

The ChocAn Simulator

Requirements Document

Table of Contents

1	Introduction.....	3
1.1	<i>Purpose and Scope.....</i>	3
1.2	<i>Target Audience</i>	3
1.3	<i>Terms and Definitions.....</i>	4
2	Product Overview	6
2.1	<i>Users and Stakeholders.....</i>	6
2.1.1	Managers.....	6
2.1.2	Members	6
2.1.3	Provider.....	7
2.2	<i>Use cases.....</i>	7
2.2.1	Logging into the Software	7
2.2.2	Recording a Service	7
2.2.3	Generate a Member Report.....	8
2.2.4	Generate a Manager Report	8
2.2.5	Advance Time.....	8
3	Functional Requirements	9
3.1	<i>Service Provider Login</i>	9
3.2	<i>Administrator Login.....</i>	10
3.3	<i>Member Login.....</i>	11
3.4	<i>Log Service for Member.....</i>	12
3.5	<i>Request Provider Directory</i>	14
3.6	<i>View Weekly Totals</i>	15
3.7	<i>Provider Weekly Report.....</i>	16
3.8	<i>Member Weekly Report.....</i>	17

3.9	<i>Administrator Weekly Report</i>	18
3.10	<i>Access Member Lists</i>	19
3.11	<i>Access Provider Lists</i>	20
4	Nonfunctional Requirements	21
4.1	<i>HIPAA Compliance</i>	21
4.1.1	Access to Patient Data	21
4.1.2	Automatic Log Off.....	21
4.1.3	Activity Records	21
4.2	<i>Development Method</i>	22
4.3	<i>Uptime</i>	22
4.4	<i>Environment Support</i>	22
5	Milestones and Deliverables	23
5.1	<i>Documents</i>	23
5.1.1	Requirements	23
5.1.2	Design	24
5.1.3	Test Plan.....	24
5.2	<i>Source Code</i>	25
5.3	<i>Project Review</i>	25
5.3.1	Project Retrospective	25
5.3.2	Client Presentation	26

1 Introduction

This document is a high level overview of requirements essential to a multifunction database commissioned by the health insurance company ChocAn. The database is to organize and integrate information regarding patients insured by ChocAn. That information will be gathered directly by ChocAn or by an associated healthcare provider. Four main areas of essential importance are detailed here. Those areas include Users and Stakeholders (those whose data is stored in the system and/or who use the system), functional requirements (functionality expected by ChocAn), nonfunctional requirements (restraints Group 4 and ChocAn have placed on the system's implementation and function), and milestones and associated deliverables of the system (detailed listing of documents and coded components of the system and their completion dates).

1.1 Purpose and Scope

This is an overview of ChocAn's data processing software's high level requirements and listings of key deliverables. Microscopic detail of the system (listings of classes, interactions, function parameter lists and return values, and by which means time is kept) is not given. Details regarding the system's HIPAA compliance in management of ChocAn's health care data, services the system provides to ChocAn and its partners, and key deliverables including their expected due dates can all be found here.

1.2 Target Audience

This document is written for Group 4 software engineers and ChocAn representatives engaged in creating a contract between Group 4 and ChocAn. The information below contains what services Group 4's database is to provide to ChocAn and under what constraints. Those in the negotiating process will find all relevant information regarding the agreement and its timelines below. Engineers looking for information regarding database implementation should seek an alternative reference.

1.3 Terms and Definitions

Term	Definition
Database	Group 4 has been tasked with the creation of a software system that can store ChocAn's partner and customer data, organize and edit said data, as well as use the data to generate reports about ChocAn's clients (providers of services or receivers of services) and ChocAn's financial status in terms of specific money owed to specific partners. In this document ChocAn's database is referred to as "database" or "the database."
Provider	A healthcare provider who uses ChocAn's database to deliver health services and their related expenses to customers. Note that ChocAn's database is to help providers send individualized member reports to the members they help, detailing the services they have acquired in the last week. Also, the database is to deliver provider reports to each individual provider detailing a week of provided services.
Member	An individual insured by ChocAn who receives medical assistance from a ChocAn provider. ChocAn's database contains a history of services, including the provider involved, for each ChocAn member. Records regarding payment status of members is kept although the database does not process individual member payments. Used interchangeably with "patient".
Manager	A ChocAn employee who is authorized by ChocAn to add members to ChocAn's database, remove members from ChocAn's database, and to otherwise edit member records. ChocAnalyst are also privy to the electronic funds transfer data file and are able to generate summary reports (see below). Used interchangeably with "ChocoAnalyst".
Member Report	A report the database generates on a provider's behalf and sends to a specific member detailing health services used in that week, if any used.
Provider Report	A report the database generates for each individual provider detailing a listing of services provided, a total count of consultations provided, and the total cost of services provided for that week.
Manager Report	A report the database generates for the manager detailing every provider to be paid for that week, the number of consultations each had, and the provider's total fee for that week. Also, the report details the total number of consultations provided that week as well as the total amount of money to be paid out.
Electronic Funds Transfer Report	A report detailing each provider's name, number, and the funds to be transferred to that provider for that week. Used interchangeably with "EFT report".
Services	In this context a service will often imply a ChocAn covered health care service.

Consults	Consults consist of a member, a provider, and a fee. A consult is not a service but an occurrence of a service for which ChocAn will be billed for.
Fees	In this context a fee refers to money ChocAn must pay to a provider for consults, a week's worth of consults, or some other grouping of consults. Fees members pay to ChocAn are handled by a third party entity. This database deals only with fees paid by ChocAn to providers.
Valid Member	A member status and a way of referring to a type of member. A manager determines a member to be valid if that member has paid their membership dues to ChocAn.
Invalid Member	A member status and a way of referring to a type of member. A manager determines a member to be invalid if that member has failed to pay their membership dues to ChocAn.
High-Level	High level aspects of this system are classes, functionality the classes are meant to provide, and public function (and their names) the classes are to provide that all members of Group 4 expect to exist. High level also refers to the control flow of the main class.
Mid-Level	Mid level aspects of this system are the return values (or lack thereof) and parameter lists of high level components that are crucial for interclass communication that all members of Group 4 will rely on in order to integrate the system into a whole.
Low-Level	Low level aspects of this system are the particular implementations of high level classes that are of concern only to the engineer or engineers tasked with the implementation of a specific class or group of dependent classes.
Login Terminal	The first control branch of the system as well as the first component of the system the user encounters. The login terminal is used to differentiate a manager from a provider and then to direct the user to the appropriate menu.
Group 4	A 3rd party software engineering firm. The engineers hired to implement ChocAn's database.

2 Product Overview

Here is a description of the project functionality, in general terms. The purpose of the software is to record services requested by members, as well as to generate reports detailing information crucial to key stakeholders, document future ChocAn financial expenditures, and to communicate the coverage status of various current and past ChocAn members to providers. These services are attached to the associated service provider, which is a one-to-one relationship (each service has a single provider). A log is generated, and at the desired time intervals, a manager will be able to request a report that indicates what each service provider is owed.

The program will be capable of loading a log of stored data, pertaining to services rendered at a previous time, as well as storing new data generated, and adding to the old log. The program will also control access to system functionality based on the user's permissions, determined by their position as providers or managers.

2.1 Users and Stakeholders

Below are the stakeholders of the software. The software will relate heavily to the needs of these groups.

2.1.1 Managers

The software aims to provide managers with a method to generate reports regarding weekly billing information and a service log, describing in financial terms how the week transpired. The software will also allow ChocAn managers to add or remove covered members (by changing their associated member status to valid or invalid).

2.1.2 Members

The activity of members will be recorded in the software, ensuring that a record exists of which services were requested, and details regarding that request. Member reports detailing a week's worth of service history will also be provided to members.

2.1.3 Provider

Service providers will be paid according to the transactions recorded in the system. Providers also use the software to look up services provided by ChocAn as well as members currently covered by ChocAn.

2.2 Use cases

Here are a few important use cases for the software.

2.2.1 Logging into the Software

Anyone has the ability to start the software and access the login terminal. However, the only users who will be granted access will be those with a managerial username and password. A database, stored in a text file, will be loaded into the program at launch.

The user will be asked for their credentials and if a match is found, they will be granted access. If there is no match, the user will be asked to try again or if they want to quit. There is no need for a limit on the number of attempts the user will be able to make.

Once the user is granted access, the signed in member will be stored for reporting purposes, and shown the main menu. Users will be either a service provider, or a manager; managers correspond to the audit mode.

2.2.2 Recording a Service

A menu option will correspond to recording a service having been used by a member, incurring a corresponding payable bill to the service provider.

A list of services will appear, indicating the name of each service and the provider for that service, and a description of exactly what that service is. The user will select a service by entering a number 1-6. Then, the system will ask if the service was consumed today. Here, the system will attempt to fill in the “serviceBilled” date as well as the “serviceEntered” date; in other words, service record entries will contain a field for when the service was entered as well as when it was actually performed, in case they are not the

same. If the user indicates that the service was not performed today, they may enter in the date that it was actually done so, in MMDDYY format.

When this is done, the entire entry will be displayed, and the user will be prompted to confirm they wish to make this entry.

2.2.3 Generate a Member Report

The system's main function is to record services, and to generate reports pertaining to those services. One such report is a weekly member activity report. The weekly report will analyze the service log, and focus on any services recorded as being performed this current week, for a specified member. A week is not necessarily the past 7 days, but is the period of time between the present day and the last start of the billing week.

The report will be written to text file.

2.2.4 Generate a Manager Report

This report will differ from the weekly reports in that it will not be solely automated. Manager reports will, like member, EFT, and provider reports be generated on a weekly basis. However, managers will be able to generate manger reports, whenever they see fit, that will contain information gathered until the manager's request.

2.2.5 Advance Time

The system will keep track of the current day of the week, so the time may be recorded for reporting purposes. Services entered in will be considered recorded on the current day, to provide an easier method. The timekeeping mechanism will also be able to determine if a week has passed and will use that ability to orchestrate automated report generation.

3 Functional Requirements

In this section, we list the services provided by the system, how it reacts to inputs, and how it behaves in particular situations.

3.1 Service Provider Login

Function	<i>Service Provider Login</i>
Description	A Provider shall be able to login to the ChocAn database using an official ChocAn terminal. The Provider shall be able to enter their Provider ID number and associated password to gain access to the ChocAn Provider database.
Inputs	Provider ID number and password entered from keyboard input to login to the ChocAn terminal network application, at an official ChocAn terminal.
Source	Service Provider accessing the ChocAn terminal application.
Outputs	Login verification, or login failure notification.
Destination	ChocAn terminal application screen.
Action	The terminal shall display to its screen the successful login of the Provider, and immediately (without further input) display the Service Provider application interface and menu options, allowing the Provider to proceed with their task. Otherwise, the ChocAn terminal shall display to its screen an error message indicating that either the Provider ID or accompanying password were incorrect (not specified), and will return to the login screen in order to allow the re-entry of the Provider ID and password. This process shall repeat upon each unsuccessful entry of Provider login credentials.
Requires	Keyboard input of Provider login credentials: ID number and password.
Pre-condition	The current ChocAn terminal application user selected the “Service Provider Login” option from the main menu display.
Post-condition	The ChocAn terminal application grants access to the ChocAn Service Provider network.
Side Effects	Invalid Service Provider credentials were entered, and access to the ChocAn network is denied.

3.2 Administrator Login

Function	<i>ChocAn Administrator Login</i>
Description	A ChocAn Administrator (Admin) shall be able to login to the ChocAn database using an official ChocAn terminal. The Admin shall be able to enter their Admin ID number and associated password to gain access to the ChocAn Admin database.
Inputs	Admin ID number and password entered from keyboard input to login to the ChocAn terminal network application, at an official ChocAn terminal.
Source	ChocAn Admin accessing the ChocAn terminal application.
Outputs	Login verification, or login failure notification.
Destination	ChocAn terminal application screen.
Action	The terminal shall display to its screen the successful login of the Admin, and immediately (without further input) display the ChocAn Admin application interface and menu options, allowing the Admin to proceed with their task. Otherwise, the ChocAn terminal shall display to its screen an error message indicating that either the Admin ID or accompanying password were incorrect (not specified), and will return to the login screen in order to allow the re-entry of the Admin ID and password. This process shall repeat upon each unsuccessful entry of Admin login credentials.
Requires	Keyboard input of Admin login credentials: ID number (username) and password.
Pre-condition	The current ChocAn terminal application user selected the “Administrator Login” option from the main menu display.
Post-condition	The ChocAn terminal application grants access to the ChocAn Administrator network.
Side Effects	Invalid Administrator credentials were entered, and access to the ChocAn network is denied.

3.3 Member Login

Function	<i>ChocAn Member Login</i>
Description	A ChocAn Member shall have their Subscription Status reviewed by a Service Provider, using the ChocAn terminal application, at the time of Service. The ChocAn Member will never directly interact with the ChocAn software.
Inputs	The ChocAn Member ID number, entered as keyboard input using the ChocAn terminal application.
Source	ChocAn membership card and associated unique Member ID number.
Outputs	Member Validation Status
Destination	ChocAn terminal application screen.
Action	A ChocAn Member shall be able to hand their membership ID card to the consulting Service Provider at the time of the Service. Upon login (Service Provider credentials) at a ChocAn terminal, <i>the Service Provider shall be able to enter the Member ID number, and the system shall notify the Provider of the current member's current Subscription Status (Valid/Invalid/Suspended). Upon validation, the Service Provider shall use this access to log the current Service for the Member, in the ChocAn database, using the terminal application.</i>
Requires	A ChocAn Member and associated Member ID, a Service Provider present and with access to a ChocAn network terminal.
Pre-condition	A ChocAn Service Provider logged into an official terminal application, and having selected the menu option "Validate Member – Point of Service".
Post-condition	The ChocAn terminal will display to the screen one of three options: <i>Validated / Invalid Number / Member Suspended</i> A <i>Validated</i> Member ID will allow the Service Provider to proceed with logging the provided service in the associated Member records. An <i>Invalid Number</i> will return the Provider to the previous screen, prompting once again for Member ID entry. Finally, <i>Member Suspended</i> will return the Provider to the main menu, also prompting the Member to contact <u>Acme Accounting Services</u> to re-instantiate their membership with ChocAn. No further action can be taken with a suspended member ID until billing is resolved through the third party.
Side Effects	Invalid Member ID entry will loop back to Member ID entry screen.

3.4 Log Service for Member

Function	<i>Log ChocAn Service provided for Validated Member</i>
Description	Service Provider uses ChocAn terminal application to record health care service provided to a validated Member.
Inputs	ChocAn Member ID; Date service provided; Service Code (referenced from provided database); Optional comments on service; Verification of: Date & Time (current at time of entry, and time of service), Member name & ID, and Service Code & fee to be billed to ChocAn.
Source	Service Provider, using the terminal application to log a service provided for a validated ChocAn member.
Outputs	Record of service provided saved to ChocAn database; billing information sent to ChocAn regarding fees now owed to associated Provider; ChocAn Provider database records updated.
Destination	ChocAn network Provider database (updated records of Service fees); Member record of services consulted through ChocAn.
Action	<ol style="list-style-type: none">1. The Service Provider shall enter the date the service was provided to the Member who is currently active in the terminal application.2. The Provider shall be presented with a list of available services and their corresponding Service Codes.3. The Provider shall enter the appropriate Service Code; the Provider shall be prompted by the terminal to verify the Service, with an option to leave additional comments; upon entry of an invalid or non-existent code, the Provider shall be presented with an error message and prompted to re-enter the Service Code.4. The ChocAn terminal application will write a record to the disk, which will include the following information:<ol style="list-style-type: none">a. Current date and time (MM-DD-YYYY HH:MM:SS)b. Date service was provided (MM-DD-YYYY).c. Provider number (9 digits).d. Member number (9 digits).e. Service code (6 digits)f. Comments (100 characters) (optional).5. The System will then look-up fee associated with the service provided, to be billed to ChocAn on the Service Provider's behalf. This number will be displayed to the terminal screen for Provider verification.6. The Provider will verify:<ol style="list-style-type: none">a. Current Date & Time.b. Service Date & Time.c. Member Name & ID.d. Service Code & Fee Paid7. A message indicating successful logging of a provided service will be displayed to the terminal application screen.
Requires	Date of service to be entered; Service Code to be entered; established connection to ChocAn database servers; Provider verification for logging. (continued next page)

Pre-condition	(continued from previous page) Service Provider has validated a ChocAn Member using their associated Member ID, and has entered the menu option to record a service, using the terminal application.
Post-condition	The ChocAn database records are updated: Service fee owed to Provider are totaled at the end of each week; ChocAn Member individual list of services provided is updated.

3.5 Request Provider Directory

Function	<i>Provider shall be able to request a Provider Directory</i>
Description	At any time during the operation of the ChocAn terminal application, the logged-in Service Provider shall be able to request a Provider Directory. The Directory will be sent to the email registered on file for the Provider.
Inputs	The Provider will select the menu option to have the directory sent.
Source	ChocAn terminal application; keyboard input.
Outputs	A confirmation message will displayed to the ChocAn terminal application screen. The email with an attached Provider Directory will be sent to the Provider inbox.
Destination	Currently logged-in Service Provider's email inbox registered on file.
Action	The Provider must select the menu option, confirm that they wish to request a Provider Directory, and then proceed to their (third-party) email application to view the attached document.
Requires	Valid Service Provider login; Provider email on file; selection of appropriate menu option.
Pre-condition	The Provider has selected the menu option to request access to the Directory.
Post-condition	A confirmation display to the terminal application; return the Provider to the main menu screen.
Side Effects	If the Provider has already requested a Directory for their currently logged-in session, the terminal application will notify the Provider as such, prior to prompting confirmation that another email will be sent.

3.6 View Weekly Totals

Function	<i>Provider shall be able to generate & view Weekly Totals of fees to be paid by ChocAn</i>
Description	For verification purposes, the Provider shall be able to total the fees accumulated over the course of the week, and view them in reference to the fees that ChocAn owes the Provider for the services provided that week.
Inputs	Fees associated with services the Provider has performed that week for ChocAn members, added together into a single sum.
Source	Provider records shall contain a log of the services performed, dates, and fees.
Outputs	The terminal application will display to the screen a number indicating the total sum of all the services provided to ChocAn members for that given week.
Destination	The terminal application screen will display the information.
Action	The Service Provider shall be able to, at any time during their logged-in session at a ChocAn terminal, select the menu option to verify total fees owed for the week.
Requires	A Service Provider must be logged-in at a ChocAn terminal.
Pre-condition	The menu option was selected to verify the fees for the week.
Post-condition	The Provider shall be returned to the main menu.
Side Effects	The Provider has not performed any services that week, and there are not totals to be displayed. A message indicating as such shall be displayed, and the Provider shall be returned to the previous menu.

3.7 Provider Weekly Report

Function	<i>Service Providers shall receive a Weekly Report from ChocAn</i>
Description	Any and all Service Providers registered with ChocAn shall receive, on a weekly basis, an automated Weekly Report delivered to their registered email inbox. The Weekly Report shall consist of the following: <ol style="list-style-type: none">1. A list of services provided to ChocAn members.2. Total number of consultations.3. Total Fees for the week, owed by ChocAn to the Provider.
Inputs	The ChocAn system shall be set to automatically generate and send these Weekly Reports; no input is required from Providers.
Source	ChocAn database records regarding Providers, Members, and Fees.
Outputs	The Weekly Report sent as an email attachment.
Destination	The registered email inboxes of any and all ChocAn Service Providers.
Action	ChocAn database automated information gathering and report sending.
Requires	ChocAn database must have record of Provider(s), services performed, and fees owed; valid email address of Provider(s) on file.
Pre-condition	Provider must have a record of service(s) performed for valid ChocAn members.
Post-condition	Provider shall be in possession of the most up-to-date information.
Side Effects	Report may not be sent: Invalid email addresses on file, or no relevant service information to send.

3.8 Member Weekly Report

Function	<i>Members shall receive a weekly report from ChocAn</i>
Description	Each registered member of ChocAn shall receive, on a weekly basis, an automated Weekly Report delivered to their email inbox on file. Each report shall consist of a list of services provided for that week: 1. Date of Service 2. Name of Provider 3. Name of Service
Inputs	The ChocAn system shall be set to automatically generate and send these Weekly Reports; no input is required from Members.
Source	ChocAn database records regarding Members and Providers.
Outputs	The Weekly Report sent as an email attachment.
Destination	The registered email inbox of the ChocAn Member(s).
Action	ChocAn database automated information gathering and report sending.
Requires	ChocAn database must have record of Member(s), services performed; valid email address of Member(s) on file.
Pre-condition	Member(s) must have consulted with/had service performed with a registered ChocAn Service Provider.
Post-condition	Member shall possess the most comprehensive information for their past week with ChocAn services.
Side Effects	Report may not be sent: Invalid email addresses on file, or no relevant service information to send.

3.9 Administrator Weekly Report

Function	<i>ChocAn Administrator shall receive a Weekly Report</i>
Description	<p>The ChocAn Administrator, manager of accounts payable, shall receive on a weekly basis, an automated Summary Report detailing the activities of the service for the most recently passed week.</p> <p>The details of the Weekly Summary Report shall include:</p> <ol style="list-style-type: none">1. List of every Service Provider to be paid that week.2. Number of consultations each Provider had.3. Total fee for the week for each Provider listed.4. Total number of Providers who actively provided services that week.5. Total number of consultations, combining the counts of all Providers.6. Overall total fee (all Providers, all Services) to be paid out that week.
Inputs	The ChocAn system will be automated to generate these reports; no actual interaction is required by a ChocAn Admin.
Source	The ChocAn system will accumulate all relevant data based on Members, Providers, Services & Fees records already in place within the database.
Outputs	The Weekly Summary Report is sent as an email attachment.
Destination	The primary work inbox on file for the ChocAn Admin.
Action	ChocAn database automated information gathering and report sending.
Requires	ChocAn database must have on file: Members, Providers, Services & Fees.
Pre-condition	Providers to be paid for services rendered; Members attending services.
Post-condition	ChocAn Admin shall possess comprehensive information for the past week.
Side Effects	Report may not be sent: Invalid email address on file, no relevant service information to be sent.

3.10 Access Member Lists

Function	<i>ChocAn Administrator shall be able to access Member lists</i>
Description	<p>A logged-in ChocAn Admin shall be able to audit current Member lists within the ChocAn database. The auditor shall be able to take several actions, depending on which menu option they choose:</p> <ol style="list-style-type: none">1. Add new Members to the database.2. Edit information for existing Members within the database.3. Delete Members from the list and remove all associated information.
Inputs	The ChocAn Admin shall select one of these options from their terminal.
Source	Keyboard input, using the ChocAn terminal application.
Outputs	The ChocAn database records of current Members shall be updated to reflect the actions taken during the ChocAn Admin audit.
Destination	ChocAn main database of Member records.
Action	The ChocAn Admin shall be presented with a menu upon logging in, and will be able to select one of the options to add, edit, or delete Member info on file.
Requires	The Admin will have to specify which action to take.
Pre-condition	The Admin has logged-in and selected the Main menu option to access Member records.
Post-condition	The records will be updated, and the Admin will be returned to the previous menu screen.
Side Effects	Potential for record loss and unpredictable consequences if a Member is unintentionally deleted; false entry of edited information.

3.11 Access Provider Lists

Function	<i>ChocAn Administrator shall be able to access Provider lists</i>
Description	<p>A logged-in ChocAn Admin shall be able to audit current Provider lists within the ChocAn database. The auditor shall be able to take several actions, depending on which menu option they choose:</p> <ol style="list-style-type: none">1. Add new Providers to the database.2. Edit information for existing Providers within the database.3. Delete Providers from the list and remove all associated information.
Inputs	The ChocAn Admin shall select one of these options from their terminal.
Source	Keyboard input, using the ChocAn terminal application.
Outputs	The ChocAn database records of current Providers shall be updated to reflect the actions taken during the ChocAn Admin audit.
Destination	ChocAn main database of Provider records.
Action	The ChocAn Admin shall be presented with a menu upon logging in, and will be able to select one of the options to add, edit, or delete Provider info on file.
Requires	The Admin will have to specify which action to take.
Pre-condition	The Admin has logged-in and selected the Main menu option to access Provider records.
Post-condition	The records will be updated, and the Admin will be returned to the previous menu screen.
Side Effects	Potential for record loss and unpredictable consequences if a Provider is unintentionally deleted; false entry of edited information.

4 Nonfunctional Requirements

This section defines the nonfunctional requirements of the system. Nonfunctional requirements are the constraints on the services or functions offered by the system. These requirements may relate to system properties such as reliability, performance, usability, and dependability.

4.1 HIPAA Compliance

The system shall comply with select standards set by the Health Insurance Portability and Accountability Act. These standards are in place to safeguard confidential medical information. Some major components of HIPAA are the HIPAA Privacy Rule, which aims to protect medical information, and the HIPAA Security Rule, which is concerned with the security of the transfer of medical information. By complying with these guidelines, this service will be granted the stamp of authority of the Department of Health and Human Services.

4.1.1 Access to Patient Data

Access to patient data must be authorized, and limited to authorized managers and providers. Patient's health data must be protected from outside access. Only authorized users may access this data.

4.1.2 Automatic Log Off

The interactive interface shall terminate a manager or provider's session in the event that the session is idle for more than 240 seconds. This feature falls under the umbrella of the HIPAA Security Rule, and protects access to medical information.

4.1.3 Activity Records

There shall be a record of all provider and manager interactions with the system. These records should be available in the event of an audit, and therefore should be available to a manager who wishes to perform an audit on the records.

4.2 Development Method

The model of development of the system shall be a combination of Waterfall and agile methods. The requirements should be its own process, while the design, development, and testing processes should be iterative. Having an iterative approach for the other processes will allow for more flexibility and change throughout the design, development, and testing steps.

4.3 Uptime

The system shall have no downtime. It should always be available on demand, at any time. As a result of the combination of Waterfall and agile methods, the system shall not need maintenance that might result in taking the system offline.

4.4 Environment Support

The software product shall be compatible with Windows and UNIX systems. This requirement makes a good case for the usage of Java as a programming language, since the Java Virtual Machine that enables a computer to run a Java program runs on the required systems.

5 Milestones and Deliverables

The purpose of this section is to define all the major ends to a stage of the project where the work can then be reviewed by the customer. Milestones are used for progress reporting and is the main influencer on the customer's view on the project's progress. Deliverables will have been specified in the project contract and will include two large milestones: the documentation, and the source code.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Requirements								
Design								
Test Plan								
Source Code								

5.1 Documents

This major milestone will contain a couple of documents, such as the requirements, design, and the test plan.

5.1.1 Requirements

This milestone consists of establishing the customer's requirements as well as defining the limitations at which it is developed and operated. The requirements should reflect the needs for a customer that defines a system. In this document, it should define exactly what needs to be implemented. Within this document will be an introduction section where the purpose, audience, and the terms and definitions are defined. Another section is the product overview. In this section is defined the high level functionality of the project. This includes use cases and stakeholders. The following sections encapsulate the functional requirements and the nonfunctional requirements. This is where the bulk of the requirements will be defined. Work that will be done to obtain this document is by analyzing and documenting the services and constraints. Interacting with the stakeholders such as managers, members, and service providers will aid in determining the services that are required and finding out the constraints that the project will be under.

5.1.2 Design

The design document will state how the software will be organized and the design of the overall system. The main goal of this document is to describe the software as a set of communicating components. Described here will be a high level abstract design of the architecture and a lower level description of the subsystems. In order to create the design, we must first understand the requirements, design the system architecture, develop design models, and then specify interfaces.

The completed design document will be followed by a completed database interface. ChocAn managers are highly recommended to vocalize opinions as at this stage the system will be at its most flexible. As the system will be at its most flexible, ChocAn advocated changes to the menus (and by implication, the systems architecture) will be given the utmost of consideration of implementation.

From the engineer's perspective, the interface will serve as a template, compartmentalizing the systems various functionality and allowing that functionality to be implemented in a more incremental fashion. At this stage Group 4 and ChocAn agree that specifics regarding the system implementation, its menus, and overall architecture (not core functionality) are subject to frequent change.

5.1.3 Test Plan

Having a test plan will help us validate that the software and all its functional requirements have been met. The testing will show errors, anomalies, or nonfunctional requirements that are not met. Within our test plan, we will do unit testing, smoke testing, and system testing. For the unit testing, we will test individual components of the software. This will be done to ensure that each unit of the software performs as designed. The smoke testing validates that the most important functions of the software work. The purpose of testing this is to come to a decision of whether or not to continue testing as this will show fatal failures. Lastly, the software will be system tested meaning that the software as a whole will be tested on a complete and integrated system to confirm compliance with the functional requirement specifications.

At this point engineers will have a more rigid understanding of high level architecture and the addition or removal of high level components will be minimized. Mid-level changes, due to the dependency established at this point in the databases creation, will be carefully evaluated and avoided if reasonably possible. Low level details remain subject only to the judgment of engineers tasked in the particular implementation.

5.2 Source Code

Fully documented presentable code and a fully functioning database. At this point, the system will be tested as a unified entity, but such test will be limited. Testing of individual components will not be conducted unless a documented system test proves a need to test a specific component. Any further changes to the system should be minimal. At this point, ChocAn will wait until the system is formally presented to them and analyze the product to ensure Group 4 can correctly explain any system caveats.

5.3 Project Review

After Group 4 successfully completes ChocAn's database, but prior to presenting the database to ChocAn, Group 4 will conduct a comprehensive overview of the database and its creation process to generate two documents: a project retrospective and a formal presentation of the database (including slides) for ChocAn.

5.3.1 Project Retrospective

The project retrospect will be primarily for Group 4. ChocAn will be permitted to view the retrospective should ChocAn be interested in the underlying processes that resulted in their database. The retrospective shall serve as a reference for future projects. The retrospective shall detail specific aspects of the processes used to create ChocAn's database that all members of Group 4 found successful and worth repeating in future projects. The retrospective will also detail specific aspects of the processes used to create ChocAn's database that all members of Group 4 found unsuccessful and worth not repeating in future projects. On specific aspects of processes that proved to be detrimental to the creation of the database, specific suggestion on how those detrimental aspects could have been corrected will also be provided.

Also, in the project retrospective a section detailing individual concerns or points of interest will be included. This shall allow individual engineers of Group 4 to document points of concern or interest that may not be fully shared in the opinion of most of Group 4. The sections information shall be used to perfect Group 4's processes as low level as individual interactions. Therefore, for the sake of confidentiality, ChocAn will have no information linking an individual Group 4 member to their specific concern or point of interest.

5.3.2 Client Presentation

In addition to the project retrospective, Group 4 will create a formal presentation that will be used to introduce ChocAn to its new database. The presentation will be two fold. First, four to five PowerPoint slides that will be used as visual components for the presentation are to be created. The slides shall aid in communicating the database's completed functionality, how the database was tested, and any defects or known complications in the final product to ChocAn.