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The ChocAn Simulator
Requirements Document

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1. Introduction

This document provides the foundation for Chocoholics Anonymous (ChocAn) data processing software system, including product overview, requirements, and milestones.

1.1 Purpose and Scope

Chocoholics Anonymous (ChocAn) is an organization dedicated to providing healthcare services for individuals battling chocolate addiction. ChocAn aims to develop a data processing system that will aid in the delivery and recording of this quality care. The intent of this system is to provide a comprehensible interface for healthcare providers to record the healthcare services they administer to ChocAn members. This system will also provide accounting of healthcare transactions between providers and members, as well as provide ChocAn managers the ability to add, delete, and update member and provider records. Additionally, this system will compile weekly, or as requested by ChocAn managers, reports for ChocAn members, providers, and ChocAn staff responsible for accounts payable.

This system is intended to aid in the record keeping and management of services rendered to ChocAn members by healthcare providers in the ChocAn healthcare network. It is not responsible for processing of monthly ChocAn membership fees, handling payment processing services to providers, and designing the provider's and manager's ChocAn Terminals. These aforementioned services will be provided by Acme Accounting Services and an unnamed third-party organization. The scope of this system is to properly record healthcare services between members and providers, transactions billed by providers to the ChocAn organization, and update member and provider records. This also extends to compiling weekly data reports for the benefit of members, providers, and ChocAn managers.

1.2 Target Audience

The intended audience of this document is all ChocAn data processing software stakeholders. These stakeholders include the ChocAn organization and their managers, as well as providers in the ChocAn healthcare network, whose involvement aids in determining the specifications of this software. This also includes our organization's software development team, which is responsible for the design and implementation of these specifications.

1.3 Terms and Definitions

1. ChocAn - Chocoholics Anonymous
2. DOS - Date of service
3. EFT - Electronic Funds Transfer
4. ID number - Identification number
5. Manager- Administrator for the ChocAn organization
6. Manager Terminal - Terminal to be used by ChocAn managers to request data records and to add, delete, and update member and provider records
7. Member/Customer - Individuals enrolled in ChocAn memberships`
8. Member/Membership Fee - Monthly fee billed to each registered member
9. Provider - Healthcare professional in the ChocAn network
10. Provider Directory - A directory to be used by the provider to locate the appropriate procedure codes for the services provided
11. Provider Terminal - Terminal to be used by providers at the time of service to verify active ChocAn memberships and bill for ChocAn services
12. Service Fee - Commission that is to be paid to the provider

2. Product Overview

This product will serve as a data-processing system for the ChocAn organization. The system will provide accessible terminals that give providers and managers the ability to record, update, and view all relevant information pertaining to the services provided. The purpose of this section is to outline the significant components of this system, including the people it affects and the services it provides. A stakeholder is any person or party that is directly affected by the system being produced. As previously mentioned, the scope of this system does not include implementing functionality for communications, accounting services, EFT, or designing the ChocAn Terminal.

2.1 Users and Stakeholders

The purpose of this section is to identify and describe all parties involved in this product and their respective roles. External stakeholders are involved with the software directly through use. They are not involved with the development, but are affected by the actions and outcome of the software. System stakeholders are directly involved with the creation of the software.

2.1.1 External Stakeholders

Members: ChocAn members benefit by having their membership information easily accessible by providers within this system. This convenience for the member offers providers an easy way to bill for ChocAn services. They'll also receive a weekly report of the services they were provided.

Providers: Providers in the ChocAn network have their information and their patient records stored within our system, which will provide an easier way to record and bill for services, as well as oversee their total fee to be collected by ChocAn.

2.1.2 System Stakeholders

<u>ChocAn</u>: The Chocoholics Anonymous Organization is responsible for funding the project and determining the specifications of this system in collaboration with our software development team, ensuring that the system meets their needs and requirements.
<u>Managers:</u> Managers are responsible for adding, deleting, and updating member and provider information in this system. They also have access to all weekly reports generated from this system, which is essential for ensuring that providers receive payment for services rendered with the collaboration of Acme Accounting Services.
<u>Software Development Team</u>: The software development team is responsible for the designing and implementing the software specifications, as well as its deployment and maintenance.

2.2 Use cases

The purpose of this section is to define the use cases for this system in detail. Use cases describe how the program accomplishes specific tasks and how users will perform those tasks on the platform.

2.2.1 Manager Registers New Member or Provider into Database

Actors

- ChocAn Manager

Preconditions:

- Manager has obtained either the new member's or new provider's demographics and billing information.
- Manager is authorized, qualified, and trained to use the software and has been given their own login credentials.

Postconditions:

- The member or provider is registered in the ChocAn database.
- A new member is assigned a ChocAn member ID number and will be mailed their ChocAn membership card.

- A new provider is assigned a ChocAn provider ID number.
- The member may now start receiving ChocAn services.
- The provider may now be able to render and bill for ChocAn services.

Overview: Once a member's or provider's request to be added into the ChocAn network has been received, the manager will add their demographic and billing information into the ChocAn database. The manager will also assign either a member ID number or provider ID number to the newly added party.

Flow of Events:
1. A request from a new member or provider to be entered into the ChocAn network, as well as appropriate demographic and billing information, has been received by a manager.
2. Using the manager's terminal, a manager logs into the system using their login credentials.
3. The manager selects the option to add a new member or provider into the system.
4. The manager will enter the information given into the system and onto the ChocAn database.
5. The manager will assign either a unique provider or member ID number.
   a. If the manager attempts to assign the new party to an existing ID number, an error message will be displayed and the manager will be prompted to enter a valid ID number.
6. The system will create fields that will be written to the disk, following that the system will send the new member or provider information to the database to be saved.
7. The terminal will display the information entered for the manager to review and ask for verification of accuracy.
   a. If the manager entered any information incorrectly, they can correct it by entering the information in again once prompted.

8. Once the information has been verified, the member or provider has been successfully added into the database and a message confirming the new addition will be displayed to the terminal.

2.2.2 Manager Deletes Member or Provider from Database

Actors
- ChocAn Manager

Preconditions:
- Manager is authorized, qualified, and trained to use the software and has been given their own login credentials.
- The member has cancelled their ChocAn membership or a provider has requested to be removed from the ChocAn network.

Postconditions:
- The member's ChocAn membership has been cancelled and their information is deleted from the database or a provider's information has been deleted from the database.

Overview: A member who wishes to cancel their membership may do so at any time. Similarly, a provider may request to be removed from the ChocAn network at any time. Once a request for discontinuation of services has been received from either a member or provider, a manager will delete their information from the database.

Flow of Events:
1. A request for discontinuation of services has been received from a member or provider and this request is sent to a manager.
2. Using the manager's terminal, a manager logs into the system using their login credentials.
3. The manager will locate the appropriate file by entering either member ID or provider ID corresponding to the request.

4. The manager will select the option to delete a member or provider file from the database.

5. A message is displayed to the manager, asking for verification to delete this member or provider from the database.

    a. If a member has outstanding debt, then they will be unable to be deleted from the database and a message notifying the manager of failed deletion and reason for failure will be displayed to the terminal.

6. Once verification to delete has been completed, the member or provider will be deleted from the database and a message confirming the deletion will be displayed.

2.2.3 Manager Updates Member or Provider Information

Actors

● ChocAn Manager

Preconditions:

● Manager is authorized, qualified, and trained to use the software and has been given their own login credentials.

● A member or provider has requested to change their demographic and/or billing information.
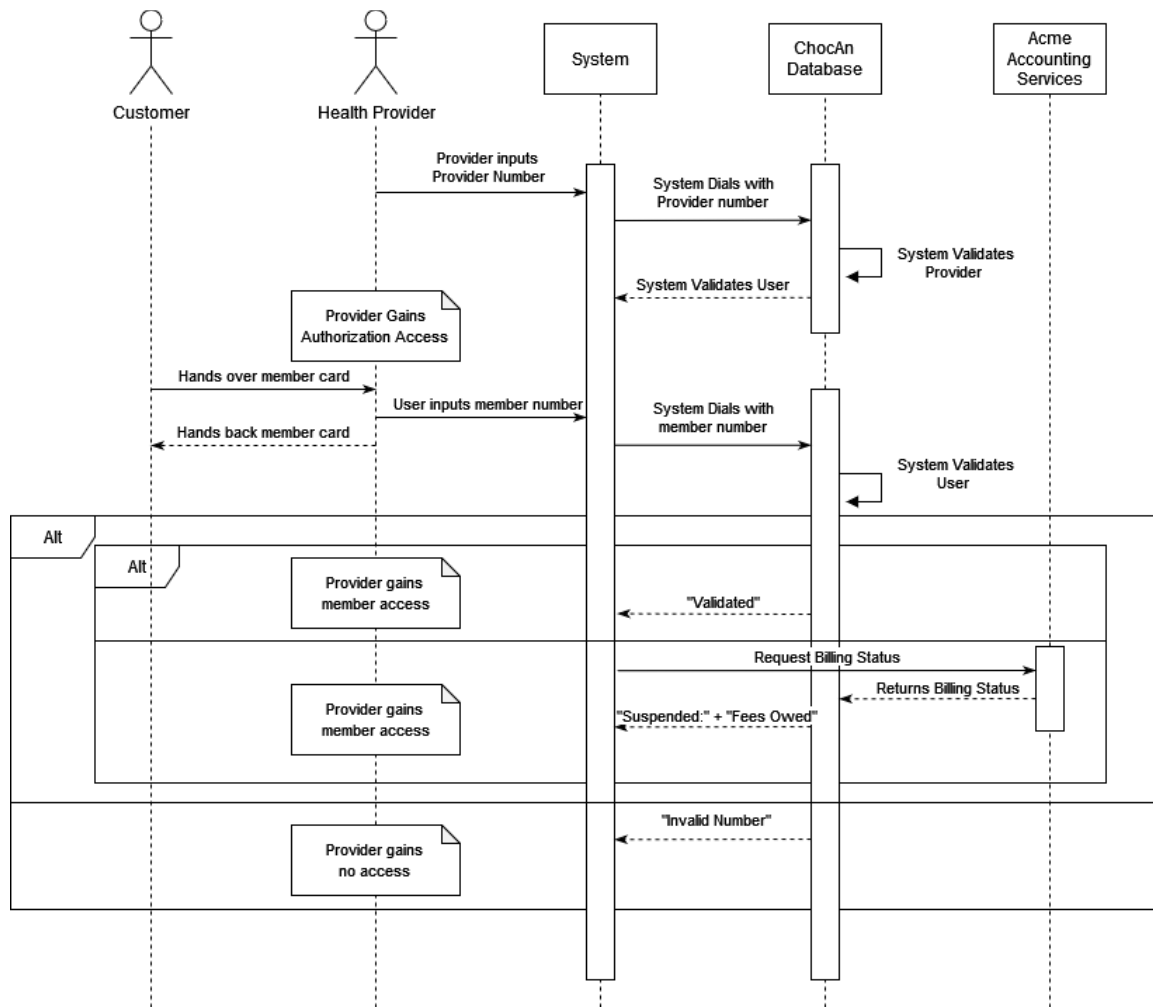
Postconditions:

● The member or provider's demographic and/or billing information has been updated by a manager.

Overview: A member or provider may need to change their demographic and/or billing information while participating in the ChocAn network. Once a request has been received by the member or provider, a manager will update the appropriate information in the database.

Flow of Events:

1. A request to change demographic and/or billing information has been received from the member or provider.

2. Using the manager's terminal, a manager logs into the system using their login credentials.

3. The manager will locate the member or provider's file by entering their corresponding member or provider ID number.

4. The manager will select the option to update the member or provider's information.

5. The manager will select the information that needs to be updated, such as the name, address, or billing information.

6. The manager will update the information corresponding to the change request.

7. A message is displayed to the manager, asking for verification that all information entered is accurate.

   a. If the manager entered any information incorrectly, they can correct it by entering the information in again once prompted.

8. Once the information has been verified, the member's information will be updated and a message confirming the update will be displayed.

2.2.4 Provider Verifies Active Membership

Actors

- Member
- Provider

Preconditions:

- Provider is authorized, qualified, and trained to use the software.
- The ChocAn database is online and can be accessed and written to.
- ACME Accounting Services can be accessed.
- Members have a membership card, or know their membership ID number.

Postconditions:

- The system will return one of the following results.

- If the member number was valid the terminal will read out: "Validated"
- If the member number was valid, but the member is suspended the terminal will read out: "Suspended: Fees Owed:" and display the fee amount owed for that member.
- If the member number is not valid the terminal will read out "Invalid Number".

Overview: At appointment check-in, the provider obtains member's ID information and inputs it into the system to see if the member number is valid. If the member number is not valid, warnings like "member ID not valid" or "member suspended: overdue bill" will be displayed on the provider's terminal.

Flow of Events:
1. The provider logs into the provider's terminal with their provider ID number.
2. A request to the ChocAn database is sent and gains access to the terminal system.
3. The terminal will ask for the membership number.
4. The member hands over their membership card to the provider.
   a. If the card isn't present at the time of service, the member's ID number can be input manually into the provider's terminal.
5. The system dials to the ChocAn database and verifies that the membership number is valid.
   a. If the membership number is not valid, the system will return "Invalid Number," and will request to input the member's ID number in again.
   b. If the membership number is valid, the message "Validated" will display on the provider's terminal.
      i. If the membership number is valid and the member has an outstanding balance, it will request a billing status from the ACME accounting services and display the message "Member Suspended" to the provider's terminal.

2.2.5 Provider Records and Bills for Rendered Service
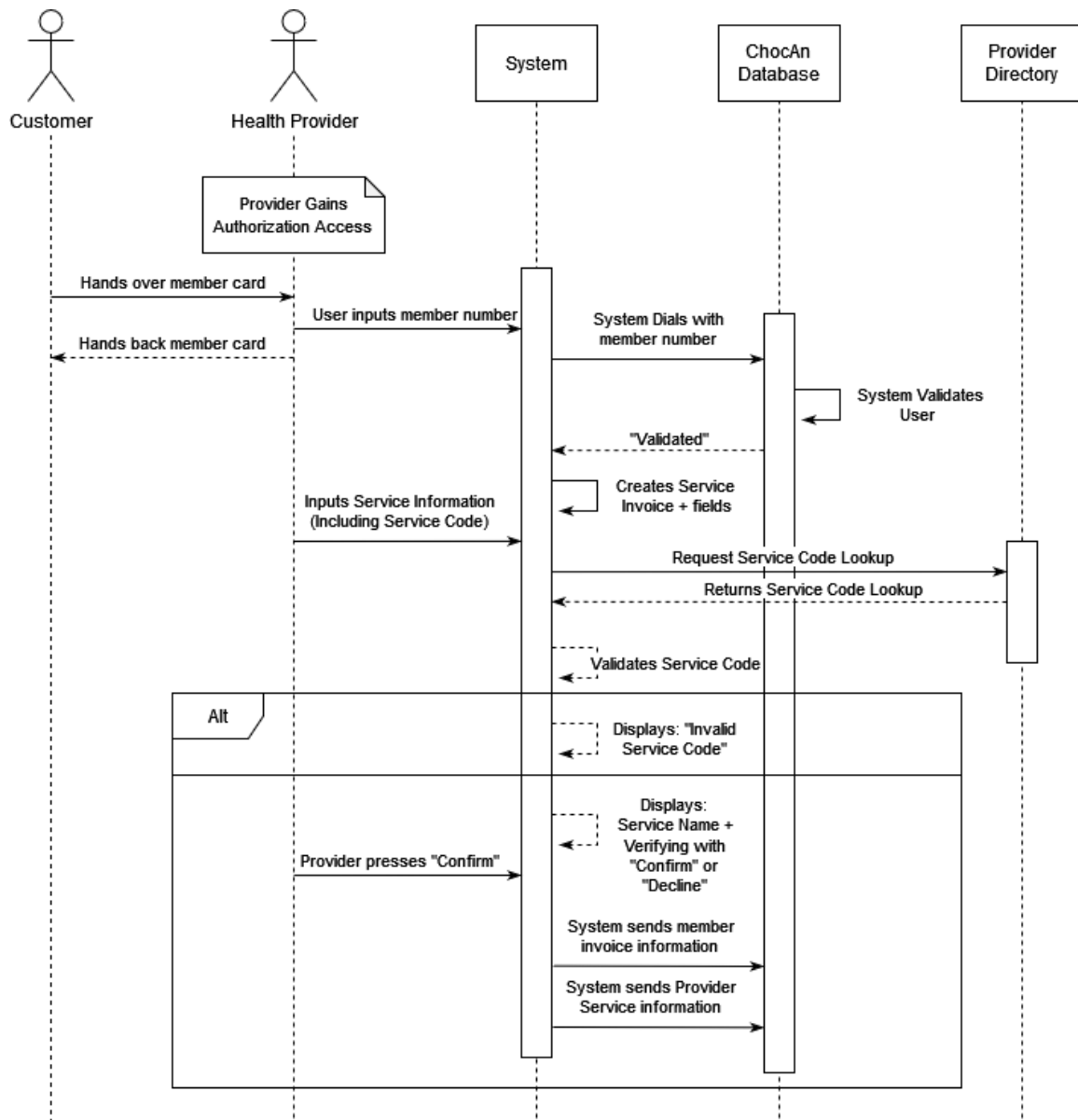
Actors: Provider

Preconditions:

- Provider has rendered services to a member.
- Provider is already logged into the terminal and has access to perform tasks.
- Provider has a member's membership card or member's ID number and inputs the membership number correctly.
- The ChocAn database is online and can be accessed and written to.

- The information that is required for input are:
    - Current date and time (MM-DD-YYYY HH:MM:SS)
    - Date of Service (MM-DD-YYYY)
    - Provider number (9 digits)
    - Member number (9 digits)
    - Procedure code (6 digits)
    - Comments (up to 100 characters) (optional)
- The provider will perform two of the following choices when inputting the procedure code:
    - The procedure code inputted is correct and the provider will hit "Confirm"
    - The procedure code is inputted incorrectly.

Postconditions:
- Information about the service for the member will be written to the ChocAn database.
- Information about the service for the provider's weekly summary and for billing purposes will be sent to the ChocAn database.

Overview: Provider searches for the procedure code associated with the service provided to the member, and verifies that the information about the service is correct. If the number doesn't correlate to a service, the provider gets a warning display about an invalid procedure code. The Provider can enter comments about the service provided before submitting the record.

Flow of Events:
1. The provider is logged into the terminal and inputs the member's number.
2. The system validates the member and the provider is ready to document and bill the customer.
3. The system will create fields for the required information, and the provider will fill it in, including the optional comment section.

4. The provider will input the procedure code associated with the service that was provided, and the system will validate the procedure code.

5. The system will look up the procedure code by reading the most current provider directory file.

    a. If the procedure code was input incorrectly then the terminal will alert the provider that the wrong procedure code was typed and will ask to input the procedure code again

    b. If the service was correct, the terminal will display the name associated with the procedure code and will ask the provider if they would like to "Confirm" or :"Decline".

6. The provider will press "Confirm" on the system.

7. The system will then update the customer's file on the ChocAn database, as well as update the provider's files to document and record their services.

2.2.6 Generate Weekly Informational Reports

Actors: Manager, System terminal

Preconditions:

- The managers have access to the terminal, trained and have knowledge of creating weekly reports.

- Providers must have emails for individual reports to be sent out.

- There must be providers and providers must have members in order to create weekly reports.

- Managers who request weekly reports will be given the time frame from the most recent Saturday to the current time and day.

- The ACME is online and has updated the ChocAn database to the most current status.

- At 12:00 AM (00:00) every Friday the system will run a weekly report that will be generated without a manager needed.

Postconditions:

- Managers will receive an external file that contains the weekly report.

- Each provider will receive their weekly report with services they have provided.

- Managers will receive a weekly report of all providers and services done.

- The report must contain the following information for each provider:

    - Provider name (up to 25 characters)

    - Provider number (9 digits)

    - Provider street address (up to 25 characters)

    - Provider city (14 characters)

    - Provider state (2 letters)

    - Provider zip code (5 digits)

    - For each service provided, the following details are included in the order the data was received (i.e., the current date and time recorded to the disk at time of billing)

        - Date of Service (MM-DD-YYYY)

        - Date and time data as received by Terminal (MM-DD-YYYY HH:MM:SS)

        - Member name (up to 25 characters)

        - Member number (9 digits)

        - Procedure code (6 digits)

        - Service fee (up to $999.99)

    - Total number of consultations provided (up to 3 digits)

    - Total fee due by ChocAn for the week (up to $99,999.99)

Overview: The system will automatically compile all entered information into organized directories that correspond to providers and members. Every week, summary reports are generated using that week's information. These reports are then automatically emailed to providers at the end of the week. Employees with access to the manager terminal can access these reports any time on request.

Flow of Events:

1. At 12:00 AM (00:00) the system or manager that will access the system will create a weekly report that is to be sent out to the managers, providers and members.

2. The system will access, consolidate, and organize all providers, which includes the required information in the weekly report.

3. Within each provider, there will be an organized list of the history of all the services provided to each member, this information will be written to an external text file.

    a. Each provider will receive separate individual weekly reports which are written to an external text file.

4. Managers are emailed weekly reports consisting of both provider and member information.

5. Providers are emailed weekly reports that contain only member information they have provided.

3. Functional Requirements

A functional requirement is an action that is offered to carry out a component of the program. The functional requirements outlined in this document will declare the components that this application will be able to perform, how it should behave, and how the system should react to particular inputs.

3.1 Verification of Providers and Members

A verification process will be requested for both the provider and ChocAn members to authenticate the validity of the provider and the subscription status of members.

3.1.1 Provider Verification

Providers will be asked to enter their 9 digit provider ID number. The system will then check if the provider's ID number is valid to allow access to the provider terminal.

3.1.2 Member Verification

The member will then hand the provider their ChocAn membership card, which has their membership information encoded on it's magnetic strip and the provider will swipe their card through the provider's terminal. Alternatively, the provider may also enter in the member's ID number manually in the case that the membership card isn't present at the time of service. The system checks if the member's ID number matches an existing member to allow access to benefits. The system will display "Validated," otherwise an error message will be displayed saying "Invalid Number" or "Member suspended" if the members status is set to suspended due to membership fees not being paid off.

3.2 Enter Billing Information

The provider shall be able to enter in billing information on the provider's terminal to be sent to the ChocAn accounts payable department.

3.2.1 The provider shall have the ability to bill ChocAn for all procedures provided by passing the member card through the card reader or keying in the member number manually.

3.2.2 The provider shall provide all necessary information for proper billing including:

> A.) The DOS (MM-DD-YYYY). The date of service is needed in case there is hardware or other difficulties that may have prevented the provider from billing ChocAn immediately after providing the service.

> B.) The procedure code (6 digits). The provider shall use the "Provider Directory" to look up the appropriate 6 digit procedure code corresponding to the service provided.

3.2.3 The system shall verify that the code was entered in correctly by displaying the name of the service corresponding to the code (up to 20 characters) and asking the provider to verify if that is indeed the service that was provided.

> A.) If the code was non-existent the system shall print an error message on the screen and prompt the user to re-enter the code.

> B.) If the code was entered correctly the system shall move on to requirement 3.5.

3.2.4 The provider shall be given the option to enter comments about the service provided (100 character limit).

3.3 Bill ChocAn for Services Provided

The system shall be able to locate the name of the procedure associated with the services provided, record the service in the ChocAn database, and send a bill to ChocAn's accounts payable department using the provider's terminal.

3.3.1 The software shall locate the name of the service by referencing the "Provider Directory" external file and by using the procedure code as a search key.

A.) If the software finds a match in the "Provider Directory" it shall display the name of the service and ask the provider to verify that this was the service rendered to the member.

B.) If the software does not find a match in the Provider Directory, it shall display an error message with the reason for the error and prompt the user to enter the code again.

3.3.2 When the provider records a service, the system will write to the ChocAn database with the empty fields containing requirement information, this includes, current date and time, DOS, member ID number, procedure code. The provider will input the required information, and once completed the system will then update and write to the ChocAn database. In addition, provider information will be simultaneously updated including the fees owed to the provider.

3.3.3 The bill shall be sent to the ChocAn banking team immediately after the provider is finished filling out the form from requirement 3.4.2.

3.3.4 At the end of the week the software shall total the fees to be paid to the provider by accessing the "Services Provided" external file with the provider number as the search key.

3.4 Store Record of Service

The system shall be able to store a record for each service rendered by a provider.

3.4.1 Once information about the service rendered is entered in by a provider, the software shall write a record to disk.

3.4.2 The following fields shall be included in the record:

A.) Current date and time (MM-DD-YYYY HH:MM:SS). This will be done automatically with a function. The provider does not need to enter in this information.

B.) Date service was provided (MM-DD-YYYY). This information was entered by the provider in requirement 3.2.2.A.

C.) Provider number (9 digits). This information was entered in by the provider when first logging in to the terminal, see requirement 3.1.

D.) Member number (9 digits). This information was entered in by the provider in requirement 3.2.

E.) Procedure code (6 digits). The name and the fee of the service are not included. This information was entered in by the provider in requirement 3.2.2.B.

F.) Optional provider comments (100 characters max). If no comment is provided, the field will be left empty and won't be displayed.

3.5 Weekly Reports

The ChocAn Data Center shall generate a set of weekly reports that summarize the services provided to all members for that week.

3.5.1 The reports shall be generated at midnight (Pacific Standard Time) on every Friday of every week.

3.5.2 The reports will be generated by reading the "Services Provided" external file and using search keys such as provider ID number and member ID number.

3.5.3 Each report shall be written to an external text file such that it can be sent as an email attachment to the interested party (i.e. members or providers).

3.6 Member Weekly Report

Each member who has consulted a ChocAn provider during that week shall receive a list of services provided sorted in order of service date.

3.6.1 The report will include the following information:

A.) Member name (25 characters)

B.) Member number (9 digits)

C.) Member street address (25 characters)

D.) Member city (14 characters)

E.) Member state (2 letters)

F.) Member zip code (5 digits)

G.) Service provided including: date of service (MM-DD-YYYY), provider name (25 characters), service name (20 characters).

3.6.2 More details about the member weekly report can be found in 3.5.

3.7 Provider Weekly Report

Each provider who has billed ChocAn during that week shall receive a report containing the list of services he or she provided to ChocAn members

3.7.1 The report shall be sorted by the order the data was received by the computer.

3.7.2 The report will contain the same information as entered on the provider's form, which includes:

A.) Provider name (25 characters)

B.) Provider number (9 digits)

C.) Provider street address (25 chars)

D.) Provider city (14 characters)

E.) Provider state (2 letters)

F.) Provider zip code (5 digits)

G.) Each service provided with the following details: date of the service (MM-DD-YYYY), date and time data were received by the computer (MM-DD-YYYY HH:MM:SS), member name (25 characters), member number (9 digits), procedure code (6 digits), fee to be paid (up to $999.99),

H.) Total number of consultations with members (3 digits)

I.) Total fee for the week (up to $99,999.99)

3.7.2 More details about the provider's weekly report can be found in 3.5.

3.8 EFT Weekly Report

A report consisting of EFT data shall be generated weekly and saved to the system.

3.8.1 The report will be saved to disk and will include the following information:

    A.) Provider name (25 characters)

    B.) Provider number (9 digits)

    C.) Total amount to be transferred to the provider for the week (up to $99,999.99)

3.8.2 Banking computers will later ensure that each provider's bank account is credited with the appropriate amount.

3.8.3 More details about the EFT weekly report can be found in 3.5.

3.9 Accounts Payable Weekly Report

The manager shall receive an accounts payable summary report containing information about the services provided for the week and the fees owed to the provider by ChocAn.

3.9.1 The report will contain the following information:

    A.) Every provider to be be paid that week with the following details

        a.) Provider name (25 characters)

        b.) Provider number (9 digits)

        c.) Total number of consultations with members (3 digits)

        d.) Total fee for the week (up to $99,999.99)

    B.) Total number of providers who provided services (3 digits)

    C.) Total number of consultations (3 digits)

    D.) Total fees for the week for all providers (up to $999,999.99)

3.9.2 More details about the accounts payable weekly report can be found in 3.5.

3.10 Manager Reports

A ChocAn manager shall have the ability to run a report at any time of day and at any day of the week.

3.10.1 The reports that the manager can request include, the list of services provided to each member (See requirement 3.6), the list of services provided by

each provider (see requirement 3.7), EFT records (see requirement 3.8), and the accounts payable summary report (see requirement 3.9).

3.10.2 The reports shall be accessed through the manager terminal after proper manager verification has been completed.

3.10.3 The reports shall display all relevant information from the time the last report was generated up to the current date and time of day.

3.10.4 The report shall be sent as an email attachment to the manager and written to disk.

3.10.5 Requesting these reports at any point of the week does not replace the reports that will run on Friday each week. The weekly reports will generate regardless if the manager requested them or not.

3.11 Maintain Member and Provider Records

All managers shall have access to the ChocAn Data Center during the day which will allow them to maintain member and provider records.

3.11.1 The managers shall have access to the Data Center in interactive mode which will allow them to add new members, delete members who have resigned, and update member records.

3.11.2 The managers shall also be able to add new providers, delete providers who have resigned, and update provider records.

3.11.3 All member/provider information shall be stored in the system and simultaneously in an external file and updated accordingly.

3.12 Maintain Membership Records

All membership records shall be updated daily by ACME Accounting Services.

3.12.1 ACME shall be responsible for managing membership procedures such as recording payments, suspending members whose fees are overdue, and reinstating suspended members who have resolved their outstanding dues.

3.12.2 The ACME software shall be responsible for updating the relevant ChocAn Data Center membership records.

3.12.3 The records shall be updated nightly at exactly 9 P.M.

4. Nonfunctional Requirements

Nonfunctional requirements are constraints on the services of functions offered by the system. They define attributes of the software such as security, reliability, performance, maintainability, and usability. Also known as system qualities, they ensure the effectiveness of the entire software. They often apply to the system as a whole rather than individual system features or services.

4.1 System Security

The system will have different levels of access for different users to ensure a high level of system security. Managers shall have the highest level of functional and data access while providers and members shall have a much more limited scope.
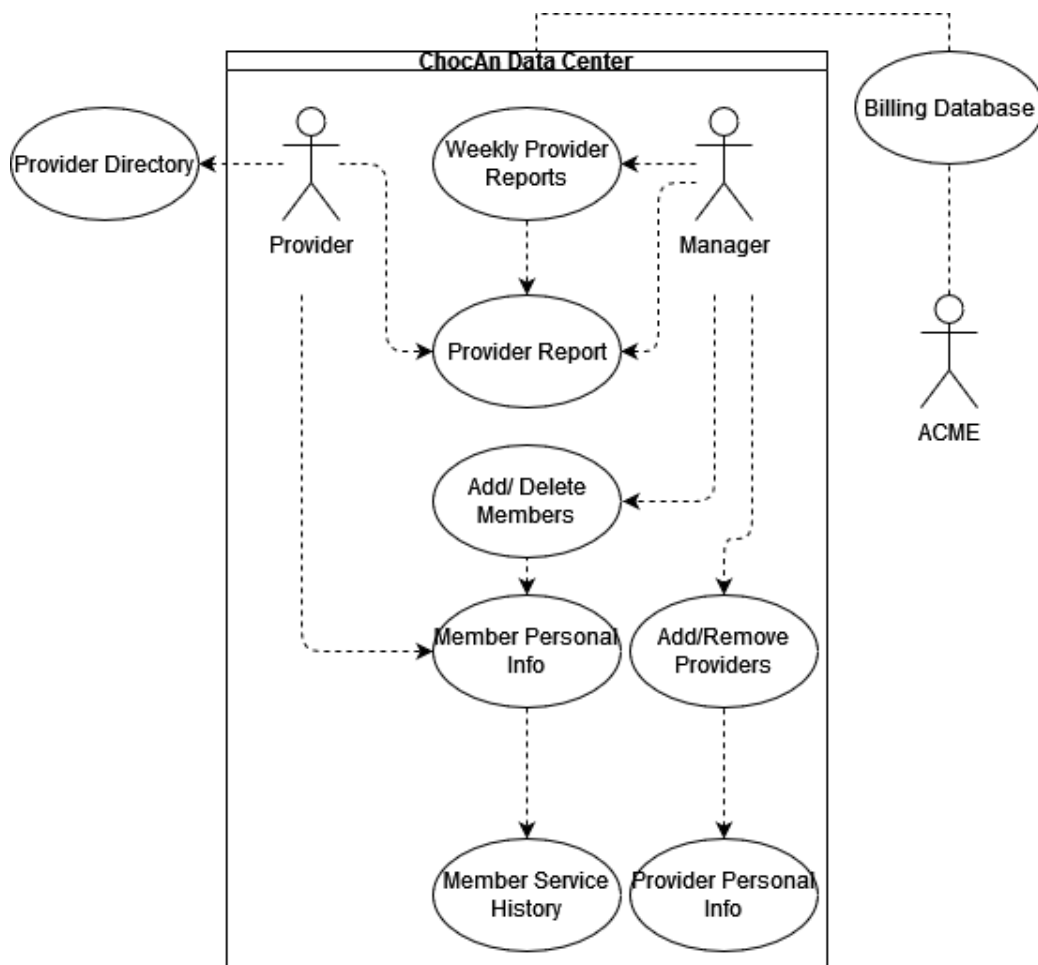
4.1.1 Manager Access

Using interactive mode, only managers can add, delete, update, or view member and provider records. Managers may also individually run provider, member, EFT, and accounts payable reports at any point during the week.

4.1.2 Provider Access

Providers can add information to the system related to services that they provided as well as view their own service history via weekly reports. Providers may also request a copy of and have access to the Provider Directory.

4.1.3 Member Access

Members can only access their service history via weekly reports.

4.1.4 ACME Accounting Services Access

ACME Accounting Services has access to member demographic, member's ID number, and billing information for the purpose of maintaining membership records.

4.1.5 Data Integrity

The external file storing all provider and member information will be encrypted.

4.2 Performance and Response Time

The system will perform at a quick, consistent speed. The system will never exceed three seconds of response time when inputting, accessing, or verifying data.

4.3 Reliability

The system will be consistent and reliable. During any downtime, member and provider information can still be accessed through external files that are updated consistently with system use.

4.3.1 Rate of System Failure

Less than 3% of failures will result in data corruption. Less than 1% of failures will result in system shut-down.

4.4 Usability & Testability

All providers and managers will be required to complete a comprehensive training course on proper use of the system before actual engagement. All providers and managers shall be able to use the appropriate system functions after completion of this training course. After this training, the average number of errors made by experienced users shall not exceed two per hour of system use.

4.4.1 User Error Handling

When any user error is encountered (such as invalid input), the specifics of the error will be displayed to the user as well as an example of a proper use case. Normal system function should resume normally after the issue is resolved.

4.4.2 User Feedback Option

Before exiting the system, users shall have the option to provide anonymous feedback on their experience with the software. This feedback will be stored in an external file so that those maintaining the software can view and address any significant issues.

4.4.3 Data Organization

To improve ease of viewing, external data files will be organized in a manner that is logical for the information being stored. The external data files for members and providers will be sorted according to ID number. The Provider Directory containing the services provided by ChocAn will be sorted by procedure code.

4.5 Serviceability and Manageability

The system will be able to continually be updated and make changes throughout the span of its use as issues or changes of needs arise.

5. Milestones and Deliverables

This section outlines each milestone and deliverable in detail including the format of the deliverable, the description, and the date that it will be completed by. All milestones listed will be delivered to the stakeholders in the form of either a document or a verbal presentation.

5.1 Requirements Document - January 31, 2022

This is the current document outlining the services the system will provide including use cases, functional and non-functional requirements, and milestones and deliverables. It will be delivered on January 31, 2022.

5.2 Design Document- February 7, 2022

The design document will show a detailed plan on developing the software. This will include a description of each system component, description of the interface, what the internal architecture will look like, and any important algorithms needed. It will include UML diagrams to show the flow from one activity to another. Additionally, it will describe implementation in great detail including data structures, helper functions, and pseudo code. This will be the final planning stage prior to implementation. It will be delivered on February 7, 2022.

5.3 Test Plan Document - February 21st, 2022

The test plan document will describe the scope of the test plan. It will specify which sections of the software will be tested and which will not, what test will be performed and which will be omitted, it will also go over strategies for unit, smoke, and system testing. The plan will include a testing schedule and the maximum fault tolerance the system must meet before being deployed. It will be delivered on February 21st, 2022.

5.4 Final Deliverable - March 11th, 2022

The final deliverable will be the final project in its completed form after all testing has been done and necessary changes made. The final project will consist of all components outlined in the requirements document, design document, and test plan document. All source code files, relevant documentation, and testing notes will be presented on March 11th, 2022.

5.5 Project Report - March 11th, 2022

The report will discuss how the team worked together to complete this project. It will outline areas that went well and areas that could use improvement. It will include a section on lessons learned throughout the process and suggestions on how the team can be improved for future projects. The report will also go over the full functionality of the software as well as all efforts made to eliminate known defects/issues. This deliverable will be in the form of a written document as well as presentation slides to be presented in front of all stakeholders. It will be delivered on March 11th, 2022.