



Design and Implementation of Voice Message Controller System for Secured Communication

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Abstracts

Mobile devices are becoming a requisite part of daily lives. This system has been established communicating android application to support and arrange for the support services people such as blind and other bodily limited persons who face. They will be done for departing calling to his family and also the area around them. Voice-message (also recognized as voice mail, or voice bank) is a computer centred system that allows and to procedure transactions connecting to individual, organization, products and services, with an ordinary telephone. The stint is also more largely to represent any system of assigning a stored telecommunications voice messages, containing using an answering machine. Most cell phone facilities offer voice-message as a basic article and many landline phones and corporate PBXs contain voice –messages services.

Voice-message systems are planned to convey a caller's chronicled audio message to a beneficiary. To do so they comprise a user interface to select, play, record, repeat, save, send, address and erase. Most systems use phone-networks, either cellular or land-line. Simple voice-message systems functions as a faraway answering machine using touch-tones as the user boundary. Simple systems may not deliver lively notifications at all, instead necessitating the recipient to check with the systems, while others may provide an suggestion that message are waiting. Voice message are fundamentally digital recordings of outgoing and incoming voice communications that are managed either by an on-site or off-site system.

Today's, Security is the most important matter for communication. Therefore, to decrease their problems of safety we implement a secured voice message controller. By executing high security voice message controller, we can avert unauthorized access to the location, confidentiality of data. It also offers disaster recovery system and prevention of nasty harm. It is very imperative to resolve the security issues by implementing some that type of projects, which helps the people to secure the data from the unauthorized access. To decrease the problem of security, implementation of high security voicemail scheme is done by using Xilinx software and that prototype is can be executed on FPGA development kit.

Keywords: Voice Message Controller System, VHDL (Very High Integrated Chip Hardware Description Language), FSM (Finite State Machine), FPGA(Field Programmable Gate Array), Xilinx software.

1. Introduction-

Technologies are closely related to the modern way of life, but exception for Childhood Blindness (CB). They aren't self-reliantly move, especially blind and motion-impaired pioneers. [7-8]. As our culture farther increases, there have been many chains for second class citizens, disabled. One of many supports that are urgent is the guarantee of mobility for blind people [1-3]. With the express development of wireless communications, the essential for voice recognition techniques has increased prominently. Voice presentations based on voice interfaces, voice recognition, and voice dialogue organization can help users to be attentive on their current work without additional effort for hands or eyes. Speech recognition is technology that uses anticipated equipment and a service which can be controlled over voice by blind, but other people also frequently face this problem, Sighted users often find them inevitably located under situations where non-visual statement is essential [7],[10-11]. We purpose purposed an android application which provisions voice commands and application is developed for the children aged from 4 to 15 years and visually impaired peoples. Subsequently unlocking the mobile phone the application will be launched without any voice command. Computational technique based classification of speech recognition deals with determining the identity of a given voice segment using a predefined set of samples. The systems application consists of the data train, list command, testing,

help. It's accepted voice command and performs the operations according to it. It's accepted voice command and performs the operations according to and to translate the voice-to-text and then produces output in the form of voice. The impartial of this paper is to project a specialized text-to-speech system, which would transform text input into speech. The text input is in the procedure of short messages as in any E-mail or *short messaging services (SMS)* [6]. The TTS system would automate E-Mail reading thus enabling the user to listen to his mails. Most EMail's do not extensively use all the vocabulary in English and hence the design of the TTS system is limited to a few optimum words

2. Voicemail

Voicemail is a computer-oriented system that permits users and subscribes to interchange personal voice messages. Voicemail is an informal interaction between a human and a machine with no reaction from the machine. These systems are characteristically widget by computers and can be interconnect via telephone networks. Voicemail systems can record and store voice messages numerically while the user is missing or simply unobtainable and can be revised when the user returns. Voicemail messages are typically short; transport the reason for the call and a return telephone number. The message should comprise the information about the obligation of the caller and the voicemail recipient. The voicemail system allows us to receive the message, listening to the message and achieve voicemail either by phone or by computer. Both computer and phone can also accomplish it. When you pay attention to your message, which is stored in your computer, is the same when it was transported to you.

3. Voicemail versus Answering Machine

Voicemail proposals many advantages above answering machines in communications. Traditional answering machines are the system, which needed the user, must be in the same dwelling for reclaiming message. On the other hand, Voicemail is the system in which user can reclaim the message from anywhere. It can be retrieved by every phone, landline or cell. Answering machines have absence of security because one should have only to press button to obtain the message. That means anyone can recover your personal message. However, in case of the voicemail system, one should have to enter the code and that code is particular. The person can only rescue the message if they enter the code. It delivers the security to your private information that occasionally contain in your messages. Voicemail proposals more option for managing the message by with only simple keys. The keys are connecting to different functions for handling the messages. Sample to store message, delete message, forwarding message etc. Therefore, the voicemail operator can easily store the message, forwarding message using simple keypad entries. Voicemail also comprises the information about the caller and the calling individual for example, time of the call, number of the caller and ID of the caller. Not this all features originate in the traditional answering machines.

4. Voicemail Controller System

Voicemail controller is a organization that permits the user to send messages, review messages, save messages, delete messages. Generally the preliminary state is named as main. From main, the user can choice any possibility according to their requirements. The selections are to save messages, read messages, forward messages, delete messages etc. Every option is associated to any key from 1 to 9. The user is free to choose any option by just pressing a key concerning to that function.

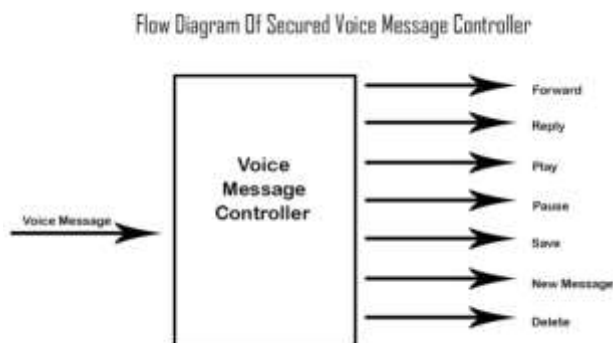


Fig.1 Flow diagram hierarchy of Voice Message Controller for Secured Communication

The Figure No. 1 illustration of the flow diagram of voicemail controller system. It shows that the main is the central and original point of the voicemail system. From that initial point the user can choose any option from the overhead which they need to use.

5. VHDL

VHDL is a commerce customary language, which is extensively used for designing hardware systems. VHDL is contraction of VHSIC Hardware Description Language. VHDL arisen out of the United State Government's (VHSIC) Very High Speed Integrated Circuits Package (Amy Poh Ai Ling et al.2011). Hardware description language incapacitates some of the restrictions of algorithmic languages, where the referencing time is not obligatory [Zhang et al.2012]. A VHDL model is basically a text based explanation of the system. The different model can be fashioned with same system at different level of abstraction. The model with specific level of abstraction signifies the comprehensive information connected with it but leaves all information that is not essential. VHDL is use for the purpose of buildings detailed model of complex digital system.

6. Finite State Machines

Finite State Machine is the rudimentary component in the designing of the hardware. Finite State Machine theory contracts with the transition and behaviour among input and output states for sequential circuits, which can be smear to any specific object. The precise object can be cite as a device that stores the status of something at a particular time and can control on input to conversion the position and cause an action or output to take place for any assumed change [Amr T. Abdel-Hamid et al, 2004]. For example, a computer is a state machine, with every instruction substitute as input, producing the state transition from present state to a new state. The FSM model has been extensively practical to fields such as electrical engineering, computer science, etc. FPGA seemed in the 1980's. A sequential scheme is also known as finite state machines. A generic method allows any sequential systems to be designed. Generally, sequential systems contain of three parts. Registers represent the states of the system. Both next state logic and output logic are completely combinational logic.

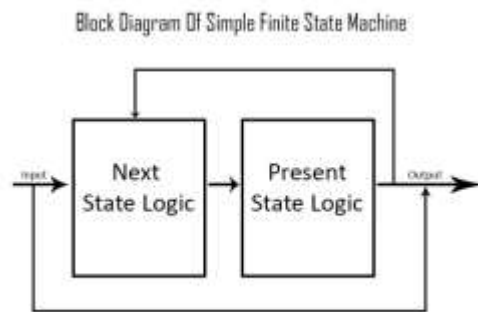


Fig.2 Simple Finite State Machine

A simple block diagram for a state machine is shown in Figure No.2, which covers a Present State Logic section, Next State logic section and an Output Logic section. Present state logic section delivers all the information about its past which helps to control its current state and next state. The basic function of this is to allocate the next state to the present state at the active clock edge [Lee,D et al. 1994]. The present state is deposited in a binary value in state register. Next state logic segment computes the function to start the next state of the system using FSM's inputs and present state. This section is applying with sequential VHDL code with a procedure. Output Logic Section is used to produce the output of the system and this is realizing with concurrent VHDL code with restricted assignment statements.

7. Xilinx 14.2 Tools used

Xilinx 14.2 is a software tool twisted by Xilinx. Its main resolution of presence for synthesis and analysis of HDL design. It permits the developers to create their designs execution timing analysis examine RTL diagrams simulate a design's response to altered stimuli and arrange the target device with the programmer. This publication is fully support the low cost Spartan domestic of FPGA and domestic of CPLDs. Xilinx is essentially used for enter a design finished schematic capture, perform circuit simulation, assign pin locations, implement the design, generate FPGA configuration data.

8. Implementation Results of Secured Voice Message Controller System

This segment of paper comprises the resultant diagrams of the execution of our project

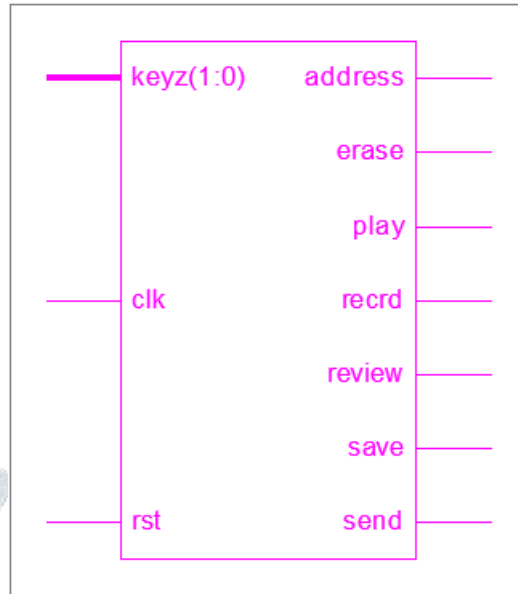


Fig.3. Technological Schematic of Voice Message Controller System for Secured Communication

This is the swift of the results in which every position and step of the project is given below in the figures. It also adds the account of the each diagram, which is the result of the implementation. Every figure tells about the dissimilar results while implementing model. By testing the prototype before final implementing on FPGA Development Board, time and money can be save. It also decreases the wastage of the components. It also upsurges the productivity. It decreases the cost of the project by plummeting damage of the hardware components. Therefore, it is very essential to testing prototype before final execution with all hardware components. The figure no. 4 shows that the technology diagram of optical shaft encoder. It demonstrations the input and output used for Voice message system. It is the schematic interpretation of the project.

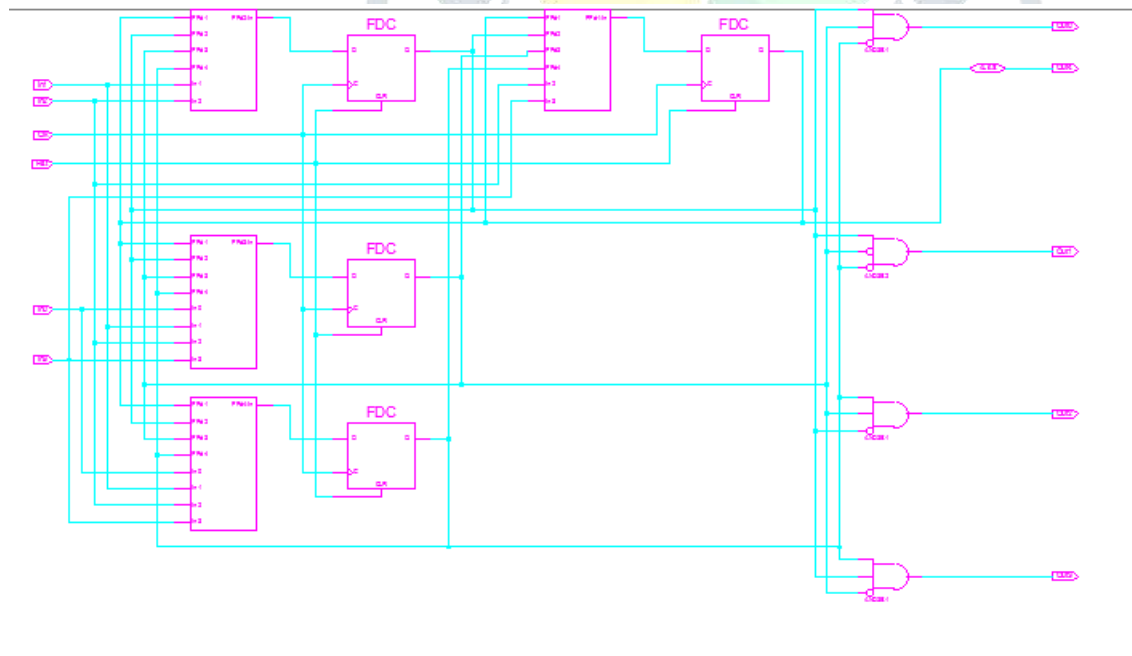


Fig-4. RTL Floorplanning of Voice Message Controller for Secured Communication

Figure No.4 demonstrations the floor planning of the Voicemail system. It shows how register transistor logic is shown in the Xilinx, which is very supportive for preparation the input and output.

9. Simulation Results



Fig.5. Simulation Result of Voice Message Controller for Secured Communication
Figure No.5 demonstrates that the waveform of Voicemail system. It demonstrates how output is change in accordance with the input.

10. Conclusions and Future Scope

This paper offerings application can be done on FPGA. In this project, implementation of voicemail controller system for secured communication is done successfully on using Xilinx software. Now days, Security is very important and it is an art of restricting admittance to certain entries. So in this work we are reduces the security issues of the rucks (people) by implementing a high security password for voicemail system. In upcoming days, voicemail one day read a caller's emotions. Voice mail frameworks as of now are getting included in politics, giving individuals the alternative of setting a crusade commercial on their voice mail welcoming so at whatever point guests go to voice mail they're demanded to vote in indulgence of a hopeful. The comfortable could be set to play for select companions or anybody from the collector's location book who calls. Frequent voice messages administration suppliers are attentive on binding together the different electronic correspondences frameworks into coordinated frameworks. Voice mail - office voice mail, mobile phone voice mail and private voice mail will assume an enormous part in that future without a doubt.

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