Voice Identification based
Bank Locker Security System

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Abstract: For our day-to-day life, security and authentication of persons, especially in bank lockers is important. Security in banks is necessary as we grow individualities and achieve numerous effects vital for each person, similar as essential documents, jewelry, particular goods, and more, we need an acceptable security. From the ancient mechanical effects to the world of current electronics, the world has changed a lot. . It is not enough to have these accessories, but security of this is veritably important, for this purpose we keep them in a bank locker. Still, we hear or read in a review that some fake person has access the locker of another person and have stolen plutocrat. In order to overcome this type of frauds, authentication of the person who wants to use the locker is really important. To overcome this security Breach, a security system has been proposed using voice identification, face detection and GSM technology.

Keywords: GSM, ESP8266, OTP

I. INTRODUCTION

At present age, safety has become a necessary issue for most of the people mainly in the rural and urban areas. Some people are more concern about their safety for their expensive thing like jewelry, money, valuable documents, etc. So the bank lockers are the safest place to accumulate them but existing security system is not providing the higher security because in conventional security system a user can open the lockers using keys. Sometimes the keys could be stolen. Then the user has to apply for original keys but the time period is longer to get new keys so Face detection, voice identification and OTP technologies is added to improve security of the bank locker system. Face detection and voice identification is automated techniques which will identify your face and voice accurately, after identification the system will send an OTP to registered mobile Number, this will add one more extra protection layer. To send SMS, GSM technology is used.

II. LITERATURE SURVEY

[1] High Protection Voice Identification Based Bank Locker Security System With Live Image Authentication
B. Sudarshan Akshaya ,R.k Mohan Reddy B Srinivasa Ramya L.K .When human beings were on earth, need of various things emerged. As years passed and with tremendous development people started earning money, property, jewellery and many more precious things. With huge development people felt a need to secure their earnings. In today's a man's life the money security is an important aspect as he earns the money by his hard work, and banking is known for this. It is not enough to have these accessories, but security of this is very important, for this purpose we keep them in a bank locker. Still, we often hear or read in a newspaper that some fake person has access the locker of another person and have stolen money. In order to overcome this type of frauds, authentication of the person who wants to use the locker is very important. To overcome this security threat, a security system has been proposed using voice identification, face detection and GSM technology.

[2] Multilayer Bank Security System using GSM Module
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Abstract— Security systems are getting more awareness and importance in last few years. For security reason RFID technology is used for this work. RFID (radio frequency identification) is a technology that combines the use of electromagnetic or electrostatic coupling in the radio frequency (RF) portion of the electromagnetic spectrum to uniquely identify an object, animal, or person. A Multi-Layer Bank Security System is a system for conforming, monitoring and controlling the security at bank locker rooms. This work includes, a door security system using the RFID technology. A microcontroller (AT89S52) in this system which will have two ports, one port is used for the RFID reader (EM-18) and the other one is for the GSM module (SIM900). There will be two levels of security in this system which can be switched by the main user. In the first level, when the RFID card is scanned over the security

system box, the card will get detected and if the card is valid then the door will open. If the card is invalid then alarm buzzer will turn on. In the second level if the card is detected, the main user will receive an OTP (one time password) through GSM module (SIM900) and will have to press that OTP to open the door.

[3]High Protection Voice Identification Based Bank Locker Security System With Live Image Authentication G. Vijaya Lakshmi, M. Kiranmai
 When mortal beings were on earth, need of colorful effects surfaced. As times passed and with tremendous development people started earning plutocrat, property, jewelry and numerous further precious effects. With huge development people felt a need to secure their Belongings. In moment's a man's life the plutocrat security is an important aspect as he earns the plutocrat by his hard work, and banking is known for this. It is not enough to have these accessories, but security of this is veritably important, for this purpose we keep them in a bank locker. Still, we hear or read in a review that some fake person has access the locker of another person and have stolen plutocrat. In order to overcome this type of frauds, authentication of the person who wants to use the locker is really important. To overcome this security Breach, a security system has been proposed using voice identification, face detection and GSM technology.
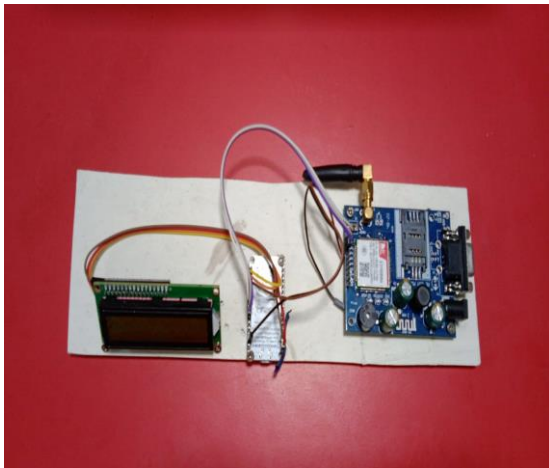
III.   METHODOLOGY

FIG 1: Voice Identification based Bank Locker Security System Circuit

First step is image identification where the image is identified based on pre uploaded pictures of the person. Next step is Voice Identification the system recognizes the voice by comparing pre recorded voices in the system and next step is. An OTP is sent to the registered mobile using GSM module which we need to enter if the otp is correct then the person is given access to the bank locker. Access is denied if any one of the step fails.
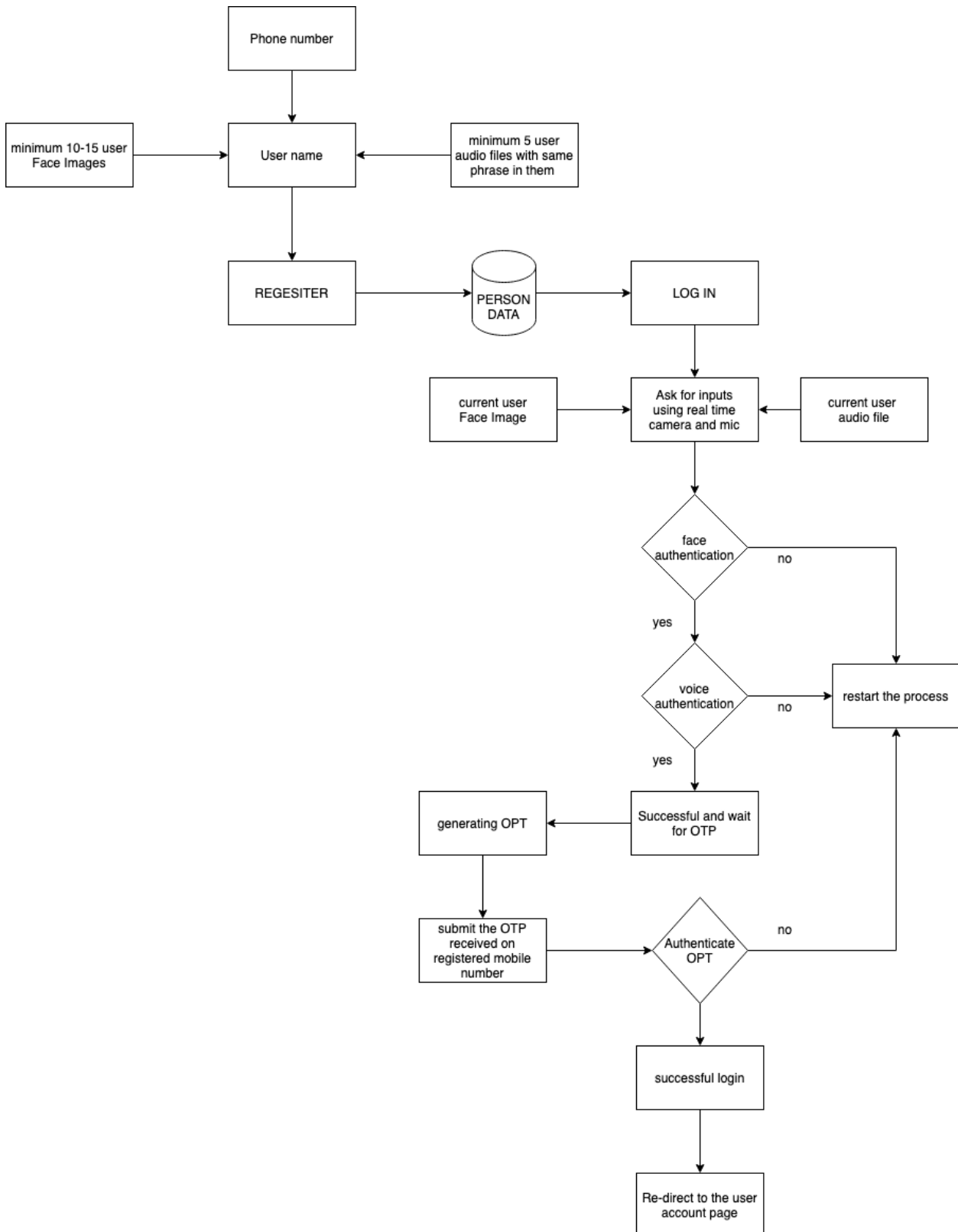
FIG 2: Flow chart of mechanism of Voice Identification Based Bank Locker Security
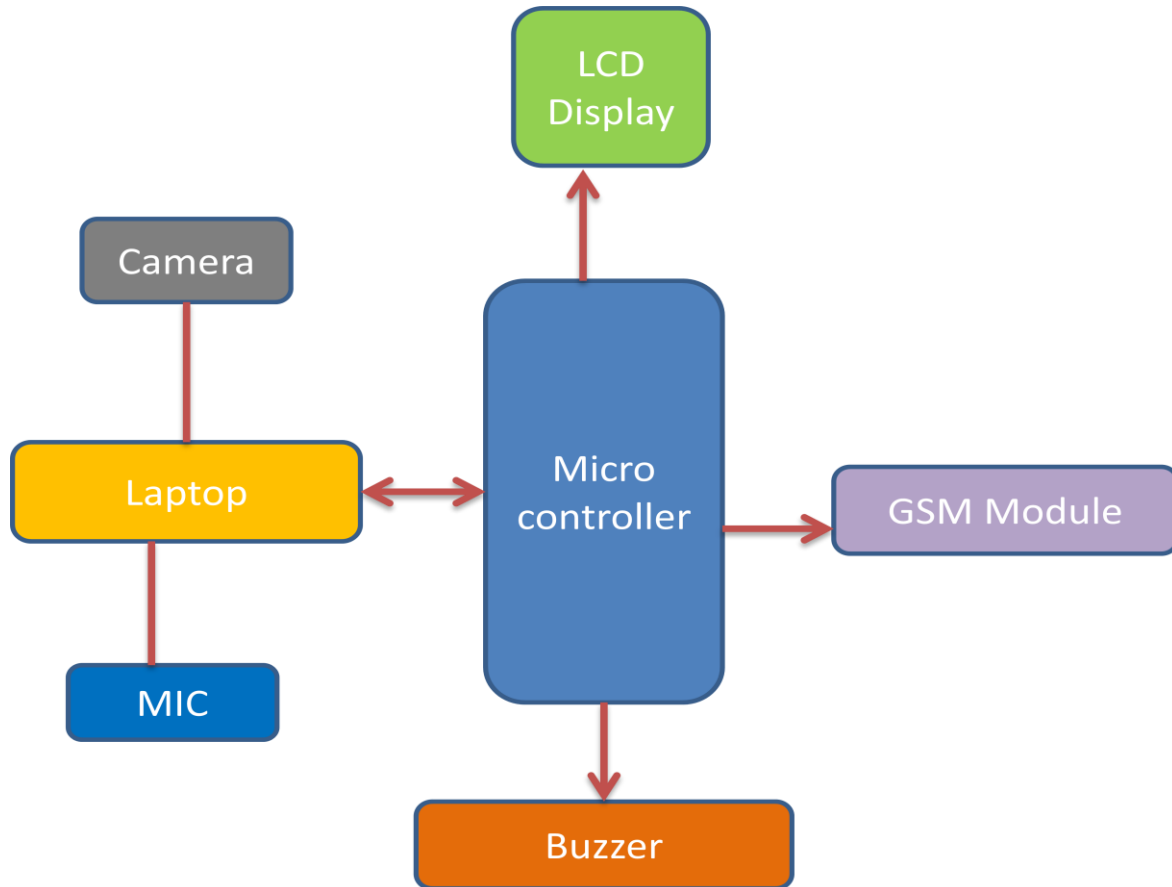
FIG 3: Block Diagram of Proposed System

Laptop: In our project laptop takes the voice input and image input processes them with available input which are per recorded and sends output to the microcontroller.

Micro Controller: Microcontroller is the heart of this project. It receives voice , image and otp input from the laptop and processes the information. Node MCU Amica is a ESP8266 Wi-Fi Module based development board. It has got Micro USB slot that can be directly connected to the computer or other USB host devices.
It has got appearance as shown in above image. It has got 15X2 Header pins and a Micro USB slot, the headers can be mounted on breadboard and the micro USB slot is for connection to USB host device that may be a computer. It has got CP2102 USB to serial converter.

GSM Module: GSM module is a hardware device that uses GSM mobile telephone technology to provide a data link to a remote network. From the view of the mobile phone network, they are essentially identical to an ordinary mobile phone, including the need for a SIM to identify themselves to the network. GSM modems typically provide TTL-level serial interfaces to their host.
LCD Display: An LCD (Liquid Crystal Display) screen is an electronic display module and has a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. A 16x2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5x7 pixel matrix. The 16 x 2 intelligent alphanumeric dot matrix display is capable of displaying 224 different characters and symbols. This LCD has two registers, namely, Command and Data.

Buzzer: Active Buzzer Arduino module produces a single-tone sound when signal is high. To produce different tones use the Passive Buzzer module. The Active Buzzer module consists of a piezoelectric buzzer with a built-in oscillator. It generates a sound of approximately 2.5 kHz when signal is high.

IV. CONCLUSION

In our paper, we reviewed some papers which have worked on this project. In our paper we introduced voice identification based locker with cost effective components. This system provide high degree of security. Any unknown user will unable to access the locker. We are using voice identification as the verification system as duplication of voice is like most difficult to create. This system is cheap and easy to use. where you need high degree of security. The low cost of the project is a very important factor in this project. This locker is very reliable and safe.

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