



University of Dar es Salaam

# Wireless Lighting System



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## Aim of the Project

- The aim of this project is to design and implement a wireless lighting system that will be used at homes, offices and industries.
- It is a remote controlled AC bulb.
- The project can be used by people with disabilities, people who are not able to step on a wall switch and those who have low access to switches at a distance.



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## Components involved

- Arduino UNO R3 Board
- Relay
- AC Bulb
- IR Receiver sensor
- Jumpers and connecting wires
- AC power source (Socket)
- Breadboard (for prototyping)



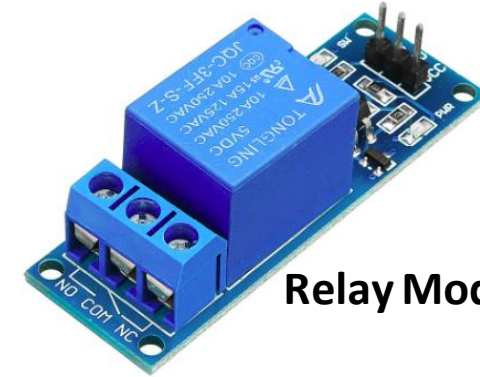
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**IR Receiver sensor**



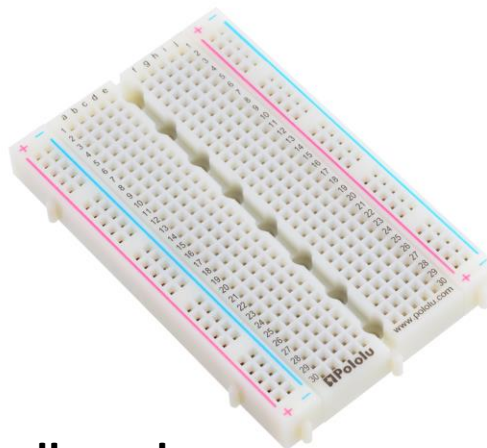
**Arduino UNO R3 board**



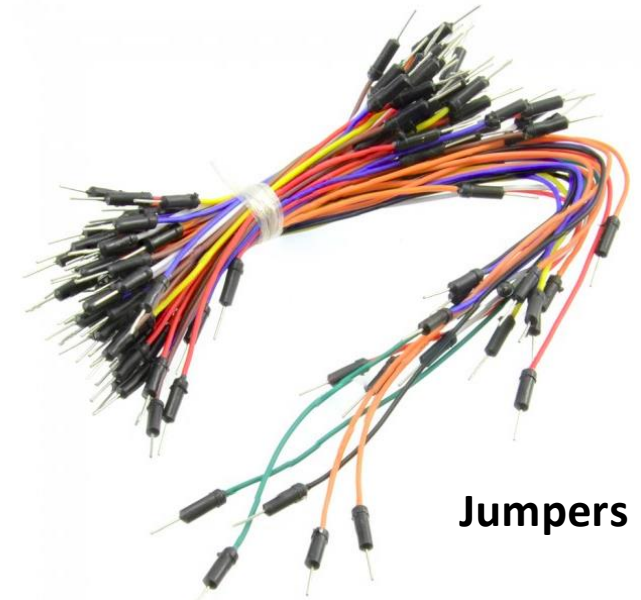
**Relay Module (1 ch)**



**AC Bulb**



**Breadboard**



**Jumpers**

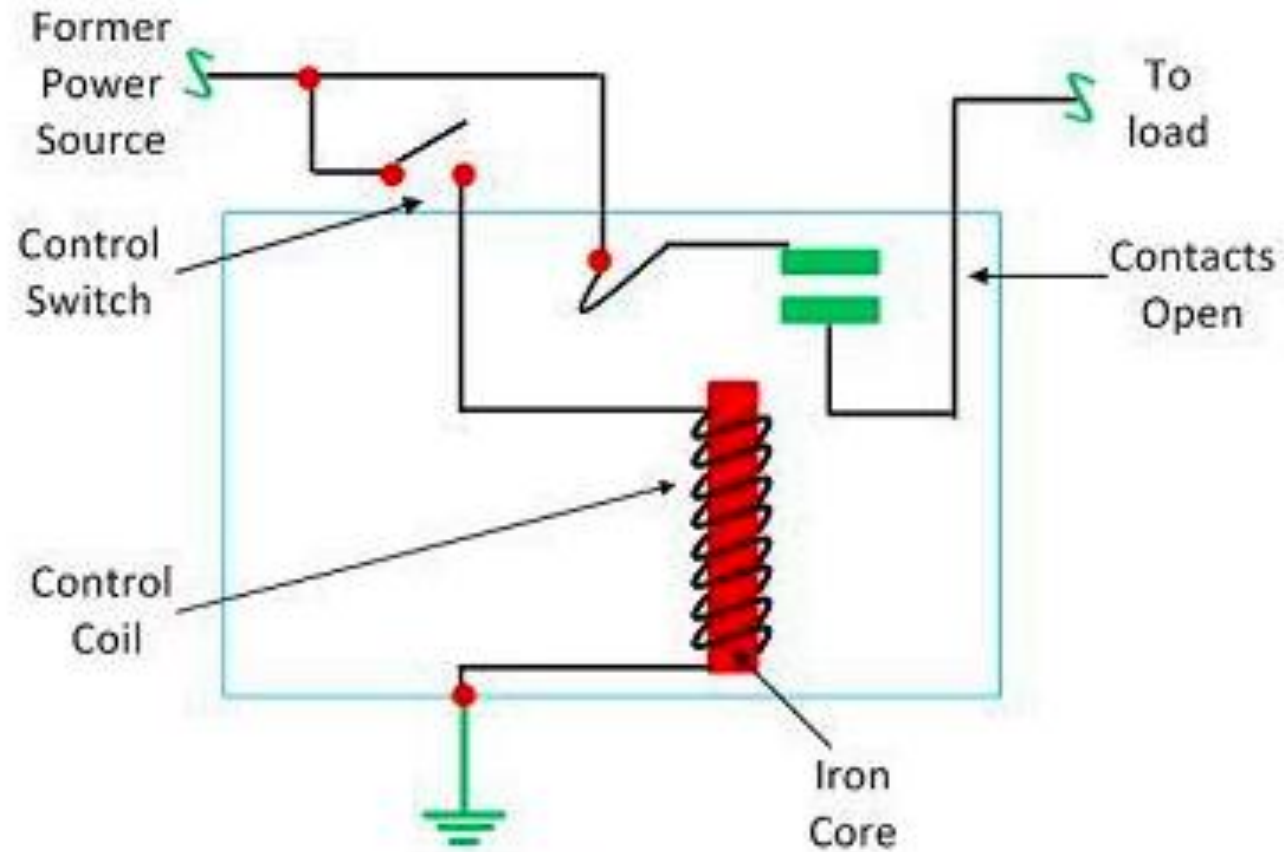


## Working Principle of a Relay

- It works on the principle of an electromagnetic attraction.
- When the circuit of the relay senses the fault current, it energises the the electromagnetic field which produces the temporary magnetic field.
- This magnetic field moves the relay amarture for opening of closing the connection.



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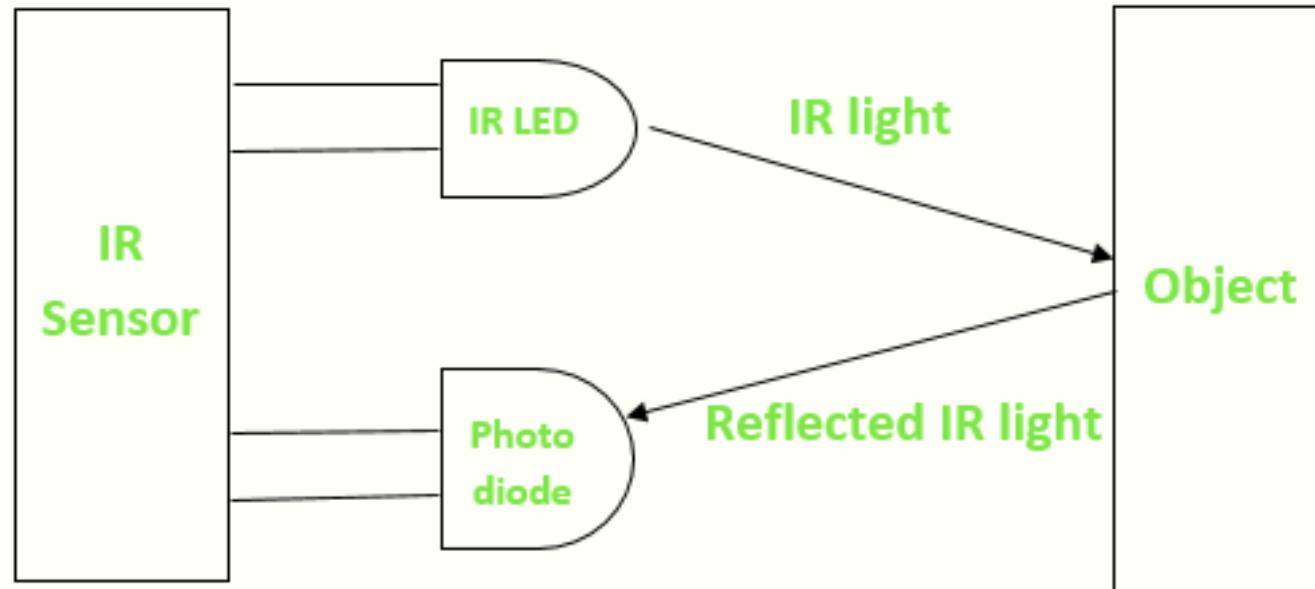


## Working Principle of IR Receiver Sensor

- IR Receiver is also called a photodiode.
- The emitter is an IR LED and the detector is an IR photodiode.
- The IR photodiode is sensitive to the IR light emitted by an IR LED. The photodiode's resistance and output voltage change in proportion to the IR light received.



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