**AUTOMATED ELECTRICAL FAULT RECOGNITION SYSTEM**

**Problem statement:-**

Generally In colleges there are many faulty appliances in classrooms or in Laboratories which goes unnoticed and the problem persists for a long time. As a result the appliances are left unrepaired.Many of these appliances remain faulty because of some electrical faults.

**Solution:-**

This project aims at sending a message either in the form of mail or a text message to the concerned authority informing about the location of the faulty appliance.

**Abstract:-**

This project consists of the following main components:-

* NodeMCU
* SMTP protocol
* Relay
* Current sensor

At first it was checked whether the switch is kept ON/OFF. This was checked using relay driver.Then a current sensor was connected in series with the electrical appliance such that if any current passes through the appliance also passes through the current sensor showing that the circuit as well as the electrical appliance is working in good condition. If no current passes through the current sensor then the fault can be either in the circuit or the electrical appliance.

The program for the project is written in such a way that as soon as the current sensor reads a zero value it triggers the nodeMCU to send a mail to the concerned authority via SMTP protocol.For this we need to include the sender’s email address and the password and also the receiver’s email address.Atlast, the email is sent to the concerned authority notifying him/her about the problem as well as the location of the faulty appliance.

We have also solved a problem where if the appliance gets short-circuited, current flows through it which is not desired as it will not send a mail to the authority even if their is a problem in the circuit.This problem is solved by using a fuse to the main circuitry that will not allow high current to pass through the appliance preventing the main cause for short circuit in an appliance.

**Future enhancement:-**

This project aims at notifying the authorities about the faulty appliances which remain unnoticed.It’s use can also be extended to the use in hospitals, malls, etc. where keeping track of all the running appliances is a difficult task.

We can connect many appliances through a single network and in addition to that we can send messages to the authorites contact number using APIs like twilio etc.