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PIR MOTION SENSOR USING ARDUINO UNO BOARD

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ABSTRACT

*This paper proposes a **PIR Motion Sensor** Switch which can detect the Infrared Rays released by human body. The light or any other electrical appliance can be activated automatically by the active presence of a human body within the detection range / coverage area & when there is no presence the light will be deactivated automatically. PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. They are small, inexpensive, low-power, easy to use and don't wear out. For that reason they are commonly found in appliances and gadgets used in homes or businesses. They are often referred to as PIR, "Passive Infrared", "Pyro-electric" or "IR motion" sensors.*

***Keywords*: Arduino UNO, PIR sensor, Relay, Diode, Buzzer.**

I.INTRODUCTION

The **PIR Motion Sensor** Switch can detect the Infrared Rays released by human body. The light or any other electrical appliance can be activated automatically by the active presence of a human body within the detection range / coverage area & when there is no presence the light will be deactivated automatically.

PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. They are small, inexpensive, low-power, easy to use and don't wear out. For that reason they are commonly found in appliances and gadgets used in homes or businesses. They are often referred to as PIR, "Passive Infrared", "Pyroelectric", or "IR motion" sensors.

For many basic projects or products that need to detect when a person has left or entered the area, or has approached, PIR sensors are great.

They are low power and low cost, pretty rugged, have a wide lens range, and are easy to interface with.

Note that PIRs won't tell you how many people are around or how close they are to the sensor, the lens is often fixed to a certain sweep and distance

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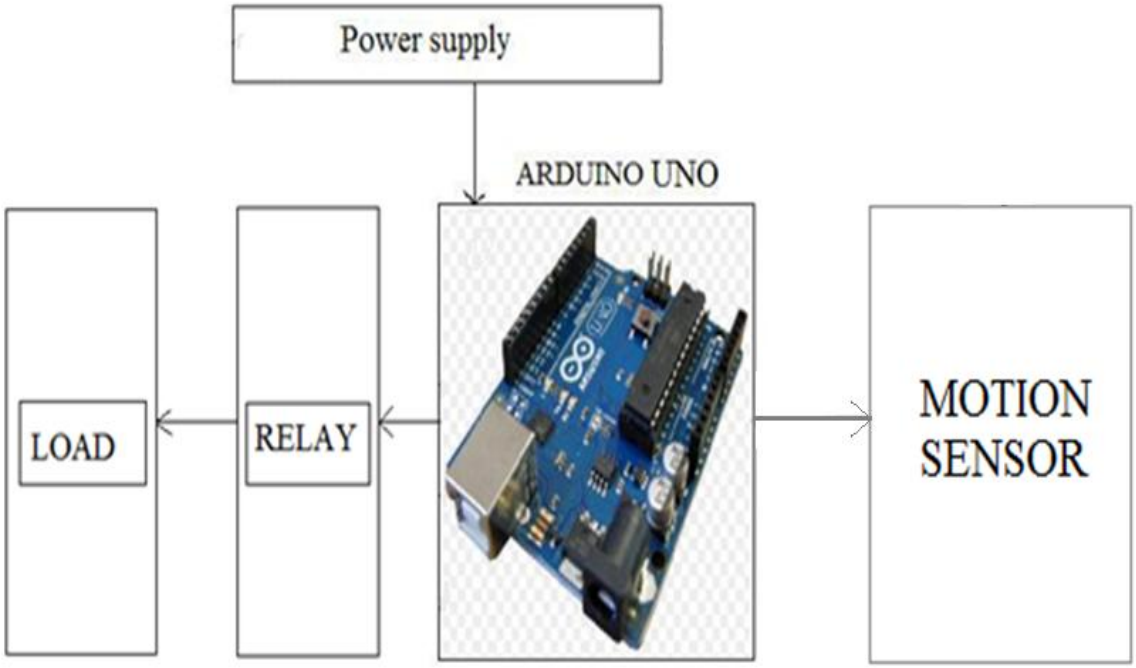
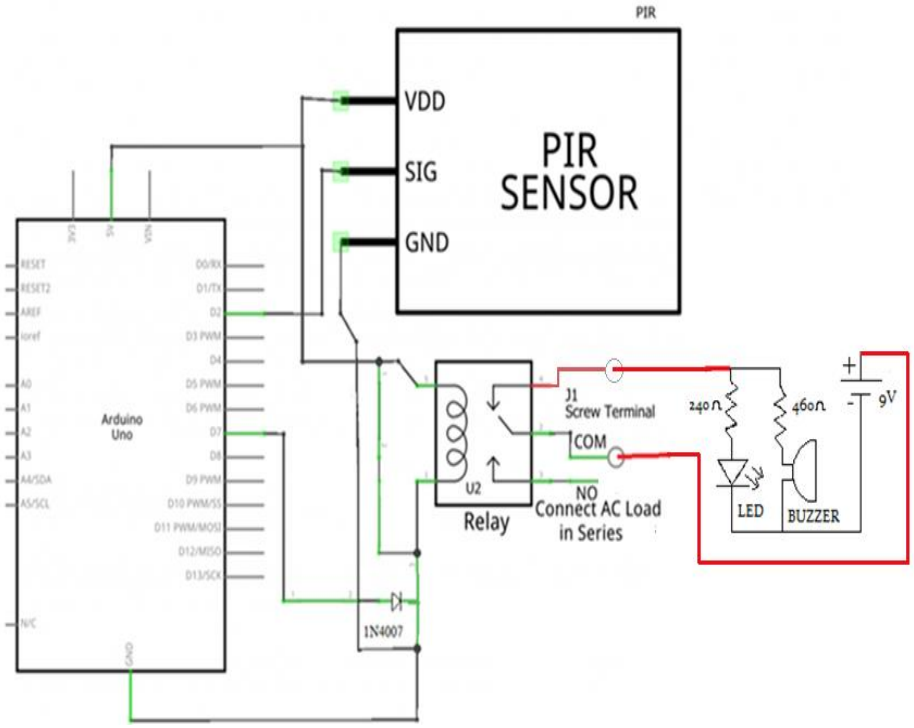
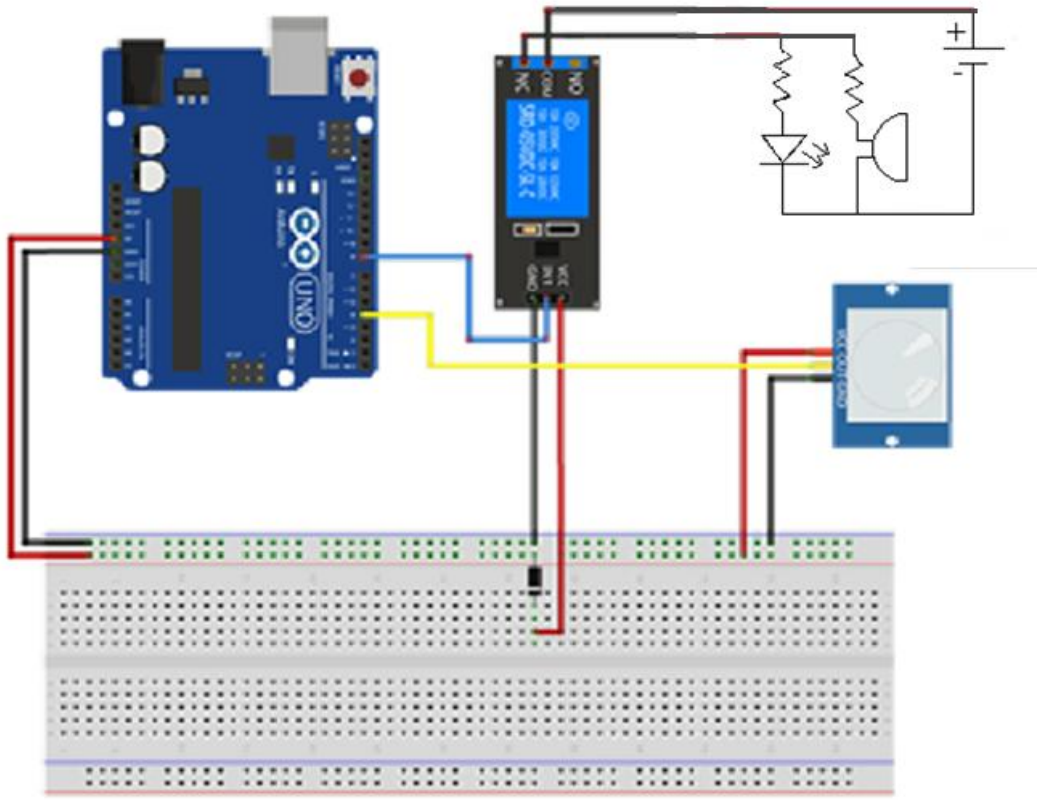
II.BLOCK DIAGRAM



III.CIRCUIT DIAGRAM



IV.SCHEMATIC DIAGRAM



V.OPERATION

The proposed system can be used in situations where a house, hospitals that wherever the blind person are living in the place.

The **PIR Motion Sensor** Switch can detect the Infrared Rays released by human body. The light or any other electrical appliance can be activated automatically by the active presence of a human body within the detection range / coverage area & when there is no presence the light will be deactivated automatically.

VI.HARDWARE REQUIREMENTS

- Arduino UNO
- PIR Motion Sensor
- 5V DC / 230V AC Relay
- Buzzer
- LED

- Diode(1N4007)
- Breadboard
- Connecting Wires
- Supply.

VII.SOFTWARE REQUIREMENTS

- Arduino IDE
- Eclipse Android SDK(Software Development Kit)Keil IDE

VIII.ADVANTAGES

- PIR Motion Sensors will itself recover its cost by reducing your electricity Bills and further save your electricity cost for the future.
- Very easy installation and can be installed by in-house technician itself.
- No separate wiring is required hence no additional installation cost.
- No modification is required and compiles with current aesthetics.

IX.DISADVANTAGES

- Radio frequency at high power is harmful for humans (active type).
- Passive motion sensors do not operate above temperature of 35℃.
- Passive type is insensitive to very slow motion of the object.
- Any kind of moving object can trigger the PIR sensor type.

X.APPLICATIONS

- Used in locker systems
- Used in Banks
- All outdoor Lights
- Lift Lobby
- Multi Apartment Complexes
- Common staircases

- For Basement or Covered Parking Area
- Shopping Malls
- For garden lights.

XI.CONCLUSION

Hence this experiment "PIR MOTION SENSOR USING ARDUINO & RELAY MODULE" has been verified successfully.

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