

LOCK SYSTEM BY RFID

These days, among the massive advancements in this world, the average locking system is also going through massive technological upgrades. Through these past years, security is becoming a big issue in today's society. Qualities of locks for the normal households are itself on the rise. But sometimes, the responsibility of the security of certain important objects is too much power or burden to give to just one person. So, in order to tackle this problem, we have created a special lock. In order to access this lock, we must scan up to three valid rfids consecutively. By doing this, we can divide the responsibility of maintaining the security of an object that is of extreme importance to the user. This also provides more security and more than one condition needs to be met in order to gain access. It becomes difficult for an intruder to break into this security system as there are multiple passwords he would have to crack in order to gain access. Our lock also sends an email to the administrator, if unauthorized personnel try to gain access, warning him about a potential threat and keeping track of all unauthorized access attempts.

METHODOLOGY: -

- Our lock system takes the input of 3 RFID's.
- Each RFID is 32 bits in size.
- There are a total of 3! (6) Sets of combinations possible of these RFID's.
- Each set of combinations are 96 bits each.
- We pass all these combinations through a hash function (MD5) and store them in an array.
- Each of these results is 128 bits each.
- We take inputs from 3 different RFID's.
- We concatenate these inputs and pass them through the MD5 hash function.
- If the result is equal to any of the values in the array, then access is granted.
- Otherwise, with the help a wifi module, we send an email to the administrator, warning him of an unauthorized entity trying to gain access.

SCREENSHOTS :

21 NodeMCU D.9 (ESP-12 Module), 80 MHz, 4M (1M SPIFFS), v2 Lower Memory, Disabled, None, Only Sketch, 115200 on COM3

secured object, the three - way or even n - way security system comes to use. The reason lies within the Probability Theory. As the probability of all members becoming corrupt at once is very less as compared to that of one. We have found that this is what the primary reason for existence of such systems is. More specifically we can use these systems in many real world problems. Banks being major one of these. We deeply understood the process or the principles on which the three – way security system works. The roots of these principles were found to be lying in Cryptography and Number Theory. We, after understanding the process which is already classic and stable also thought of ways by which the same may be improved in terms of efficiency. Overall the project made our understanding of the concepts of Cryptography and Number Theory very clear followed by strengthening of our concepts from Microprocessor and Interfacing. Since these are the concepts which come handy for the implementation of the system under discussion. The project has really enriched our knowledge in many ways.