Arduino based Industrial Appliances Control System by Decoding Dual Tone Multi-Frequency Signals via GSM Network

Team:- VICTORIOUS SECRET

PROJECT NAME :- INDUSTRIAL APPLIANCE CONTROL

Group members

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Abstract:-

In industries its appliances are spread over a large area and thus operating these loads is a very cumbersome and hard task. In agriculture fields also, pumps and other loads are connected over a large area and hence it is difficult for the farmer to operate all the loads and similarly for household appliances .Keeping this in mind we want to design a project which is based on arduino software and DTMF signals via gsm network.

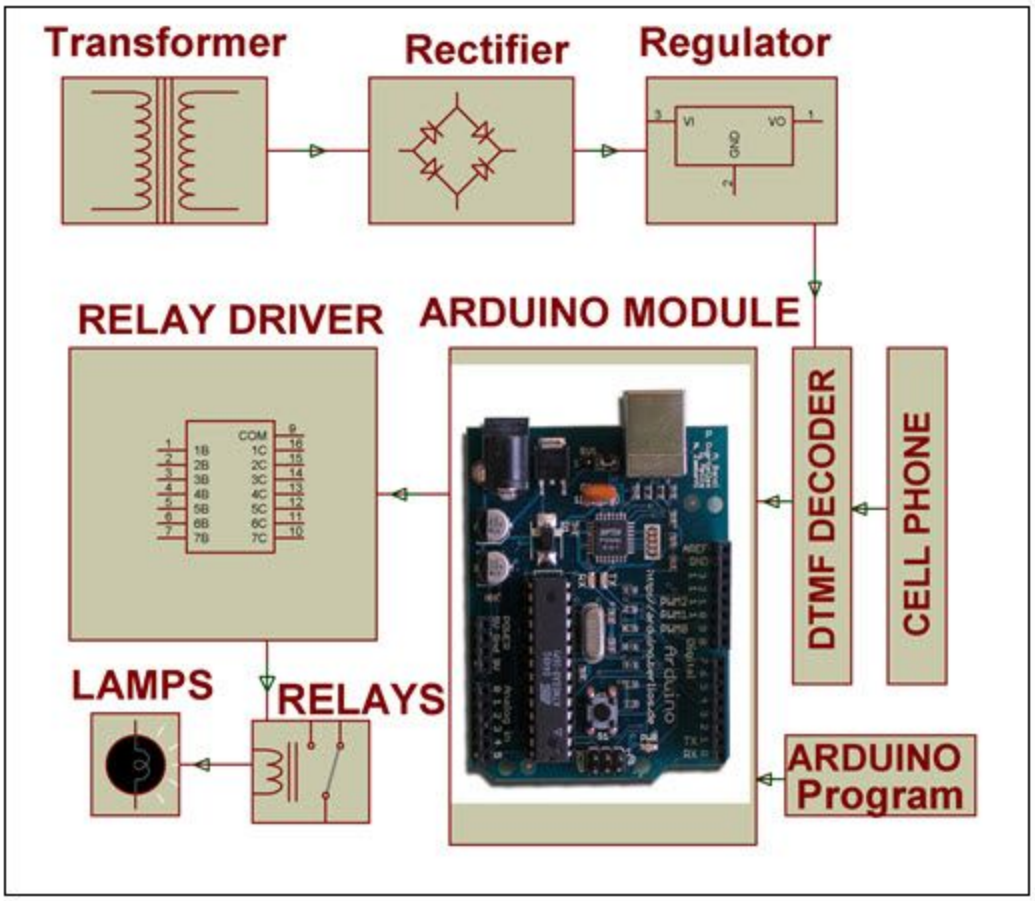
Structure:-

A cell phone is interfaced to a DTMF decoder in the system from its audio output socket for receiving tone commands. The receiving cell phone codes are converted into digital commands by a DTMF Decoder which will identify the frequency of the key and convert that frequency to its equivalent digital code which is then fed to the Arduino board.

As per the commands sent from the sender's mobile, the Arduino board sends signals through a buffer to actuate respective loads by turning the relays ON/OFF. These relays are actuated by a relay driver IC interfaced to the Arduino board.

Furthermore, this project can be enhanced by using a GSM modem, wherein the loads can be controlled by sending an SMS. This will eliminate the need for answering the call for the system to work.

Block diagram:-



Prerequisite knowledge :-

1.arduino programing language

2.dual tone multi frequency decoder

Timeline:-

Week 1:-consulting with seniors, mentors and decide the action plan. Simultaneously researching and learning about arduino programing language , DTMF decoder.

Week 2:- purchasing all essential parts, constructing the mechanical parts required, programing the arduino development board.

Week 3-4:- programing the arduino development board, connecting it with the DTMF decoder and the DTMF decoder to cell phone.
Week 5-6:- assembling all the part , bugs and checking its function.

Cost:-

Component required:-

Hardware Requirements

- **Arduino Develop Board**
- **Transformer**
- **DTMF Decoder**
- **Relays**
- **Relay Driver IC**
- **Inverter IC**
- **Voltage Regulator**
- **Crystal**
- **Diodes**
- **Resistors**
- **Capacitors**
- **Lamps.**

Software Requirements

- **Arduino software**
- **Languages: Arduino Programming language**

Combining all the rate of above hardware requirements nearly the estimated cost will be 10000/-INR