Sarvajanik Collage of Engineering and Technology

Computer Engineering department

PROJECT ON
"MOTION SENSED LIGHT"
(UNDER IOT CLUB)

Organized By

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About the Project

In our library we observe that lights are continuously on during the whole college hours(8 hrs a day atleast) ,but there is no need of that as student are not there in search of book all the time(e.g. while lecture hrs) so it need not to be on whole the time. As a result, there is a wastage of electricity a lot.

The solution is that, we created a device based on motion sensor, that will activate the lights when there is a movement in its range. And when the motion is stopped then lights will off with in some time.

So we basically use below listed components.

- PIR(Passive Infrared) sensor
- Relay
- Jumping Wire
- Rectifier and transformer(for 220 V ac to 5 V dc)

Circuit diagram

230 V ac

Transformer + Rectifier
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5 V DC

PIR
- +
- S
- −

Relay
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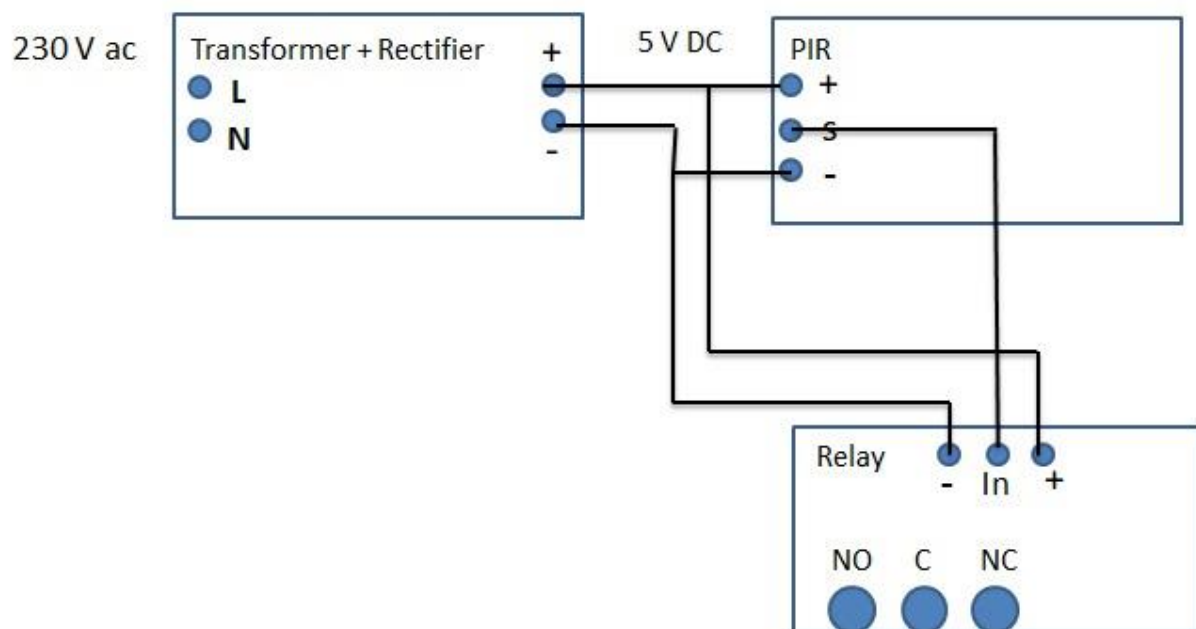
Prototype Phase

so, what we basically did is that, we sensed the motion using the sensor named PIR passive infrared   sensor, as it detect the motion it gives signal to relays connected to it, now what relays do is that, it will work as a switch for the 230V AC side.

So as signal is detected relay will switch on the AC load connected to it.

PIR:

It comes with wide specs ….

What we used is the one of two config i.e., H type config of PIR, what it basically does is it sense the motion on first go …. Then if within the specified time if another motion is detected then the timer resets and count from very beginning, so we can say that, till the time someone is searching the book the lights will be on and after the last motion detected by the PIR motion sensor lights will turn off after the timer completes.
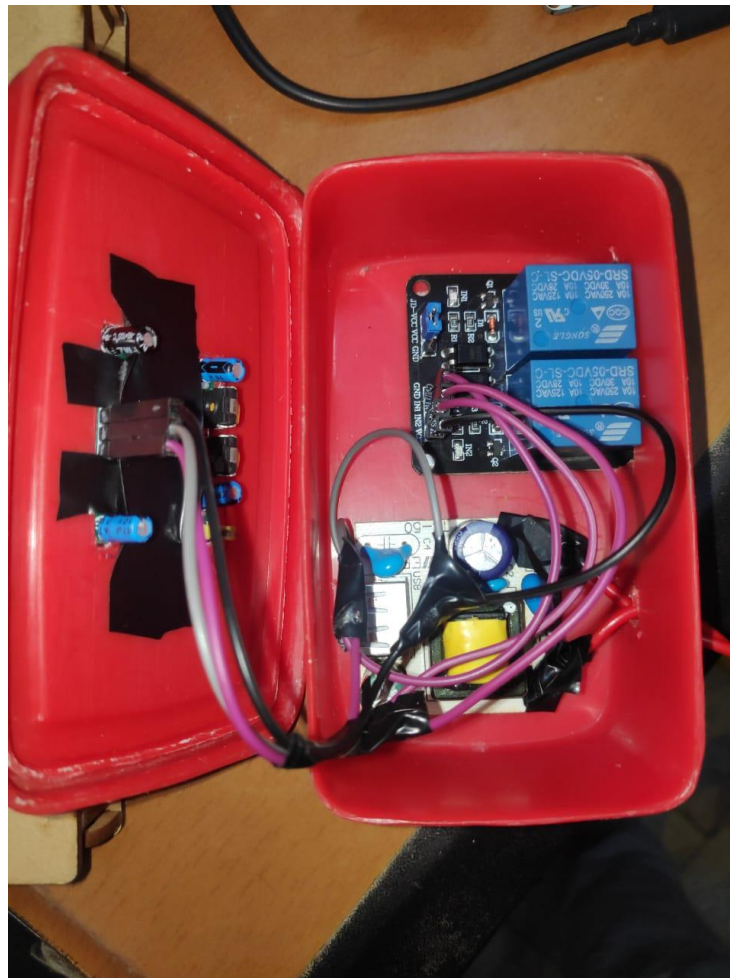
We worked for this project nearly 2-3 days. And after that we deploy that prototype in library to observe the behavior of device in real time. On the 3rd day of deployment librarian give us a review that the timer is so fast that once the lights starts it offs too early. So, at that time we increase the timer setting form 8 sec to 80secs …after that on 7th or 8th day we took the review again and all is working well.

Future Scope for project

- We can use this to automate all the lights where it is appropriate places such as toilets, lobbies, library etc.

Some experience while doing project

Actually, we found that data sheet is good to go with…. while doing project. What we did early is …...we decided to use esp32 to sets the delays as required…...and after we go through the data sheet, we found that all timing and sensitivity changes can be done on module only(lol!!!!) ….so, in a nutshell, do consider datasheet.

Members involved

- Dobariya Manav
- Kumbhani Abhishek
- Patadiya Brijesh