**The ChocAn Simulator**

by Team 7, LLC

Portland State University

Science Research and Teaching Center

1719 SW 10th Ave., Suite 247

Portland, Oregon 97201

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Rev | Author | Changes |
| 2017-10-14 | 0.1 | Austin Parrish | Introduction |
| 2017-10-14 | 0.2 | Christian Clevinger | Summary |
| 2017-10-14 | 0.3 | Edward Koroteev | Functional Requirements pt. 1 |
| 2017-10-14 | 0.4 | Brent McManus | Functional Requirements pt. 2 |
| 2017-10-14 | 0.5 | Lance Booth | Milestones and Deliverables |
| 2017-10-15 | 1.0 | Ray Emory | Compiling sections into one document. Editing. |
| 2017-10-16 | 1.1 | Ray Emory | Charts and Use Cases added. |
| 2017-10-17 | 1.2 | Ray Emory | Added Non-Functional Requirement |
|  |  |  |  |

Table of Contents

[1 Introduction 5](#_Toc496030962)

[1.1 Purpose 5](#_Toc496030963)

[1.2 Scope 5](#_Toc496030964)

[1.3 Definitions 6](#_Toc496030965)

[1.3.1 Conformance Levels 6](#_Toc496030966)

[1.3.2 Acronyms, Abbreviations, and Initialisms 6](#_Toc496030967)

[1.3.3 Glossary of Terms 7](#_Toc496030968)

[2 Product Overview 8](#_Toc496030969)

[2.1 Users and Stakeholders 9](#_Toc496030970)

[2.1.1 Team 7 9](#_Toc496030971)

[2.1.2 Chocoholics Anonymous 9](#_Toc496030972)

[2.1.3 Chris Gilmore 9](#_Toc496030973)

[2.1.4 ChocAn Administrators 9](#_Toc496030974)

[2.1.5 ChocAn Providers 9](#_Toc496030975)

[2.1.6 ChocAn Members 9](#_Toc496030976)

[2.1.7 ChocAn IT Staff 9](#_Toc496030977)

[2.1.8 Additional Software Contractors 10](#_Toc496030978)

[2.2 Use Cases 10](#_Toc496030979)

[2.2.1 Adding, Deleting, and Editing Providers or Members 10](#_Toc496030980)

[2.2.2 Generating Reports 10](#_Toc496030981)

[2.2.3 Validation 11](#_Toc496030982)

[2.2.4 Log Service Rendered 12](#_Toc496030983)

[2.2.5 Provider Directory 12](#_Toc496030984)

[3 Functional Requirements 13](#_Toc496030985)

[3.1 Login 13](#_Toc496030986)

[3.1.1 Login Screen 13](#_Toc496030987)

[3.1.2 Administrator Login 13](#_Toc496030988)

[3.1.3 Provider Login 13](#_Toc496030989)

[3.2 Logout 14](#_Toc496030990)

[3.3 Administrator Terminal 14](#_Toc496030991)

[3.3.1 Manage Members 14](#_Toc496030992)

[3.3.1.1 Add Member 14](#_Toc496030993)

[3.3.1.2 Delete Member 14](#_Toc496030994)

[3.3.1.3 Update Member 15](#_Toc496030995)

[3.3.2 Manage Providers 15](#_Toc496030996)

[3.3.2.1 Add Provider 15](#_Toc496030997)

[3.3.2.2 Delete Provider 15](#_Toc496030998)

[3.3.2.3 Update Provider 16](#_Toc496030999)

[3.3.3 Generate Reports 16](#_Toc496031000)

[3.3.3.1 Member Report 16](#_Toc496031001)

[3.3.3.2 Provider Report 16](#_Toc496031002)

[3.3.3.3 EFT Report 17](#_Toc496031003)

[3.3.3.4 Summary Report 17](#_Toc496031004)

[3.4 Provider Terminal 18](#_Toc496031005)

[3.4.1 Verify Member Number 18](#_Toc496031006)

[3.4.2 Log Services 18](#_Toc496031007)

[3.4.3 Request Provider Directory 19](#_Toc496031008)

[4 Non-Functional Requirements 20](#_Toc496031009)

[4.1 Availability 20](#_Toc496031010)

[4.1.1 Acceptable Downtime 20](#_Toc496031011)

[4.2 Response Time 20](#_Toc496031012)

[4.3 Operating Environment 20](#_Toc496031013)

[4.4 Memory Requirement 20](#_Toc496031014)

[4.5 Authentication 20](#_Toc496031015)

[4.6 Confidentiality 20](#_Toc496031016)

[4.7 Ease of Use 21](#_Toc496031017)

[5 Milestones and Deliverables 22](#_Toc496031018)

[5.1 Design Document 22](#_Toc496031019)

[5.2 Test Plan 22](#_Toc496031020)

[5.3 Completed Software 22](#_Toc496031021)

# Introduction

## Purpose

This document shall give a detailed description of the requirements for the “Chocoholics Anonymous Management Program System” software. It shall illustrate the purpose and complete declaration for the development of the system. It shall explain system constraints, interface and interactions with other external applications. This document is intended primarily to be proposed to a customer for its approval and a reference for developing the first of the system by the development team.

## Scope

The Chocoholics Anonymous Management Program System is a command line based system that manages members, health care providers, and staff databases for the Chocoholics Anonymous organization.

Providers shall be able to sign in using a terminal to access Member information, log services, and access the provider directory information. Chocoholics Anonymous administrators shall sign in using a terminal to add members, remove members, update member records, add providers, remove providers, update provider information, and generate reports.

All system information is maintained in a database, which is located on a separate server. The software shall also interact with the terminal software which is required to be an already installed application on the user’s computer. By using the terminal, users can interact with the application.

## Definitions

### Conformance Levels

|  |  |
| --- | --- |
|  |  |
| **Expected** | A keyword used to describe the behavior of the software in the design models assumed by this requirements document. |
| **May** | A keyword that indicates flexibility of choice with no implied preference. |
| **Shall** | A keyword indicating a mandatory requirement. Designers are required to implement all such mandatory requirements. |
| **Should** | A keyword indicating flexibility of choice with a strongly preferred alternative. Equivalent to the phrase “is recommended.” |

### Acronyms, Abbreviations, and Initialisms

|  |  |
| --- | --- |
|  |  |
| **ChocAn** | Chocoholics Anonymous |
| **M-PIN** | Member Personal Identification Number |
| **P-PIN** | Provider Personal Identification Number |
|  |  |
|  |  |

### Glossary of Terms

|  |  |
| --- | --- |
|  |  |
| **Administrator (Admin)** | An employee of Chocoholics Anonymous. Has specific permission for managing and controlling the system. |
| **Database** | In the context of this document and software, a database refers to a localized text file that stores information relating to the software. |
| **IT Staff** | Support staff at the Chocoholics Anonymous Data Center. |
| **Member** | A member of Chocoholics Anonymous |
| **Provider** | A healthcare provider for Chocoholics Anonymous. |
| **Service Code** | A 6 digit code corresponding to a service available from a Provider |
| **Service(s)** | Refers to the service provided by a Provider to a Member. |
| **Software** | Unless otherwise noted, refers to the Chocoholics Anonymous Data Processing software. To be created based off of the requirements outlined within this document. |
| **Terminal** | A terminal interface with which to control the software. |
| **User** | A user of the software. Can refer to either an Administrator or a Provider. |
| **Validated** | An M-PIN is recognized as valid by the software. Meaning that the member exists and is current on their payments to ChocAn |

# Product Overview

Users of the Software shall be ChocAn Administrators and service Providers to ChocAn members. A stakeholder for this project is any person or group that will be affected by the implementation of the software product produced. The product to be provided to ChocAn by Team 7 is data processing software. This software will contain the information of care providers and members. It will be able to record the date and services the member received from a provider.

The software shall be used by administrators at ChocAn to add and delete both Members and Providers. Administrators will also be allowed to update Member and Provider records.

The software shall be used by ChocAn Providers to validate Members and charge Members for services provided. The software shall prevent Members from receiving service if their M-PIN is invalid or if their membership has been suspended due to late payment.

The software shall contain a directory of services available, listed by their service code.

During the billing process, if the M-PIN is validated, then the Provider records the date on which the service was rendered. The service code corresponding with the service rendered shall be entered by the Provider to bill the ChocAn Member.

Providers shall have access to view the database at any time during the week. At the end of each week (12:01 am Saturday) each Member who received services from a Provider shall receive an email with an attachment that includes the details of the services they received, listed in order of the date the service was provided. Providers shall also receive a summary email for the services they provided to Members during the week. The provider summary shall also detail the total fee for the week.

Other services, including the communications software, accounting services, and terminal design shall be implemented by other contractors.

## Users and Stakeholders

This section is to detail who shall use the finished product, and who shall be affected by the product. Users for the software shall be ChocAn Administrators and ChocAn Providers who provide services to ChocAn Members. Stakeholders of the product shall be any person or persons that will be affected by the implementation of the software.

### Team 7

Team 7 is the company developing the software. Team 7 is responsible for the quality of product delivered to ChocAn.

### Chocoholics Anonymous

ChocAn is to receive the data processing software. ChocAn may use the provided software to keep Members and Providers up to date on information. The software produced may also be paired with other software to help assist ChocAn in the automation of processes.

### Chris Gilmore

ChocAn CTO. Has final approval for the data processing software to be delivered.

### ChocAn Administrators

ChocAn Administrators are a primary consumer of the data processing software to be delivered. Through the software provided, Administrators shall have access to the reports of both Providers and Members. Administrators shall also be able add, delete, and edit the information of any accounts in the ChocAn database.

### ChocAn Providers

ChocAn Providers are a primary consumer of the data processing software to be delivered. Through the software provided, Providers shall be able to bill ChocAn for services rendered to Members, as well as track services and fees owed. Providers shall also receive weekly reports of services rendered.

### ChocAn Members

ChocAn Members are a secondary consumer of the data processing software to be delivered. Through interactions with Providers, members shall be able to receive services that are billed to ChocAn through the software. Members shall also receive weekly reports of services received.

### ChocAn IT Staff

ChocAn IT Staff will support ChocAn Administrators in the performance of their duties. The IT Staff are responsible for adding Administrator credentials to the database.

### Additional Software Contractors

Other contractors producing other software for ChocAn will need to be enabled to integrate their software with the data processing software delivered by Team 7.

## Use Cases

This section will detail the use cases of the software. A use case is any action that the software performs due to an actor. An actor can be a person or an external system.

### Adding, Deleting, and Editing Providers or Members

Administrators shall have the capability of adding both new Providers and new Members into the system. Administrators shall be capable of removing an existing Provider or an existing Member from the system. Additionally, Administrators shall be capable of editing the information for an already existing Provider or Member.

To add, delete or edit a Member or Provider, an administrator must first login to the software using the terminal. Once successfully logged in, the administrator shall select whether they wish to perform actions on either a Member or Provider.

The process flow for adding, deleting or editing shall be the same for both Members and Providers.



### Generating Reports

At 12:01 am every Saturday, the software shall send an email to Members who received services during the week. The email shall include an attachment, which shall detail the services the Member received, including the date of services rendered and the Provider of the services rendered.

At 12:01 am every Saturday, the software shall send an email to Providers who rendered services during the week. The email shall include an attachment, which shall summarize the services provided with the total number of services provided and payments due for the week. The attachment shall contain the details for each individual service provided.

At 12:01 am every Saturday, the software shall send an email to the ChocAn manager of accounts payable. The email shall include an attachment, which shall summarize the number of services rendered by Providers, and the sum total of fees due.

An Administrator shall have the option of generating any type of report at any time during the week. To generate reports, the Administrator must first login to the software using the terminal. Once logged in, the Administrator may select an option to generate reports, the Administrator may then select which report they wish to generate, a Member Report, a Provider Report, an EFT Report or a Summary Report.



### Validation

Before any service is provided to a Member, a Provider shall input their M-PIN. The software shall check the M-PIN against the database of members, protecting the provider from performing a service for a non-member.

To validate a Member, the Provider must first login to the software using the terminal.

### Log Service Rendered

A Provider shall have the ability to log any services rendered to a Member. The service is logged to the ChocAn database so that the Provider may be reimbursed by ChocAn at the end of the week when reports are run (12:01 am Saturday).

A Provider shall have the option to log a service rendered at any point during the week, it should not be necessary for the service to be logged on the same day the service was rendered. To log a service, the Provider must first login to the software using the terminal. Once logged in, the Provider may select the option to log services; the Provider should then enter the M-PIN for the Member who received service, followed by pertinent data to the service rendered. The Provider shall then be asked to confirm the service log, and upon confirmation, the service is logged to the ChocAn database.



### Provider Directory

A Provider may look at the provider directory to find the service code that corresponds to the service that they are providing. Providers shall key in this six digit code when billing a member. Providers shall have access to the directory at all times.

# Functional Requirements

Herein the document shall describe the functional requirements for the software. A functional requirement describes the functions of the software or its components as a set of expected inputs, outputs, and behavior. The functional requirements will list the available options the software provides to Administrators and Providers using the terminal application.

The software shall be usable by both Administrators and Providers. These requirements shall outline the separation of functionality available to Administrators versus Providers.

## Login

The software shall require a user to login before completing any actions.

### Login Screen

The software shall present a user with the option of logging in as either an Administrator or as a Provider. A user shall be able to select which level of login they wish to attempt, either as an Administrator or as a Provider. A user cannot progress without first successfully logging in.

### Administrator Login

A ChocAn Administrator shall be able to login using their administrator credentials. Administrator credentials consist of a username and associated password. Administrator credentials can be added to the database by the ChocAn IT Staff.

If an invalid username or password is entered into the Administrator login page, an error shall be presented stating that either the username or password was incorrect, with no specification given to which entry was incorrect.

Upon successful login, the Administrator shall be presented with the available actions they can take as an Administrator.

### Provider Login

A ChocAn Provider shall be able to login using their Provider credentials. Provider credentials consist of a P-PIN and associated password. Provider credentials can be added to the database by a ChocAn Administrator.

If an invalid P-PIN or password is entered into the Provider login page, an error shall be presented stating that either the P-PIN or password was incorrect, with no specification given to which entry was incorrect.

Upon successful login, the Provider shall be presented with the available actions they can take as a Provider.

## Logout

The software shall allow a user to log out from the terminal. The logout procedure should be identical for both Administrators and Providers.

Upon selection of logging out, a user should be asked to confirm if they wish to logout.

Upon a successful logout of the terminal, the user shall be returned to the login screen.

## Administrator Terminal

Upon successful login of an Administrator, the software shall present the user with the administrator terminal. The administrator terminal should display options for managing members, managing providers, and generating reports

### Manage Members

An Administrator shall be able to manage member records. This includes adding a new Member, deleting an existing Member, and updating the information for an existing Member.

#### Add Member

An Administrator shall be able to enter information for a new Member. The Administrator shall be able to enter the Member’s name and address (Street, City, State & ZIP). The software should generate an M-PIN for the new Member. Upon creation of a new Member, the new Member is assumed to be in good standing for dues paid.

The Administrator must complete all available fields (name & address) to be able to create a new Member. Failure to do so will generate an error message that describes the data missing and no Member will be created.

Upon successful creation of a new Member, the terminal will display the information of the new Member back to the Administrator.

#### Delete Member

An Administrator shall be able to remove a member from the ChocAn database. To find the Member to be removed, the Administrator shall enter an M-PIN into the terminal.

If no Member is found with a matching M-PIN, an error shall be generated stating that no Member was found with the entered M-PIN.

If a Member is found with a matching M-PIN, the terminal will ask the Administrator for confirmation before proceeding with the delete.

Upon a successful delete, the Member is removed from the database.

#### Update Member

An Administrator shall be able to update the information of an existing Member. To find the Member whose information needs to be updated, the Administrator shall enter an M-PIN into the terminal.

If no Member is found with a matching M-PIN, an error shall be generated stating that no Member was found with the entered M-PIN.

If a member is found with a matching M-PIN, the terminal will ask the Administrator what field needs to be updated. The options available are name, address, and membership status.

Membership status reflects whether or not a specific Member has paid their membership dues.

### Manage Providers

An Administrator shall be able to manage Provider records. This includes adding a new Provider, deleting an existing Provider, and updating the information for an existing Provider.

#### Add Provider

An Administrator shall be able to enter information for a new Provider. The Administrator shall be able to enter the Provider’s name and address (Street, City, State & ZIP). The software should generate a P-PIN for the new Provider.

The Administrator must complete all available fields (name & address) to be able to create a new Provider. Failure to do so will generate an error message that describes the data missing and no Provider will be created.

Upon successful creation of a new Member, the terminal will display the information of the new Provider back to the Administrator.

#### Delete Provider

An Administrator shall be able to remove a Provider from the ChocAn database. To find the Provider to be removed, the Administrator shall enter a P-PIN into the terminal.

If no Provider is found with a matching P-PIN, an error shall be generated stating that no Provider was found with the entered P-PIN.

If a Provider is found with a matching P-PIN, the terminal will ask the Administrator for confirmation before proceeding with the delete.

Upon a successful delete, the Provider is removed from the database.

#### Update Provider

An Administrator shall be able to update the information of an existing Provider. To find the Provider whose information needs to be updated, the Administrator shall enter a P-PIN into the terminal.

If no Provider is found with a matching P-PIN, an error shall be generated stating that no Provider was found with the entered P-PIN.

If a Provider is found with a matching P-PIN, the terminal will ask the Administrator what field needs to be updated. The options available are name and address.

### Generate Reports

An Administrator shall be able to generate reports from the terminal. Available reports to generate include a Member Report, a Provider Report, an EFT Report, and a Summary Report. The Administrator shall also have an option to generate all reports simultaneously.

#### Member Report

A Member Report is a summary of all services provided to a ChocAn Member during the past week, sorted in order of service date.

The Member Report is headed by the Member’s information; their name, M-PIN, and address. Following the Member information, the Member Report lists, from older to newer, the services provided to the Member during the last week. This service information shall include the date the service was provided, the name of the provider, and the name of the service rendered.

The Administrator shall be able to generate Member Reports for all Members in the ChocAn database, or to generate a single Member Report for a specific Member.

To generate a report for a specific Member, the Administrator shall be required to enter the M-PIN of the Member for whom the report is to be generated.

If no Member is found with a matching M-PIN, an error shall be generated stating that no Member was found with the entered M-PIN.

If a Member is found with a matching M-PIN, the Member Report shall be generated.

#### Provider Report

A Provider Report is a detailed summary of services rendered by a ChocAn Provider during the past week, sorted in order of service date.

The Provider Report is headed by the Provider’s information; their name, P-PIN, and address. Following the Provider information, the Provider Report lists, from older to newer, the services rendered by the provider during the last week. This service information shall include the date the service was rendered, the date and time the service was logged with the ChocAn database, the name and M-PIN of the member to whom the service was rendered, the service code for the consultation, and the fee for the service. Following the service details, the Provider Report shall tally the number of services rendered for the week and the sum of fees for services rendered.

The Administrator shall be able to generate Provider Reports for all Providers in the ChocAn database, or to generate a single Provider Report for a specific Provider.

To generate a report for a specific Provider, the Administrator shall be required to enter the P-PIN of the Provider for whom the report is to be generated.

If no Provider is found with a matching P-PIN, an error shall be generated stating that no Provider was found with the entered P-PIN.

If a Provider is found with a matching P-PIN, the Provider Report shall be generated.

#### EFT Report

An EFT Report is an abbreviated Provider Report, detailing the sum of services rendered by a Provider during the past week.

The EFT Report shall contain the Provider’s name, the total number of services rendered for the week, and the sum of fees for services rendered.

rendered for the week and the sum of fees for services rendered.

The Administrator shall be able to generate EFT Reports for all Providers in the ChocAn database, or to generate a single EFT Report for a specific Provider.

To generate a report for a specific Provider, the Administrator shall be required to enter the P-PIN of the Provider for whom the report is to be generated.

If no Provider is found with a matching P-PIN, an error shall be generated stating that no Provider was found with the entered P-PIN.

If a Provider is found with a matching P-PIN, the EFT Report shall be generated.

#### Summary Report

A Summary Report a summation of all Provider activity for the past week.

For all Providers who rendered services to Members during the past week, the Summary Report shall display their name, number of services rendered and their total fee for the week. Following the Provider details, the Summary Report shall sum the total number of services rendered by all Providers and the sum of fees owed.

The Administrator shall be able to generate a Summary Report.

## Provider Terminal

Upon successful login of a Provider, the software shall present the user with the Provider Terminal. The Provider Terminal should display options for validating a Member, bill ChocAn for services rendered to a Member, and to request the Provider Directory.

### Verify Member Number

Before rendering services, a Provider should verify that a Member can receive services. To verify a Member, the Provider shall key in the M-PIN of the Member. The software shall check the keyed in M-PIN against the member database. Depending on the results of the check against the database, the terminal shall display one of three results, Validated, Invalid Number or Member Suspended.

A message of Validated indicates that the M-PIN exists in the database and the Member is in good standing. The Provider should render services at this point.

A message of Invalid Number indicates that the M-PIN was not found within the database. The terminal should re-display the M-PIN as entered so that the Provider may double check it for accuracy. The Provider should not render services in this case.

A message of Member Suspended indicates that the Member associated with the M-PIN has fallen behind on their dues. The Provider should not render services in this case.

### Log Services

To log a service rendered, the Provider shall be able to enter an M-PIN to select the Member who received the service. The process for entering an M-PIN in this scenario shall be the same as the process to verify a Member Number.

The software should prompt the Provider to enter the date of services rendered. The Provider shall be able to enter the date.

The software should prompt the Provider to enter the service code corresponding with the service rendered. The software should also provide the Provider with the option to display the directory of service codes. The Provider shall be able to enter a service code.

If the service code entered by the Provider is not recognized by the software, meaning it does not exist within the database, an error message shall be displayed on the terminal. The Provider should then be prompted to re-enter the service code.

Upon entry of a valid service code, the software shall display on the terminal the description that corresponds with that service code. The Provider shall then be prompted to confirm the service code displayed.

Should the Provider choose not to confirm the displayed service code, the Provider should then be prompted to re-enter the service code.

The Provider shall then be prompted by the terminal to enter a comment on the services rendered.

Once the relevant data for a service rendered has been entered by the Provider, the terminal shall display the summary of the service, and the Provider shall be prompted to confirm the service report. If the Provider denies confirmation, the entered data is discarded and the Provider is returned to the main Provider Terminal. On confirmation, the service report is written to the ChocAn database and the fee owed to the Provider is displayed.

### Request Provider Directory

The Provider shall then be prompted by the terminal to enter a comment on the services rendered.

The Provider Terminal shall have an option for the Provider to request the Provider Directory. The Provider Directory contains the list of services available to ChocAn Members from Providers, a six digit service code is listed alongside a description of the service and a fee for the service.

Upon request of the Provider Directory, the Provider Terminal shall display the directory. The Provider Directory shall be presented in an alphabetically sorted order, based off of the description of the service.

# Non-Functional Requirements

Functionality of the project, not as it relates to the operation of the software by users is laid out within this section.

## Availability

The system is expected to run 24 hours a day, 7 days a week, excepting scheduled maintenance.

### Acceptable Downtime

Downtime during normal working hours, Monday through Friday, 8 am through 5 pm, shall not exceed 5 consecutive minutes, or 10 minutes total throughout a day.

Downtime outside of normal working hours shall not exceed 30 consecutive minutes.

## Response Time

The software is expected to have a response time of no more than 10 seconds for all commands.

## Operating Environment

The software shall run on a POSIX compliant environment.

## Memory Requirement

The software should require no more than 100 MB of memory available for installation and operation.

## Authentication

The software will authenticate Members and Providers through their M-PIN and P-PIN, respectively. Providers will be required to login using a password setup by an Administrator.

The software will authenticate Administrators through a username and password to be setup by the ChocAn IT Staff.

## Confidentiality

The software shall not provide information to those not authorized to view it.

## Ease of Use

The software should be simple enough for a user to become proficient with no more than 2 hours of training.

# Milestones and Deliverables

Here, details of important milestones and deliverables will be laid out, along with their expected date of completion.

## Design Document

The Design Document is expected to be completed by 2017-10-31. This shall go into exacting detail as to how the system will be implemented.

## Test Plan

The Test Plan is expected to be completed by 2017-11-14. This document shall detail how the software will be tested and what the conditions for success are.

## Completed Software

The completed software is expected to be delivered by 2017-11-30. A full analysis of test results shall be delivered alongside the completed software.