Product Requirements

Team: <*Team 5 Tigers*>

Revision Number	*Revision Date*	*Summary of Changes*	*Author(s)*
0.0	02/07/16	Initial write-up. This is just an initial write which will change as we become more familiar with the project	Team 5 together
0.1	02/16/16	General makeover of the document to reflect how the team is progressing so far. In addition, stakeholders is updated based on the feedback from the first submission.	Robert Mason
0.2	02/27/16	Re-wrote the Use-cases to be more in line with how the program will actually function. In addition, some of the scheduled features of R2 have had their Use-cases altered based on what we expect to achieve in our time frame.	Robert Mason

Brief problem statement

We represent a funding group (HAccelerator) chartered to create applications for the benefit of health-care across the country. The project we currently want to make a reality will be called **HealthNet**. At its core, HealthNet is meant to enable their hospitals in the US to be able to manage both employees and patients. The successful implementation should make it easy for users to effortlessly sign-up as patients so that the hospital can, without difficulty, manage their procedures and patient related tasks to optimize day-to-day work-flow.

The HealthNet product is intended to improve hospitals by providing an easy mechanism for managing employees, gathering statistical data on the inner workings of the hospital,

signing up patients, making appointments, and allowing ease of transfer of both patients and their information between hospitals.

We want a product whose emphasis is on ease of use, whose navigation is straightforward and where the status of any, and all, information shown is clearly displayed. Ultimately, a system where understanding and communication about hospital and patient matters is improved.

The problem in hand is to optimization of the day to day work flow of the employees. Healthnet will allow us to solve this problem. A successful application will allow the patients sign up without any difficulty and manage patient related to tasks in no time. From the employees' perspective, this app will allow the doctors to transfer patients information to different hospitals. It will make easier for the patients to set appointments and sign up.

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.
Program Users– These are the actual users of HealthNet. Arguably the most important people involved because if they had no need for the software, why would it have been created in the first place? This includes everyone in the system (Doctors, Patients, Nurses, Administrators).

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. This probably isn't mandatory but is just helpful to ensure that the end user knows what they are doing as well as the potential risks that can be associated with this.
- 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

In addition, there are a number of non required features of the program which includes stuff like understanding the the medicare system in general but this is likely only helpful. Because the actual payment system is outside the scope of this program this is assumed to be relatively irrelevant and thus is discarded. In addition, the target user should probably have some sort of medical need before entering into the system. A large number of users trying to register at the same time could slow the system down and harm the experience for others.

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**
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.	**R1**

		If the patient or doctor already has an appointment at the time selected, then the system will not allow for the appointment.	
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. Nurses can view the prescriptions of patients belonging to the same hospital. Patients can view their prescriptions from their account.	R2
10	Viewing Patient Medical Information, Prescriptions and Tests and Results	Doctors can view all medical information for any patient in the system (regardless of Hospital). Nurses can only view patient medical information in the hospital they work for. 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 not limited to updating of a Patient's information, viewing of a Patients information/records, and transfers of a Patient from one hospital to another.	**R1**
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 are the only ones to approve a patient's discharge from the Hospital. This event is recorded by the system.	R2
14	Viewing Activity Log	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: - breakdown of the viewing activity of patient records or by system user - most common system activities (or by user) Other important and informative statistics yet to be determined.	**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	R2

		- average length of stay (from admission to discharge) - most common reasons for being admitted to the hospital - prescription statistics Other important and informative statistics yet to be determined.	
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	Upload Patient Information	Doctors will be able to upload the results of a patient's tests if needed. Doctors will be able to upload images such as those used in X-Rays to update a patient's record. Uploads are considered as updates to a patient's medical information.	R2
18	Send Private Message	Doctors, nurses, patients and administrators can send private messages of limited length via the system.	R2

Use case context diagram

Patient Registration

Administrator Registration

Update Patient Profile Information

Update Patient Medical Information

Export Information

Create or Update Patient Appointment

Cancel Patient Appointment

Appointment Calendar

Add/Remove Prescriptions

Viewing Patient Medical Information, Prescriptions and Tests and Results

Release Test Results

Logging System Activity

Admission and Discharge to/from Hospital

Viewing Activity Log

Viewing System Statistics

Patient Transfer

Upload Patient Information

Send Private Message

Use case description

Use Case Number:	***UC-01***
Use Case Name:	***Patient Registration***

Overview:	***The purpose of this is to allow users to register accounts into the system***
Actor(s):	***Patient***
Pre-condition(s):	***Patient does not have an account already***
Scenario Flow:	1. ***Patient enters software*** ***2. Patient hits create account button*** ***3. Patient creates a username/password*** ***4. System checks to make sure that it is valid*** ***5. Patient enters medical profile information, preferred hospital, and emergency contact information*** ***6. System stores all of this for later***
Alternate Flows:	***If there is an account already it tells the user that it has been taken already and forces them to redo their account***
Post Condition:	***The user will have an account.***

Use Case Number:	***UC-02***
Use Case Name:	***Administrator Registration***
Overview:	***This is for when Doctors, Nurses, and Administrators are added to the system. This is done through account creation which is subsequently validated by an existing administrator***
Actor(s):	***Doctor/Nurse/Administrator and a different administrator***
Pre-condition(s):	***User is either a Doctor/Nurse/Administrator and there is already an administrator in the system***
Scenario Flow:	***1. An existing administrator creates a new account for a new user*** ***2. This is then validated by the user***
Alternate Flows:	***If the user isn't an employee of a hospital they won't be validated.***
Post Condition:	***The user will have an Administrator account***

Use Case Number:	***UC-03***
Use Case Name:	***Update Patient Profile Information***
Overview:	***This allows patients to update their own profile information***
Actor(s):	***Patient***
Pre-condition(s):	***User has a valid account and is already logged in***
Scenario Flow:	1. ***User enters their profile settings*** ***2. User updates their information*** ***3. User hits save which is then saved to the system***
Alternate Flows:	***If the change that is attempted is invalid for any reason it will be cancelled***
Post Condition:	***The users information is up to date***

Use Case Number:	***UC-04***
Use Case Name:	***Update Patient Medical Information***
Overview:	***Doctors and Nurses have the ability to update patient medical information***
Actor(s):	***Doctor/Nurse Patient***
Pre-condition(s):	***The patient must be valid and the Doctor/Nurse must be in their account***
Scenario Flow:	1. ***Doctor/Nurse searches for Patient by name*** ***2. Doctor/Nurse check their medical information*** ***3. Doctor/Nurse updates the information and save it*** ***4. Updated information is saved in the system***

Alternate Flows:	***If the patient doesn't exist nothing will be done***
Post Condition:	***The Patients Medical Information is updated in the system***

Use Case Number:	***UC-05***
Use Case Name:	***Export Information***
Overview:	***Patients will be able to export their information and their test results from the system with relevant privacy warnings.***
Actor(s):	***Patient***
Pre-condition(s):	***User must have an account as well as be signed into the system.***
Scenario Flow:	1. ***User his export information*** ***2. They will be presented with a warning about privacy*** ***3. Data will be exported from the system***
Alternate Flows:	***If the user has no information nothing will be exported.***
Post Condition:	***The data will be exported***

Use Case Number:	***UC-06***
Use Case Name:	***Create or Update Patient Appointment***
Overview:	**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.
Actor(s):	***Patients/Doctors/Nurses and a Patient***
Pre-condition(s):	***Patient must have an active account***
Scenario Flow:	1. ***The user must be logged in*** ***2. They create/modify an appointment with a doctor and a location*** ***3. The system checks to see if this is valid*** ***4. Appointment is created and saved to the system***
Alternate Flows:	***If the patient or selected doctor has an appointment at that time already it will throw an error and do nothing.***
Post Condition:	***The patient will have an appointment or it will be updated.***

Use Case Number:	***UC-07***
Use Case Name:	***Cancel Patient Appointment***
Overview:	***Describe the purpose of the Use Case and give a 1-2 line description. This could be the same as the description provided for the user story.***
Actor(s):	***Patient/Doctor***
Pre-condition(s):	***The Patient/Doctor must have an active appointment***
Scenario Flow:	1. ***User/Doctor locates their appointment in the system*** ***2. They cancel the appointment*** ***3. System saves this information*** ***4. The other user is notified of this change***
Alternate Flows:	***If there is no appointment it will not be cancelled***

Post Condition:	***The selected appointment is removed***

Use Case Number:	***UC-08***
Use Case Name:	***Appointment Calendar***
Overview:	***Doctors and patients will easily be able to view all of their appointments***
Actor(s):	***Patient/Doctor***
Pre-condition(s):	***User must have a valid account***
Scenario Flow:	1. ***User enters the system*** ***2. User hits the view appointments button*** ***3. They are taken to a screen that shows all of their active appointments***
Alternate Flows:	***none.***
Post Condition:	***User will see all of their appointments in a calendar view***

Use Case Number:	***UC-09***
Use Case Name:	***Add/Remove Perscription***
Overview:	***Doctors have the ability to add/remove prescriptions of patients. Nurses and Patients have the ability to view the prescriptions of patients.***
Actor(s):	***Doctor/Nurse/Patient and a Patient***
Pre-condition(s):	***The Patient must have a valid account***

Scenario Flow:	1. ***The user is logged into the system*** ***2. They go to the prescription tab*** ***3. If they are a doctor they can add/remove prescriptions*** ***4. If they are a user/Nurse they are only allowed to view*** ***5. Changes are saved in the system***
Alternate Flows:	***If the prescription is invalid it won't be added, duplicates must not be allowed.***
Post Condition:	***The prescription is modified in some manner***

Use Case Number:	***UC-10***
Use Case Name:	***Viewing Patient Medical Information, Prescriptions, Tests, and Results***
Overview:	***The goal is to allow users to view the information of Patients***
Actor(s):	***Doctor/Nurse/User***
Pre-condition(s):	***The user must be logged into the system***
Scenario Flow:	1. ***User searches for a patient*** ***2. If they are a doctor, they can view anyone. If they are a nurse they can only view in their own hospital. If they are a Patient they can only view their own information.***
Alternate Flows:	***If the user doesn't exist, the system won't have any results***
Post Condition:	***The user will see the information of either them self or someone else***

Use Case Number:	***UC-11***

Use Case Name:	***Release Test results***
Overview:	***The goal is for the Doctor to release information on the patients test results***
Actor(s):	***Doctor and Patient***
Pre-condition(s):	***The user has a valid Doctor account***
Scenario Flow:	1. ***The doctor searches for a patient*** ***2. The doctor enters the test information*** ***3. The system saves this information*** ***4. The patient has the ability to add comments***
Alternate Flows:	***none.***
Post Condition:	***The test results are in the system and are available for viewing***

Use Case Number:	***UC-12***
Use Case Name:	***Logging System Information***
Overview:	***This is the process in which user actions are recorded in the system for security purposes.***
Actor(s):	***User***
Pre-condition(s):	***Enter the condition that must be true when the main flow is completed.***
Scenario Flow:	1. ***Whenever a user accesses or modifies any information about a patient this is saved to a log***
Alternate Flows:	***If the action performed doesn't involve a patient, it won't be recorded.***
Post Condition:	***User activity will be logged to the system.***

Use Case Number:	***UC-13***
Use Case Name:	***Admission/Discharge from hospital***
Overview:	***The purpose of this is to allow Doctors and Nurses to admit a patient for an extended stay.***
Actor(s):	***Doctor/Nurse and a Patient***
Pre-condition(s):	***Patient must have an account and the Doctor/Nurse must be logged into the system***
Scenario Flow:	1. ***Doctor/Nurse locates the patient in the system*** ***2. They either admit them or discharge them from the hospital*** ***3. The system logs this action for security***
Alternate Flows:	***If the patient doesn't have an account they don't be admitted*** ***If the patient is already in the hospital they won't be re-admitted and if they aren't in the hospital they can't be discharged***
Post Condition:	***The patient will be admitted into a hospital***

Use Case Number:	***UC-14***
Use Case Name:	***Viewing Activity Log***
Overview:	***Administrators will be able to view the logs of all the system activity***
Actor(s):	***Administrator***
Pre-condition(s):	***The user must have an active administrator account***
Scenario Flow:	1. ***Administrator selects the Activity Log option***

	2. System displays information within a month (may be a different length) about their hospital
Alternate Flows:	***none***
Post Condition:	***The user will view the logs of the activity***

Use Case Number:	***UC-15***
Use Case Name:	***Viewing System Statistics***
Overview:	***Administrators will be able to view compiled statistics for their hospital over the last month. These will include things like length of stay, number of users etc.***
Actor(s):	***Administrator***
Pre-condition(s):	***The administrator must have a valid account that is logged into the system.***
Scenario Flow:	1. ***Administrator selects the view system statistics option*** ***2. They are taken to a screen that allows them to see the information***
Alternate Flows:	***If there is no user activity the administrator will be notified that there is no active information***
Post Condition:	***The Administrator will be viewing the system statistics***

Use Case Number:	***UC-16***
Use Case Name:	***Patient Transfer***
Overview:	***The purpose of this is to allow a patient to be transered***

Actor(s):	***Administrator/Doctor and a Patient***
Pre-condition(s):	***The Administrator/Doctor must have a valid account and the patient has to exist.***
Scenario Flow:	1. ***The Administrator/Doctor searches the system to find the specified patient*** ***2. They select the transfer option and select the hospital where they are being moved to*** ***3. The system moves their location and saves this information***
Alternate Flows:	***If the doctor isn't at the receiving hospital they will be unable to complete the transfer but the attempt will be logged.***
Post Condition:	***Enter the condition that must be true when the main flow is completed.***

Use Case Number:	***UC-17***
Use Case Name:	***Upload Patient Information***
Overview:	***The purpose of this is to allow Doctors to upload patient information (tests X-Rays etc.). These are considered updates to medical info and will be logged to the system.***
Actor(s):	***Doctor and a Patient***
Pre-condition(s):	***The Doctor and patient must both have valid accounts***
Scenario Flow:	1. ***Doctor locates patient in the system*** ***2. Doctor hits 'edit medical information'*** ***3. Doctor uploads the results of a test or an X-Ray*** ***4. System saves and updates this information*** ***5. This update is tracked***
Alternate Flows:	***none.***
Post Condition:	***The information will be uploaded and saved to a patient as well as logged into the system.***

Use Case Number:	***UC-18***
Use Case Name:	***Send Private Message***
Overview:	***Everyone in the system should be able to send short messages to anyone else through the system***
Actor(s):	***2 Users***
Pre-condition(s):	***There must be at least 1 other valid account in the system and user must be logged on***
Scenario Flow:	1. ***User locates the person they want to message in the system*** ***2. They select the 'send message' option*** ***3. They write their message and hit send*** ***4. The system makes a copy for it's records and notifies the other user that there is a new message waiting for them***
Alternate Flows:	***If the message is too long it won't be sent***
Post Condition:	***A message will have been sent to a different user***