



## ENHANCING SMART LOCK SECURITY USING USER AUTHENTICATION AND INTERNET OF THINGS

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**ABSTRACT** Security is a major concern today and we need an intelligent security system which can be used in Homes. The proposed security system will be working upon the finger prints and it will authenticate the persons on the basis of their fingerprint. This will reduce the chances of security breaches and it will also remove the problem of remembering passwords. The system will lock and unlock the door as per the results obtained from bio metric verification, which consist of biometric data along with the time stamp and a complete log of all security accesses with its actual time will be maintained in a web based secure and encrypted database. The logs of the complete security system can be accessed by the owner remotely. The time stamp and biometric ensures a secured security system, in order to provide a smart security solution.

**KEYWORDS :** Internet of Things, Biometric, Time Stamp

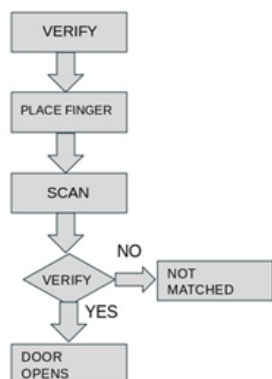
### INTRODUCTION

The Everything in the world is becoming increasingly “smart”, so that we need to use smart lock which works with IoT. IoT is the concept of connecting any device to the Internet. The term refers to devices that collect and transmit data via the Internet. The concept is based on a general rule that “Anything that can be connected will be connected” Biometric fingerprint is a personal authentication technique based on their fingerprint. Fingerprint authentication techniques have a little possibility to being attacked by someone who did not have an access to the privacy. This technique was safe and cannot be attacked by others because everyone has different fingerprint .IoT systems suffer from the most challenging security issue is that IoT device compromise or fail to authenticate the user causing a serious concern . Fingerprint authentication allows people to verify them self with simply process. People only need to put their fingerprint into fingerprint scanner when they want to authenticate themselves. This technique assumed to be a better than authentication technique, because the user biometric cannot be replicated. So we can ensure that the correct user is using the system.

### PROPOSED SYSTEM

In this paper we are proposing a method to secure the smart lock which are connected to Internet (IoT). The users are allowed to enrol their fingerprints in the system. Once their fingerprints are enrolled into the System, they were stored in the data base system.

When the user wants to access the lock they need to place the finger print on the top scanner which is an IoT device ,the device scans the finger and time stamp is added with the scanned image and sends it for the verification , in an encrypted format using sha lalgorithm.at the verifier side the the due is decrypted into time stamp and scanned image, system, verifies the time stamp with the current time if it matches , the system check the biometric image , if both matches the system sends a confirmation to the lock that the correct person is accessing the system ,thus we over come the most crucial concern of IoT system the lack of authentication . flow diagram shows how the system works



### CONCLUSION

In future, Smart alarms can be implemented as a modification to this paper .When intruder tries to break security of the door, an alarm, This will inform the neighbours about intruders and this will help to take further action to prevent intruder from entering. We also provide a security camera with this module which takes images of the person who is trying to access the system and can be used for other level of security. when an intruder tries to attack this system. The image taken will be send to the authorized person on their phone and email. And for this we also need a GSM module.

### CONCLUSIONS

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