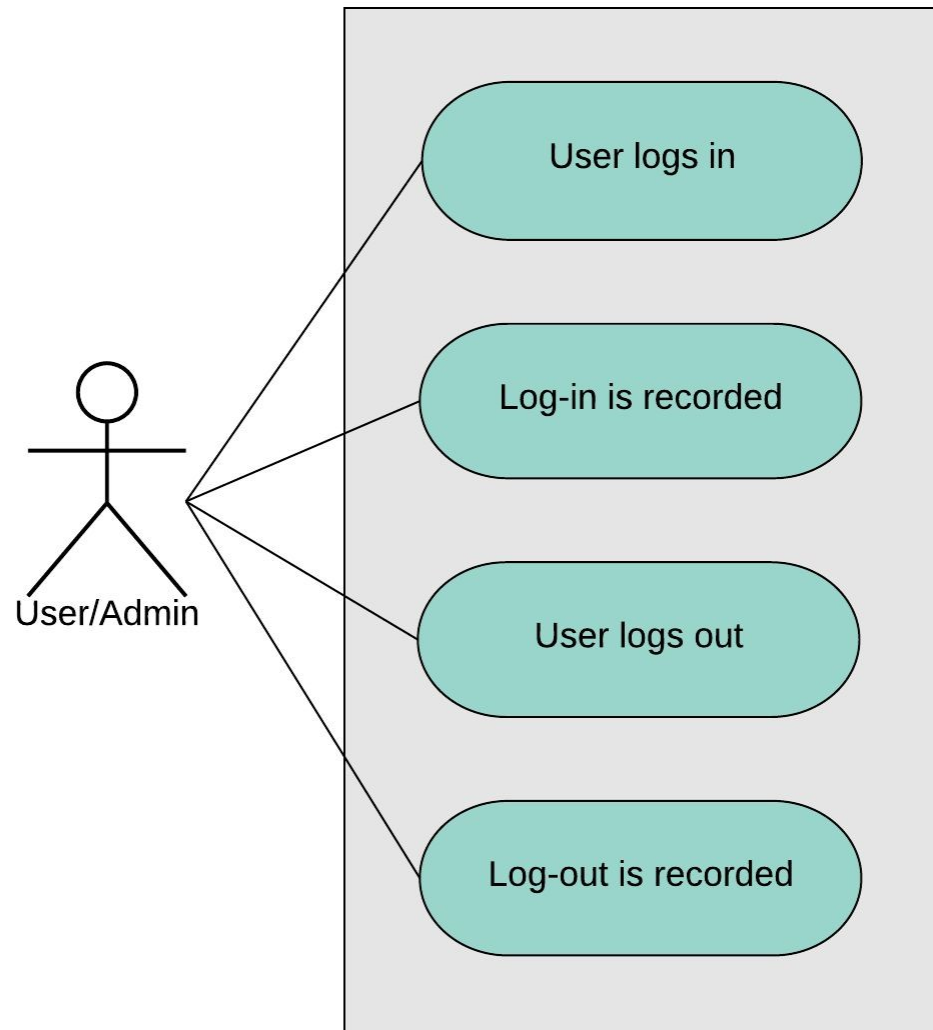| Use Case Number:	*UC-R2-11*
Use Case Name:	*Release Test Results*
Overview:	*Doctors can release a patient's test results*
Primary Actor(s):	*Doctors*
Secondary Actor(s):	*None*
Pre-condition(s):	*- There is a test result to release*
Scenario Flow:	*Main (success) Flow:* 1. *Doctor logs in* 2. *Clicks Pending Tests* 3. *Chooses a test to release* 4. *Provide results and click submit results*
Alternate Flows:	*Alternate Flow: None*

Diagram for UC-R2-11

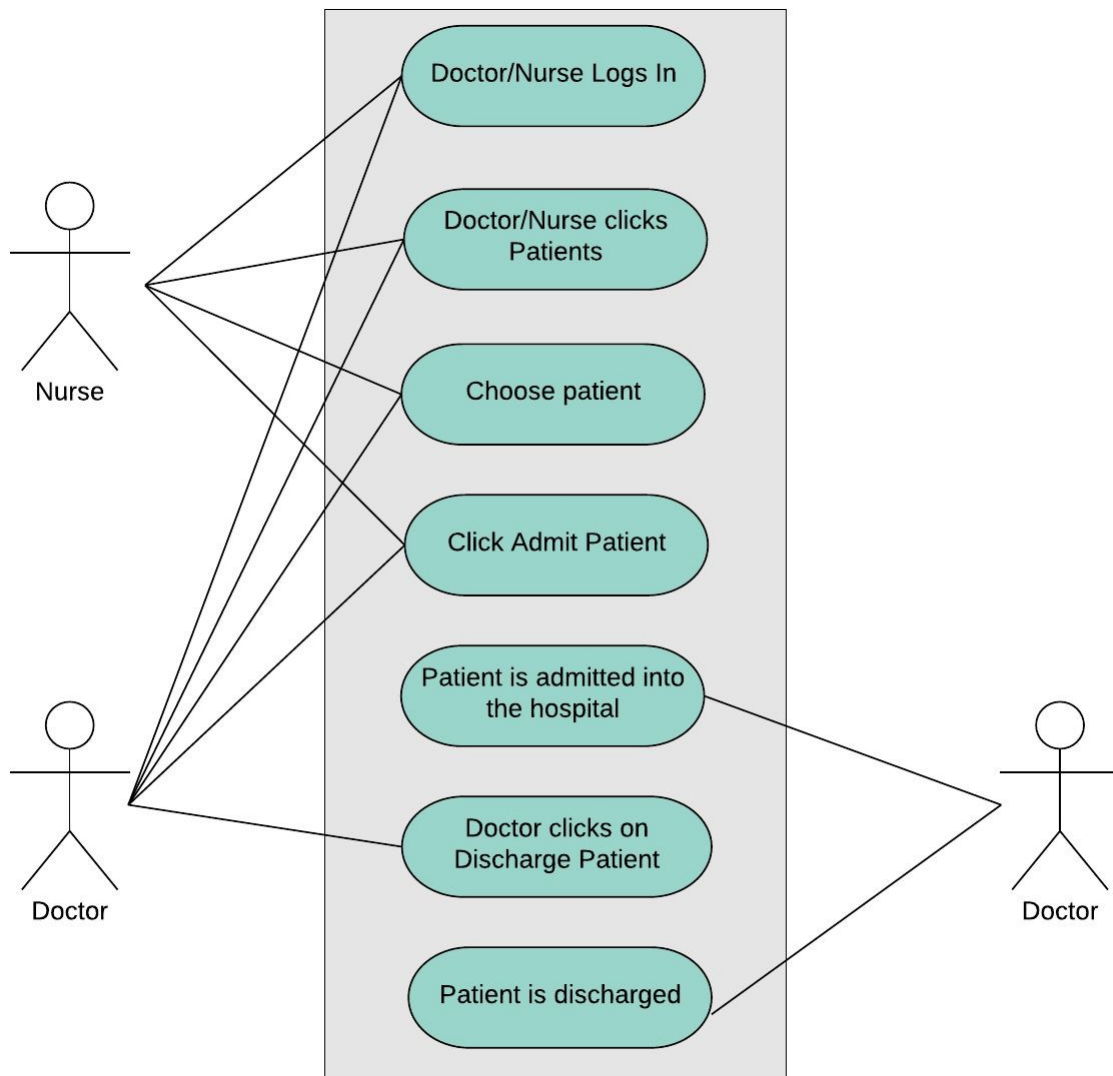**Logging System Activity**

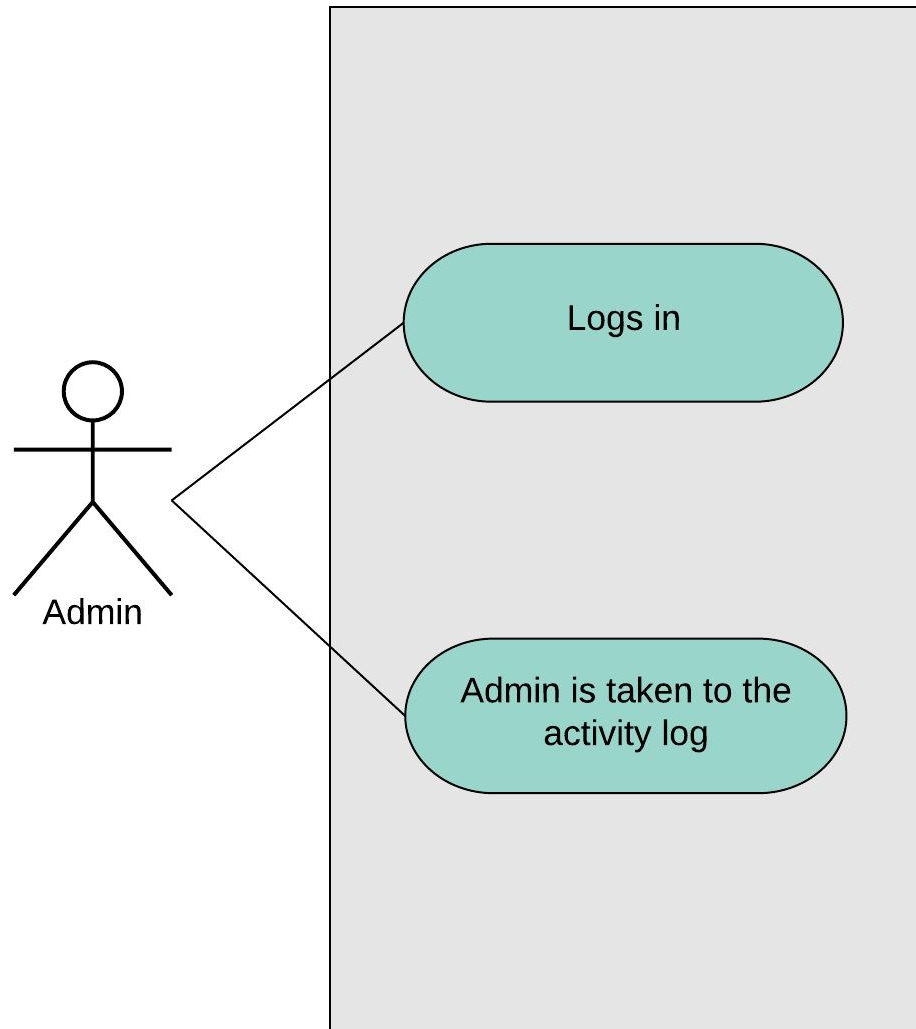| Use Case Number:	*UC-R1-12*
Use Case Name:	*Logging System Activity*
Overview:	*For security, many actions in the system will be logged for review at a later date*
Primary Actor(s):	*Users*
Secondary Actor(s):	*Admins*
Pre-condition(s):	*- System has been setup and configured.* *- System is running and open for registrations.* *- Users/Admins have an account to log in with*
Scenario Flow:	*Main (success) Flow:* 5. *User/Admin logs in* 6. *System records the log in*

Alternate Flows:	*Alternate Flow #1: User fails to log in 1.*
	        System does not record the
	    attempt

Diagram for UC-R1-12

Admission and Discharge to/from Hospital

Use Case Number:	*UC-R2-13*
Use Case Name:	*Admission and discharge to/from Hospital*
Overview:	*Doctors and Nurses can admit a patient to the hospital for an extended stay* *Doctors can discharge a patient from the hospital*
Primary Actor(s):	*Doctors and Nurses*
Secondary Actor(s):	*Patient*
Pre-condition(s):	*- Everyone has an account*
Scenario Flow:	*Main (success) Flow:* 1. *Doctor/Nurse logs in* 2. *Doctor/Nurse clicks Patients* 3. *Choose patient* 4. *Click Admit Patient* 5. *Patient is admitted into the Hospital* 6. *Doctor clicks Discharge Patient* 7. *Patient is discharged*
Alternate Flows:	*Alternate Flow: Patient does not have an account* 1. *An account must be made as soon as possible* 2. *Previous steps are then followed*

Diagram for UC-R2-13

Viewing Activity Log

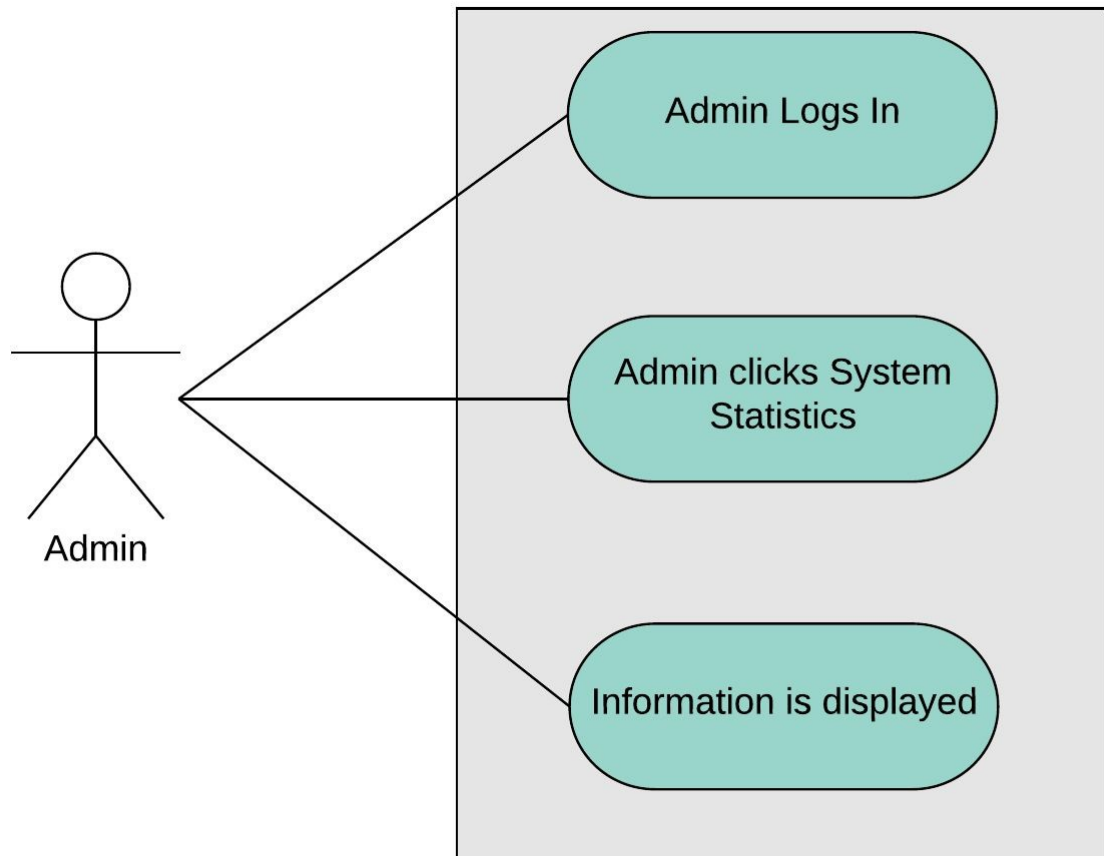| Use Case Number:	*UC-R1-14*
Use Case Name:	**Viewing Activity Log**
Overview:	**Administrators will be able to view the logs of all system activity for a given time-frame at their hospital.**
Primary Actor(s):	**Admins**
Secondary Actor(s):	**<NONE>**
Pre-condition(s):	*- System has been setup and configured.* *- System is running and open for registrations.* *- Admin has accessed website with administration powers*
Scenario Flow:	1. *Admin logs in* 2. *Admin is taken to the Activity Log*
Alternate Flows:	*Alternate Flow #1: Admin does not select a time frame* 1. *System asks for a time frame* 2. *Admin provides time frame and clicks "View"* 3. *Activity Log is displayed*

Diagram for UC-R1-1

Viewing System Statistics

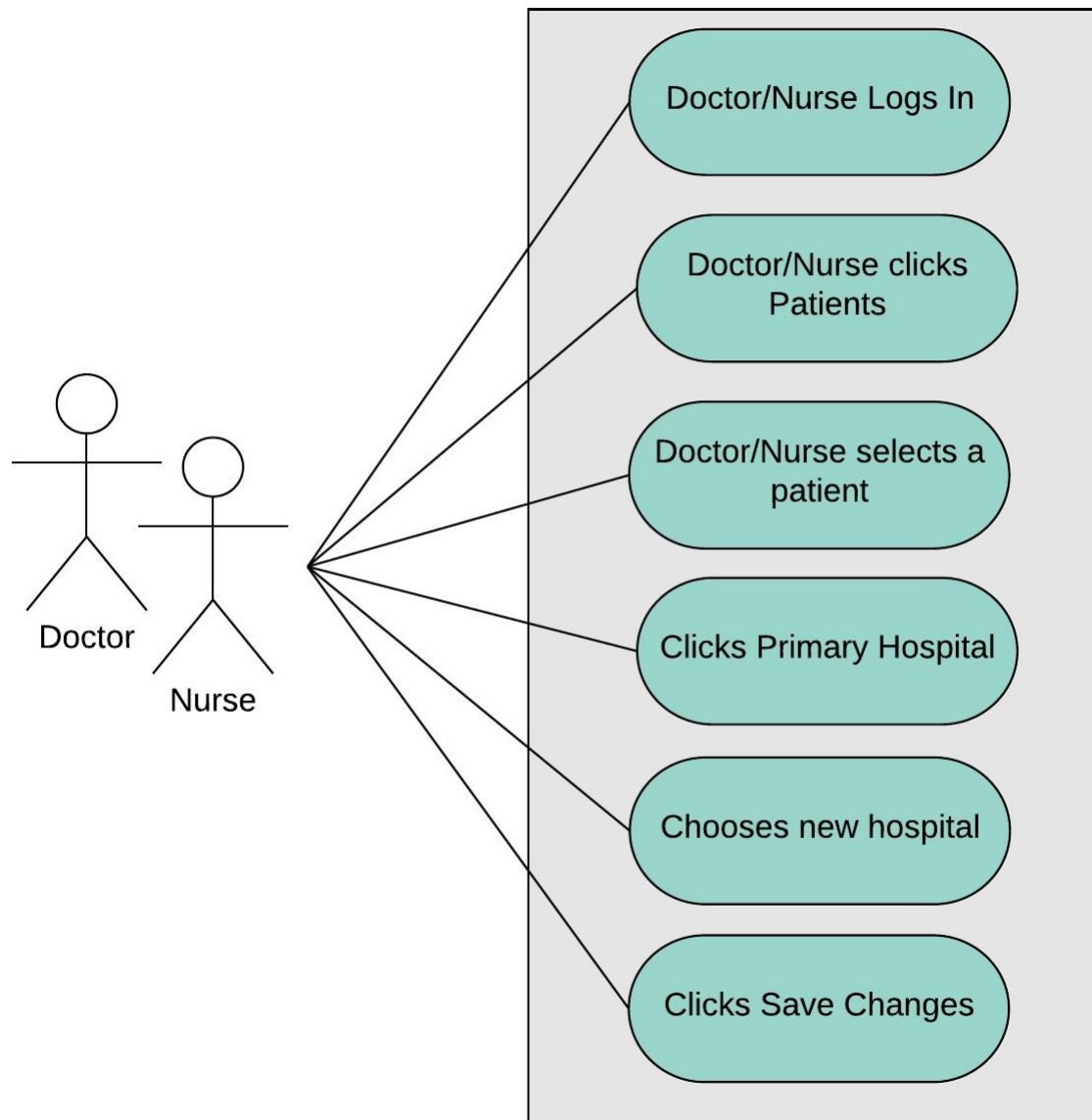| Use Case Number:	*UC-R2-15*
Use Case Name:	*Viewing System Statistics*
Overview:	*Administrators can see statistics*
Primary Actor(s):	*Admins*
Secondary Actor(s):	*None*
Pre-condition(s):	*- System has been setup and configured.* *- Admins has superuser powers*
Scenario Flow:	*Main (success) Flow:* 1. *Admin logs in* 2. *Admin clicks System Statistics* 3. *Information is displayed*
Alternate Flows:	*Alternate Flow: None*

Diagram for UC-R2-15

Patient Transfer

Use Case Number:	*UC-R2-16*
Use Case Name:	*Patient Transfer*

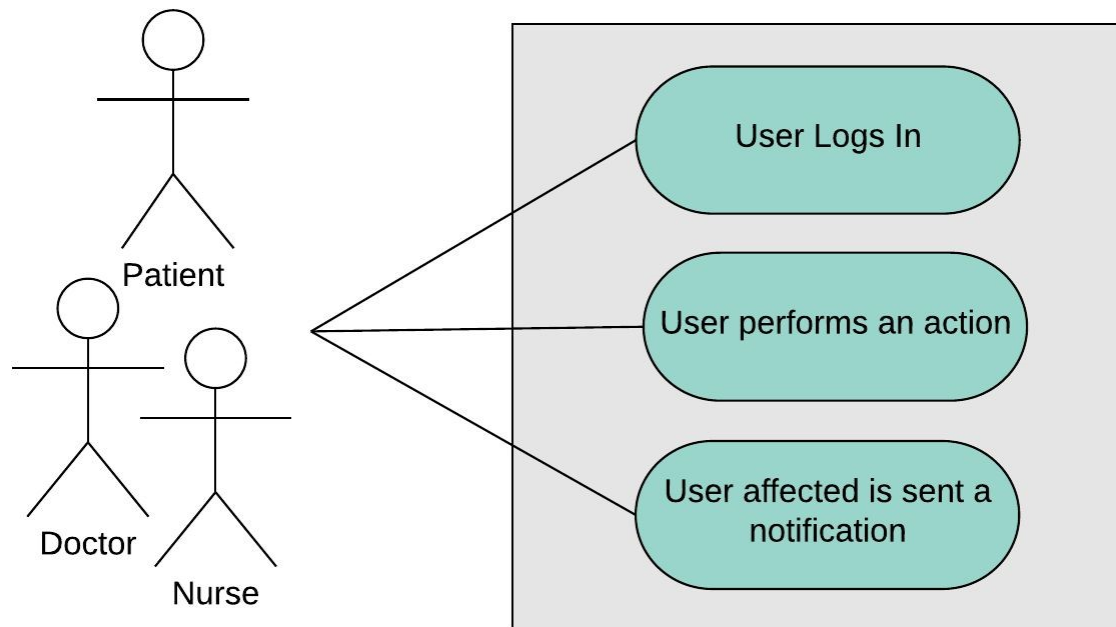| Overview:	*Patient can be transferred between hospitals*
Primary Actor(s):	*Doctors and Nurses*
Secondary Actor(s):	*Patients*
Pre-condition(s):	*- All accounts are working properly*
Scenario Flow:	*Main (success) Flow:* 1. *Doctor/Nurse logs in* 2. *Doctor/Nurse clicks Patients* 3. *Selects a patient* 4. *Click Primary Hospital* 5. *Choose new hospital* 6. *Click save changes*
Alternate Flows:	*Alternate Flow #1: New and old hospital are the same* 1. *System displays an error message*

Diagram for UC-R2-16

Upload Patient Information

Use Case Number:	*UC-R2-17*
Use Case Name:	*Notification System*
Overview:	*Users will be able to receive notifications for actions including but not limited to:* - *Messages* - *New Test Results* - *New Appointments*
Primary Actor(s):	*Patients, Doctors, Nurses*
Secondary Actor(s):	*None*
Pre-condition(s):	- *User has an account registered*
Scenario Flow:	*Main (success) Flow:* 1. *User logs in* 2. *User performs an action* 3. *User affected by action is notified*
Alternate Flows:	*Alternate Flow: None*

Diagram for UC-R2-17

Send Private Message

Use Case Number:	*UC-R2-18*
Use Case Name:	**Send Private Message**
Overview:	**All website users can send messages to each other through the website. Users are notified when a message is received and can instantly reply. Users can send short messages of a limited number of characters to each other.**
Primary Actor(s):	**Doctors, nurses, patients and administrators**
Secondary Actor(s):	**<None>**

Pre-condition(s):	-User has an account -User is logged in -User has someone to message
Scenario Flow:	1. *User logs in.* 2. *User hits the message button.* 3. *User clicks Compose Message* 4. *User selects an user and writes message* 5. *Click Send Message*
Alternate Flows:	*Alternate Flow: 1#* *Message does not send.*

Diagram for UC-R2-18