

HOME DOOR AUTOMATION SYSTEM

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ABSTRACT

Our fundamental target is to use the distinctive electronic parts accessible in the market and fabricate a coordinated home security framework by utilizing Bluetooth gadget and Microcontroller innovation. This framework gives benefit with ease thought about to the cost of the accessible security framework. We need to make a framework that will give 24 into 7-benefit .By utilizing enlisted secret word in this framework we can open the entryway by which it builds the security level to keep an unapproved opening. In the event that the client overlooks the blend of secret key this framework gives the adaptability to the client to change or reset the password. Safety effort is high as gave in two ways. To start with, we need to enter secret key for verification by Arduino association and second is for opening the entryway in application. The two passwords can be changed as and when required. This programmed password based bolt framework will give client more secure and minimal effort method for locking-opening framework. The security door lock automation system promises a bold step to the future where mechanical door locks will be substituted by electronic door locks.

KEYWORDS: Arduiono, security, secure, access.

INTRODUCTION

Different control frameworks have been outlined throughout the years to forestall access to unapproved client. The primary go for giving locks for our home, school, office, and building is for security of our lives and property. It is subsequently essential to have helpful method for accomplishing this objective. The security safes for last few centuries has been largely dominated by mechanical locks. This project is an ambitious shot at making a shift from the former to electronic door lock systems. Programmed entryway framework have turned into a standard element on various sorts of structures and homes. Furthermore, they are getting to be well known each day to build up viable electronic gadgets, which give security. Home security has been a noteworthy issue in light of the fact that of the expansion in wrongdoing rate and everyone needs to make appropriate move to forestall unapproved client. There was a need to computerize home with the goal that client can exploit the GSM innovation and PC control framework. The gadgets like a phone arrive line or the Global System of Mobile correspondence (GSM) can give highlights, which can be utilized locally to deal with Apparatuses like; entryway, TV, mechanical arm, cooler, ventilate, electric globule, and so forth. Securing homes has turned out to be one of the concerning issues that confronting many individuals. With the extended length of clearing out the home because of work, examine and different obligations, homes are being more powerless for a few dangers particularly being burgled. Aside from the dangers, there are diverse situations where securing or, then again checking the house is exceptionally basic, for example, the presence of elderly people or children with sitter. Observing what's more, controlling a few undertakings inside the house would have the capacity to give greatest security.

Home automation framework is a PC based application that can Associate diverse electronic gadgets for the purpose of checking and controlling the home machines. Home mechanization framework is a region that has gotten a few considerations by both the scholastic and business fields. The most punctual exertion of home security framework was depended on wired home systems be that as it may, because of the suitable arranging and development works required to offer a wired home, such exertion have a tendency to be inadequate. As an answer for this issue, remote correspondence has been developed to give stage that is more adaptable where the establishment cost is fundamentally lower than the wired one. In this manner, it has been connected for various security home frameworks with a specific end goal to give caution to basic dangers, for example, interruptions or other natural dangers, for example, gas spilling of fire.

RELATED WORKS

A few remote frameworks have been proposed whether for the scholastic or business area. Such frameworks were expected to give a remote control and observing errands. For example, a framework has been proposed by which depends on different innovations. This framework is made out of numerous modules, for example, the human location module (HDM) which plans to recognize the client at the entryway. This can likewise be performed utilizing the camera module in which the pictures or the video stream is being prepared.. Such framework empowers following and location of interloper and it depends on giving home security. For this reason, a face acknowledgment method is used to distinguish the gatecrasher and on discovering him, a picture of the interloper is sent on the proprietor mail id for additionally activity. The usage of this framework likewise incorporates the correlation of various methodologies for protest following and after that utilized a brightening touchy foundation displaying approach for the proposed security framework. Be that as it may, this framework doesn't utilize secret word for ID. In this present circumstance, the level of security is weak. So there is a great deal of burglary, robbery going ahead in and around the globe. Along these lines, individuals dread to keep any of their assets in their homes. From this time forward, many individuals want to keep it in banks. Be that as it may, in this unreliable world even banks are not very sufficiently sheltered to fulfill individuals needs. A typical man feels his resources are secured if there is effectiveness in security. Hence this project can give effective security in minimal cost.

WORKING OF THE SYSTEM

Download Arduino software .Write the code using keypad and servo library and import it and transfer to Arduino via USB cable. Now take 4x4 keypad and connect the 8 ends to pin 8,7,6,9,5,4,3,2 of Arduino respectively. Connect positive terminal of red and green LEDs to pin 12 and 13 of Arduino. Now both negative terminal of red and green LEDs to resistor 220Ω and other end of resistor to ground . Now connect black wire of servo is connected to ground of Arduino , red wire to 5V of Arduino and yellow wire to pin 11 of Arduino .Apply external power to Arduino and enter password and we will see our servo motor works. The working of the door lock system starts off when the user enters the password the Arduino which is preprocessed already with a password compares each literal one by one by the application of for loop. The lcd screen used in the system notified the user in case of a authentic passcode and at the same time it also notifies the user of invalid passwords. This further leads to the buzzing of the buzzer and finally in lighting green or red LED light depending upon the authenticity of the password. The lighting of the LED is combined simultaneously with the rotation of the servomotor, which is connected to the doorknob, or the handle of the safe. This is a perfect combination of an electronic system working in tandem to complete the mechanical task. This effectively could curb chances of possible burglaries and reduce the risks to ainsignificantly low rate. Keypad is the info module when the visitor embeds the code at the entryway. It at that point sends flag to control module, which at that point check the visitor id by the database. Control module at that point sends the visitor id to the server for check. Server at that point scans for visitor id and if the id exists in the database then server sends motion back to control module as a reaction, in the meantime actuates the camera, take snaps of the client at the entryway, and sends it through Email. All the while, the server tells the proprietor that visitor has showed up at the entryway "through the message "ACCESS DOOR Demand".

The entire system is based on the Arduino code which has all the connections and powers all the devices including lcd screen and led lights. Arduino boards are generally modest contrasted with other

microcontroller stages. The Arduino programming condition is anything but difficult to-use for amateurs, yet sufficiently adaptable for cutting edge clients to exploit too. For teachers, it is advantageously in light of the Processing programming condition, so understudies figuring out how to program in that condition will be acquainted with the look and feel of Arduino. The Arduino depends on Atmel's ATMEGA8 and ATMEGA168 microcontrollers. There are numerous gatherings introduce on the web in which individuals are discussing the Arduino.

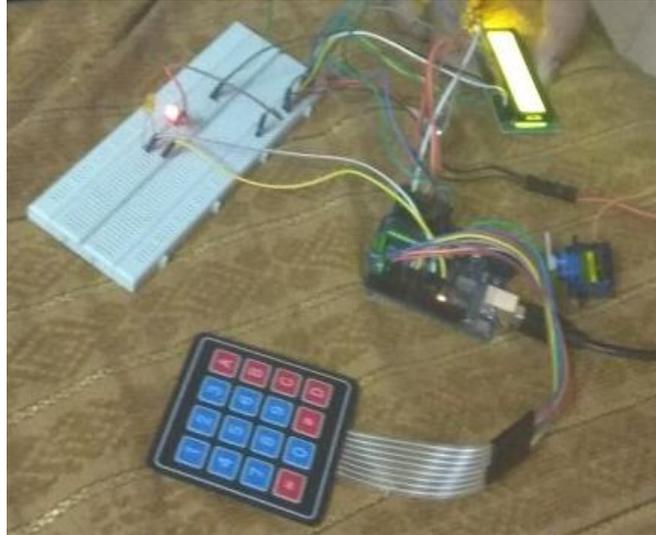


Fig1. The working of a door locks system when a wrong code is entered

Designers, specialists and experts are making their tasks through Arduino.. TheArduino gets ready for the modules are distributed under a Creative Commons permit, so experienced circuit fashioners can make their own variant of the module, expanding it and enhancing it. Indeed, even moderately unpracticed clients can construct the breadboard form of the module so as to see how it functions and spare cash. The Arduino programming is distributed as open source instruments, accessible for expansion by experienced developers. Another enormous favorable position of Arduino is its library of cases introduce inside the product of Arduino. The dialect can be extended through C++ libraries, and individuals needing to comprehend the specialized points of interest can make the jump from Arduino to the AVR C programming dialect on which it's based. Likewise, you can include AVR-C code specifically into your Arduino programs in the event that you need to. What is intriguing is the rise of little cabin enterprises growing up in numerous unsuspected zones. This new age of stages is altogether unique as it fills in as the hatchery of new creators, and another period, as changes of uses serve new and energizing needs. The greatest favorable position of Arduino is its prepared to utilize structure. As Arduino arrives in an entire bundle shape which incorporates the 5V controller, a burner, an oscillator, a miniaturized scale controller, serial correspondence interface, LED and headers for the associations. In last years' the utilization of Arduino increments exponentially because of its meaningfulness and effortlessness.

ADVANTAGES AND DISADVANTAGES

The first and foremost usage of the home door automation system is that the missing of keys which is rampant could be avoided. No keys to be lost, stolen or occupied. A simple and sophisticated keypad could control the door knob and the to and fro motion could be handled effortlessly. Minimal energy is wasted in the opening and closing action of the door, thereby enabling ease in usage and handling. Automation in the system is an important aspect in robotics which is integrated flawlessly. An addition feature that could be embedded in the system is the indication if any attempt to unauthorized access is made. The last and essential point to be discussed under advantages is its feasibility. The entire system is highly cost efficient and is affordable to a large part of the society without much sacrifice.

Moving over to the disadvantages, is the lack of technological advancement is a major hindrance and hasn't been given proper attention due to the massive following of mechanical locks. The personal identification

number is somehow not retrievable with the existing technology and provided no technological upgrade is happened once forgotten password is lost forever unless the whole system is formatted or restored. Powered by electricity may not function properly in the case of a power failure. There are some digital door locks who have a pin length upto 10 digits. Some people who want a password more than 10 digits cant keep it.

FUTURE SCOPE

The home door automation is one such field, which has immense potential to be reinvented every now and then. The already existing model, which we have demonstrated itself, could be integrated with various other analog inputs such as fingerprint sensing and face recognition, which could reduce human effort to nearly nil. It's the need of the hour for the transformation of mechanical locks to electronic locks. What the Arduino stage has done is to take what was at one time a divided and costly market for apply autonomy and microchips and turn into the real stage, to a great extent by goodness of much lower cost and convenience, prompting higher volume and fame, and group bolster behind it. Arduino has made it easy to program their sheets with any PC by means of USB and easy to coordinate with a wide cluster of sensors and gadgets. The Arduino is incredible for specialists, prototypers, and individuals simply beginning in mechanical autonomy due to its minimal effort, usability, and extensive after on the web. It's anything but difficult to learn and instruct individuals to have the capacity to do fundamental things with the Arduino, yet it's sufficiently fit to do genuinely complex things on the off chance that you as a designer have the ability to exploit it. It's enabling individuals to create extends reasonably to construct and control their own gadgets, for example, sensors that send information to the Internet and control frameworks for a wide range of things. It's additionally lessening the cost of improvement by enabling organizations to create models significantly more rapidly and with less starting speculation. Its definitely life changing for elder people who have a very hard way with mechanical locks as it requires physical effort. Also for kids electronic locks could help in case of emergency. The model could be extended to a higher level and is presently a field of interest to many MNC's and enthusiasts. LPG sensors could be integrated on this model in case of fire emergencies as well and huge disaster could be averted.

COMMERCIAL APPLICATIONS

We can make it user-friendly by using fingerprint sensors instead of keypad. We can make inputs change by modifying it and add some voice recognition. Various other analog inputs can be used rather than sticking to conventional keypad door lock system. Piezoelectric sensors and acoustic sensors being some of them. Face recognition is another booming concept that could be embedded within the basic miniature of security door lock system. Light dependent resistors can be also used in night time which will end up giving us further protection from burglars.

CONCLUSION

This is continuous task. This paper gives fundamental thought of how to control home security for perceptive home, particularly for entryway key locks. It additionally gives a security and simple to Android telephone clients. This task in view of Android stage, which is Free Open Source Software. So the usage rate is cheap and it is sensible by a typical individual. With the remote Bluetooth, association in microcontroller grants the framework establishment in more simple way. The framework has been effectively planned and intended to control the entryway condition utilizing an Android Bluetooth-empowered telephone and Bluetooth modules by means of Bluetooth HC-05. Until presently we have effectively actualized equipment and one little application has been created utilizing MIT application creator. Future extent of our undertaking is high. In this semester, we will build up the android application utilizing shroud. We have examined a basic model in this paper yet in future it can be reached out to numerous different areas. This project is effective in providing enough security as long as the password is not shared. In future this "Arduino based password security locking system" can be provided maximum security by the above enhancements in order to completely satisfy user's needs. Hence, a common man can afford to purchase such locking system in minimal cost to keep his valuables safely without any worries. The system will allow the person who knows the password and will not allow those who don't know the password. The keypad door lock system will throw new light into privacy and security systems' automation. Various other already

existing technologies could be embedded with ease in to this system and increase the productivity for the consumers with higher quality goods.

ACKNOWLEDGMENT

The project has thrown new light on various aspects of door lock systems. We hope that this research could speed up the process of shifting of mechanical locks to electronic locks. This is the need of the hour and can possibly make our nation a technology provider rather than being dependant on other nations for further technological advancement. We have tried our best to make our research as authentic and as simple as possible to appeal to the larger crowd outside to take this innovation to new heights

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