we are making a security device

COMPONENTS:

1. Microprocessor (Arduino Nano ESP32): microprocessors are used to store the code and algorihtm so that they can make the hardware parts working.

microprocessors stores the database and other necessary information that is to be used during the operation.

It stores the information of registered RFID tag. information of multiple RFID tags can be stored on the board in order to provide them the access.

2. RFID Reader and Tag (MFRC 522): RFID Reader emits the radio frequencies which interacts with the RFIDtag and after the transaction of secured key, RFID reader send the key to microcontroller that verifies the key. If the key is correct the microcontroller sends signal to relay module to unlock the vehicle.

3. GSM Module: This is an ultra compact and reliable wireless module. The SIM900A is a complete Dual-band (900/1800 MHz) GSM/GPRS solution in a SMT module which can be embedded in the customer applications allowing you to benefit from small dimensions and cost-effective solutions.Featuring an industry-standard interface, the SIM900A delivers GSM/GPRS 900/1800MHz performance for voice, SMS, Data, and Fax in a small form factor and with low power consumption. With a tiny configuration of 24mm x 24mm x 3 mm, SIM900A can fit almost all the space requirements in your applications, especially for slim and compact demand of design.

4. Solenoid Lock:A solenoid bolt is a type of electronic-mechanical locking mechanism. This type of lock is characterized by the use of a solenoid to throw the bolt.[1] Sophisticated solenoid bolt locks may use microprocessors to perform voltage regulation, reduce power consumption, and/or provide access control. A solenoid bolt can be designed either to fail open (the lock opens on power loss) or to fail closed (the device is locked upon power loss). Some models may be suitable for high-security sites.

5. Buzzer: A buzzer is a electronic device that can create noise. If someone tries to tamper the security of your lock, the buzzer will create the noise that can attract nearby people.

6. Relay Channel Module:A relay is an electrically operated switch. It consists of a set of

input terminals for a single or multiple control signals, and a set of

operating contact terminals. The switch may have any number of

contacts in multiple contact forms, such as make contacts, break

contacts, or combinations thereof. Relays are used where it is necessary to control a circuit by an independent low-power signal, or where several circuits must be

controlled by one signal. Relays were first used in long-distance

telegraph circuits as signal repeaters: they refresh the signal

coming in from one circuit by transmitting it on another circuit.

Relays were used extensively in telephone exchanges and early

computers to perform logical operations.

7. Android Application: Using the android application the user can operate the locking and unlocking operation and also can get the information about the status of the lock.

8. Power Source: Power source is essential as it provides the power to the setupto make it functional.

9. G.P.S. Module: GPS Module. NEO-6M GPS Receiver Module. Global Positioning System (GPS) makes use of signals sent by satellites in space and ground stations on Earth to accurately determine its position on Earth. The NEO-6M GPS receiver module uses USART communication to communicate with microcontroller or PC terminal.

10. Connecting Wires

11. Switches and Reed sensors