Report On

Bank Locker Security System Using Android Application

Submitted in partial fulfillment of the requirements of the Mini project in Semester III of Second Year Computer Engineering

by

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Department of Computer Engineering

CERTIFICATE

This is to certify that the Mini Project entitled **"Bank Locker Security System Using Android Application"** is a bonafide work of **Mrudul Chaudhari (Roll no. 11), Siddhesh Thakarkar (Roll no. 56) & Prathmesh Tiwari (Roll no. 57)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **"Bachelor of Engineering"** in Semester III of Second Year **"Computer Engineering" .**

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Mini Project Approval

This Mini Project entitled "**Bank Locker Security System Using Android Application"** by **Mrudul Chaudhari (Roll No. 11), Siddhesh Thakarkar (Roll no. 56) & Prathmesh Tiwari (Roll no. 57)** is approved for the degree of **Bachelor of Engineering** in Semester III of Second Year **Computer Engineering .**

Examiners

1……
(Internal Examiner Name & Sign)

2……
(External Examiner name & Sign)

Date:

Place:

ABSTRACT

As we know that security has become very important in this developing world. Everyone has valuable accessories such as gold, jewelry or cash. It is not enough to own these items, but the security of these items is very important, and for this purpose we keep them in safe deposit boxes. Nevertheless, we often hear or read in the newspapers that a fake person has gained access to another person's safe deposit box and stolen money. To prevent this kind of fraud, authentication of the person who wants to use the safe deposit box is very important. In this project, we are designing advanced banking security systems that ensure genuine access to the safe deposit box and prevent all abuses.

ACKNOWLEDGEMENT

Before presenting our project we want to thank some people who have made great contribution in the completion of our project.

First of all, we want to thank Mr. Vikrant A. Agaskar, our guide for our project

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Introduction

1.1 Introduction

In state-of-the-art contemporary-day world, safety performs an critical role. Every character has treasured add-ons like gold, rings or cash. It is not sufficient have those add ons, however safety of that is very critical, for this reason we preserve them in financial institution lockers. Still we regularly pay attention or examine news paper that a few faux character has get admission to the locker of any other character and have stolen money. In order to conquer this sort of frauds, authentication of the character who desires to use the locker may be very critical. In this challenge; we are designing strengthen safety structures for banking so one can make sure the guanine get admission to of the locker overcoming all of the misuses. Electronic lockers provide an smooth, steady and handy facility for clients or body of workers contributors to store any non-public gadgets such as. The goal of this challenge to layout a "ban Locker security system using android application" through using android phone, Bluetooth module and android application. User has to simply press a button at the application gift withinside the cellular with a purpose to open or near the locker which may be very smooth and secure for the user.

1.2 Problem Statement & Objective

PROBLEM STATEMENT:

Bank locker play an important role in today's life and are considered the safest place to store jewelry, documents, stock certificates, etc. The traditional methods used by most banks rely on manual locks and PIN numbers/passwords, which are not completely secure. Still, many banks struggle to prevent illegal access and break-ins, and to prevent disclosure of secret information This can result in wasted time for both the customer and the staff. The main disadvantage of such manual locker systems is the lack of security, as the key can be duplicated. This would lead to the theft of all the valuable possessions in the safe deposit boxes. The password, personal identification number (PIN) or smart cards are used for personal identification to access the safe deposit boxes. However, the smart cards can be stolen, the password and PIN numbers can be forgotten or guessed. Still, many banks struggle to prevent illegal access and break-ins, and to prevent disclosure of secret information. These are all problems with traditional safe deposit boxes and lead to bank robberies. The security of these safe deposit boxes must be ensured and verified by strong authentication mechanisms to limit unauthorized access. In our project, we implement a bank locker security system based on an Android application using an Arduino UNO board and a Bluetooth module, which gives us more security than traditional bank locker security systems that use keys for their bank accounts. The project is completely based on the operation of the servo motor which is mainly used as a system to open the lock.

OBJECTIVE:

The objectives are the following

1. The goal of this project is to design and implement a lockbox with a high security system supported with an Android application that can be placed in banks, hotels, secured offices, hostels, and homes.
2. To make the affordable lock which should be easily understandable to the user.
3. To overcome the problem of forgetting the password and hacking the password of the locker.
4. Increased accessibility without compromising security.

1.3 Scope

To supply a high tech multifunction smart lock, which will be helpful for the students, hostellers and day scholars to overcome all the problems related to safety, security and misplacing of important documents, money and some electronic devices in the public residence. The same problem is faced by students leaving in hostel, so we will be going to provide them a smart and secure locker inside their cupboard which will be capable of holding all these things securely. And this locker will be handled with an android application for best user comfort and security purpose.

In addition, this project will develop an intelligent security system for bank locker based on FACE, IRIS and retina scanning for visual identification of the person

2. Literature Survey

The concept got here to us even as looking for true venture topics. We continually desired to put theoretical thoughts into practice. An embodiment of the prevailing invention gives a compact digital protection locker gadget that consists of an array of lockers, every of that's digital locked and electronically accessed. One component of an embodiment of the prevailing invention lets in legal personnel get right of entry to to the identity of the man or woman storing an editorial in a particular locker. In every other component of an embodiment of the prevailing invention, the garage lockers are organized in a matrix of rows and columns and are constructed to have a length to house gadgets having a length of not unusual place mobileular phones. Nowadays, banks are constantly enhancing their locker protection structures by integrating growing quantity of digital components. Therefore, we 'recreating a gadget for the safety of financial institution locker the usage of Android application ,Bluetooth module and servo motor. Basically, we're the usage of the servo motor as a door lock that's immediately related to the Arduino board with code applied in it. With the assist Bluetooth module, the servo motor rotates thinking about the order of Android Application via which Bluetooth is related. As in line with the use presses the button at the Application, the door receives open and closed at the customers order. So, that is a basic concept ofour venture.

2.1 Survey Of Existing System

The present day gadget isn't genuinely that steady and maximum of time safety is neglected. The present day gadget makes use of financial institution locker which consist of locks and keys. There isn't any any lots safety covered on this gadget. The factor used on this gadget are genuinely antique and excessive strength consuming. The security features relies upon from financial institution to financial institution and location to location

2.2 Limitation of Existing System

Author	Year	Technique	Advantage/Scope
] Y. Sai Sreeja, P. Naga Babu, P. Bhargav, V. Bhorath	2020	Camera module and raspberry pi	Less power consumption, real time observation, highly secure
Gokul. R, Ganasekaran	2020	Sensors, RFID, GSM	Improve the reliability
Arvasu Chikara, Pallavi Choudekar, Ruchira, Divya Ajisa	2020	Image Processing, Fingerprint scanning	Automatic lockers, More safer
]Priya Kumari, Pushpanaik, Raghavendra, Parameshwara, Divya M N	2019	Arduino UNO, MATLAB, camera	Improving the safety and secureness
] S.V.Tejesvi, P.Sravani, M.L.Mythili, K.Jayanthi	2016	Fingerprint, GSM, Sensors	Time saving, Reducing bankers work load
Sanal Malhotra	2014	RFID, password, GSM	More Secure
Amit Verma	2013	RFID	Security

2.3 Mini Project Contribution

TASK	SIDDHESH	MRUDUL	PRATHMESH
PLANNING	✓	✓	✓
RESEARCH	✓	✓	
DESIGN	✓	✓	✓
IMPLEMENTATION	✓	✓	✓
DRAFT	✓		✓
FINAL REPORT	✓	✓	

3.Proposed System

In this challenge we suggest a Arduino, Application & Bluetooth primarily based totally steady access which could offer an advanced locker device for banks. This device contains Arduino UNO Board, Bluetooth module & Servo Motor. Basically, we're using the servo motor as a door lock that is without delay linked to the Arduino board with code applied in it. With the assist Bluetooth module, the servo motor rotates thinking about the order of Android Application thru which Bluetooth is linked. As according to the consumer presses the button at the Application, the door receives open and closed at the customers order.

3.1 Introduction

To avoid the limitation of the current system, it is necessary to design and develop a new system which has the following advantages and the existing system.

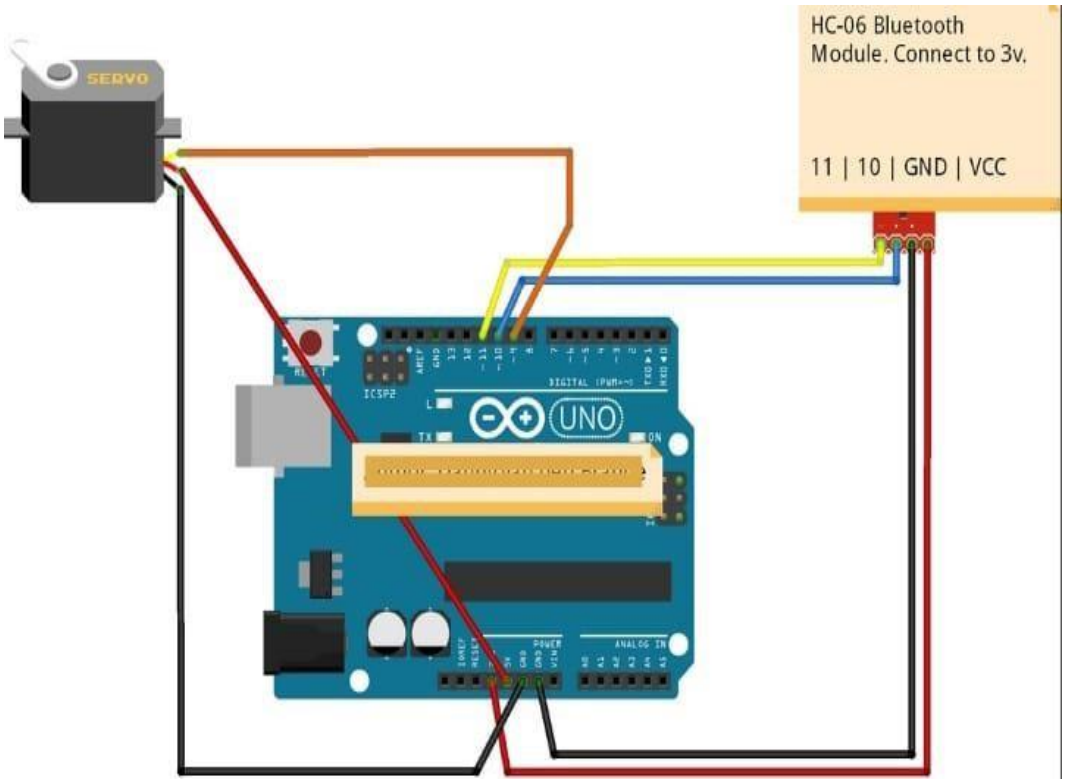
- Everything is automated which reduce the factor.
- Flexibility in generating of information.
- Quick retrieved and maintenance of data.
- Highly accurate.
- User satisfaction.

ADVANTAGES OF PROPOSED SYSTEM

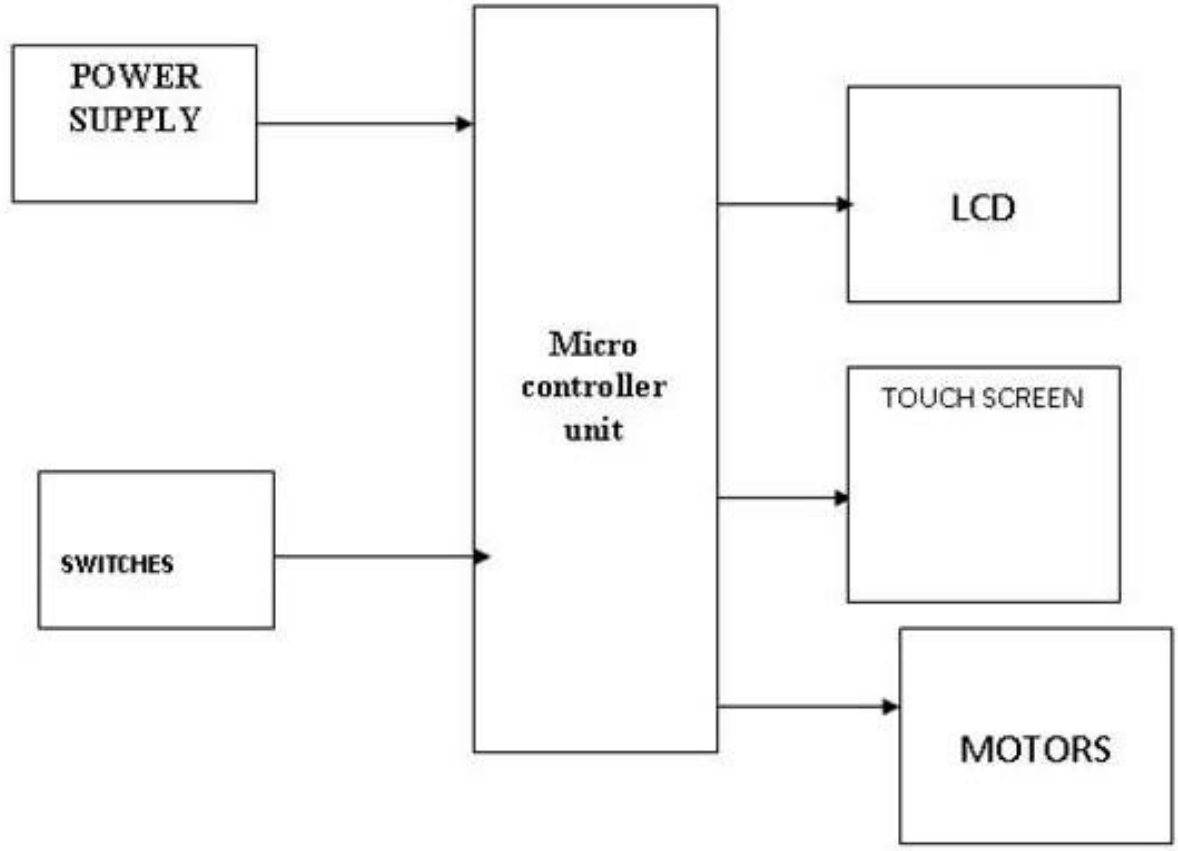
1. The proposed system due to the use of hardware's makes it more faster and prominent for the user.
2. Transfer of information from Application to Servo motor become easier and faster.
3. Managing and maintaining data becomes easier and cheaper due to the very high amount and reliability of storage space available in the proposed system.
4. Customer services can not only be satisfied but also enhanced to the extent that one can open or the closer the locker anytime.

3.2 Block diagram/ Architecture Framework:

Control System.



Workflow of system



3.3 Algorithm and Process Design

Code:

```
#include<SoftwareSerial.h>
#include <Servo.h>
Servo myservo;
SoftwareSerial mySerial(2, 3); // RX, TX int
Position ;

void setup()
{
  myservo.attach(11);
mySerial.begin(9600);
  Serial.begin(9600);
}

void loop()
{
 if(mySerial.available()>0)
 {
  Position = mySerial.read();
  Position = map(Position, 0, 180, 180, 0);    myservo.write(Position);
 }
}
```

Project Design:

We planned to design a project in a such a way that it will be convenient and easier for the user to understand and get comfortable with it. Only on the press of button on Android Application, user can easily open the locker and it is also secured, because of directly connection with Bluetooth. So no other person can connect to your Bluetooth without knowing your Bluetooth Password. This is the final Design of our Project.

3.4 Details of Hardware and Software

TECHNOLOGY USED - C

HARDWARE REQUIREMENT:

1. Minimum 64 MB RAM (128 MB Desirable) at Computer.
2. Arduino UNO Board.
3. Bluetooth HC-05 Module.
4. Micro Servo Motor.
5. Jumper Wires.
6. USB Cable.
7. Power Bank or 5V Battery for Power Supply.

SOFTWARE REQUIREMENT:

1. Arduino IDE
2. Windows or Linux software

3.5 Experiment and Results for Validation and Verification

These are the experiments and the results that we obtained over the project:

1. User can Change the Bluetooth Password according to his convenient to connect with Locker.
2. User can be get connected up to a distance of 25-30 meters with the Bluetooth in order to control the Locker.
3. Locker can be made according to the customer requirement of a specific height and width.
4. Consists of Open & Close System.
5. Can be connected to Locker through any Android Phone easily only if knowing a Bluetooth password.

Features:

- Easy to use.
- User Friendly.
- Easy Connection with the Locker.

3.6 Analysis

During this assignment we analyzed that how a good deal significance does protection performs in our every day lives. Bank lockers are pre purported to be more secure than domestic with all of the more than one layers of securities and surveillance they provide. However, questioning that financial institution lockers are the most secure area to steady valuables is inappropriate.

The foremost aim of this assignment is to layout and put in force a protection gadget primarily based totally on utility, which may be prepared in banks, workplaces and apartments. In this gadget best the authenticated man or woman alternatives up the documentsor the cash from the locker. In this the technique is going on this manner that, first the consumer will join its android utility with the Bluetooth tool present in locker. Only a certified man or woman can hook up with locker due to its Bluetooth password so it's miles safe. As the cellular receives related you may press the button to open and close, in line with which the Servo motor receives rotated and the door receives unlocked. .In this manner, a easy and notably steady protection gadget for financial institution lockers may be implemented.

3.7 Conclusion & Future Work

CONCLUSION:

it can be concluded that the system has been successfully implemented and that the goal is being achieved without deviation. This project is basically the work of IoT, Hardware & Software. Because the locker design is user-friendly, people of all ages can use it according to their needs. This intelligent lock will relieve banks with security-related problems. This proposed work demonstrates the feasibility of developing smart lockers for banks based on IoT. This system was implemented to overcome the problem of forgetting passwords when using a traditional locker. With this intelligent technology, only an authorized person can open the lock and take out the money, jewellery and other important documents. This is a cost-effective device with low power consumption, compact size, wide operating range, highly secure and reliable self-contained unique system.

FUTURE WORK:

in addition, the future scope of this project is to develop an intelligent bank locker security system based on FACE,IRIS and retina scanning for visual identification of the person.

4.References

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