

# Digitized Code Lock based on Arduino R3

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**Abstract:** Security is an imperative worry all throughout the planet and it has been significant string for every single classified division. This work depends on Arduino and is utilized for the security reason. Arduino is an open-source prototyping stage dependent on simple to-utilize equipment and programming. Arduino utilizes an ATmega328 microcontroller. As security is extremely fundamental now daily, so by utilizing this undertaking just the approved individual will be permitted to enter by entering the right secret key. The circuit is tried in proteous and is working. It is extremely basic, cost affecting and secure. The lock can be open if the secret word entered is right and match to the secret phrase which is as of now put away in the inner memory. It additionally comprise a LCD show which is utilized to interface with the task to yield lock status. This undertaking can be utilized in ATMs, entryways of houses, storage spaces, workplaces and anyplace where security is required.

## Index Terms - Arduino R3

### I. INTRODUCTION

Due to the advancements in the technology, results in decreasing the theft incidents or intruders, etc. Gadgets and locks need more attention to ensure an enduring security for our lives and properties. Therefore it's important to use other types of locks especially the Digital Code Locks. Here we use a numeric secret phrase for locking. We used simple components in the design of the circuit and Embedded software, i.e., C language in IDE, used to develop our project. The absolute lock system mainly depends on Arduino Uno. In addition to it, we have a Keypad, a LCD display and a Buzzer. Digital code lock or digital combination locks are a type of digital locks where a combination of digits/characters or both are used for unlocking the lock. Digital code lock systems are generally common on security systems. An electronic lock or digital lock is a device which has an electronic control assembly attached to it. They are provided with an access control system. This system permits the user to unlock the device with a secret key. The secret key is entered by making use of a keypad. The user can likewise set his secret key to ensure better protection. This article describes the making of a digital code lock using Arduino.

### II. LITERATURE REVIEW

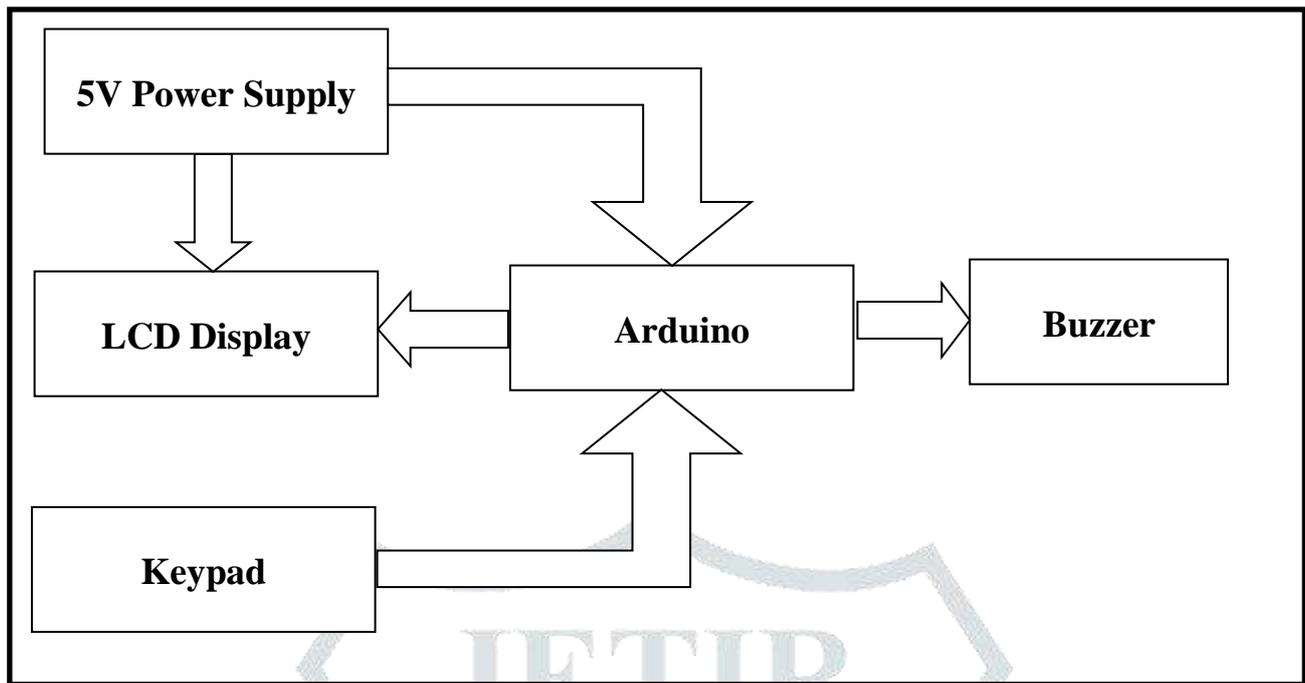
This paper gives idea of how to control home security for smart home especially for door key locks. They used android based door lock system for indoor and outdoor key lock system. It also provides a secure system for Android phone users [1].

This paper proposed idea that in day to day life security of any object or place password based system plays a major role. This paper has considered about this and created a secure access for a door which needs a password to unlock the door [2].

This paper has proposed design and implementation of a low cost, flexible and wireless solution for home automation, especially or on/off the lamp and to on/off the television automatically. However, this is a basic system without advanced features like integration of RTOS, and also not has light sensors that are used to intelligently control the home appliances without human intervention. This system is designed to improve the standard living in home [3].

This paper gives detail information about system in which we can unlock the door by using pre-decided password. It increases the security level to prevent an unauthorized unlocking done by attacker. In case the user forgets the both passwords, his system gives the flexibility to the user to change or reset the password. This automatic password based lock system will give user more secure way of locking unlocking system [4].

## III. METHODOLOGY



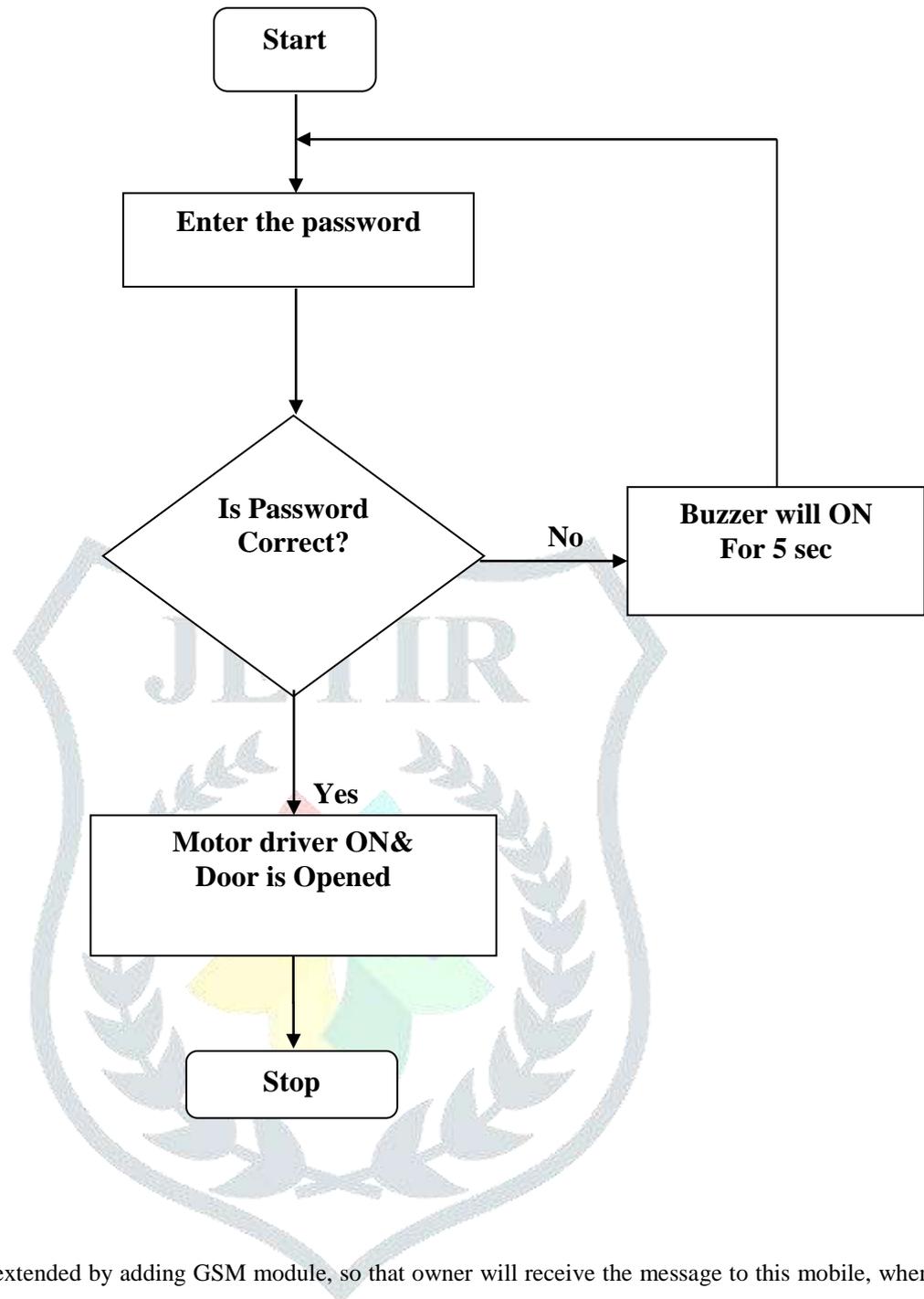
## IV. WORKING PRINCIPLE

First the Arduino and the LCD will be empowered utilizing 5V force supply. At whatever point anybody press the secret phrase on the keypad. The sign will go to the Arduino. In Arduino UNO, AVR RISC regulator is utilized, where the program for the task is composed. It is likewise utilized for constantly screens the keypad for a match with the put away secret word which is put away in its blaze memory and furthermore to give computerized and simple sign to the gadgets.

The microcontroller inside it will check if the entered secret phrase is right. On the off chance that the secret phrase is right the Arduino will convey a message to LCD show which will then, at that point show that entrance allowed. Any instrument associated will be begun.

In the event that the secret key isn't right, it will show wrong secret key. In the event that off-base secret key is entered multiple times, the bell will be ON and message will be shown on the LCD show as RESET PASSWORD. To open the framework we need to reset the framework.

## V. FLOW CHART



## VI. FUTURE SCOPE

This project can be further extended by adding GSM module, so that owner will receive the message to this mobile, whenever the lock is being authenticated. This helps the locking system to be more secure.

Also, we can keep a count for wrong entries of pass key, such that the lock will be permanently locked if the count reaches and it can't be opened until the owner resets it.

## VII. CONCLUSION

The digital code lock performed as expected. This digital code lock is very marketable because it is easy to use. Comparatively inexpensive due to low power consumption and highly reliable. This is most prevalent from of digital lock as it uses numerical code for authentication. The code lock is therefore particularly useful in door locks and equipment locks.

Arduino based digital code lock system can be used in the places where we need security. It can be used to secure lockers and doors. The microcontroller helps to monitor keypad and if someone enters the password it will match the entered password with the password stored in the memory and if it they are matched then microcontroller will switch on the corresponding device. The system will allow only the person who knows the password and will not allow those whom it does not know. Thus the system is secured and protective and useful.

## VIII. REFERENCE

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