Home Automation System using Sonic Detectors

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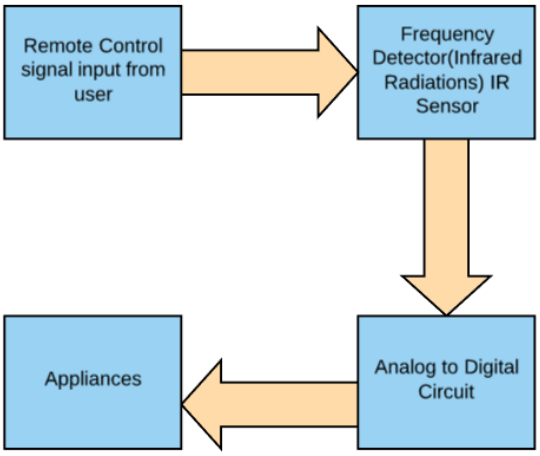
Introduction

Control your home appliances with a frequency operated remote, without getting out of your bed. You just have to press a button on the remote in the vicinity of the IR sensor used in this circuit, which you can keep by the bedside. You can switch on/off different electrical equipment (TV, fan, light, etc) in this way.



System Overview

The main features of the proposed/prototype circuit are: -

- Up to four devices can be operated in all sorts of combinations of ONs and OFFs. (Which can be logically extended to larger number of devices).
- To toggle the device's state, you need not shift yourself physically, only ensure that you have the remote with yourself.

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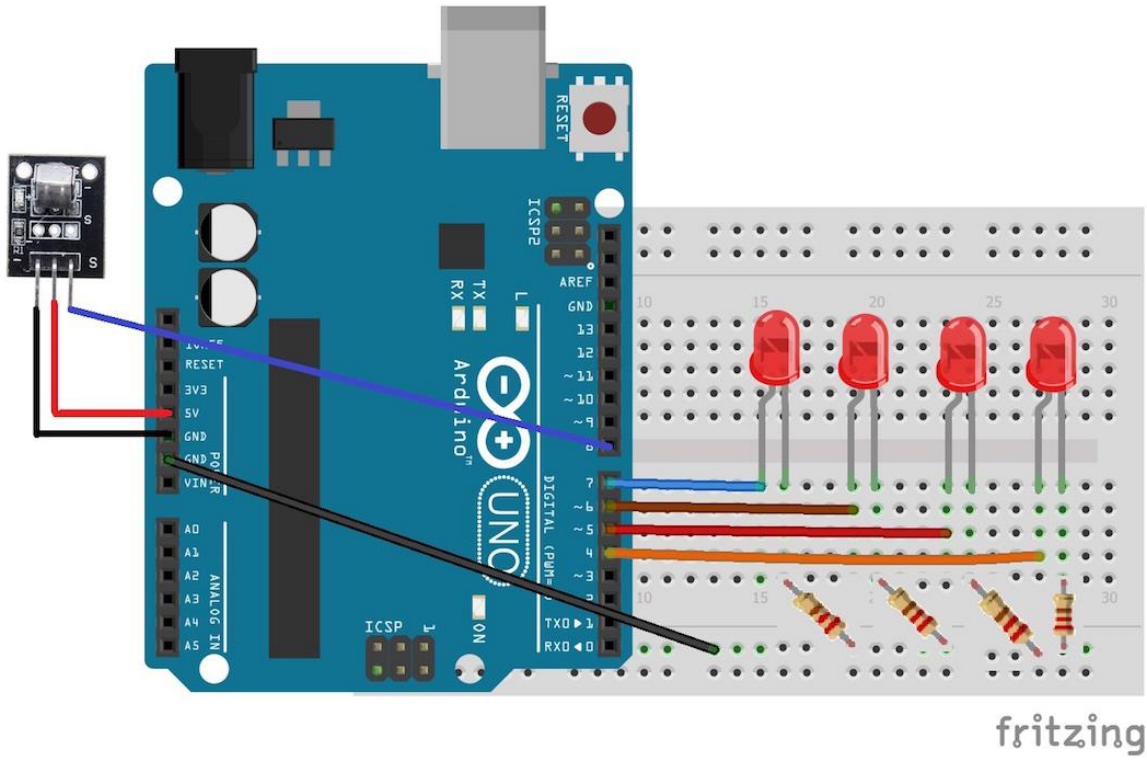
Circuit Design of the Module



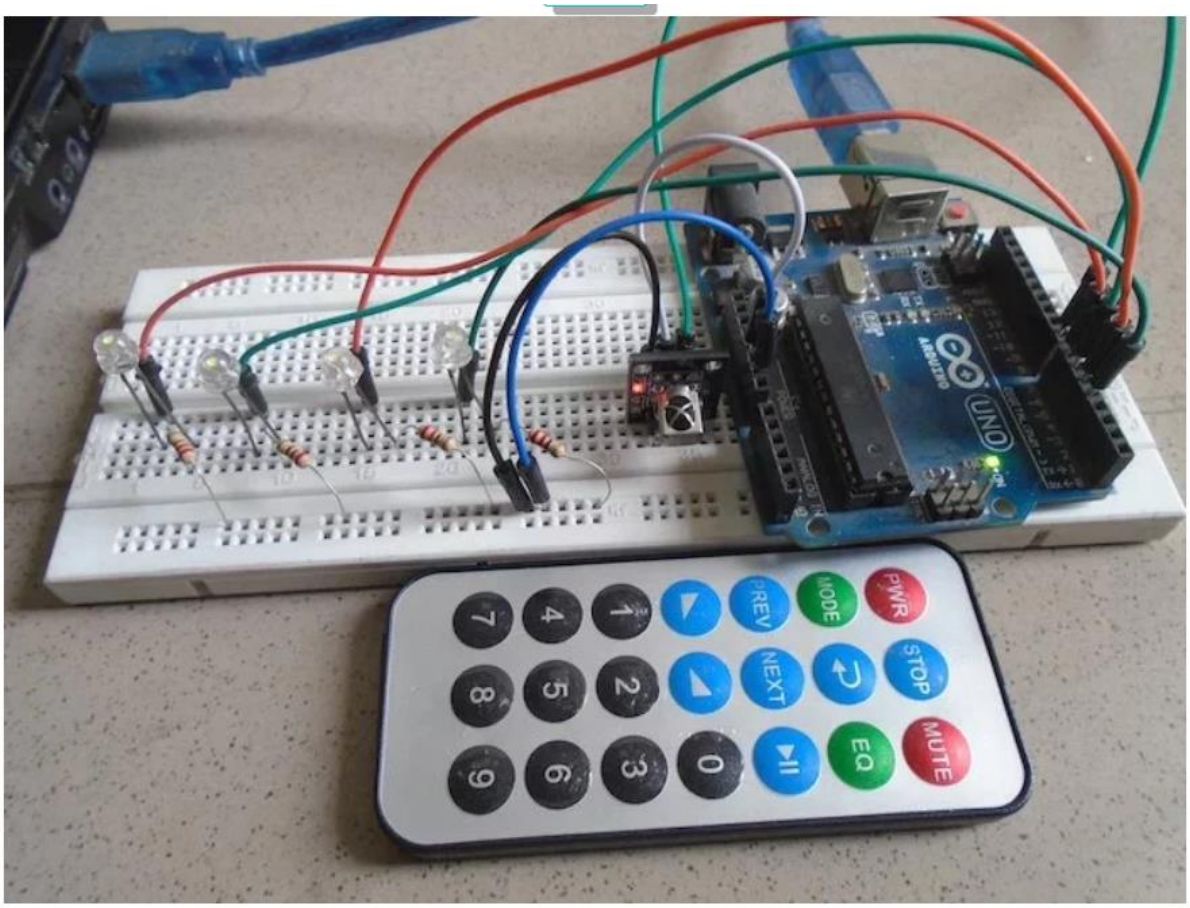
Implementation Details

First, connect the four LEDs to the Arduino. Connect the positives of the four LEDs to the pins 7, 6, 5, and 4. Connect the negative of the four LEDs to GND on the Arduino through the 220-ohm resistors. The longer wires on the LEDs are positive and the shorter wires are negative.

Then connect the IR sensor to the Arduino. The connections for the IR sensor with the Arduino are as follows:

- Connect the negative wire on the IR sensor to GND on the Arduino.
- Connect the middle of the IR sensor which is the VCC to 5V on the Arduino.

- Connect the signal pin on the IR sensor to pin 8 on the Arduino.



Expected Results

In this project, we are controlling LEDs using an IR sensor and a remote. The IR sensor is a 1838B IR receiver. Whenever a button on the remote is pressed, it will send an infrared signal to the IR sensor in the coded form. The IR sensor will then receive this signal and will give it to the Arduino.