**Requirements Document**

**Date:** May 02, 2015

**Version: Release 2**

**Team: Team B**

**1.0 Brief Problem Statement**

The funding group HAccelerator has requested we produce a medical application called HealthNet. This product will be accessible to both patients and hospital personnel. HAccelerator wants the design to focus on ease of use and flexibility. The application will collect data metrics on the patients, allow for the scheduling of appointments, and allow for interhospital information transfer and management. In the end, patients should have easy access to their medical information.

**2.0 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.

**Hospital Administrators**  - responsible for ensuring the product meets the needs of the hospital and for speaking on behalf of the hospital staff. They will also ensure the application conforms to health privacy standards.

**Physicians Group** - represent the doctors who will use the system. They will provide input as to which features are needed to help their jobs.

**3.0 Users profile**

The target patient 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

- is willing to share information such as home address and contact information as well as more personal information such as medical history

The target doctor/nurse 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 others’ health by using an online way of interacting with their hospital

- is willing to share information such as home address and contact information as well as their schedule.

The target administrator 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 others’ health by using an online way of interacting with their hospital

- is willing to share information such as home address and contact information as well as their schedule.

- has an understanding of the inner workings of the hospital and its management.

**4.0 Use Cases (Operational Scenarios)**

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| **Use Case Number** | **User Story Name** | **Description** | **Release** |
| UC-01 | Patient Registration | Users sign up to become a Patient with their personal contact information and creates login credentials.  Additionally, a patient may provide the system with some basic medical profile information, a choice of preferred hospital, health insurance provider, and emergency contact information (linked to another patient if they are already in the system). | **R1** |
| UC-02 | 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** |
| UC-03 | Update Patient Profile Information | Patients can update their profile information. | **R1** |
| UC-04 | Update Patient Medical Information | Doctors and Nurses can update patient medical information. | **R1** |
| UC-05 | Export Information | Patients will be able to export their information and their test results from the system with relevant privacy warnings. | **R2** |
| UC-06 | 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** |
| UC-07 | Cancel Patient Appointment | Patients can cancel their existing appointments.  Doctors can cancel their existing appointments.  Nurses cannot cancel (only modify) existing appointments. | **R1** |
| UC-08 | 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** |
| UC-09 | 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** |
| UC-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** |
| UC-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** |
| UC-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** |
| UC-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** |
| UC-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** |
| UC-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   Other important and informative statistics yet to be determined. | **R2** |
| UC-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** |
| UC-17 | Upload Patient Tests  (Text Based) | Doctors will be able to upload the results of a patient’s tests if needed.  Uploads are considered as updates to a patient’s medical information. | **R2** |
| UC-18 | Send Private Message | Doctors, nurses, patients and administrators can send private messages of limited length via the system. | **R2** |
| UC-19 | Upload Patient Images | Doctors will be able to upload images such as those used in X-Rays to update a patient’s record.  (cont’d)  Uploads are considered as updates to a patient’s medical information. | **R2** |
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**4.1 Use case diagram**

**4.1.1 Use case diagram Continued.**

**4.1.2 Use case diagram Continued.**

**4.2 Use Cases (Description)**

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| **Use Case Number:** | UC-01-01 |
| **Use Case Name:** | Registration |
| **Overview:** | Registrant shall provide personal, medical, and emergency contact information to the System upon registering and becoming a Patient. |
| **Actor(s):** | Registrant |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for registrations.  - Registrant has accessed website via URL |
| **Scenario Flow:** | Main (success) Flow:   1. Registrant selects option to register 2. System requests personal information 3. Registrant provided personal information. 4. System verifies required information is provided.  * If information is invalid System displays message. Return to Step 2  1. System requests basic medical information 2. Registrant provides medical information 3. System verifies required information is provided.  * If information is invalid System displays message. Return to Step 5  1. System requests emergency contact information 2. Registrant provides emergency contact information 3. System verifies required information is provided    * If information is invalid System displays message. Return to Step 8 4. System requests login information 5. Registrant provides login information 6. System verifies required information is provided    * If information is invalid System displays message. Return to Step 11 7. System displays confirmation of registration |
| **Alternate Flows:** | Main (success) Flow:  Alternate #1: After Step 2 in success scenario System will display the option to Cancel the registration process. The following steps would occur:   1. Registrant selects option to cancel during registration 2. System requests confirmation to cancel 3. Registrant confirms intent 4. System returns to main screen   Alternate #2: The emergency contact information is an existing user in the system. After step 10 the following steps would occur:   1. Registrant selects option to select an emergency contact from the system 2. System displays a search bar for the Registrant to input the user’s name 3. Registrant inputs the user’s name and presses enter 4. System returns a list of users with matching names 5. Registrant chooses intended user 6. System sets that user as an emergency contact |
| **Post Condition:** | Registrant did not complete registration. System does not store Registrant's information. |

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| **Use Case Number:** | UC-02-01 |
| **Use Case Name:** | Administrator Registration |
| **Overview:** | Administrators shall provide a completed account to Doctors, Nurses, and other Administrators. |
| **Actor(s):** | Administrator, Doctor, Nurse |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for registrations.  - Administrator has accessed website via URL |
| **Scenario Flow:** | Main (success) Flow:   1. Admnistrator selects option to register a non-patient account 2. System requests the Registrant’s personal information 3. Administrator provides personal information. 4. System verifies required information is provided.    1. If information is invalid, System displays message. Return to Step 2 5. System requests username 6. Administrator provides username 7. System verifies required information is provided    1. If information is invalid System displays message. Return to Step 11 8. System provides temporary, randomly generated password 9. System displays confirmation of registration |
| **Alternate Flows:** | Main (success) Flow:  Alternate #1: After Step 2 in success scenario System will display the option to Cancel the registration process. The following steps would occur:   1. Administrator selects option to cancel during registration 2. System requests confirmation to cancel 3. Administrator confirms intent 4. System returns to main screen   Alternate #2: The Registrant is an existing user in the system. After step 2 the following steps would occur:   1. Administrator is shown the user’s email and offered a chance to send a password reset link to it.    1. If the email is incorrect, the Administrator is offered a chance to change the email and send a link to the new address. 2. If the Administrator chooses to send a link, the System sends a password reset email to the listed address. |
| **Post Condition:** | Administrator did not complete registration. System does not store Registrant's information. |

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| **Use Case Number:** | UC-03-01 |
| **Use Case Name:** | Update Patient Profile Information |
| **Overview:** | Patients can update their profile information. |
| **Actor(s):** | Patient |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for registrations.  - Patient has accessed website via URL  - Patient has already registered with the system. |
| **Scenario Flow:** | Main (success) Flow:   1. System prompts for log in information 2. Patient enters log in information 3. System checks log in information for validity    1. If invalid, return to step 1 4. System displays the patients profile information 5. Patient selects which information to change 6. Patient selects option to save changes 7. System requests confirmation to change information 8. Patient confirms intent 9. System updates patient information for all users 10. System returns to main screen |
| **Alternate Flows:** | Alternate Flow: After step 7 patient chooses to cancel their information update   1. Patient cancels update intent 2. Patient exits their profile 3. System returns to main screen |
| **Post Condition:** | Patient completed the update. System stores Patient’'s information.  Patient did not complete the update. System does not store Patient’'s information. |

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| **Use Case Number:** | UC-04 |
| **Use Case Name:** | Update Patient Medical Information |
| **Overview:** | Allows Doctors and Nurses to update a patient’s medical information |
| **Actor(s):** | Doctors, Nurses |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for registrations.  - Patient has accessed website via URL  - Patient has already registered with the system.  - Doctor or Nurse has already registered with the system. |
| **Scenario Flow:** | Main (success) Flow:   1. Doctor or Nurse selects patient to update. 2. System requests patient medical information to be updated. 3. Doctor or Nurse provides the needed medical information. 4. System verifies that the updated patient medical information is correct.    1. If the information is invalid, the system displays a message. Return to step 2. 5. System requests confirmation that this is the information they wish to update. 6. Patient confirms intent. 7. Information is updated for all Doctors, Nurses and the Patient. 8. System returns to main screen. |
| **Alternate Flows** | Alternate Flows: After step 5, if the medical practitioner decides to cancel the update.   1. The Doctor or Nurse cancels the update. 2. System requests confirmation of the cancellation. 3. Doctor or Nurse confirms intent. 4. System returns to main screen. |
| **Post Condition:** | Medical Practitioner did not complete update. System does not store updated patient information. |

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| **Use Case Number:** | UC-05-02 |
| **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):** | Patients |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for registrations.  - Patient has accessed website via URL  - Patient has already registered with the system.  - Doctor or Nurse has already registered with the system and entered patient information. |
| **Scenario Flow:** | Main (success) Flow:   1. Patient selects “Export Information” button 2. System presents compressed HTML files with Patient’s name and Patient’s medical history 3. Patient downloads file 4. System returns to main screen |
| **Alternate Flows** | Alternate Flows: After step 2, if the Patient decides to cancel the download.   1. System deletes file 2. System returns to main screen |
| **Post Condition:** | Patient has zipped file with HTML files in it. The system saves the files.  Patient has no files and the system stores no files. |

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| **Use Case Number:** | UC-06-01 |
| **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):** | Nurse, Doctor, Patient |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for record amendments.  - Registrant has accessed website via URL  - Doctor’s schedule is accessible. |
| **Scenario Flow:** | Main (success) Flow for Creating:   1. System prompts for log in information 2. Patient enters log in information. 3. System checks log in information for validity.    1. If invalid, return to step 1. 4. System displays days the hospital is open for appointments. 5. Patient selects a day for the appointment. 6. System displays available appointments based on the patient’s doctor’s schedule. 7. Patient selects a time. 8. System checks to see if the time is still available.    1. If unavailable, return to step 6.. 9. System adds appointment to Patient and Doctor accounts.   Main (success) Flow for Updating:   1. System prompts for log in information 2. User enters information. 3. System checks for validity.    1. If invalid, return to step 1. 4. System displays days the hospital is open for appointments. 5. User selects a day for the appointment. 6. System displays appointments on specified day associated with that user. 7. User selects an appointment to change. 8. System displays appointment information. 9. User changes information. 10. User selects option to save changes. 11. System requests confirmation to change the appointment. 12. User confirms intent 13. System checks validity of changes.     1. If invalid, return to step 9. 14. System updates appointment information for all associated users. 15. System returns to main screen. |
| **Alternate Flows** | Creating Alternate Flow 1 : After step 5, if no times are available, the system prompts the user to select a different day.   1. Patient selects option to select a different date 2. System requests confirmation to change the date 3. Patient confirms intent 4. System returns to main flow step 4.   Creating Alternate Flow 2: After step 5, if no times are available, the system prompts the user to cancel the appointment creation.   1. Patient selects option to cancel during creation. 2. System requests confirmation to cancel 3. Patient confirms intent 4. System returns to main screen   Updating Alternative Flow 1: After step 12, the system gives the user the option to cancel the appointment update.   1. User selects option to cancel during creation. 2. System requests confirmation to cancel 3. User confirms intent 4. System returns to main screen |
| **Post Condition:** | Appointment Creation did not complete. System does not store Appointment information.  Appointment Update did not complete. System does not store changes. |

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| **Use Case Number:** | UC-07-01 |
| **Use Case Name:** | Cancel Patient Appointmnt |
| **Overview:** | Patients can cancel their existing appointments.  Doctors can cancel their existing appointments.  Nurses cannot cancel (only modify) existing appointments. |
| **Actor(s):** | Nurse, Doctor, Patient |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for record amendments.  - User has accessed website via URL  - User has created an account and has given the system appropriate person information.  - Doctor schedule known.  - User is logged into his/her account. |
| **Scenario Flow:** | Main (success) Patient:   1. Patient navigates to the appointments page. 2. System displays a list of the patient’s current appointments. 3. Patient selects the appointment to change. 4. System displays available appointments based on the patient’s doctor’s schedule. 5. Patient selects a new appointment slot. 6. System verifies the slot is still available.    1. If the spot is taken, return to step 4. 7. System prompts for conformation of user’s intent to change. 8. Patient saves changes by confirming intent. 9. System saves changes and notifies the patient’s nurse and doctor. 10. System deletes old appointment. 11. System returns to patient’s main page.   Main (success) Doctor/Nurse:   1. Doctor/Nurse navigates to the appointments page. 2. System displays a list of the current appointments. 3. Doctor/Nurse selects the appointment to change. 4. System displays available appointments based on the doctor’s schedule. 5. Doctor/Nurse selects a new appointment slot.    1. Nurse prompted to alter appointment details.    2. Doctor prompted to alter or delete appointment. 6. System verifies the change is valid.    1. If the spot is taken, return to step 4. 7. System prompts for conformation of user’s intent to change. 8. Doctor/Nurse saves changes by confirming intent. 9. System saves changes and notifies the patient. 10. System deletes old appointment. 11. System returns to patient’s main page. |
| **Alternate Flows** | Patient Alternate Flow 1 : After step 8, if the user fails to confirm intent to save appointment changes, the system offers the opportunity to abort changes.   1. The user cancels the session. 2. System requests confirmation of the cancellation. 3. User confirms intent. 4. System returns to main screen. No changes to the database made. |
| **Post Condition:** | Appointment Deletion did not complete. System does not store Appointment information.  Appointment Update did not complete. System does not store changes. |

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| **Use Case Number:** | UC-08-01 |
| **Use Case Name:** | Appointment Calendar |
| **Overview:** | 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. |
| **Actor(s):** | Nurse, Doctor, Patient |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for record amendments.  - User has accessed website via URL  - User has created an account and has given the system appropriate person information.  - Doctor schedule known.  - User is logged into his/her account. |
| **Scenario Flow:** | Patient/Doctor Main(success) Flow:   1. User logs into account. 2. User selects to view appointment their appointment calendar. 3. System displays a calendar of the current month with days that have appointments with certain text on them. 4. If the user clicks on a day with an appointment the system will display all the appropriate appointment information in a new window. 5. The user can navigate the calendar to future or past months.   Nurses Main(success) Flow:   1. User logs into account. 2. User selects to view appointment calendar. 3. The system will display a calendar of that week, with each day having that day’s appointments. 4. The user can click on certain days to get the appropriate appointment information. |
| **Alternate Flows** | Main(success) Flow:  Alternate #1: After step 2 the user can exit the appointment calendar.   1. The user selects to leave the appointment calendar 2. The system takes the user to the page they requested |
| **Post Condition:** | There are current appointments for the patient/doctor. The system does not display any appointments in the calendar. |

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| **Use Case Number:** | UC-09-01 |
| **Use Case Name:** | Add/Remove Prescriptions |
| **Overview:** | 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. |
| **Actor(s):** | Nurse, Doctor, Patient |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and open for record amendments.  - User has accessed website via URL  - User has created an account and has given the system appropriate person information.  - Doctor schedule known.  - User is logged into his/her account. |
| **Scenario Flow:** | Doctor Main(success) Flow for Adding:   1. User logs into system. 2. User goes to their current patients. 3. User searches for specific patient. 4. System displays information regarding specific patient. 5. User selects patients prescriptions. 6. System displays the patients prescriptions. 7. User selects to edit patients’ prescription information. 8. System displays patients’ prescription information. 9. User adds a new prescription with all appropriate information. 10. System adds information to patients account.   Doctor Main(success) Flow for Removing:   1. User logs into system. 2. User goes to their current patients. 3. User searches for specific patient. 4. System displays information regarding specific patient. 5. User selects patients prescriptions. 6. System displays the patients prescriptions. 7. User selects to edit patients’ prescription information. 8. System displays patients’ prescription information. 9. User selects to remove a certain prescription. 10. System removes information from patients account.   Nurse Main(success) Flow:   1. User logs into system. 2. User goes to view patients. 3. System displays all the patients that go to the same hospital as that nurse. 4. User selects any patient, or search for a specific patient. 5. System displays the information of the patient. 6. User selects prescriptions section of information. 7. System displays the prescriptions of the patient.   Patient Main(success) Flow:   1. User logs into system. 2. User goes to view thier account information. 3. System displays all user account information. 4. User selects prescriptions section of information. 5. System displays user’s prescription information. |
| **Alternate Flows** | Adding Alternate Flow: If user enters bad information the system will not allow the prescription to be added, at least until the problem is fixed.   1. Systems prompts that certain information given is invalid. 2. User fixes bad information or cancels adding prescription.   Removing Alternate Flow: If patient has no current prescriptions the user cannot remove one.   1. The user exits the prescription section of the patient information.   Nurse Alternate Flow: If patient has no current prescriptions the user cannot view any.   1. The user exits the prescription section of the patient information.   Patient Alternate Flow: If user has no current prescriptions the user cannot view any.   1. The user exits the prescription section of the account information. |
| **Post Condition:** | Prescription addition was not successful. System does add a prescription to the patient account.  Prescription removal was not successful. System does not remove prescription from the patient account. |

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| **Use Case Number:** | UC 10-01 |
| **Use Case Name:** | Viewing patient medical information, prescriptions, and test results. |
| **Overview:** | 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. |
| **Actor(s):** | Nurse, Doctor, Patient |
| **Pre condition(s):** | - System has been setup and configured.  - User has accessed website via URL  - User has created an account and has given the system appropriate person information.  - Patient and Nurse Hospital location known.  - User is logged into his/her account. |
| **Scenario Flow:** | Doctor Main(success):   1. Doctor logs on to HealthNet. 2. Doctor navigates to patient page. 3. System displays all patients in the system. 4. Doctor searches for patient 5. System displays matches.    1. If no matches found, return to 3. 6. Doctor selects a patient file to view. 7. System verifies that the user is a doctor.    1. If unsuccessful, system returns to 2. 8. System displays all patient medical information.   Nurse Main(success):   1. Nurse logs on to HealthNet. 2. Nurse navigates to patient page. 3. System displays all patients registered in the nurse’s hospital.. 4. Nurse searches for patient 5. System displays matches.    1. If no matches found, return to 3. 6. Nurse selects a patient file to view. 7. System verifies that the user is a Nurse.    1. If unsuccessful, system returns to 2. 8. System displays all patient medical information.   Patient Main(success) Flow:   1. Patient logs on to HealthNet. 2. Patient navigates to medical information page. 3. System displays test information and available results, prescriptions, and general medical information. |
| **Alternate Flows** | Patient Alternate Flow: At step three, the patient selects the option to request sensitive medical information.   1. System prompts patient to verify his/her request for release of his/her sensitive medical information. 2. Patient confirms intent. 3. System sends request to patient’s Doctor 4. Doctor responds to request 5. Patient’s information display updated accordingly. |
| **Post Condition:** | Request denied: system notifies patient of denial and does not update information.  Request accepted: system notifies patient of acceptance and displays the sensitive information. |

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| **Use Case Number:** | UC-11-01 |
| **Use Case Name:** | Release Test Results |
| **Overview:** | Doctors within a patient’s hospital will be allowed to release medical test results uploaded to the system for patient viewing. |
| **Actor(s):** | Doctor |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and able to be accessed by third parties.  - Doctor has accessed website via URL  - Patient has already registered with the system.  - Doctor has already registered with the system.  - Patient has uploaded test results |
| **Scenario Flow:** | Main (success) Flow:   1. Doctor selects patient to view medical records. 2. System inquires if the Doctor would release the tests or keep them private 3. Patient confirms intent. 4. Information is updated for all Doctors and the Patient. 5. System returns to main screen. |
| **Alternate Flows** | None |
| **Post Condition:** | The Test results are released to the patient, allowing the patient to view them at will. |

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| **Use Case Number:** | UC-12-01 |
| **Use Case Name:** | Logging System Activity |
| **Overview:** | For security and record-keeping, many actions in the system will be logged for review at a later date. Almost any action is prone to being logged in the system. |
| **Actor(s):** | None |
| **Pre condition(s):** | - System has been setup and configured.  - System is running and able to be accessed by third parties. |
| **Scenario Flow:** | Main (success) Flow:   1. Something happens that changes a state in the system. 2. Logger is called to log the activity. 3. Message is written to a system log file. 4. The system waits for another activity to be logged. |
| **Alternate Flows** | None |
| **Post Condition:** | The system log file is updated and saved to the database containing the new information. |

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| **Use Case Number:** | UC-13-01 |
| **Use Case Name:** | Admission and Discharge to/from Hospital |
| **Overview:** | 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. |
| **Actor(s):** | Doctor, Nurse |
| **Pre condition(s):** | -System has been setup and configured  -System is running and able to be accessed by third parties.  - Doctor has accessed website via URL  - Patient has already registered with the system.  - Doctor has already registered with the system.  -Nurse has already registered with the system. |
| **Scenario Flow:** | Main (success) Flow:  Doctor Main (admission)   1. Doctor logs on to HealthNet 2. Doctor navigates to patient page 3. System displays all patients in the system 4. Doctor searches for patient 5. Doctor admits patient to the hospital   Doctor Main (discharge)   1. Doctor logs on to HealthNet 2. Doctor navigates to patient page 3. System displays all patients in the system 4. Doctor searches for patient 5. Doctor discharges patient from the hospital   Nurse Main (admission)   1. Nurse logs on to HealthNet 2. Nurse navigates to patient page 3. System displays all patients in the system 4. Nurse searches for patient 5. Nurse admits patient to the hospital   Nurse Main (discharge)   1. Nurse logs on to HealthNet 2. Nurse navigates to patient page 3. System displays all patients in the system 4. Nurse searches for patient 5. Nurse sends discharge approval request to doctor 6. Doctor discharges patient from the hospital |
| **Alternate Flows** | Alternate Flows:  None |
| **Post Condition:** | Patient has been admitted to hospital.  Patient has been discharged from hospital. |

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| **Use Case Number:** | UC-14-01 |
| **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. 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. |
| **Actor(s):** | Administrators |
| **Pre condition(s):** | -System has been setup and configured.  - System is running and able to be accessed by third parties.  -System must be logging activity. |
| **Scenario Flow:** | Main (success) Flow:   1. Administrator logs in to HealthNet 2. Administrator navigates to the system page 3. Administrator selects to view the system log 4. System displays Log |
| **Alternate Flows** | Alternate Flows:  None. |
| **Post Condition:** | The Administrator is able to viewing the System log. |

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| **Use Case Number:** | UC-15-02 |
| **Use Case Name:** | Viewing System Statistics |
| **Overview:** | 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    Other important and informative statistics yet to be determined. |
| **Actor(s):** | Administrators |
| **Pre condition(s):** | -System has been setup and configured.  - System is running  - Administrator is Registered |
| **Scenario Flow:** | Main (success) Flow:   1. Administrator selects “View Statistics” 2. Administrator reads statistics |
| **Alternate Flows** | Alternate Flows:  None. |
| **Post Condition:** | The administrator has viewed the statistics |

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| **Use Case Number:** | UC-16-02 |
| **Use Case Name:** | Patient Transfer |
| **Overview:** | Patient can be transferred between hospitals.    Transfers can be carried out by either administrators or by doctors (ones who are at the receiving hospital). |
| **Actor(s):** | Administrators, Doctors, Patients |
| **Pre condition(s):** | -System has been setup and configured.  - System is running  - Administrator and/or Doctor is Registered  - Patient is registered |
| **Scenario Flow:** | Main (success) Flow:   1. Administrator or Doctor (the transferring faculty) selects “Transfer Patient” 2. The transferring faculty enters the patient’s ID number. 3. The transferring faculty presses the “Transfer” button 4. The System requests confirmation 5. The faculty presses “Yes” to the confirmation box. 6. The System returns to the main menu |
| **Alternate Flows** | Alternate Flows: The faculty cancels the transfer at step 3 or 4   1. The System requests confirmation 2. The faculty presses “Yes, cancel transfer” 3. The System returns to the main menu |
| **Post Condition:** | The patient is transferred |

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| **Use Case Number:** | UC-17-02 |
| **Use Case Name:** | Upload Patient Text Information (Tests) |
| **Overview:** | Doctors will be able to upload the results of a patient’s tests if needed.  Uploads are considered as updates to a patient’s medical information. |
| **Actor(s):** | Doctors |
| **Pre condition(s):** | -System has been setup and configured.  - System is running  -Doctor is Registered  -Patient is Registered |
| **Scenario Flow:** | Main (success) Flow:   1. Doctor Selects “Upload Patient Information” 2. Doctor checks “Upload Text” box 3. Doctor chooses images on their computer 4. Doctor presses “Upload” button 5. System returns to main screen |
| **Alternate Flows** | Alternate Flows:   1. Doctor decides not to upload 2. System returns to main screen |
| **Post Condition:** | The text is uploaded. |

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| **Use Case Number:** | UC-18-02 |
| **Use Case Name:** | Send Private Message |
| **Overview:** | Doctors, nurses, patients and administrators can send private messages of limited length via the system. |
| **Actor(s):** | Doctors, Nurses, Patients, Administrators |
| **Pre condition(s):** | -System has been setup and configured.  - System is running  - Both participants are registered  -Patient is Registered |
| **Scenario Flow:** | Main (success) Flow:   1. Sender chooses “Private Message” 2. Sender selects other user by ID number 3. Sender types message 4. Sender presses “Send” 5. Recipient opens Private Message tab 6. Recipient reads message |
| **Alternate Flows** | Alternate Flows:  None. |
| **Post Condition:** | The message is sent and read |

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| **Use Case Number:** | UC-19-02 |
| **Use Case Name:** | Upload Patient Images |
| **Overview:** | 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. |
| **Actor(s):** | Doctors |
| **Pre condition(s):** | -System has been setup and configured.  - System is running  -Doctor is Registered  -Patient is Registered |
| **Scenario Flow:** | Main (success) Flow:   1. Doctor Selects “Upload Patient Information” 2. Doctor checks “Upload Image” box 3. Doctor chooses images on their computer 4. Doctor presses “Upload” button 5. System returns to main screen |
| **Alternate Flows** | Alternate Flows:   1. Doctor decides not to upload 2. System returns to main screen |
| **Post Condition:** | The image is uploaded. |

**5.0 System Requirements (Software Features)**

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| **Requirements ID** | **Relevant Use Case Numbers** | **Description** | **Targeted Release** |
| REQ-001 | UC-01 UC-02 | *Registration Page*   * a form to be completed by both hospital staff and patients. * records personal information * records patient medical information | R1 |
| REQ-002 | UC-03 UC-04 UC-09 UC-11 UC-16 UC-17 UC-13 UC-19 | *Update Patient Information*   * patients can edit both personal and medical profiles. * doctors can update patient prescriptions. * update patient hospital of service. * doctors can upload patient test results. | R1, R2 |
| REQ-003 | UC-10 | *View Patient Information*   * Patients can view their own information. * Nurses can only view the information of patients registered within their hospital * Doctors can view the information of all patients registered in the system. | R2 |
| REQ-004 | UC-06 UC-07 UC-08 | *Appointment Management*   * Patients, doctors, and nurses are able to create or modify an appointment. * Patients and doctors can cancel appointments * Doctors and Patients can view their person appoint schedule. * Nurses can view all patient and doctor appointments either by week or by day. | R1 |
| REQ-005 | UC-12 UC-14 UC-15 | Logging system activity and statistics | R1, R2 |
| REQ-006 | UC-05 | Export patient information | R2 |
| REQ-007 | UC-18 | Sending private messages between users | R2 |

**6.0 Design Constraints**

**6.1 Software Constraints**

System Requirements:

* Python 3.2.2
* Django 1.6.5
* SQLite 3.7.11
* HTML 5
* CSS 3
* Windows 7

**6.2 Deployment Constraints**

Packaging Requirements:

* Final application delivered in a compressed folder.

Deployment Requirements:

* Final application must run on the SE lab machines.

**7.0 Document Change Log**

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| --- | --- | --- | --- |
| ***Document Version Number*** | ***Revision Date*** | ***Summary of Changes*** | ***Author(s)*** |
| Initial | 02/07/2015 | First draft of requirements | Roland Sanford, Derek Popp, Tyler Shank, Harry Longwell, Ross Kinsey |
| Version 2 | 02/21/2015 | Added more use case descriptions and finalized the components of sections 5 and 6 | Roland Sanford, Derek Popp, Tyler Shank, Harry Longwell, Ross Kinsey |
| R1 | 03/08/2015 | Fixed minor errors | Roland Sanford, Derek Popp, Tyler Shank, Harry Longwell |
| R1 | 3/9/2015 | Changed UC-14 main flow | Tyler Shank |
| R1 | 3/9/2015 | Deferred UC-09 and UC-17 to R2 | Tyler Shank |
| R2 Planning | 04/04/2015 | Reviewed for R2 Planning | Roland Sanford, Derek Popp, Tyler Shank, Harry Longwell, Ross Kinsey |
| R2 | 05/02/2015 | Final draft for R2 | Roland Sanford, Derek Popp, Tyler Shank, Harry Longwell, Ross Kinsey |