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IOT Based Smart Bank Locker Security System

Mr. Lokesh M. Giripunje[1], Suchita Sudke[2], Pradnya Wadkar[3], Krishna Ambure[4]
[1]*Assi. Professor, Department Of E&T C Engineering, DYPIEMR, Akurdi, Pune1*
2, 3, 4 Student of BE (E&TC), DYPIEMR, Akurdi,Pune

Abstract: This project will focused on effective recognizing and controlling system for Bank locker room which is fully self-determining. In cases of robberies, its commonly happen that the banned entrance in the locker room area which can be detected by our security system. If the robbery take place the banks are not be capable to recognize the robber due to absence of the proof by using the current human operated security system. The system will designed in effective way by recognizing and controlling illegal person to access the locker for the safety of bank locker room. In this, we proposed a three phase conformation of procedure for smart locker, by applying Android App, using Fingerprints and OTP which check out the user. As compare to any other previous approaches our system uses the Android App which generates an OTP to registered mobile number which highlights the smart security. The designed system is highly proficient and consistent because of three security stages and not capable to break the combination of this three stages.

Keywords– Bank Locker Security System, Android App, Internet Of Things, Fingerprint

I. INTRODUCTION

The Bank,which is a place that indicate very high level security. In day to day life every person are involved in banking transaction. Because of high level security, we uses bank lockers to secure our important documents, expensive jewellery, or cash ect in it. Hence it has become an very important part for every common human being. To suffer in this world and for a continuous development; the banking sector needs to accommodate a very hige rise security. As we know new branches are opening by considering the public interest. Hence more security for every sectors is required. Because of developmentcurrent system and services becomesautonomous and banking service is not so far from that.Various researches shows that there are accountability in devices and technologies in security system. The detection of motion will be done by the camera[2] itself and hardware connected with it which provides multisatge security[3] i.e. using PIR sensor and RFID system[4], warning message and the face recognition which identifies the user face[5], and also by using dual keys[6]. Occasionally the biometrice mechanism i.e. fingerprints[8] are used which gives high security. For messaging a GSM module[9], email alert[7] or getting an real time update IOT[10] will be utilized.

A. Objectives of our work

1) Successfully verify an OTP which is generated by an Android App and identify the user accessing the locker using his/her OTP No.
2) verify a user accessing the locker by using fingerprinting.
3) Analyzemalicious users and generate a ‘blacklist’ with unacceptable fingerprints of user are able to usethe locker. Identify invalide users and create a ‘whitelist’ with the fingerprints of users that gives permission to access the locker.

II. LITERATURE REVIEW

Sr. no.	Name of paper	Year of publish	Methodology used	Result	Limitation
1	Improving Home Automation Security; Integrating Device Fingerprinting into Smart Home	2016	1)Device fingerrprint using JavaScript 2) Login Credentials 3)OTP generated by sever	To improve the Home Security it verifies the user and also device.	Malicious user tried to gain the access of locker more than one time.
2	Development of an Intelligent System	2014	1)Motion detection 2)messaging through GSM	Unauthorized image detection	Uses of microcontroller

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	for Bank Security		module	signal sends to microcontroller and warring message will be generated	not gives that much of reliable system
3	An Efficient Multistage Security System for User Authentication	2016	1)RFID system 2)Password 3)Biometric consecutively	By usingmatrix keypad, GSM technology,RFID tag the security system is successfully implemented	The password can be hacked by the unauthorized user
4	An Advanced Internet of Thing based Security Alert System For Smart Home	2017	1)PIR sensor 2)email alert	Motion is detected by PIR sensor then that will sends to owners email which gives the warrning of theft.	The security alert warrning is only given by the email.
5	Web-Based Online Embedded Door Access Control and Home Security System Based on Face Recognition	2015	1)Face recognition 2)GSM 3)zigbee	In this system monitoring andcontroling of equipment is based on web.	Face detection takes more complex algorithm
6	Authenticated Secure Bio-metric Based Access to the Bank Safety Lockers	2014	1)dual key safety lockers 2)bio-metrics	This system provides the dual key of an special characters and a biometric is only for to the specific staff id.	It can be easily hacked by any unathorized user.
7	Analysis of Remote Control Techniques Employed in the Home Automation and Security System	2009	1)email alerting 2)SMS control	The inturder alert unit gives the signal to remote location through SMS.	It not provide that much of securityand it is unrealible.
8	Biometric Recognition: Security and Privacy Concerns	2003	1)fingerprint	By using figureprint the unauthorized access can be detected	It not provide top level security only by fingerprint.
9	Intellectual Bank Locker Security System	2016	1)PIR sensor 2)fingerprint 3)Vibration sensor 4)GSM	The locker security is done by PIR sensor and fingerprint. The vibration sensor is detect	This system only detect the unathorized user not identified it.

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				the pressure on locker which triggers the alarm.	
10	IOT Based Theft Premption and Security System	2016	1)PIR sensor 2)IOT 3)web server	The system con controlled by hand held cell phone which turn ON and OFF the system	In case of mobile phone is hacked the system not used for high security.

III. METHODOLOGY

This project provides a highly secure, valid and easy to operate for both the customer's who hasa locker in a Bank and the head of the branch who responsible for all the operations connected to the safety lockers. Our work does tripple verification process by user fingerprint, legitimate login credentials and OTP for authorized user. When a user wants to access the locker he/she request the login page from sever, the sever then returns the login page. The user sends the login credentials, if login credentials verification is passed then system request to give an fingerprint of user. Then the obtain fingerprint is analyzed and matched with original one.There are two lists in our database; the 'whitelist' is the list which consistof acceptable fingerprints of legitimate users and the 'blacklist' is a list of illegal fingerprints which for, who tried to approch the locker. The whitelisted user with their acceptable fingerprints canonly access the locker after OTP No. verification. The blacklisted client along with their fingerprints are not permitted to use the locker although their User Name and Password are correct. The Android App which generate an One Time Password(OTP) which consist of an random code and send it to the correct users registered mobile number through message, That code is entered by the user into the webpage and thus authorized person is verified.If the user is not able to verify any of this stages then that user is added in blacklist and he is not capable toaccess the locker at all. Then that blacklisted users information is given to that of authorized person. The authorized user can add the users in blacklist if he wants and trusted third party device can access the locker after verification by legitimate user.

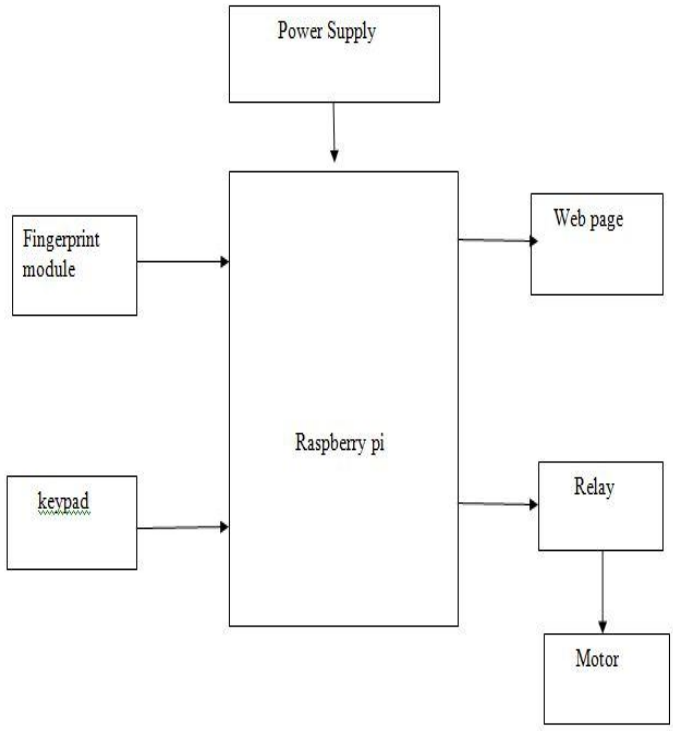

fig.no.1 block diagram of iot based smart locker security system

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IV. ADVANTAGES

A. It provides three stage security.
B. High accuracy in terms of security.
C. No one can hack or crack the system because of using the Android App.
D. It is easy to use and required no special training and equipment.
E. It provides unique Android App, which accessed by only the authorized person.

V. DISADVATAGES

A. It takes more time to process
B. The unauthorized person cannot recognized clearly.

VI. APPLICATIONS

A. Bank security system
B. Home security system
C. It is use for protection and safety purpose
D. Industrial security system

VII. CONCLUSION

This papersolution is forhighly secured reliable smart locker system.The system will effectively detect and control unauthorized access by considering safety of the bank locker rooms.It will convince the bank customers to use system and hence defend their valuable things from robber and also any harm.This system is used where top level security is needed.The future enhancement to this work could be done by adding some more aspect such as face recognition. Therefore it improved the reliability of bank lockerand unauthorized access will be minimized. The enhancement could be further applied to identify the illegal entrance.

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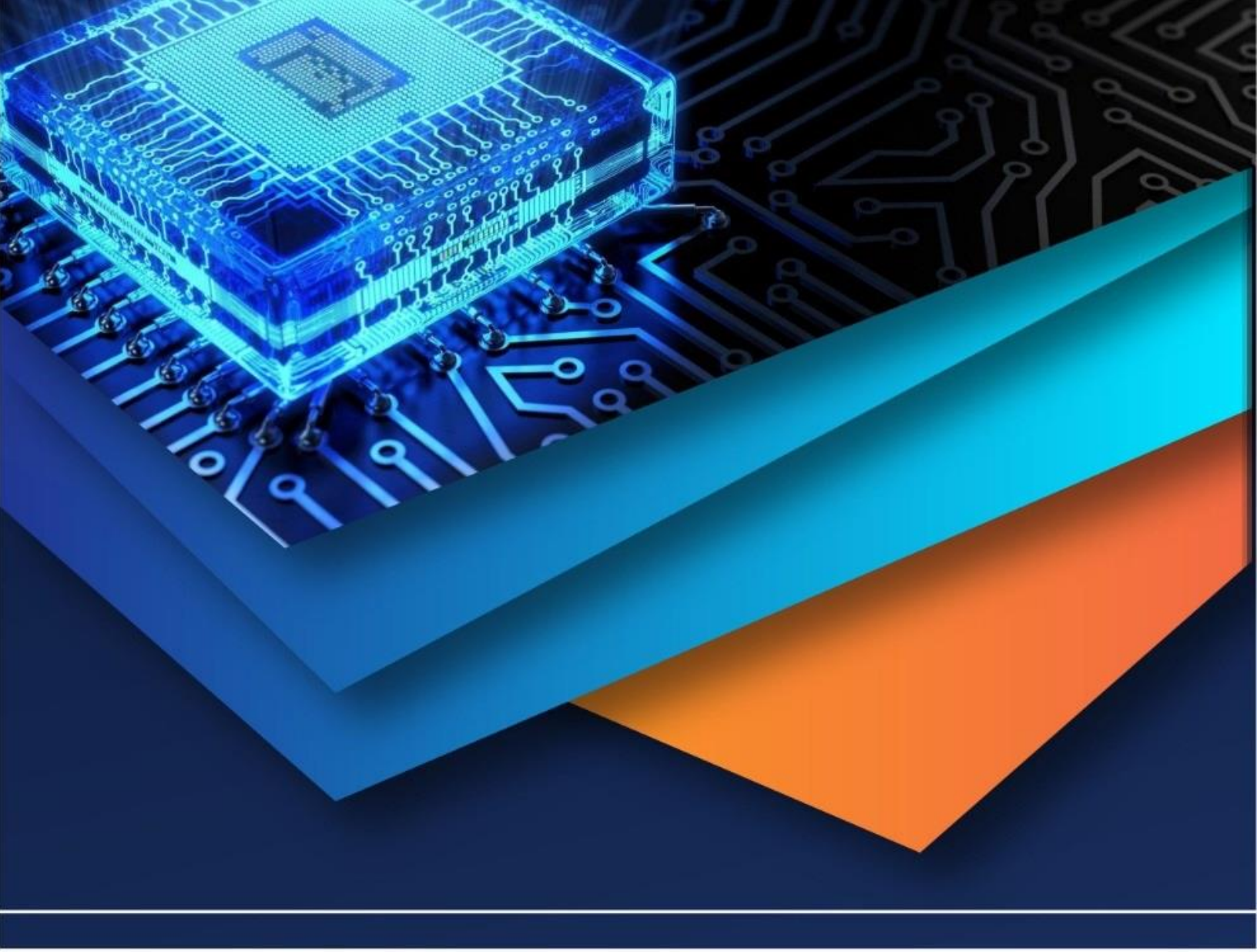

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