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IoT based Smart Door Lock System with ESPCAM-32

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Abstract: ***The advancement in technology Smart door locking system have become more advanced. The android based smart door lock system here is basically designed for smart lock with high security operations. Such system is very much required in Bank, home and Business organization. The system also gives functionalities for single user, where single user is authorized to operate the lock. The cost is very low implementation with advanced functionality and easy to use interface makes the system very useful.***
Keywords: Esp-32 Arduino, Smart Phone.

I. INTRODUCTION

Android Based Smart door locking system is designed to prevent unauthorized access, trespassing and intrusion. Banks, corporate offices, financial organization, jewellery shops, and government organization are some of the common targets where unauthorized access, trespassing and intrusion take place. Normally the aim behind such activities is stealing money, jewels or any important documents for individual gain. The purpose of Android Based Smart door locking system is to provide a smart solution to overcome these challenges and provide a feasible solution.

In today's Smart Life we operate All Physical things get into Smart System. That is we operate water heater, Air Controller [a.c], light, fan etc on smart phone and also this smart life in car totally operate [like start–stop , lock-unlock] on smart phone Tata car company provide system iRA and connect next, Hyundai car company provide System blue link for this And mg car company provide System Internet inside.

But we does not operate our home lock or Any other lock by smart phone in this smart life we carry key when door lock And Other Money Locker, bank lock. For this problem my group build IOT Android smart lock system. In this iot project this lock is operate by smart phone with high security.

II. LITERATURE REVIEW

Many automated advanced door locking system has been developed and its popularly used in many places like commercial buildings and organization. Some of these automated doors locking system are based on RFID (Radio- frequency identification).

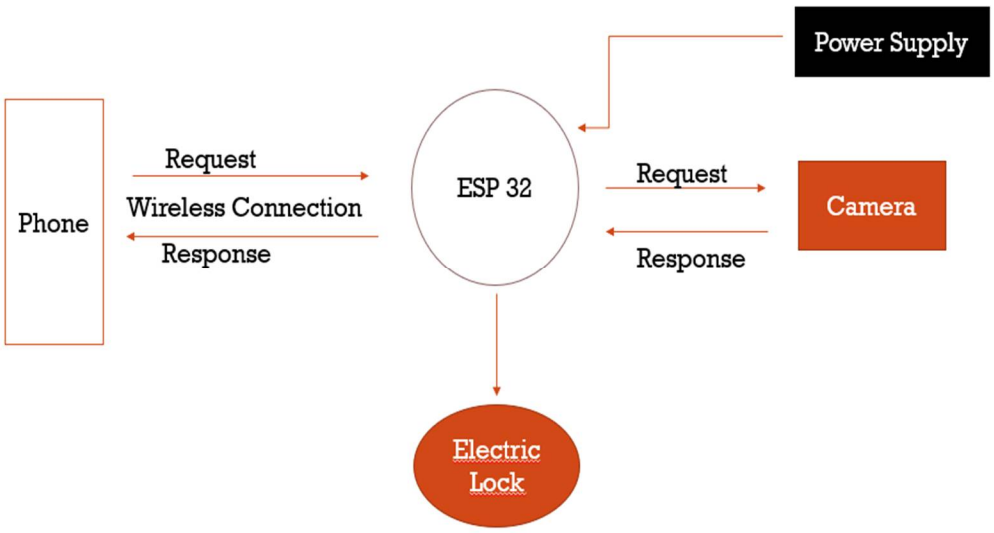
The RFID card reader detects and checks the user accessibility. When the card is brought near the reader, it identifies the radio frequency of the card and thus verifies. The Key but these systems are very expensive. Various control systems are being designed over the years to prevent unauthorized access. The main aim for providing locks for our home, school, office, and building is for security of our lives and property. It is therefore important to have convenient way of achieving this is Me and my group has implemented a Door Automation System Using ESP-32 Module, the implementation was on Android platform. So the implementation cost is less and affordable by a common user. With the use of wireless Wifi connection the system installation in more easy way Ankush has implemented an Automatic Connection to blynk Application Based Door Lock System. This system works on pre- decided Automatic unique connection concept. It increases the security level to prevent an unauthorized access done by the general user is the main user.

The system works using automatic Connection Esp-32 wifi to wifi hotspot of smart phone with unique Blynk Authentication Character system to operate. We surveyed many smart doors locking system. We found that these products are very expensive. Some of the implementation mentioned in the literature survey is very cost effective in implementation but do not provide multi user or multi level functionalities. We identified these requirements and thought to develop a system which is cost effective in implementation and having more advanced features like Single user and multi-Users but at a time only one device is operate. These features are the need of time and such functionalities will make the system more useful.

III. IMPLEMENTATION STRATEGY

Esp-32 In Upload the Programming by this programming its automatically connected to configuring smart phone through wifi and there being process to operating the circuit need authentication of blynk app its matched by programming, authentication its successfully matched then conveniently properly worked with high security. In this system operating is very easy and convenient to use. It's properly works by following smart phone command. This system it need always power electric current supply in12v in hardware there is very low maintained so it's affordable to all persons those use smart phone.

A. System Architecture



B. Working in different strategy

1) *Case 1:* Your are in home if any person ring your door bell at this today's condition corona [work from home is at all company start] suppose you are in work then you stop work take priority to open door first this condition in you disturb in your work. This smart life in you use this smart door lock system use see who at door through ESP-32 camera to your smart phone then you there is option door lock and unlock in your smart phone so there is no disturbance in your work
2) *Case 2:* All family go to some work in out of home there is you apply physical lock on door and carry key with you. But in this smart door lock system in lock and unlock door through smart phone so there is no need of carry key only carry smart phone with you and your smart phone is in this smart life in smart phone is your locker key.
3) *Case 3:* In banking main locker there is need of one operator that is main officer of bank. So there is need of high security this smart lock system is very useful and powerful system to lock the main locker.

C. Methodology

1) *Module 1:* So build the programming to esp-32 Arduino board.
2) *Module 2:* Then it automatically connects to configure smart phone by follow the programming.
3) *Module 3:* This mobile to hardware connection is automatically connects by Arduino board through programming.
4) *Module 4:* Configure blynk application by follow to programming and matched blynk authentication character to programming blynk character [in case this character it not match then circuit is not work through smart phone. This is for high security purpose], configure other component on hardware like voltage regulator, diode, transistor, and capacitor then take power supply to hardware.
5) *Module 5:* Then you're smart lock system it complete work with high security an easy to use.
6) *Output:* Smart lock system completely worked with configure smart phone.

D. Algorithms

1) Algorithms to Connect Smart phone to Hardware

```
WiFi.begin(ssid, password);
while (WiFi.status() != WL_CONNECTED) {
 delay(500);
}
```

2) Algorithms to Unlock Solenoid lock through Arduino

```
if(digitalRead(LOCK) == HIGH)
{
else

}
```

3) Algorithms to Capture Photo

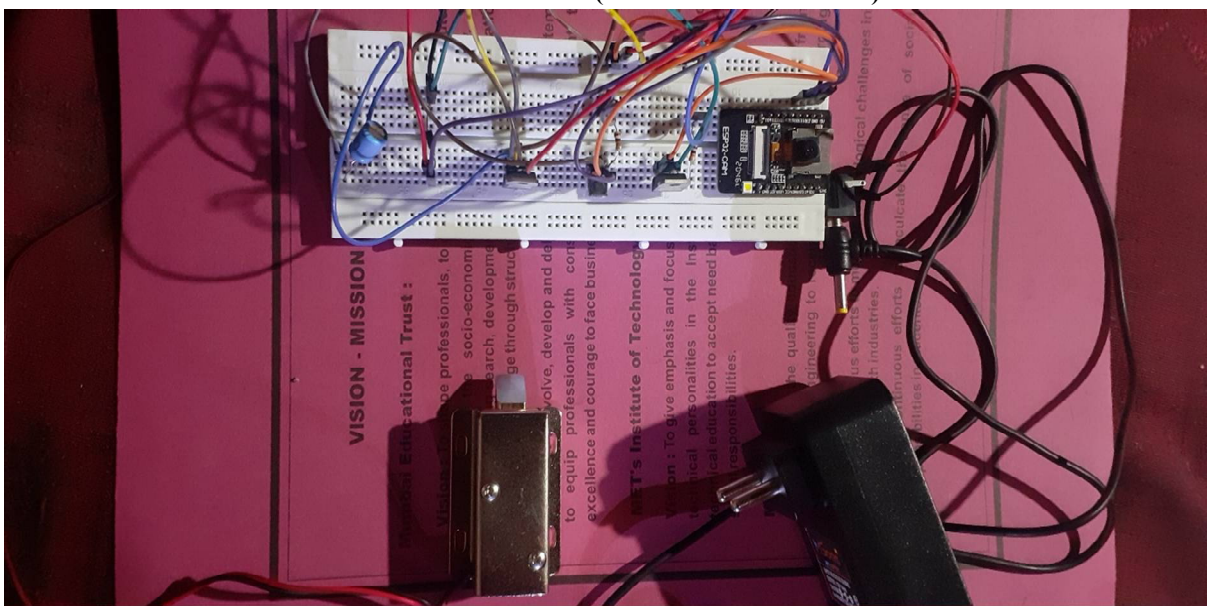
```
if(digitalRead(PHOTO) == HIGH)
{
takePhoto();
}
```

IV. CONCLUSION AND FUTURE SCOPE

Thus Android Based Smart Door Locking System is a modern successor of the conventional door locking system. This system is very low cost and easy to install and is designed under high security which makes it useful.

In future scope A rechargeable battery can provide in case in power failure. It can also be implemented using cloud computing where user can control the lock irrespective of his location. Camera can also be done to store capturing photo by clicking door bell. For further security, finger scanner, face recognizes or etc can be used.

V. OUTPUT (IMAGE OF PROJECT)



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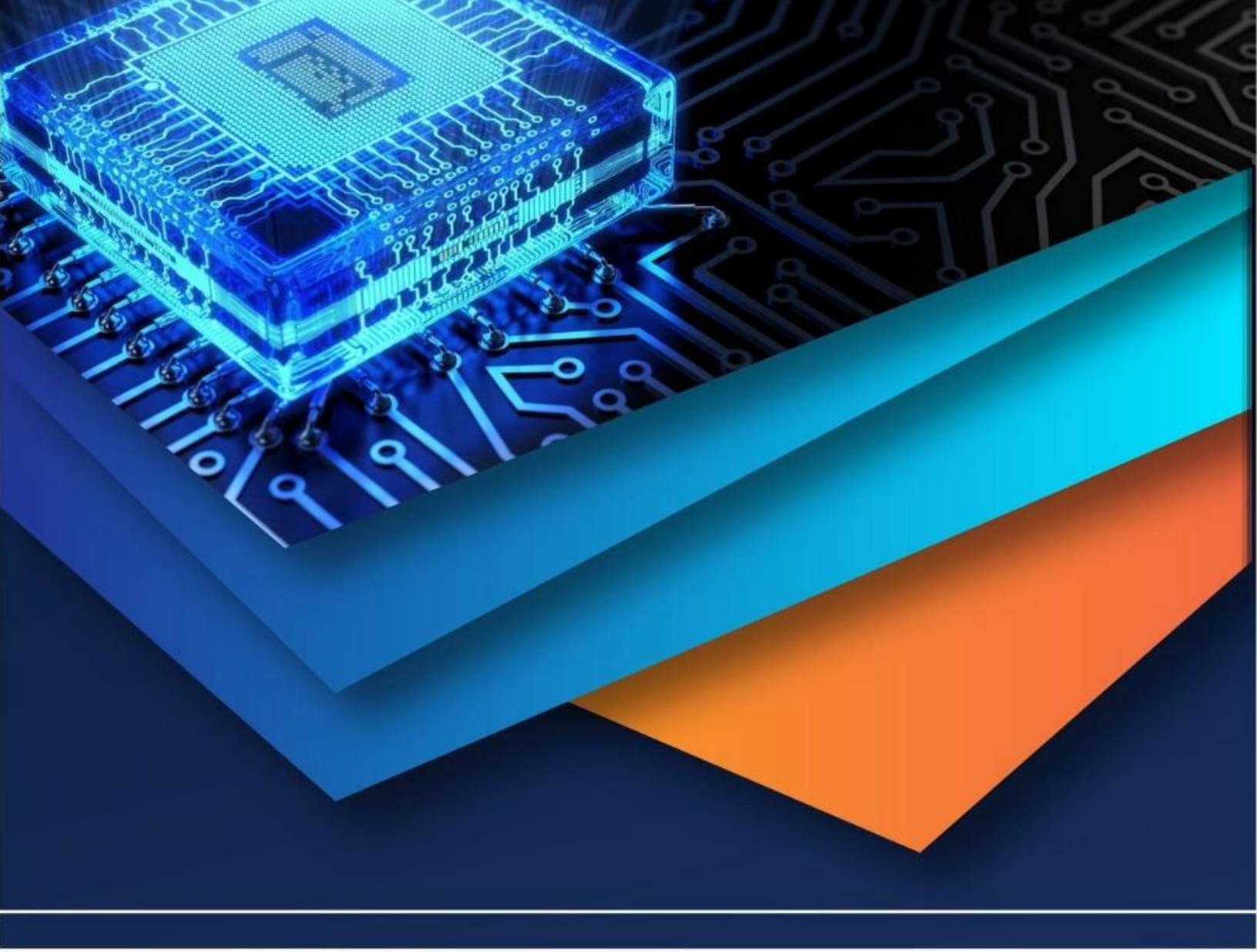

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