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**Analysis Phase**

Voicemail System

**---------- Functional Specification ----------**

Summary:

This is a voicemail system that does:

* Lets a person dial an extension number. An input line consisting of a single character 1 . . . 9 or # denotes a pressed button on the telephone touchpad
* Connects the call to the extension
* Provided the other party does not pick up the telephone, the caller leaves a message
* The other party can later retrieve the messages
* The other party can later keep the messages
* The other party can later delete the messages

Point of view of the caller:

The caller has the options to:

* When the caller calls the main number, he will be asked to dial an extension or hang-up
* The caller dials an extension and is connected to that extensions
* A greeting is played
* If the owner of the extension does not pickup, the caller will be directed to voicemail
* The caller can then hang-up or leave a 30 second message. The caller can leave a shorter message by hanging up after leaving the message.

Point of view of the owner:

* The owner calls the main number and dials his extension
* He will be played a greeting
* He will be asked to enter a password or wait to leave a message
* He will enter the correct password. If it is incorrect, he repeats the above steps
* The owner now can view unread messages or read messages
* Then the messages in the queue of the unread or read messages are played. He will have the option to delete the message or keep them immediately after each one is played
* After reading an unread message, it will be stored in the read messages queue
* Then the owner may hang-up after any message is played by pressing ‘H’ or he may listen to all the messages in the selected queue before the system hangs up.

**---------- User Manual ----------**

Dialing the main number of the system on the telephone (main) will initialize the voice mail system. You first will hear a welcome and some options. Then you can enter the extension you wish to reach or hang up (enter 3 numbers from 0 to 9 and end with a #). If you dial a valid extension, you will be connected to that extension if it is enabled. If the owner of the extension is available, he will pick up and you can converse with him. If he is not available, you will be led to voicemail. At voicemail, you will hear some options and can leave a message after the “beep.” The message can be at max 30 seconds long or you may shorten it by hanging-up. If you enter a password after the voicemail options message (enter 3 numbers from 0 to 9 and end with a #), you will have access to your voicemail mailbox and will be given the options to delete a message by pressing 0, hang-up by pressing H, or listen to the messages in the queue. You may hang-up after a message is played or delete it by pressing 0. The system will automatically hang-up after all the messages in the mailbox are played. If you are the admin, enter the extension ‘000’ and the password ‘987. You will be given the option to enable or disable mailboxes and change the password of mailboxes. You first enter the mailbox number and then its new password.

**---------- Use Cases ----------**

The caller calls the number of the system from the “main” worldwide telephone system (method). The system would start playing the caller’s options and wait for an input.

**Use Case: Invalid input**

If the input is invalid (letters, symbols, length larger than 3), the system would ask for another input or ask to enter H to hang-up. If the input is a symbol that is not a number, ‘H’, or ‘#’, you will be asked to reenter.

**Use Case: Valid input**

After a valid input (3 numbers followed by ‘#), the system would then search and connect the caller to the correct extension and call it. The user may pick up the phone and the system hangs-up after the call. You can press ‘H’ to hangup.

**Use Case: Admin Menu**

If the user dials ‘000’ and enters the correct password ‘987’, he will have the option to enable or disable mailboxes and change their passwords.

**Use Case: The extension owner is not available to pickup**

If the extension owner is not available to pick up the call, the caller would be led to voicemail. A greeting will be played recorded by the user. Then the user will hear more options, such as to enter a password or wait for the “bleep” to leave a message. These two cases will be discussed in the following paragraphs.

**Use Case: The user enters the correct password**

If the user enters a password, he will be played a message stating his options: press 0 to listen to unread messages and press 1 to listen to saved/read messages. After that, you will hear: press 0 to delete a message or do nothing to keep it, press H to hang-up, press 9 to record a greeting. After this intro message is played, the user can enter 0, H, or nothing after each message in the mailbox is played to perform an action. A message will be played, and the user will press 0 to delete the message or wait or press a random key for the next message. An unread message heard will be placed in the read messages queue. The system automatically hangs-up after playing all the messages in the mailbox.

**Use Case: Greeting management**

If the user presses 9, he will be asked which greeting he wants to change. He can press 1, 2, or 3 and then he can replace that stored greeting by speaking into the phone. After that, the user will be asked which greeting to set as default to which the user enters 1, 2, or 3. Pressing any other keys during this phase will hang up the phone.

**Use Case: The user enters a wrong password or waits**

If the user enters a wrong password or does not enter anything, he will be allowed to leave a message in the mailbox. A “beep” will be played. The caller has 30 seconds to leave a message. The caller can press H during his message to end his message if he wishes not to speak for 30 seconds. If he does so, the message is ended and saved before hanging up. After leaving a message, the call is hung-up, and the system is exited.

