

Password based Electronic Lock

Abstract:

Password Based Electronic Lock System is a simple project where a secure password will act as a door unlocking system. Traditional lock systems using mechanical lock and key mechanism are being replaced by new advanced techniques of locking system. These techniques are an integration of mechanical and electronic devices and are highly intelligent. One of the prominent features of these innovative lock systems is their simplicity and high efficiency.

Such an automatic lock system consists of electronic control assembly, which controls the output load through a password. This output load can be a motor or a lamp or any other mechanical/electrical load.

Here, we developed an electronic code lock system using microcontroller (a Password based Lock System), which provides control to the actuating the load. It is a simple embedded system with input from the keyboard and the output being actuated accordingly.

This system demonstrates a Password based Electronic Lock System using Microcontroller, wherein once the correct code or password is entered, the door is opened and the concerned person is allowed access to the secured area. Again, if another person arrives, it will ask to enter the password. If the password is wrong, then door would remain closed, denying access to the person.

Working Principle:

The main component in the circuit is controller. In this project, a 4×4 Matrix Keypad is used to enter the password. The password which is entered is compared with the predefined password.

If the entered password is correct, then the system opens the door by rotating door motor and displays the status of door on LCD. If the password is wrong, then the door is remains closed and displays “PWD is wrong” on LCD.

Advantages of Password Based Electronic Lock System:

- This project provides security
- Power consumption is less
- Used commonly available components
- Project is simple and easy

Applications of Password Based Electronic Lock System:

- This simple circuit can be used at residential places to ensure better safety.
- It can be used at organizations to ensure authorized access to highly secured places.
- With a slight modification this Project can be used to control the switching of loads through password.

Limitations of Password Based Electronic Lock System:

- It is a low range circuit, i.e. it is not possible to operate the circuit remotely.
- If you forget the password it is not possible to open the door.