Microcontroller Based Home Security System

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Home security system is the best burglar deterrent you can have. Many people don't think about security at home until it is too late and they have become victims. The prime concern of this project is to provide total security. This microcontroller based home security with password door lock system feature can also perform day and night detection, laser beam monitoring system for windows, and magnetic monitoring for doors. Aside of providing total security, this project aims to utilize the homemade circuitry and build a low cost integrated home security system.

The system includes alarm system. Hence the security system will sound an alert when there is an attempt of break-in. The system is digital. It also incorporated a 7 segment display with a 4x3 keypad.

Home security system prototype make use of the 20pin At89c2051 microcontroller. The user is required to enter 5 digit pin to activate or deactivate the door lock security. The " # " serves as an enter key and The backspace by pressing " * " is implemented so that when the user enters a wrong password, this keys can be used to delete the previous entered pin. Windows and doors are monitored by laser beam and magnetic door sensor. If the beam and the magnetic door sensor get interrupted for a possible break-in, hence an alarm will sound and an array of light will blink.

This project is capable of light sensing using Light dependent resistor (LDR) and uses digital input output logic and analog information process. The LDR is attached to a voltage divider circuitry. By using Kirchhoff's law the voltage obtained and which we can use to measure the level of light. As result the system will automatically trigger the lights on during night and off during day time.

Here is a working demo of the project:

A special thanks to Romel L. Emperado (romel_emperado) of Philippines who submitted this project. I also want to wish him good luck for his future projects.