

# The ChocAn Simulator

## Preliminary Requirements Document

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# **1 Introduction**

## **1.1 Purpose and Scope**

Chocoholics is an organization designed to help chocolate addicts beat their chocolate fixation by providing them with a monthly subscription to ChocAn. Patients can book appointments with accomplished specialists with the knowledge to treat chocolate addiction.

Members and Providers will use a portable terminal throughout their journey with ChocAn, which will serve the functions of checking in, entering and editing member and provider information, attending appointments, and displaying the journey of the member from when they begin as a patient to when they are “discharged.”

Providers of ChocAn carry a credit card machine sized terminal which they use to check in with their Provider ID. Members receive plastic ID cards which serve three functions: Name, Identification Number, and an encoded magnetic strip. When a member needs to check in to a provider, he or she will scan the ID card through the provider’s terminal.

## **1.2 Target Audience**

The target audience for this megaproject is the group of people afflicted with the great accessibility of chocolate and chocolate containing products throughout this processed world. For too long, chocolate addiction has continued to create more and more addicts of chocolate based nutrition, breaking family structure throughout Earth as it distracts innocents from real organic foods to the vicious processed chocolates that plague the vulnerable members of society. The goal of ChocAn is to give an alternative to this ruthless lifestyle and help individuals in the betterment of their health, providing self accountability, and freedom from the clutches of Chocolate once and for all.

### **1.3 Terms and Definitions**

- **ChocAn** - Chocoholics Anonymous
- **EFT** - Electronic Funds Transfer
- **PHI** - Patient Health Information
- **HIPAA** - Health Insurance Portability and Accountability Act

## 2 Product Overview

The ChocAn software shall create files for each member and provider containing all of the details for the member, provider, and service. The EFT data shall be set up in a file containing the provider name, provider number, and the amount to be transferred. The billing shall be done by a third party, using the information provided by the ChocAn software.

Stakeholders are individuals who either care about or have a vested interest in the ChocAn software. They are the people who are actively involved with the work of the project or have something to either gain or lose as a result of the project.

The organization shall only be responsible for writing the ChocAn data processing software. The organization shall not be responsible for the communications software, for designing the ChocAn provider's terminal, for the software needed by Acme Accounting Services, and for implementing the EFT component.

### 2.1 Users and Stakeholders

The purpose of this section is to identify the people who will benefit from the ChocAn software product. Both the members and providers are important end users of the product and have different uses for the software.

#### 2.1.1 Providers

The providers for ChocAn are the medical and healthcare workers who will be utilizing the ChocAn software for patient appointments. These shall include dietitians, internists, as well as exercise specialists.

#### 2.1.2 Members

The members of ChocAn are the paying subscribers of the ChocAn software who are utilizing ChocAn for their healthcare needs.

## **2.2 Use cases**

The purpose of this section is to describe how the stakeholders shall use ChocAn software. This section also outlines the software's behavior to a request by the stakeholder.

### **2.2.1 Services**

The member can choose the service that is accommodating to their situation. The provider shall choose the correct service for each patient to ensure the patient account and the billing information is correct according to the service provided. The service code used shall be a six (6) digit number. This shall correspond to the service name which shall be 20 characters.

### **2.2.2 Records**

The records kept by ChocAn shall include the following information and functionality:

- Add Members/Providers
- Delete Members/Providers
- Update Member Records/Providers
- Search Member Records/Providers

### **2.2.3 Billing ChocAn**

The provider shall check in the member's details after the service has been provided to keep track and bill ChocAn for that particular provider. At the end of the week, the provider totals the fees to verify the amount to be paid to that provider by ChocAn for that week.

# 3 Functional Requirements

The ChocAn system shall have different functionality for providers and members. The system shall store provider and member information in external files to be accessed by the system for different uses.

A ChocAn user shall be able to search the appointments list for all providers of ChocAn services. Each provider using the system shall be uniquely identified by his or her nine (9) digit number. The user shall have their own unique nine (9) digit membership number. Each service that is provided shall correspond to a six (6) digit number.

The system shall generate each day, for each provider, a list of patients who are expected to attend appointments that day. The billing for providers shall be done based on the reports indicating the services each ChocAn provider completed for the members. The billing shall be handled by an outside party.

## 3.1 Terminal Required Fields

Providers of ChocAn carry a portable terminal which they use to check in with their Provider ID. Members receive plastic ID cards which serve three functions: Name, Identification Number, and an encoded magnetic strip. When a member needs to check in to a provider, they will scan the ID card through the provider's terminal, as well as error management.

### **3.1.1 Provider Terminal Functions**

The provider terminal shall process and hold the following information with the correct format:

- Provider Number (9 digits)
- Member Number/s (9 digits)
- Service Code relating to different service types (6 digits)
- Service Name (20 characters)
- Comments or information about service provided (500 characters)
- Date of Service (MM-DD-YYYY)

If the provider has entered an invalid code, it shall display an error message.

See section [3.4.3](#).

### **3.1.2 Member Terminal Functions**

The member terminal shall process the following information for correct data processing and billing information (with the following format):

- Current date and time (MM-DD-YYYY HH: MM:SS)
- Date service was provided (MM-DD-YYYY)
- Provider Number (9 digits)
- Member Number (9 digits)
- Service Code (6 digits)
- Service Name (20 characters)
- Comments or anything provider needs to know (strings up to 500 characters)

If the member number is invalid, it shall display an error message. See section [3.4.1](#).

## **3.2 ChocAn Design**

ChocAn's Design relies heavily on the providers' and members' usage of its terminal, which consists of various input and output design options on the interface that make using the ChocAn appointment and services system user friendly and easy to navigate. To start using the terminal, it shall be turned on and the terminal shall ask for the provider number. When a member comes for their appointment, the provider shall collect the member's card and slide it in the terminal to check-in the member for appointments. The



terminal shall process the card account details and return a message stating if the ID is valid or not. After being given the proper care by the provider, the member's ID shall be taken in through the terminal and date of service will be entered. The terminal shall display a directory of services along with their specific identification numbers. The proper number shall be input into the terminal by the provider based on the service provided, as well as optional comments. After pressing enter, the terminal shall calculate fees and display them.

### **3.3 Information Storage**

The information for the ChocAn software shall be stored as external files. These shall be separated into the Provider Directory, Member Directory, Service Directory, and Member profiles.

#### **3.3.1 Provider Profile Format**

A file containing the provider information. Each line will contain:

- Service ID (9 digits)
- Service name
- Provider name (25 characters)
- Provider number (9 digits)
- Provider street address (25 characters)
- Provider city (14 characters)
- Provider state (2 letters)
- Provider zip code (5 digits)

#### **3.3.2 Member Directory Format**

A file containing the member information.

- Member ID (9 digits)
- Member Name (25 characters)

### **3.3.3 Member Profile Format**

One text file per member, which includes:

- Member ID (9 digits)
- Member Name (25 characters)
- Member Street Address (25 characters)
- Member City (14 characters)
- Member State (2 letters)
- Member Zip Code (5 digits)
- Service ID (6 digits)
- Service Name (20 characters)
- Date and Time of Services (MM-DD-YYY HH:MM:SS)

### **3.3.4 Provider Directory Format**

One master file as a directory, for the providers to use, listing every service with each service on one line, containing:

- Service ID (6 digits)
- Service Name (20 characters)
- Service Fee

### **3.3.5 Weekly Report**

The software shall write a record for each service provided to a member in a weekly file with the following details:

- Current date and time (MM-DD-YYYY HH:MM:SS)
- Date service was provided (MM-DD-YYYY)
- Provider number (9 digits)
- Member number (9 digits)
- Service code (6 digits)
- Comments (100 characters) (optional)

### **3.4 Error Management**

Error management will play a crucial role in the use of ChocAn's terminal. Every time a command is entered into the terminal, the software shall verify and validate that the input is grammatically and statistically correct. When provider, member, or service numbers are entered, the software will look throughout its database to verify the information's validity to make sure nonexistent directories are not being called.

In the background, the software shall check if the member number is in good standing. Members should authenticate themselves using their member card.

#### **3.4.1 Member Number Validation**

If the member number is valid, the terminal shall display "Validated." If the member number is not valid a reason shall be displayed. This shall be either "Invalid Number" or "Member Suspended." If the message is "Member Suspended," this means that the user owes membership fees beyond one month and the member status has been set to suspended.

#### **3.4.2 Service Number Validation**

If a service number is valid, the terminal shall display "Validated". If the service ID is non-existent, an error message shall be displayed as "Service ID not found".

#### **3.4.3 Provider Number Validation**

The provider shall enter their provider number when the terminal is turned on. After entering the number, the terminal will display the number back to the provider with a confirmation prompt "Is this correct?" If the provider entered a non valid number, an error message will be displayed saying, "Provider ID not found." If the number is correct and the provider confirms it was entered correctly, a confirmation message shall appear, saying "Provider number validated."

## **4 Nonfunctional Requirements**

Non functional requirements serve as constraints or restrictions on the design of the software.

### **4.1 Response Time**

The terminal shall respond to the user's inputs within five (5) seconds.

### **4.2 Security of Patient Health Information**

The software shall be HIPAA compliant to ensure the protection of PHI.

### **4.3 Availability of ChocAn During Normal Business Hours**

ChocAn software shall be available throughout the working hours from 9AM to 5PM.

### **4.4 Software Updates and Patching Schedule**

The software must be regularly updated and maintained to ensure data integrity. There shall be scheduled updates every three months, with monthly reviews in case of updates needed sooner. The software will regularly check the system for vulnerabilities, bugs, and data risk management.

# 5 Milestones and Deliverables

The milestones and deliverables correspond to the term project dates. These include the Requirement Document, Design Document, Test Plan, Project Report, and Project Presentation.

Each document shall outline the corresponding requirements, design, or test plan for the ChocAn software. The report and presentation shall be turned in by the group and presented at the end of the term, together. Any item that is to be turned in via Canvas shall be submitted by one group member only.

## 5.1 Document Deliverables and Completion Period

The requirements for this project include the following: Requirement Document, Design Document, the Test Plan, a Project Report, and the final deliverables.

### 5.1.1 Requirement Document

The Requirement Document shall be completed on February 6, 2023. This shall list out the requirements needed for the project scope, including functional and non-functional requirements to mitigate any miscommunication and understanding of the project.

### 5.1.2 Design Document

The Design Document shall be completed on February 13, 2023. This document shall describe the design of the ChocAn software.

### 5.1.3 Test Plan

The Test Plan shall be completed on February 27. This document shall describe the ways in which the ChocAn software will be tested to ensure validity.

### 5.1.4 Project Report and Final Deliverables

The Project Report and the Final Deliverables shall be completed on March 17. This shall include the presentation of the software to the stakeholders.