Smart Door Lock System with Fingerprint Interface

This project includes a smart and affordable door lock enhanced with a fingerprint interface. Human detection and recognition field is very significant and has undergone rapid changes with time. An important and very reliable human identification method is fingerprint identification. Fingerprint of every person is unique. So this helps in identifying a person or in improving security of a system. Finger print of a person is read by a special type of sensor. Finger print sensor can be interfaced with a microcontroller. In this project we use a fingerprint sensor to read ones identity to automatically operate the door. For this, we use a microcontroller to enable the door opening or closing if the matching between scanned data and the already existing data is correct. Comparison is done inside the fingerprint module itself and its output is given to microcontroller. Result is displayed in a LCD display whether the user is authorized or not. LCD also helps to make troubleshooting easier. Alarming option is provided to warn about an unauthorized usage, The entry time also will be recorded in the real time server so in case of physical damage to the device will not lose the login details of the pat days ,all the details are keeping inside a remote real-time server through a real time database

Wi-Fi based microcontroller

ESP8266

Power Supply

Wi-Fi module

Figure print module

Electronic Door lock

Display module

Real-Time Database