

Product Requirements

Team: 201661-12-SWEN-261-TEAM-2-Grewp2

<i>Revision Number</i>	<i>Revision Date</i>	<i>Summary of Changes</i>	<i>Author(s)</i>
0.1	09/06/16	Initial revision	Nick Deyette, Kyler Freas, Smruthi Gadenkanahalli, Umang Garg
0.2	09/29/16	Changed the use case template for changing the user's profile information. Patients can no longer change their email. However, Patients can change their contact number and emergency contact numbers.	Nick Deyette
0.3	10/03/16	Updated certain use cases to match what is actually being delivered to the customer. Features that were promised but not delivered will be put in red and will be noted for R2.	Nick Deyette

Brief problem statement

The project is meant to give hospitals an easy method to manage their daily functions. It will serve as a management product in which hospitals can easily find both patient and employee data. Patients should also be able to schedule appointments and update their data. The end goal is to provide a convenient, straightforward system which improves the connection between patients and hospital employees.

Stakeholders

HAccelerator Board of Directors – oversee the projects 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 principle 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.

Users profile

The target user must:

- Have basic experience using computers and browsing the internet. Has filled out online forms or surveys and may have purchased or sold a product.
- Have a computer with access to the internet
- Have an interest in improving their health by using an online way of interacting with their hospital
- Be willing to share information such as home address and contact information as well as more personal information such as medical history

System requirements

At a high-level this project will be source controlled in SVN, run on Django using python, sqlite and needs to be compatible with the latest browsers.

Although the application needs to be accessible through the internet, deployments and demonstrations for this phase of the project will take place within the RIT Software Engineering environment. To this end, you must understand and document the target platforms from the perspective of the client browser as well as that of the server. Make sure to capture versions or software dependencies, programming languages and hardware specifications that are available for your use and proceed only after you document and confirm these with the customer.

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.

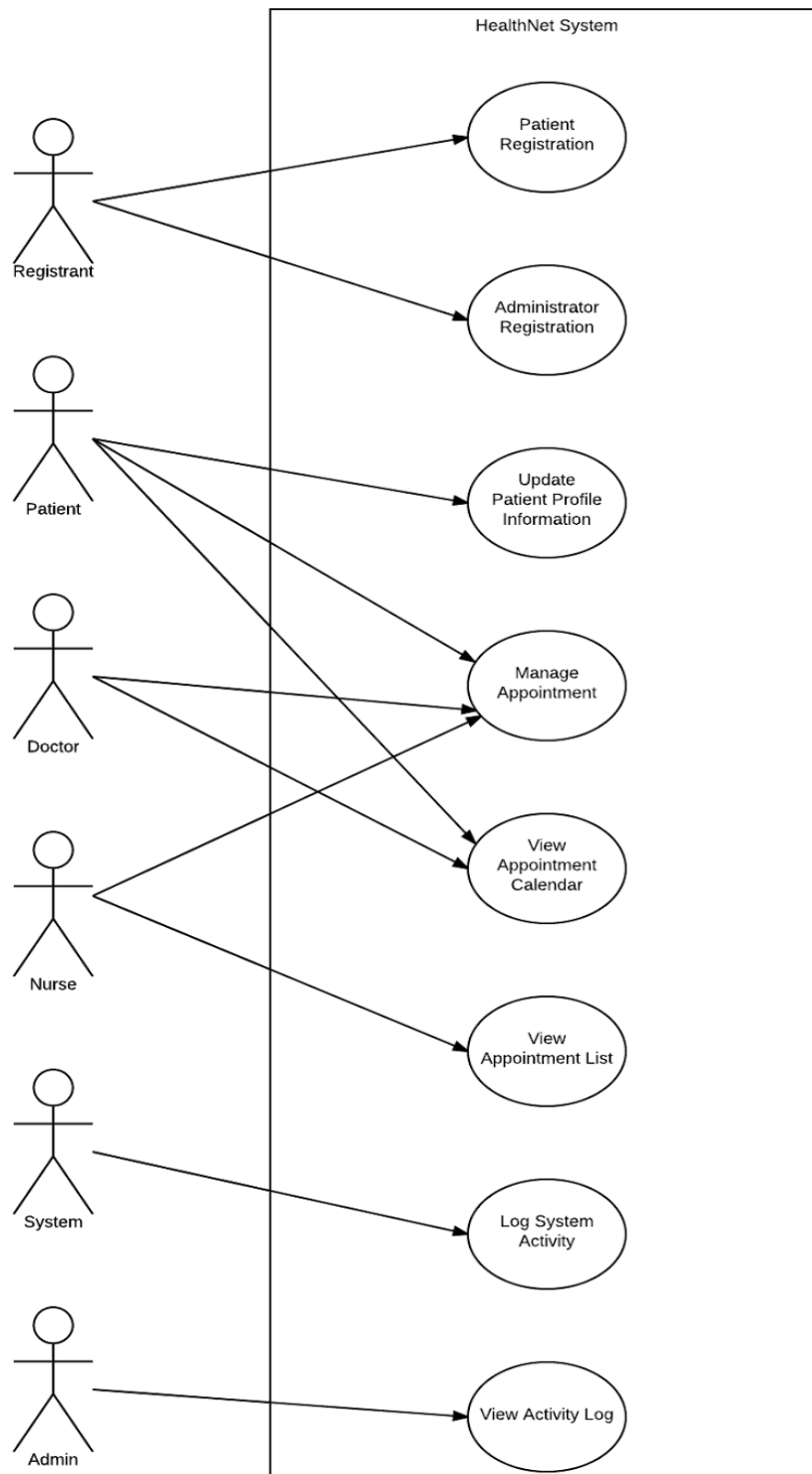
No	User Story Name	Description	Release
1	Patient Registration	Users sign up to become a Patient by providing their personal contact information, proof of insurance and unique login credentials. Additionally, a patient should provide the system with some basic medical profile information , a choice of preferred hospital and emergency contact information (linked to another patient if they are already in the system).	R1 R2
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.	R1
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	<p>Patients, doctors and nurses can create or update an appointment with a doctor and at one of the doctor's available locations.</p> <p>If the patient or doctor already has an appointment at the time selected, then the system will not allow for the appointment.</p>	R1 R2
7	Cancel Patient Appointment	<p>Patients can cancel their existing appointments.</p> <p>Doctors can cancel their existing appointments.</p> <p>Nurses cannot cancel (only modify) existing appointments.</p>	R1
8	Appointment Calendar for Doctors and Patients	Doctors and patients will easily be able to view all of their appointments in a calendar view.	R1
9	Appointment Calendar for Nurses	Nurses will be able to see all appointments for the day and week between Patients and Doctors.	R1
10	Add/Remove Prescriptions	<p>Doctors can add or remove a prescription to a patient record.</p> <p>Nurses can view the prescriptions of patients belonging to the same hospital.</p> <p>Patients can view their prescriptions from their account.</p>	R2
11	Viewing Patient Medical Information, Prescriptions and Tests and Results	<p>Doctors can view all medical information for any patient in the system (regardless of Hospital).</p> <p>Nurses can only view patient medical information in the hospital they work for.</p> <p>Patients can view their tests (pending or completed) and view the corresponding results for those tests that have been released by the doctor.</p>	R2

		Prescriptions and other non-sensitive information is viewable by the patient without a need for doctor's release.	
12	Release Test Results	<p>Doctors (within the patient's hospital) can, upon evaluating a patient's test results, release them for view by that patient.</p> <p>Comments may be added to the specific test result for view by the patient.</p>	R2
13	Logging System Activity	<p>For security, many actions in the system will be logged for review at a later date.</p> <p>Some examples of actions to be logged include but are 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.</p>	R1
14	Admission and Discharge to/from Hospital	<p>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.</p> <p>Doctors are the only ones to approve a patient's discharge from the Hospital. This event is recorded by the system.</p>	R2
15	Viewing Activity Log	<p>Administrators will be able to view the logs of all system activity for a given time-frame at their hospital. Some examples of this might be:</p> <ul style="list-style-type: none"> - breakdown of the viewing activity of patient records or by system user - most common system activities (or by user) <p>Other important and informative statistics yet to be determined.</p>	R1 R2
16	Viewing System Statistics	<p>Administrators will be able to view compiled statistics for a given time-frame at their hospital. Some examples of this might be:</p> <ul style="list-style-type: none"> - number of patients visiting the hospital 	

		<ul style="list-style-type: none">- 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 <p>Other important and informative statistics yet to be determined.</p>	R2
17	Patient Transfer	<p>Patient can be transferred between hospitals.</p> <p>Transfers can be carried out by either administrators or by doctors (ones who are at the receiving hospital).</p>	R2
18	Upload Patient Information	<p>Doctors will be able to upload the results of a patient's tests if needed.</p> <p>Doctors will be able to upload images such as those used in X-Rays to update a patient's record.</p> <p>Uploads are considered as updates to a patient's medical information.</p>	R2
19	Send Private Message	<p>Doctors, nurses, patients and administrators can send private messages of limited length via the system.</p>	R2

Use case context diagram



Use case description

Use Case Number:	<i>UC-01</i>
Use Case Name:	<i>Patient Registration</i>
Overview:	<i>Registrant shall provide personal, medical, and emergency contact information to the System upon registering and becoming a Patient.</i>
Actor(s):	<i>Registrant</i>
Pre-condition(s):	<i>- System has been setup and configured. - System is running and open for registrations. - Registrant has accessed website via URL</i>
Scenario Flow:	<i>Main (success) Flow:</i> <i>1. Registrant selects option to register</i> <i>2. System requests personal, login and contact information</i> <i>3. Registrant provided information.</i> <i>4. System verifies required information is provided.</i> <i>• If information is invalid System displays message. Return to Step 2</i>
Alternate Flows:	<i>Alternate Flow #1: After Step 2 in success scenario System will display the option to Cancel the registration process. The following steps would occur:</i> <i>1. Registrant selects option to cancel during registration</i> <i>2. System returns to main screen</i> <i>3. Registrant is not saved to the system</i>
Post Condition:	<i>Registrant completed registration. System stores Registrant's information.</i>

Use Case Number:	UC-02
Use Case Name:	Administrator Registration
Overview:	Registrant shall provide personal and contact information to the System upon registering and becoming a Administrator.
Actor(s):	Administrator
Pre-condition(s):	<ul style="list-style-type: none"> - System has been setup and configured. - System is running and open for registrations. - Administrator has accessed website via URL -Administrator is a valid user with administrative power
Scenario Flow:	<p>Main (success) Flow:</p> <ol style="list-style-type: none"> 1. Administrator selects option to create a new user 2. System prompts for new user information, such as: <ol style="list-style-type: none"> a. User Type b. Username c. First and Last Name d. Email e. Password 3. Administrator enters new user information 4. System confirms that all required information is entered <ol style="list-style-type: none"> a. If information is valid, system displays message. Return to step 2. 5. System creates a new user
Alternate Flows:	<p>Alternate Flow #1: After Step 2 in success scenario System will display the option to Cancel the registration process. The following steps would occur:</p> <ul style="list-style-type: none"> • Administrator selects option to cancel during registration • System returns to main screen • New user is not created
Post Condition:	Administrator completed creation of the new user. System stores the new user's information.

Use Case Number:	UC-03
Use Case Name:	<i>Update Patient Profile Information</i>
Overview:	<i>Patients can update their profile information.</i>
Actor(s):	<i>Patient</i>
Pre-condition(s):	<ul style="list-style-type: none"> - <i>System has been setup and configured.</i> - <i>System is running and ready to accept a request to update profile information</i> - <i>Patient has accessed website via URL</i> - <i>Patient should have an account</i>
Scenario Flow:	<p><i>Main (success) Flow:</i></p> <ol style="list-style-type: none"> 1. <i>Patient selects option to update their profile information</i> 2. <i>Patient selects option to edit contact number/emergency contact number/password</i> <ul style="list-style-type: none"> ○ <i>If Patient selects change contact number, enter a new contact number</i> ○ <i>If Patient selects change emergency contact number, enter a new emergency contact number</i> ○ <i>If Patient selected change password, prompt for old password</i> ○ <i>If entered password is correct, change to new password</i>
Alternate Flows:	<p><i>Alternate Flow #1: After Step 2 in success scenario System will display the option to Cancel the modification process. The following steps would occur:</i></p> <ul style="list-style-type: none"> ● <i>Patient selects option to cancel during modification</i> ● <i>System returns to main screen</i> ● <i>Patient information is not saved</i>
Post Condition:	<i>Patient information is saved</i>

Use Case Number:	UC-04
Use Case Name:	Create Patient Appointment
Overview:	<p><i>Patients, doctors and nurses can create an appointment with a doctor and at one of the doctor's available locations.</i></p> <p><i>If the patient or doctor already has an appointment at the time selected, then the system will not allow for the appointment.</i></p>
Actor(s):	User
Pre-condition(s):	<ul style="list-style-type: none"> - System has been setup and configured. - System is running and ready to accept a request to create an appointment - User has accessed website via URL - User has an account
Scenario Flow:	<p>Main (success) Flow:</p> <ol style="list-style-type: none"> 1. User selects option to create an appointment 2. System checks if user is a Patient, Doctor or Nurse <ol style="list-style-type: none"> a. If user is a nurse, go to step 3 b. If user is a patient, go to step 3 c. If user is a doctor, go to step 6 3. System shows a list of doctors 4. User selects a doctor with which to make the appointment 5. If user is a patient, go to step 8. Else, continue to step 6. 6. System shows list of patients 7. User selects patient for which to make appointment 8. System displays availability calendar 9. User selects date and time from calendar 10. User confirms creation of appointment
Alternate Flows:	<p>Alternate Flow #1: After Step 2 in success scenario System will display the option to Cancel the creation process. The following steps would occur:</p> <ul style="list-style-type: none"> • User selects option to cancel during creation • System returns to main screen • Appointment is not created

Post Condition:	<i>The given Patient has an appointment at the given date and time with the given Doctor</i>
------------------------	--

Use Case Number:	UC-05
Use Case Name:	Update Appointment
Overview:	<p><i>Patients, doctors and nurses can create an appointment with a doctor and at one of the doctor's available locations.</i></p> <p><i>If the patient or doctor already has an appointment at the time selected, then the system will not allow for the appointment.</i></p>
Actor(s):	User
Pre-condition(s):	<ul style="list-style-type: none"> - System has been setup and configured. - System is running and ready to accept a request to update an appointment - An appointment has been created - User has accessed website via URL - User has an account
Scenario Flow:	<p>Main (success) Flow:</p> <ol style="list-style-type: none"> 1. User selects option to update appointment 2. System checks if user is a Patient, Doctor or Nurse <ol style="list-style-type: none"> a. If user is a nurse, go to step 3 b. If user is a doctor OR patient, go to step 5 3. System shows list of doctors 4. User selects a doctor 5. System shows calendar with all appointments for the doctor 6. User has option to select a change to appointment: <ol style="list-style-type: none"> a. Select a new doctor (if user is a nurse or patient) b. Select a new patient (if user is a nurse) c. Select a new date/time 7. User confirms their changes to the appointment
Alternate Flows:	<p>Alternate Flow #1: After Step 2 in success scenario System will display the option to Cancel the update process. The following steps would occur:</p> <ul style="list-style-type: none"> • User selects option to cancel during update • System returns to view appointment screen • Appointment is not updated <p>Alternate Flow #2: After step 5 in success scenario System will display a calendar of all the appointments. If a user selects a past appointment, the following steps would occur:</p>

	<ul style="list-style-type: none">• <i>Patient clicks on past appointment</i>• <i>Details for past appointment are displayed, but the user can not update it</i>
Post Condition:	<i>Appointment is updated</i>

Use Case Number:	UC-06
Use Case Name:	<i>Cancel Appointment</i>
Overview:	<p><i>Patients can cancel their existing appointments.</i></p> <p><i>Doctors can cancel their existing appointments.</i></p> <p><i>Nurses cannot cancel (only modify) existing appointments.</i></p>
Actor(s):	<i>User</i>
Pre-condition(s):	<ul style="list-style-type: none"> - <i>System has been setup and configured.</i> - <i>System is running and ready to accept a request to cancel an appointment</i> - <i>An appointment has been created</i> - <i>User has accessed website via URL</i> - <i>User has an account</i> - <i>User must be a patient or doctor</i>
Scenario Flow:	<p><i>Main (success) Flow:</i></p> <ol style="list-style-type: none"> 1. <i>User selects option to cancel an appointment</i> 2. <i>System shows appointment calendar for User</i> 3. <i>User selects appointment to cancel</i> 4. <i>System shows confirmation to cancel the appointment</i> 5. <i>User confirms cancellation</i> <ol style="list-style-type: none"> a. <i>If User denies the cancellation, System sends user to main screen</i> 6. <i>System removes appointment</i>
Alternate Flows:	-
Post Condition:	<i>The appointment is cancelled</i>

Use Case Number:	UC-07
Use Case Name:	Viewing Appointment Calendar (for doctor or patient)
Overview:	Doctors and patients will easily be able to view all of their appointments in a calendar view.
Actor(s):	User
Pre-condition(s):	- System has been setup and configured. - System is running and ready to accept a request to show the calendar - User has accessed website via URL - User has an account - User must be a patient or doctor
Scenario Flow:	Main (success) Flow: 1. User selects option to view their appointment calendar 2. System shows appointment calendar for User
Alternate Flows:	-
Post Condition:	The calendar for the specific user is shown

Use Case Number:	UC-08
Use Case Name:	<i>Viewing Appointment Calendar (for nurse)</i>
Overview:	<i>Nurses will be able to see all appointments for the day and week between Patients and Doctors.</i>
Actor(s):	<i>User</i>
Pre-condition(s):	<i>- System has been setup and configured. - System is running and ready to accept a request to show the calendar - User has accessed website via URL - User has an account - User must be a nurse</i>
Scenario Flow:	<i>Main (success) Flow: 1. User selects option to view their appointment calendar 2. System shows option to select a doctor 3. User selects a doctor 4. System shows appointment calendar for the selected doctor. Will only include appointments that occur on a day that is in the current week.</i>
Alternate Flows:	<i>-</i>
Post Condition:	<i>The calendar week for the selected doctor is shown</i>

Use Case Number:	UC-09
Use Case Name:	Logging System Activity
Overview:	<p><i>For security, many actions in the system will be logged for review at a later date.</i></p> <p><i>Some examples of actions to be logged include but are 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.</i></p>
Actor(s):	System
Pre-condition(s):	<ul style="list-style-type: none">- <i>System has been setup and configured.</i>- <i>System is running and ready to accept a request to log activity</i>- <i>User has accessed website via URL</i>- <i>User has triggered an action on the System which has successfully completed</i>
Scenario Flow:	<p>Main (success) Flow:</p> <ol style="list-style-type: none">1. <i>System accepts the request to log activity</i>2. <i>System determines the type of action performed</i>3. <i>System determines current date/time</i>4. <i>System records the action that was performed along with the date/time</i>
Alternate Flows:	-
Post Condition:	<i>The action is successfully logged by the system</i>

Use Case Number:	UC-10
Use Case Name:	<i>Viewing Activity Log</i>
Overview:	<i>Administrators will be able to view the logs of all system activity for a given time-frame at their hospital. Some examples of this might be:</i> <ul style="list-style-type: none"><i>- breakdown of the viewing activity of patient records or by system user</i><i>- most common system activities (or by user)</i> <i>Other important and informative statistics yet to be determined.</i>
Actor(s):	<i>Admin</i>
Pre-condition(s):	<i>- System has been setup and configured.</i> <i>- System is running and ready to accept a request to view activity log</i> <i>- Admin has accessed website via URL</i> <i>- User is an admin</i>
Scenario Flow:	<i>Main (success) Flow:</i> <ol style="list-style-type: none"><i>1. Admin selects option to view activity log</i><i>2. System displays complete activity log (date/time, type of action, user if applicable) for all actions</i>
Alternate Flows:	<i>-</i>
Post Condition:	<i>Admin is able to view the complete activity log</i>