COURSE PROJECT

Voice Mail System

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Chapter 1

Introduction

1. Introduction

1.1 About the System

A voicemail system is a centralized system used in businesses for sending, storing and retrieving audio messages, just as an answering machine would do at home. Voicemail systems make a Phone System more flexible and powerful by allowing information and messages to pass between users even when one of them is not present.

1.2 Purpose

Voicemail is a method of storing voice messages electronically for later retrieval by intended recipients. Callers leave short messages that are stored on digital media (or, in some older systems, on analog recording tape) Users can play their voicemail messages either as audio or as text.

1.3 Scope

Voice messaging is a viable alternative to e-mail and fax systems as a business communicating tool. The voice-messaging systems include many services such as the voice messages , the voice-mail distribution lists , fax-in and fax-on demand in the mailbox ,and the voice forms that any user can access anywhere in the world . Voice mail provides twenty-four-hour-a-day answering capability

1.4 Vision

Many voice message service providers are focused on unifying the various electronic communications systems into integrated systems. Voice mail -- office voice mail, cell phone voice mail and residential voice mail -- will undoubtedly play a big role in that future.

1.5 Why this system is necessary?

Each extension in a phone system is normally linked to a voice mailbox, so when the number is called and the line is not answered or is busy, the caller listens to a message previously recorded by the user. This message can give instructions to the caller to leave a voice message, or provide other available options. Voicemail systems also provide notifications to users to inform them of new voicemails. Most modern voicemail systems provide multiple ways for user to check their voicemail including access through PC's, mobile phones, landlines.

1.6 Proposed Solution

- On dedicated hardware (on premise)
- On your Private on premise Cloud
- On your Private remote Cloud

Chapter 2

System Analysis

2. System Analysis

2.1 Use Case Model

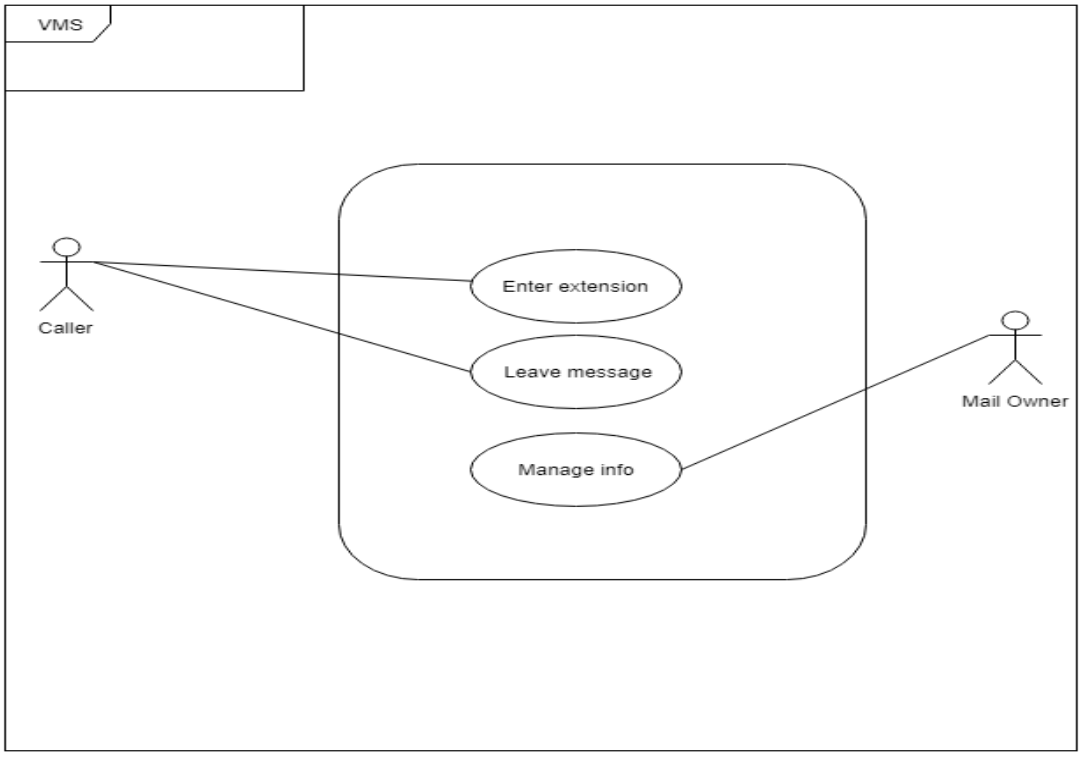

Figure 1: Use Case Model

2.2 Actor Goal List

Table 1: Actor goal list

Actor	Goal
Caller	Connect Voice mail Enter extension Leave message
Mail Owner	Retrieve message Manage Information

2.3 Use Case Description (Brief)

2.3.1 Enter Extension (Example)

Admin of System has necessary data required for Reports generation. Admin can also register account and can assign roles to accounts registered. He can also post notification to notification bar and add required data to database.

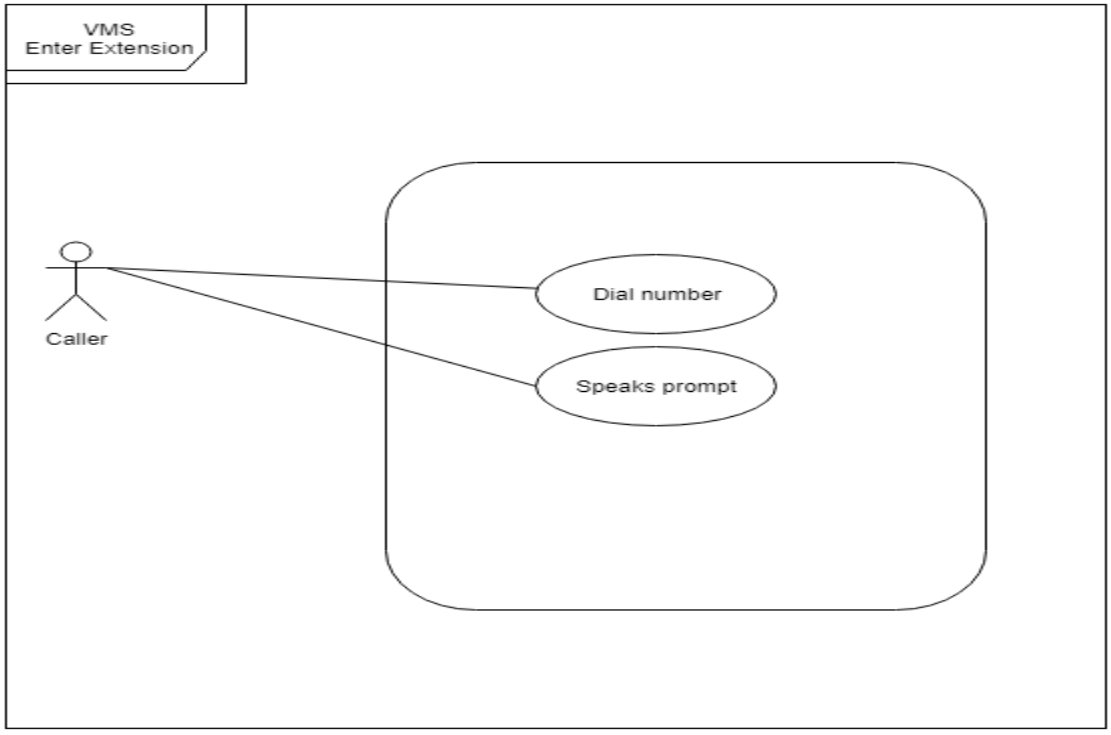

Figure 2: Use Case Diagram to Enter Extension

2.3.2 Leave Message

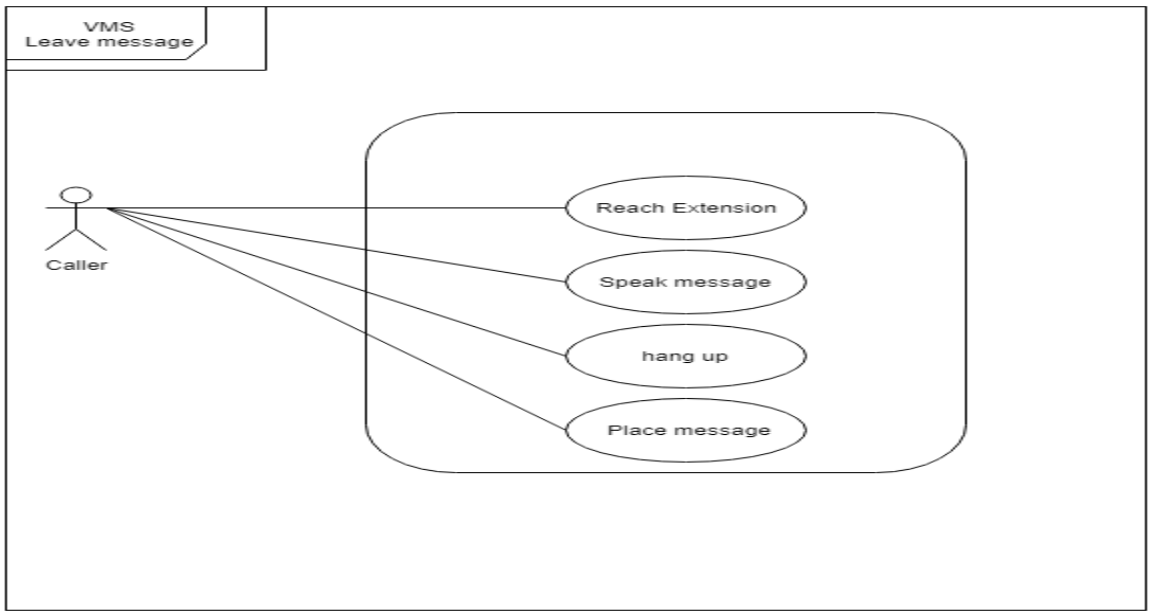

Figure 3: Use Case Diagram to Leave Message

2.3.3 Manage Info

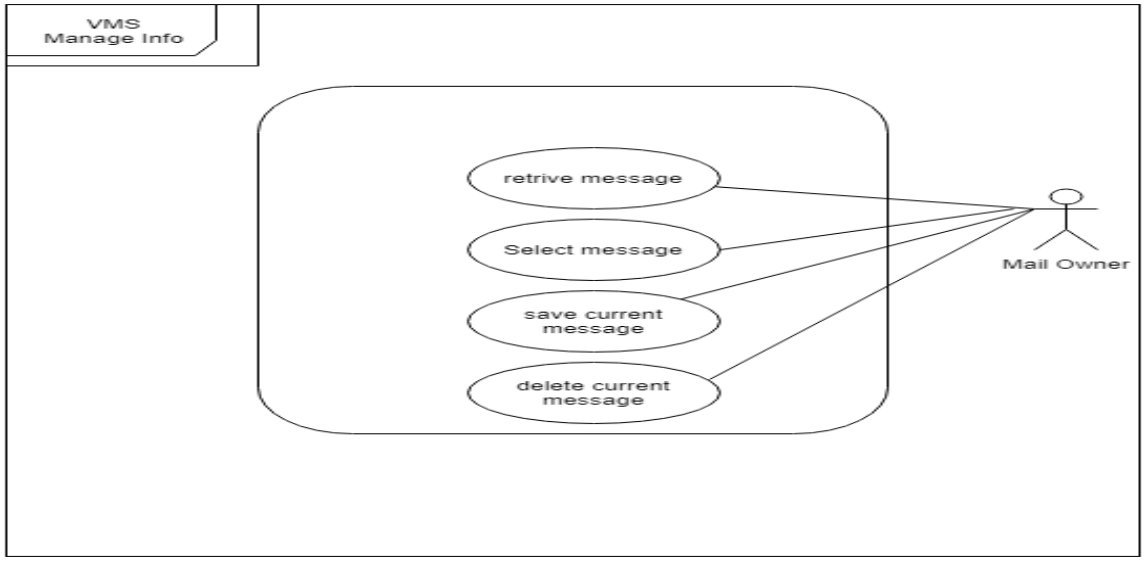

Figure 4: Use Case Diagram to Manage Info

2.4 Use Case Description (Detailed)

2.4.1 Enter Extension (Example)

Table 2: Enter Extension

Use Case Name:	Enter extension	
Scenario :	Reach an extension	
Brief Description:	Caller use the following convention for input: An input line consisting of a single character 1....9 or # denotes a pressed button on the telephone touchpad. For example, to dial extension 13, you enter 1 3 # An input line consisting of the single letter H denotes hanging up the telephone. Any other text denotes voice input.	
Actor:	Caller	
Precondition:	Caller use the keyboard to type the number.	
Post condition:	Caller can see the ringing to this number.	
Flow of events:	Actor	System
	1. The caller dials the main number of the voice mail system. 2. The caller types in the extension number of the message recipient.	1.1. The voice mail system speaks a prompt. **Enter mailbox number followed by** #. 2.1. The voice mail system speaks. **You have reached mailbox xxxx. Please leave a message now.**
Exception Condition:	1.1. If caller cannot input number to the Mail Owner then it's fail to enter extension.	

2.4.2 Leave Message (Example)

Table 3: Leave Message

Use Case Name:	Leave message	
Scenario :	Leave a Message	
Brief Description:	When the Caller cannot get the Mail Owner then him/her, leave can leave a message. Because Caller had some, urgent so he/she can leave a message.	
Actor:	Caller	
Precondition:	Caller need to simulate the three distinct input events that occur in a real telephone system: speaking, pushing a button on telephone touchpad, and hanging up the telephone.	
Post condition:	Mail Owner can received the voice message and know the Caller information.	
Flow of events:	Actor	System
	1. The caller speaks the message. 2. The caller hangs up.	1.1. The voice mail system places the recorded message in the recipient's mailbox 2.1.Save message
Exception Condition:	1.1 Leave the message but network error so Mail Owner cannot receive the message.	

2.4.3 Manage Info (Example)

Table 4: Manage Information

Use Case Name:	Manage Information	
Scenario :	Retrieve message, keep and delete message to manage information.	
Brief Description:	The other party that means the 2nd owner can later retrieve the messages, keep them, or delete them.	
Actor:	Mail Owner	
Precondition:	Mail should be in the mailbox and there should be retrieve option.	
Post condition:	After clicking the retrieve button it will be retrieve or by clicking save button. Otherwise, it will be unsaved then it would be lost.	
Flow of events:	Actor	System
	1. The mailbox owner selects the "retrieve your messages" menu option. 2. The mailbox owner selects the "listen to the current message" menu option. 3. The user selects "save" button to save the current message. 4. The user selects "delete" button to delete the current message".	1.1. The voice mail system plays the message menu 3.1. Save the current message. 4.1. Delete the message
Exception Condition:	1.1. It can be happened that there is no mail to retrieve. 2.1. Retrieve button may not be workable. 3.1. Save button would be damaged/hanged. Then it will not work.	

2.5 System Sequence Diagrams

2.5.1 Enter Extension

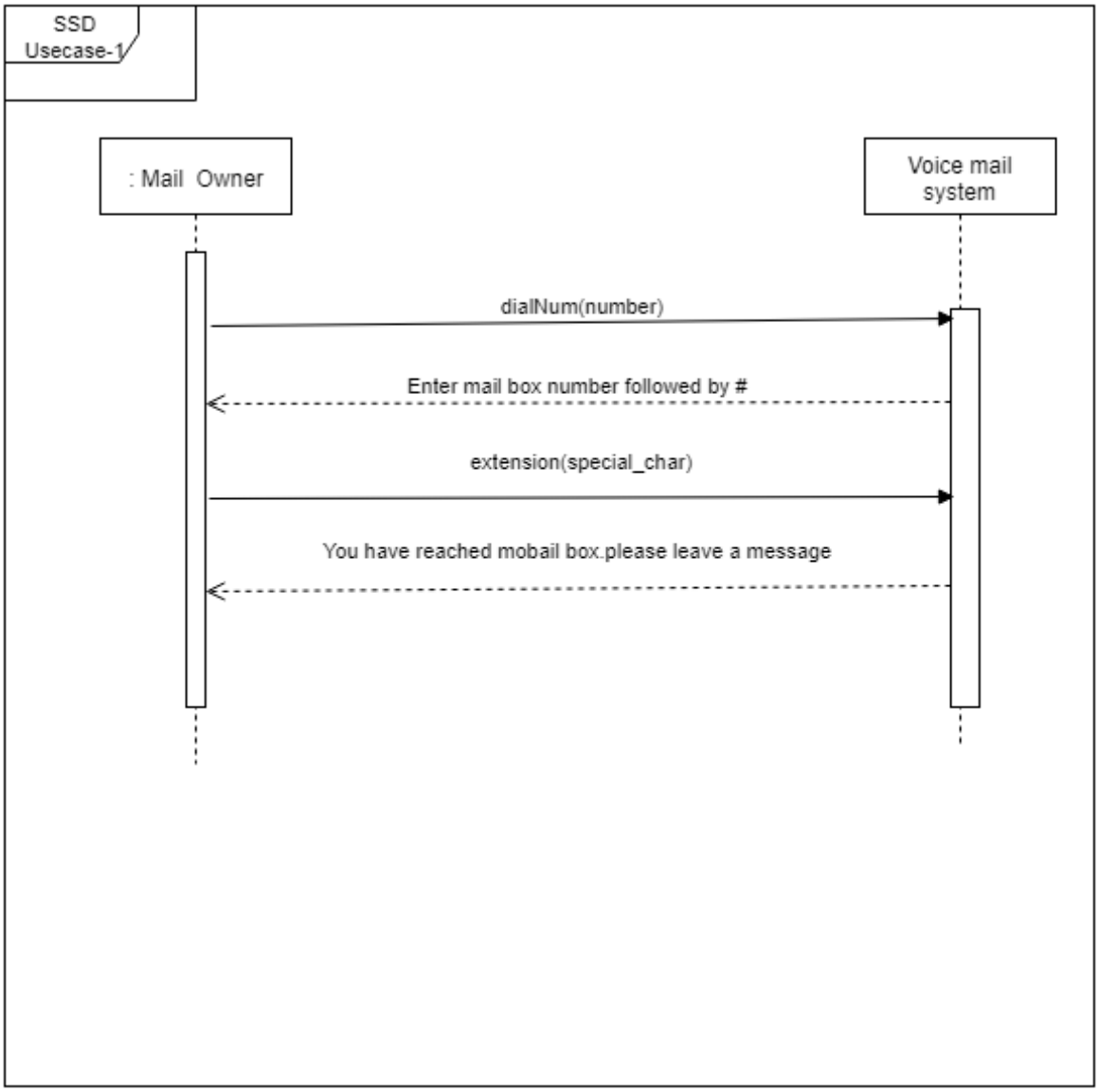

Figure 5: SSD to flow of event for Enter Extension

2.5.2 Leave Message

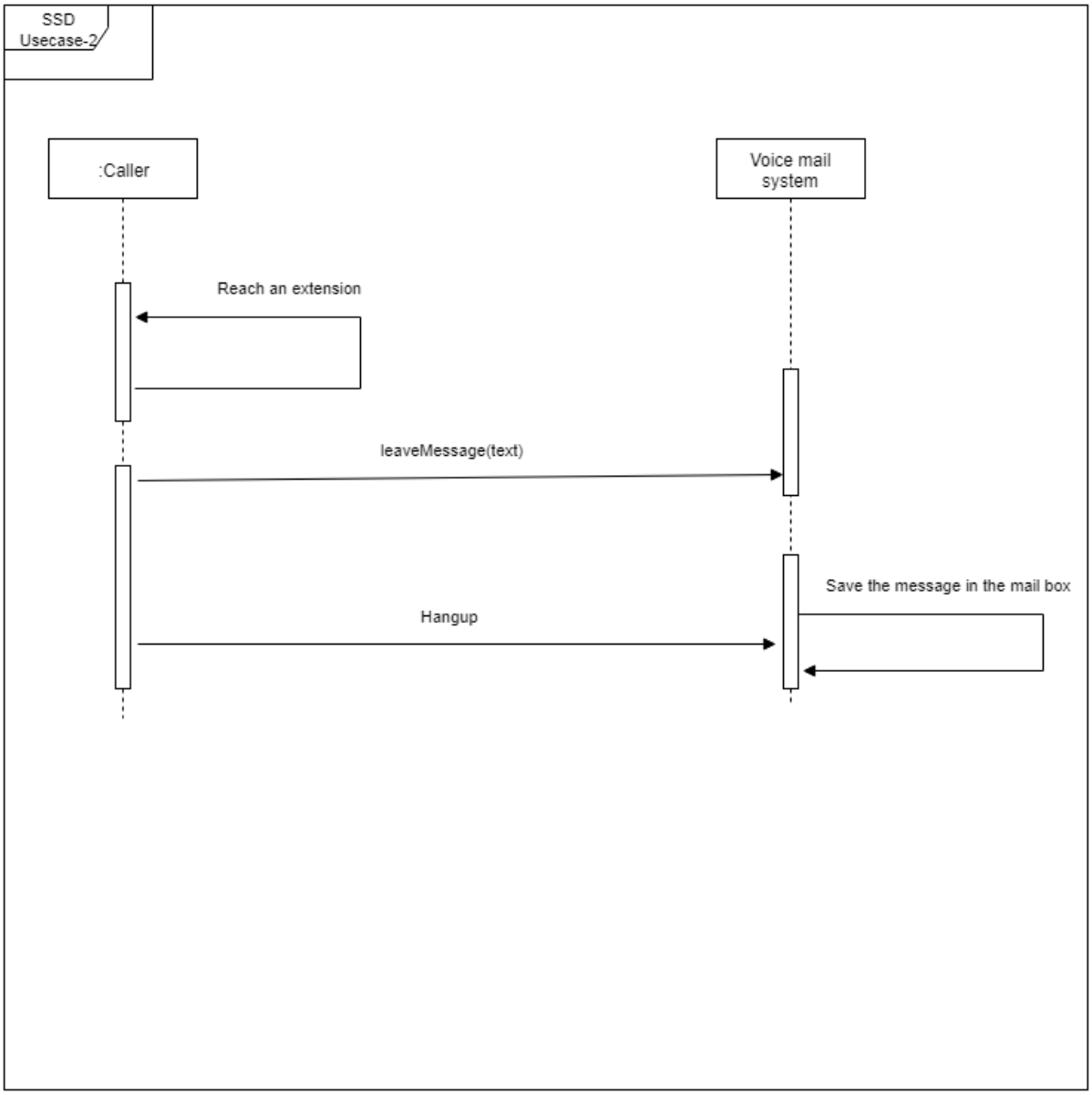

Figure 6: SSD to flow of event for Leave Message

2.5.3 Manage Information

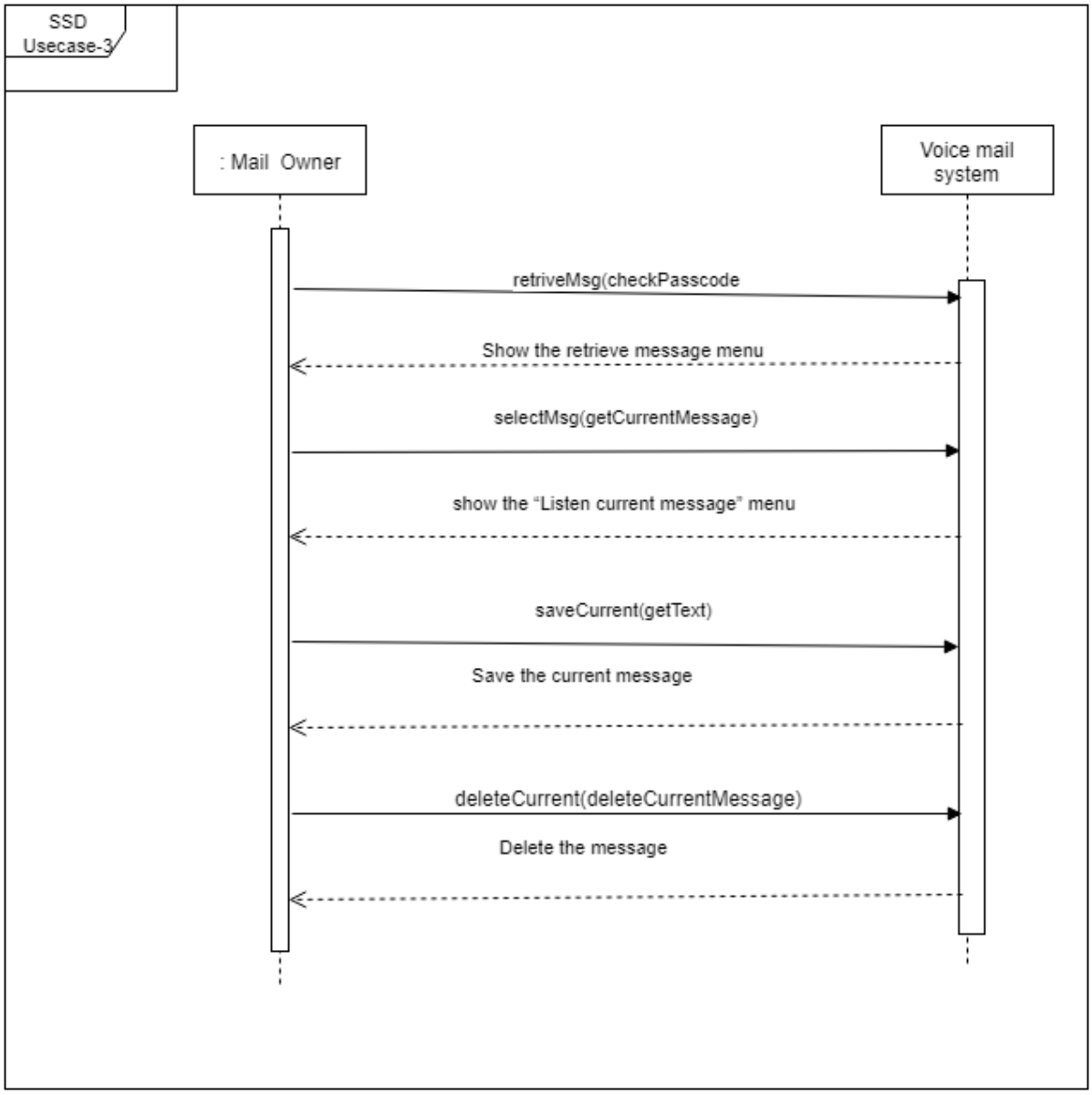

Figure 7 : SSD to flow of event for Manage Information

2.6 Domain/Conceptual Model

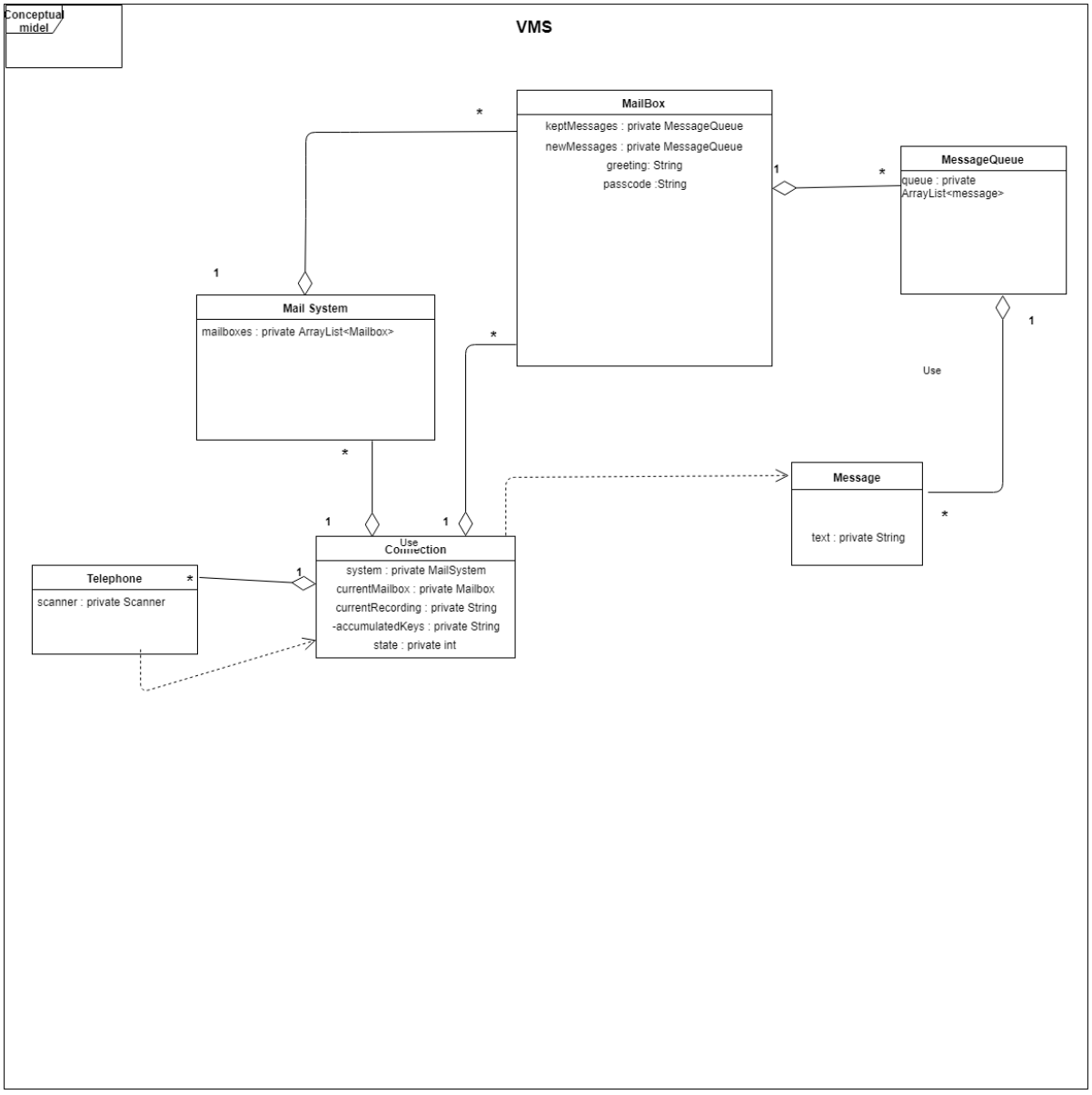

Figure 8: System Domain Model

2.7 Activity diagram

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency.

2.7.1 Mail Owner

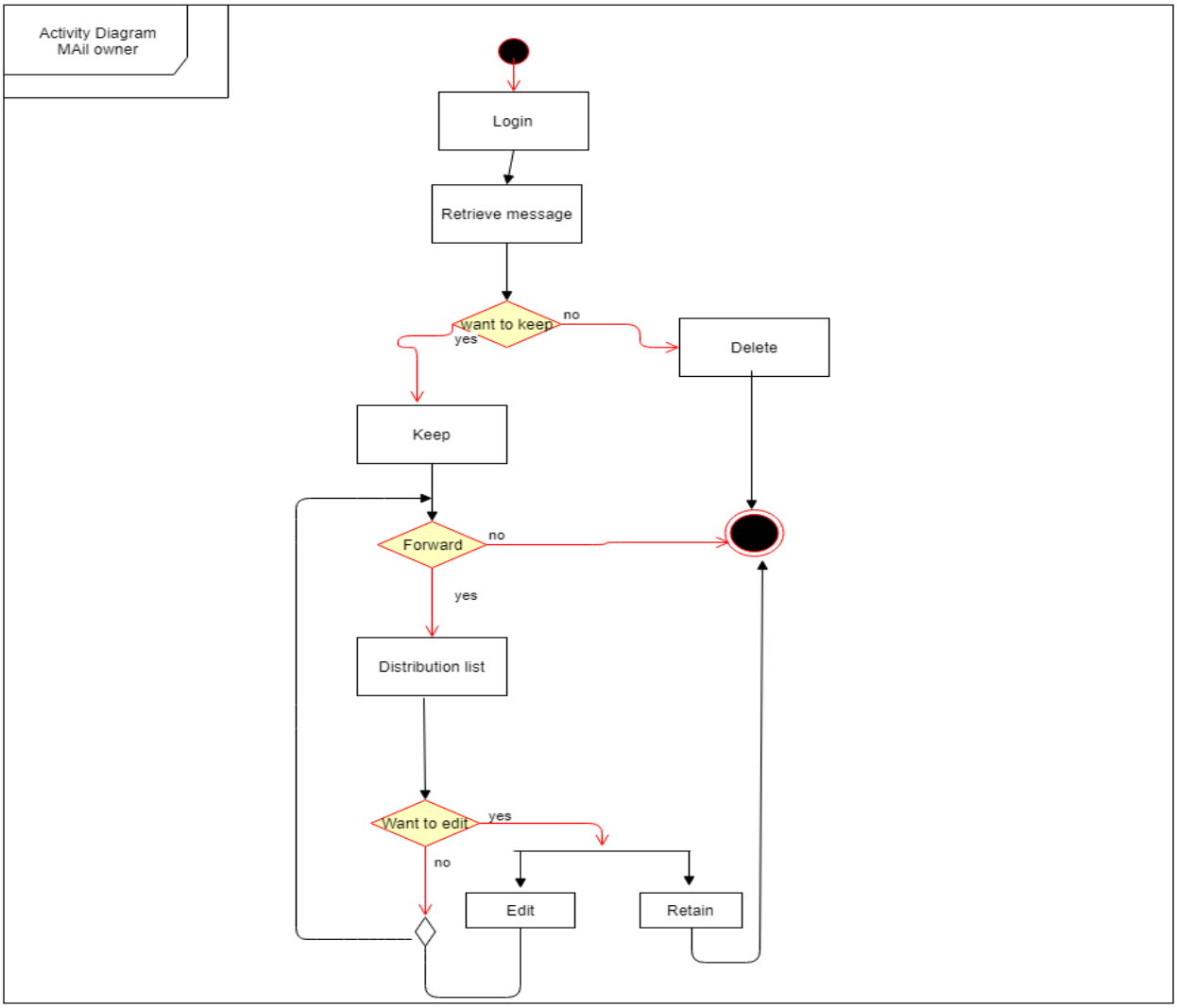

Figure 9: Activity Diagram for Mail Owner

2.7.2 Caller

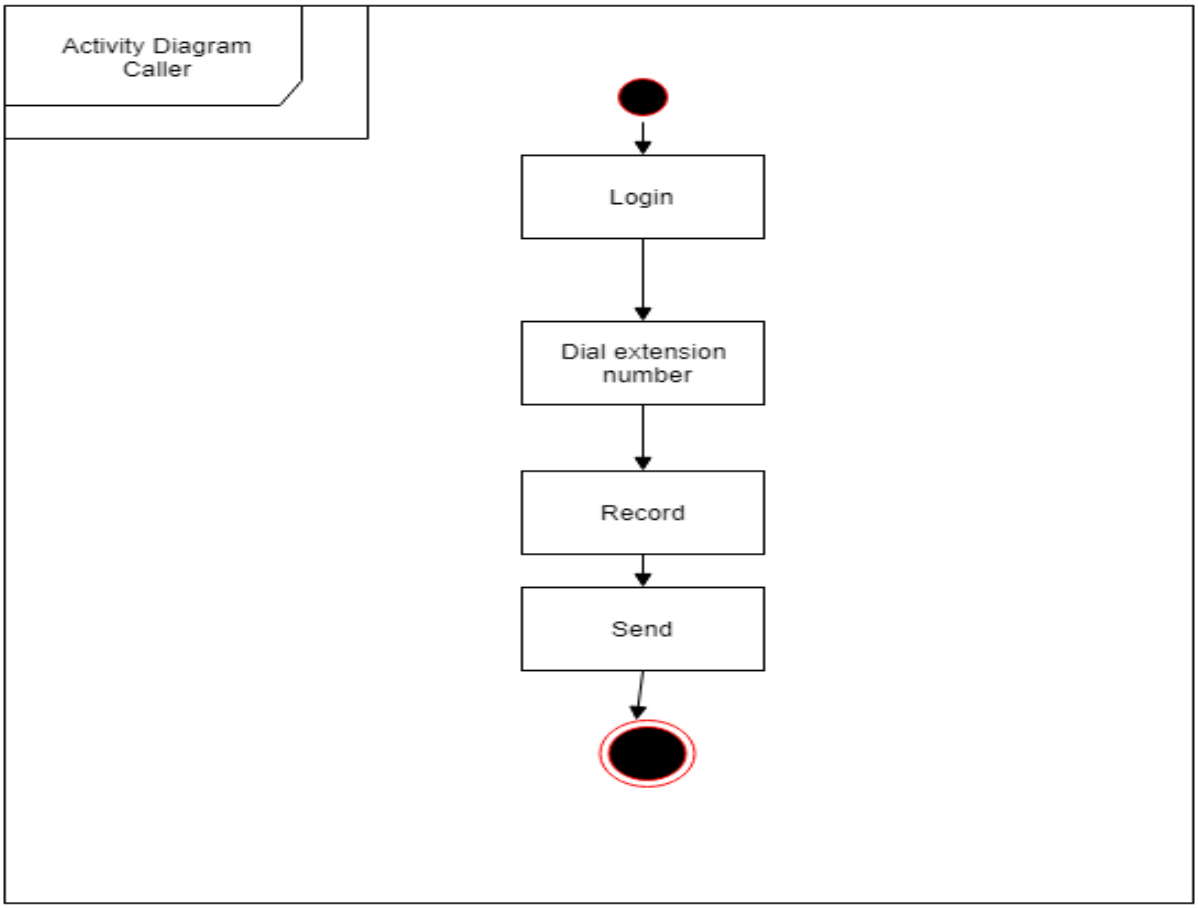

Figure 10: Activity Diagram for Caller

Chapter 3

System Design

3. System Design

Design is a process that uses the product of analysis to produce a specification for implementing a system. Design is the logical description of how a system will work.

3.1 Sequence Diagrams

The UML includes interaction diagrams to illustrate how objects interact via messages. They are used for dynamic object modeling. The term interaction diagram is a generalization of two more specialized UML diagram types:

3.1.1 Enter Extension

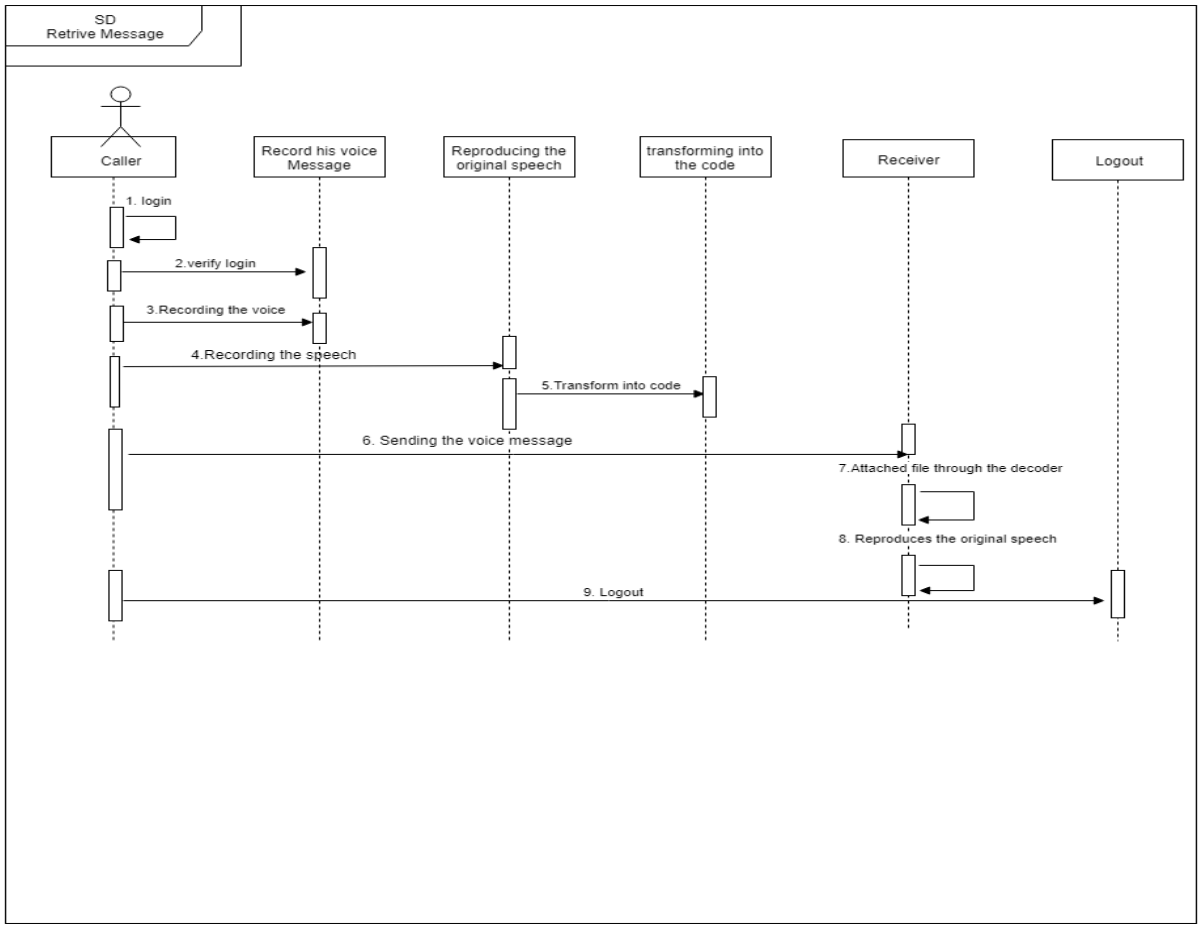

Figure 11: SD to Enter Extension

3.1.2 Leave Message

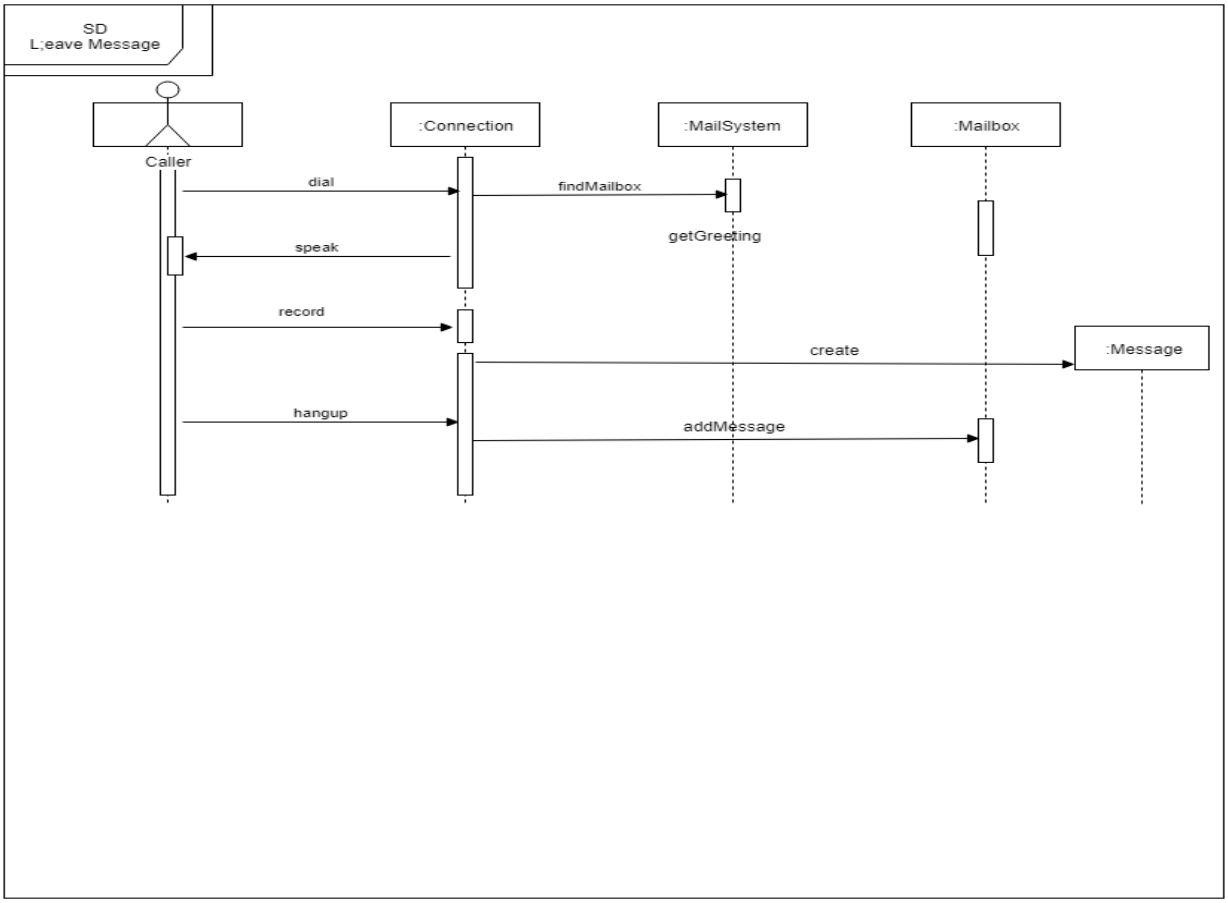

Figure 12: SD to Leave Message

3.1.3 Manage Info

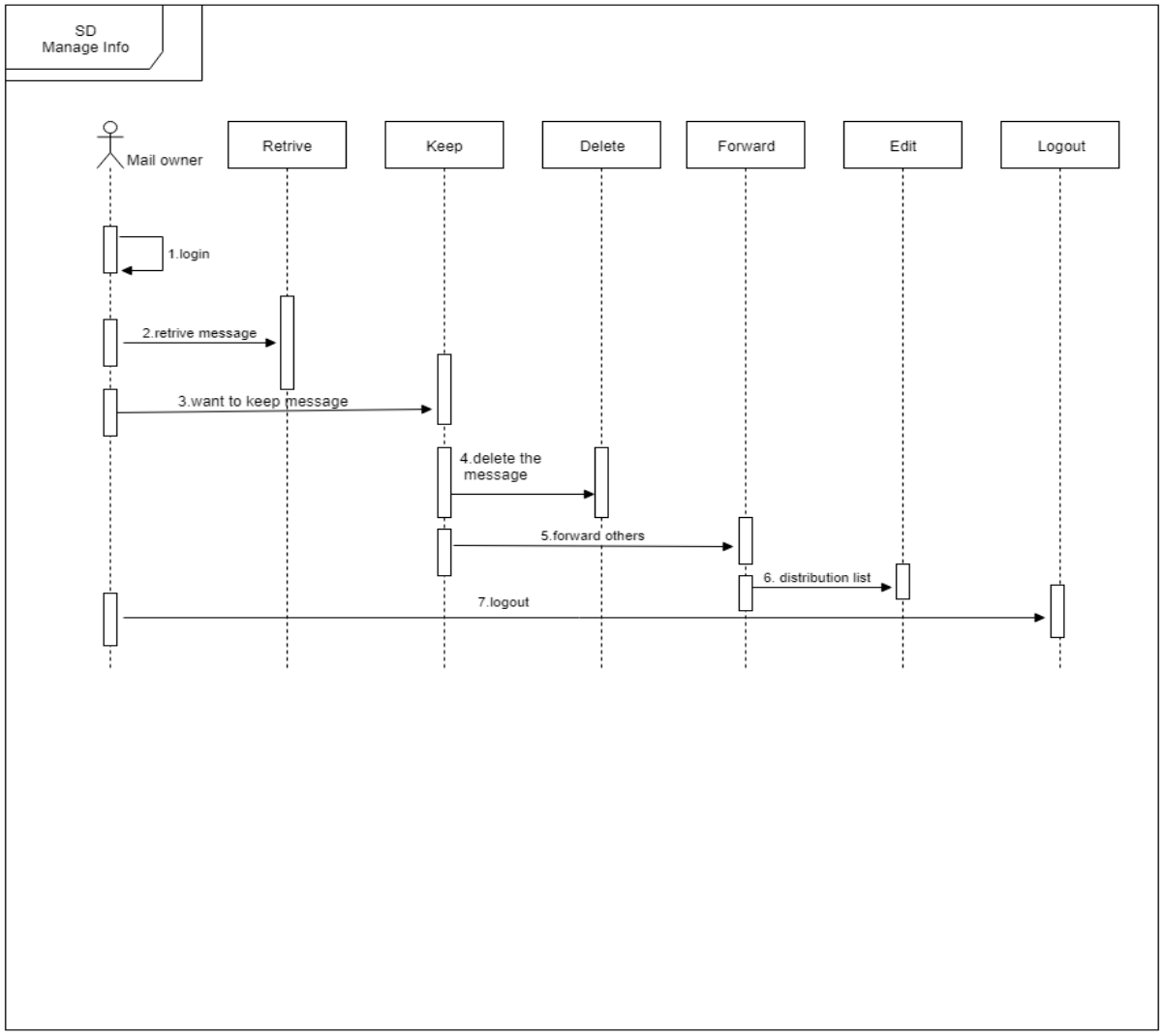

Figure 13: SD to Manage Info

3.2 Class Diagram

Class or structural diagrams define the basic building blocks of a model. They are used for static object modeling, describing what attributes and behavior it has rather than detailing the methods for achieving operations.

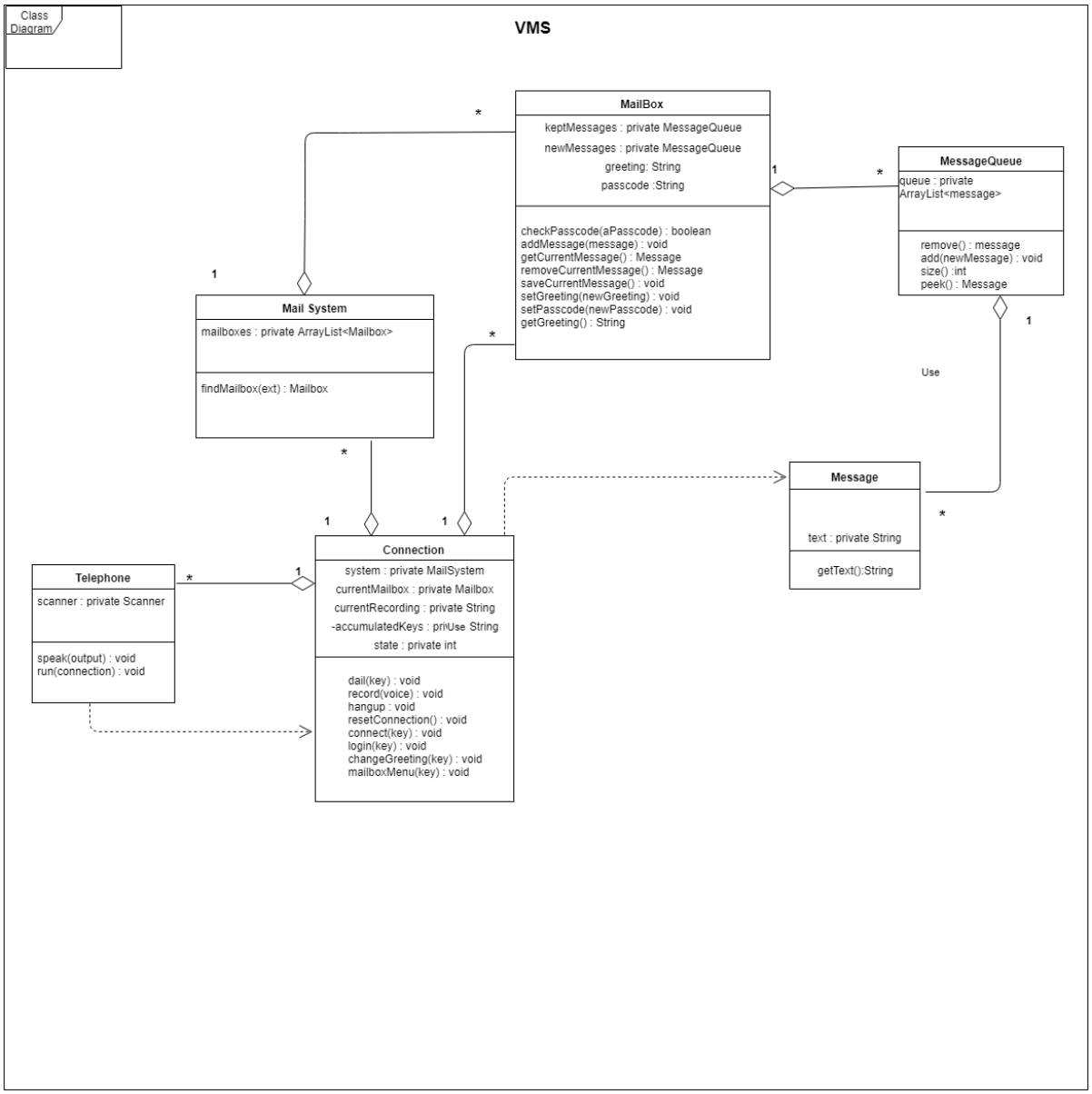

Figure 14: Class Diagram of System