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# Home appliance security using artificial intelligence (Smart Door Lock Using Wi-Fi)

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**ABSTRACT**
Nowadays, providing a security system for houses has become a vital research in which the latest technologies are being adopted to serve this purpose. Wireless network is one of the technologies that have been used to provide remote monitor and control for the home appliances. This paper aims to propose a security door lock system based on Raspberry pi technology where cameras, keypad and pi-lids are being utilized to provide an alarming system that has the ability to notify the owner, as well as, recognizing guests by giving them a user-id. In this vein, the authorized individuals are only the ones who will get the permission to access the doors. The system works by taking snaps for the guest through a code and camera pi positioned in the doors then, such snaps will be sent to the owner. The proposed system can be extended to be used for different properties and facilities such as banks and office.

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## I. LITERATURE REVIEW

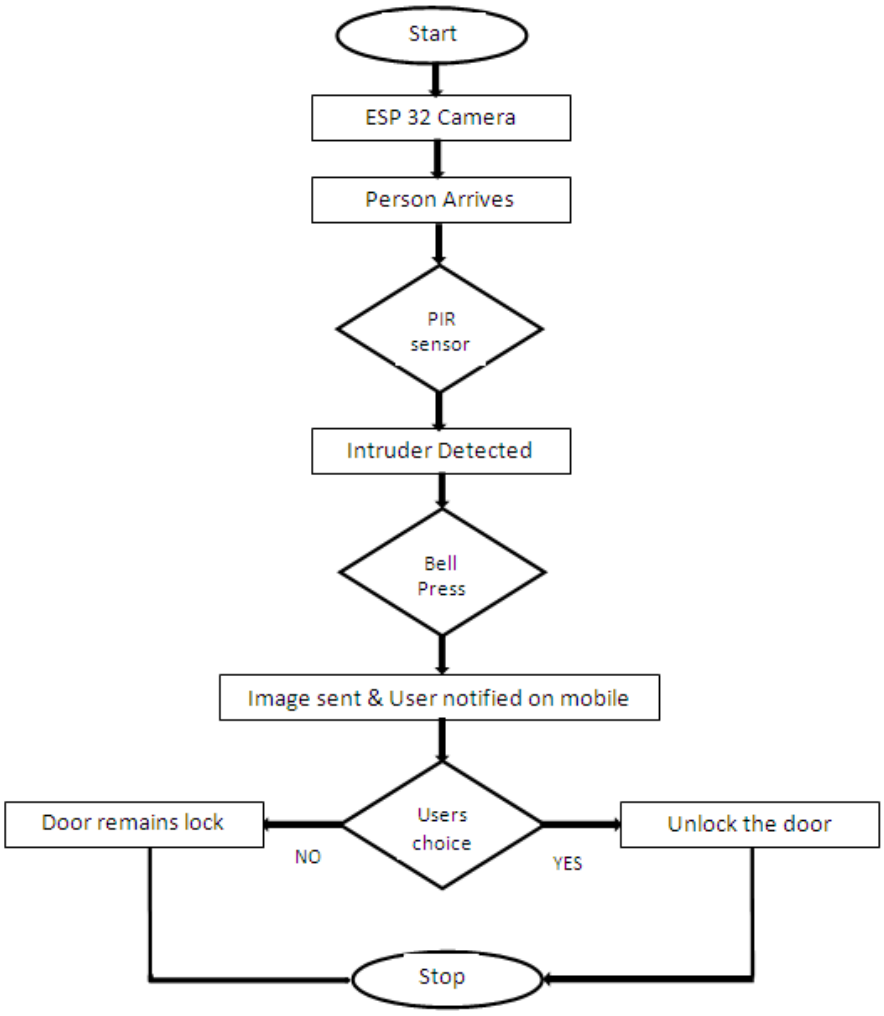
Many automated advanced door locking system has been developed and it's popularly used in many places like commercial buildings and organization. Some of these automated doors locking system are based on RFID (Radiofrequency identification).

The RFID card reader detects and checks the user accessibility. When the card is brought near the reader, it identifies the radio frequency of the card and thus verifies the key but these systems are very expensive.

## II. INTRODUCTION

Security system is one of the most researched fields and with increasing security threats; companies are launching new smart security products to combat these threats. We built security systems like Raspberry Pi Visitor monitoring system, video surveillance camera, wireless doorbell; IoT based Door Security Alarm etc. We will use ESP32 and camera to build a Smart Wi-Fi door bell. We will make a Smart Wi-Fi image Doorbell using ESP32-CAM. This Smart doorbell can easily be powered by an AC socket and whenever someone at the door presses the doorbell button, it will play a specific song on your phone and sends a text message with a link of image where you can see the person at the door from anywhere in world.

## III. FLOW DIAGRAM




**System Design**


**Concept of the project**

- In this IoT project, Smart Wi-Fi door lock using ESP32-CAM and the Telegram App. In this ESP32CAM Wi-Fi lock project, when someone presses the doorbell, you will get a notification on the mobile with a photo of that person. After checking the photo you can also unlock the door from your mobile phone.

- You can easily take the picture and unlock the door from the smartphone using Telegram App.
- We can make this smart door lock with the camera using a 12v electronic lock, ESP32 CAM module, and some basic electronics components. Supply 12V DC to this smart Wi-Fi door lock and connect your smartphone with the same Wi-Fi network. Now if you press the push button you should get a notification on the mobile phone.
- After that click on the 'Take Picture' button to get the picture and then click on the 'Unlock Door' button to control the 12v electronic lock. After testing the circuit, connect the Wi-Fi lock at the main door.

## IV. CONCLUSION

The proposed system allows remote access to lock or unlock the door without physical interaction. The locking and unlocking of the door happens in fraction of seconds. The system will takes picture of person who press the bell and notify the user. It also provides a security and easy Android phone users

**Future scope**

- For future scope, the device can be paired with a database to save the records of images of known people for automatically unlock the door.
- Also Instead of capturing photograph will uselive broadcast.
- Improve AI.

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