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A Survey Paper on Digital Vault

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Abstract

Due to smart creativity and ventures, the business sector, start-up companies and apartment houses are growing significantly in this current scenario. The globe is now booming with digital technologies. "So this paper suggested a wireless lock called "Digi locker" with this booming scenario. It is, however, a typical smart lock system that operates the same as a conventional lock with advanced digital features. This tool is small in size, compact, inexpensive and easy to operate. The primary objective of this project is to provide protection and reduce the workers in homes, offices, apartments, buildings, etc. The suggested Digi locker is an IOT-based project to provide the approved safety

Keywords: *Internet of Things (IOT), Integrated Circuits (IC), (NXP), Random Access Memory (RAM), (ROM), General Purpose Input Output (GPIO).*

I. INTRODUCTION

From the way we react to the way we behave, the Internet of Things (IOT) affects our lifestyle. From air conditioners that we can control with our mobile, to smart cars that provide the shortest route or our smart watches that track our everyday activities. IOT is a giant network of devices linked to it. These devices gather together and share data about how they are used and the environment in which they are operated [1]. It's all done using sensors, sensors are embedded in every physical device. It can be our mobile phone, electrical appliances, Pecos barcode sensors, traffic light and almost everything that we come across in our day-to-day life. It basically refers to a system of interconnected and interrelated devices that abeles transfer and receive data over a wireless network without human involvement. There are many applications present which are based on the internet of things (IOT). This paper is also one of the projects which is based on an IOT named Digi locker.

However, Digi locker is a digital lock comprising a fingerprint sensor, a camera and a guest button which are operated in an accordance with the controller to open and close the lock. The main advantages and benefits of this project is, it is portable, small, cost effective and easy to use which provides security to our home, buildings, offices, apartments etc.

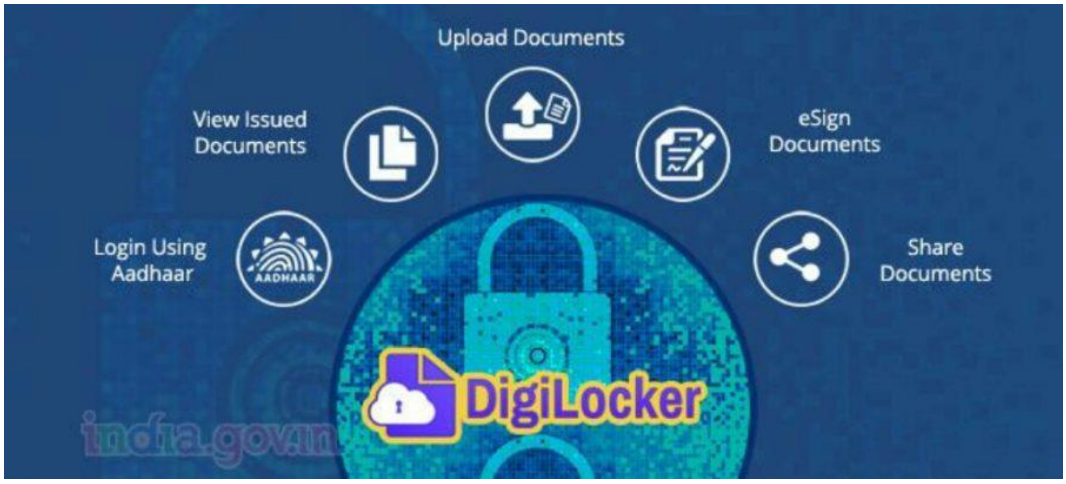

Fig 1: Use of Digital Vault

A. Digital vault:-

Targeted at the idea of paperless governance, Digital vault is a platform for issuance and verification of documents & certificates in a digital way, thus eliminating the use of physical documents.

II. REVIEW OF LITERATURE

This section addresses various digital lock-based applications with their advantages and limitations: S.Sankar etc. Al. has provided security through the use of the digital lock system based on IOT (Internet of Things) to minimize the workforce in smart homes and building automation scenarios. The IOT-based digital lock provides the authorized user and guest user with protection in this document, where if the individual is authorized and their information (password and biometric fingerprint) are already stored in the local database or cloud. So if the person wants to enter or exit the home or office with this project implementation, they need to enter the password and thumb impression that the door will automatically enter the password and thumb impression. But if any guest wants to enter or leave the office or home they need to enter the guest option in the hardware device. Then the guest image is captured and is sent to the authorized person through the internet. However, the admin receives the details of the person through email or mobile application then they will send an approval signal to the digital lock and the then door will be open or close automatically [1].

Jeong-ile jeong has proposed a method based on IOT technology and application of smartphone communication technology to a conventional device called door lock, which is used to open or close remotely through authentication. More particularly the smart door lock system based on the study of enhancement plans to provide security instead of the issue which is caused by the physical key used in unmanned automation machines, such as ATMs, KIOSKs and vending machines [2].

Ilkyu ha has proposed a security and usability improvement on a digital door look system based on the internet of things. In this paper the digital locker works with the application of the internet of things where it is designed and implemented to enhance the security function that can transfer the recorded image to the user mobile device when an invalid user tries to attempt

an illegal operation. It can also deliver alarm information to the mobile device when the door is physically damaged. This proposed system enables a user to check the access information and remotely operate the door lock to enhance the problem [3].

This block diagram is an internal mechanism of the Digi locker, which comprises an LPC2148 controller in which all the parameter and sensor such as fingerprint sensor, guest button, camera, storage unit, Wi-Fi module and lock/unlock module are connected to perform the mechanism of Digi locker. When the authorized user sends a signal from the smart mobile the controller receives the signal and converts the received analog signal into digital form and makes the Digi locker open within no time. If the authorized user or the owner do not use a mobile application, he/ she can directly open or close the Digi locker by using a biometric the sensor to which the microcontroller is connected.

The controller verifies the data with the stored data that was stored in the storage unit of the lock until the fingerprint is scanned, if the fingerprint is validated the lock will be opened if it does not stay locked. When any guest enters, the guest button stored in the Digi locker has to be pressed, then the guest button sends a signal to the controller and then the controller sends a signal to the camera to capture the guest's image. The captured image is then checked with the stored record, if the record is verified then the Digi locker will be opened in not then the controller will submit the detail and image of the individual to. The authorized user is allowed to verify the details of the guest and revert a signal back to the controller to open or close the lock. When the power is given to the device the controller activates the device, where there are three processes by which the lock can be open or close. Firstly, the lock can be opened by using a biometric sensing process where the user has to enter the finger print the entered finger print will be verified by the stored data. If the fingerprint of the user is matched the lock gets open and if the fingerprint doesn't match with the stored fingerprint, then the lock will not open [4]. Secondly, by using a mobile app, the lock can be opened where the user sends an input signal to the controller in analogue form to open the lock, the controller converts the signal from analogue to digital, making the process simple and the lock is automatically opened. If the user sends an input signal to the controller via the mobile app to close the door, then the lock is automatically closed. An algorithm is stored in the Digi locker to perform this job, which accepts the registered smartphones' commands to open and close the door. And the last process where the lock can be opened or closed if the guest is verified by the stored data or the user. To perform this task there is a camera and a guest button, when any guest arrives they have to enter the guest button which sends a signal to the controller to activate the camera. When the camera is activated it captures the image of the guest and the controller verifies the image with the stored image of that person. If the image is verified the lock gets open but if the user is not verified the controller sends data through the internet to the user. Once the user verifies the image or the details of the person and sends a command or message to the controller then only the lock gets open or remains closed [5].

III. CONCLUSION

The Internet-based Digi locker is a system used to provide our homes, workplaces, houses, apartments, etc. with security. This device comprises the sensors, the Wi-Fi module, the guest button, the storage unit and the LPC2148 microcontroller-connected lock/unlock module. The

microcontroller tracks the signal that comes from the consumer or the connected devices continuously. The microcontroller recognizes the results with the stored data when the user connects his/her finger to the sensor, and the lock will unlock. This same process is done when the user uses a mobile app to open and close the lock. If a person is not authorized, then he/she will be listed as a guest and had to press the guest button. Once the button enters the image capture and sent to the controller for identification if not identified by the controller the data is then sent to the user for identification to lock/ unlock the Digi locker.

IV. REFERENCES

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