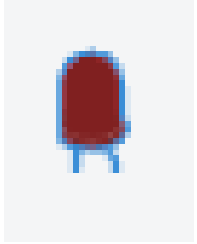
Project Details

Create a burglar alarm – detect motion of a person (using a PIR sensor). If there is motion, ring the buzzer.

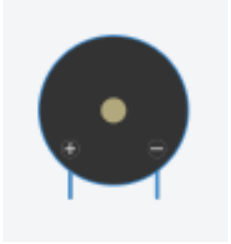
Components used and its description

Name	Quantity	Component
U1	1	Arduino Uno R3
PIR1	1	310.42949326143435 , -89.10222575516691 , -32.23998251370246 PIR Sensor
D1	1	Red LED
R1	1	1 kΩ Resistor
PIEZO1	1	Piezo

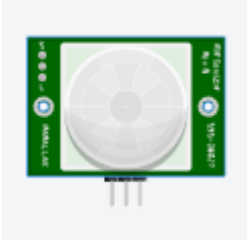
Resistor



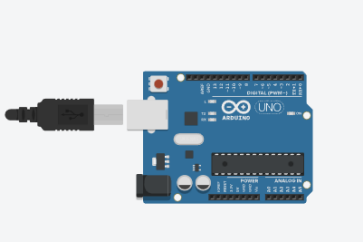
LED



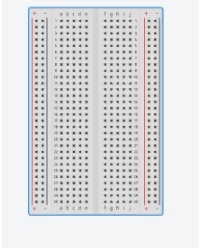
Buzzer



PIR Sensor

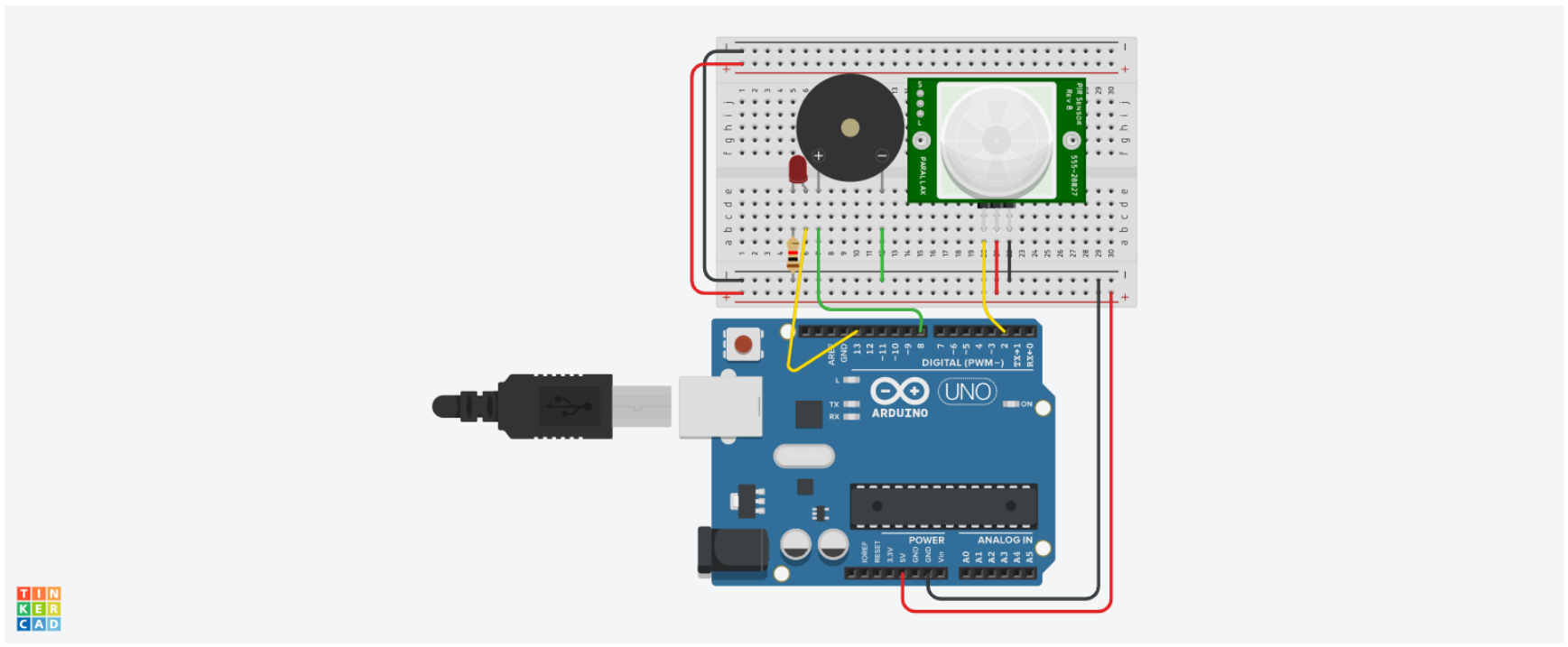


Arduino Uno

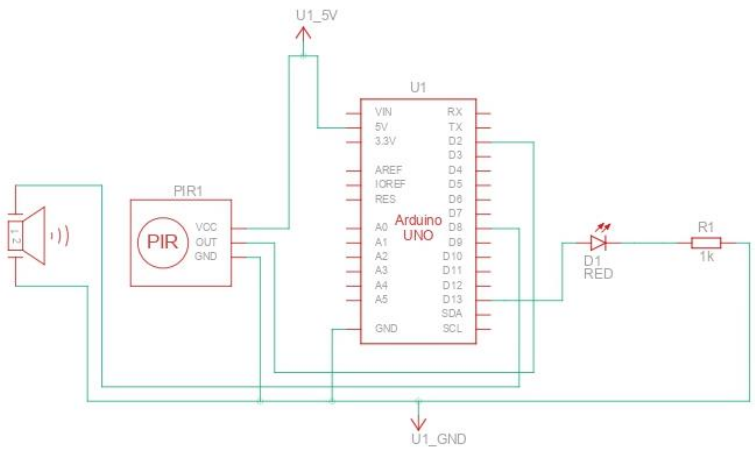


Breadboard

Circuit diagram

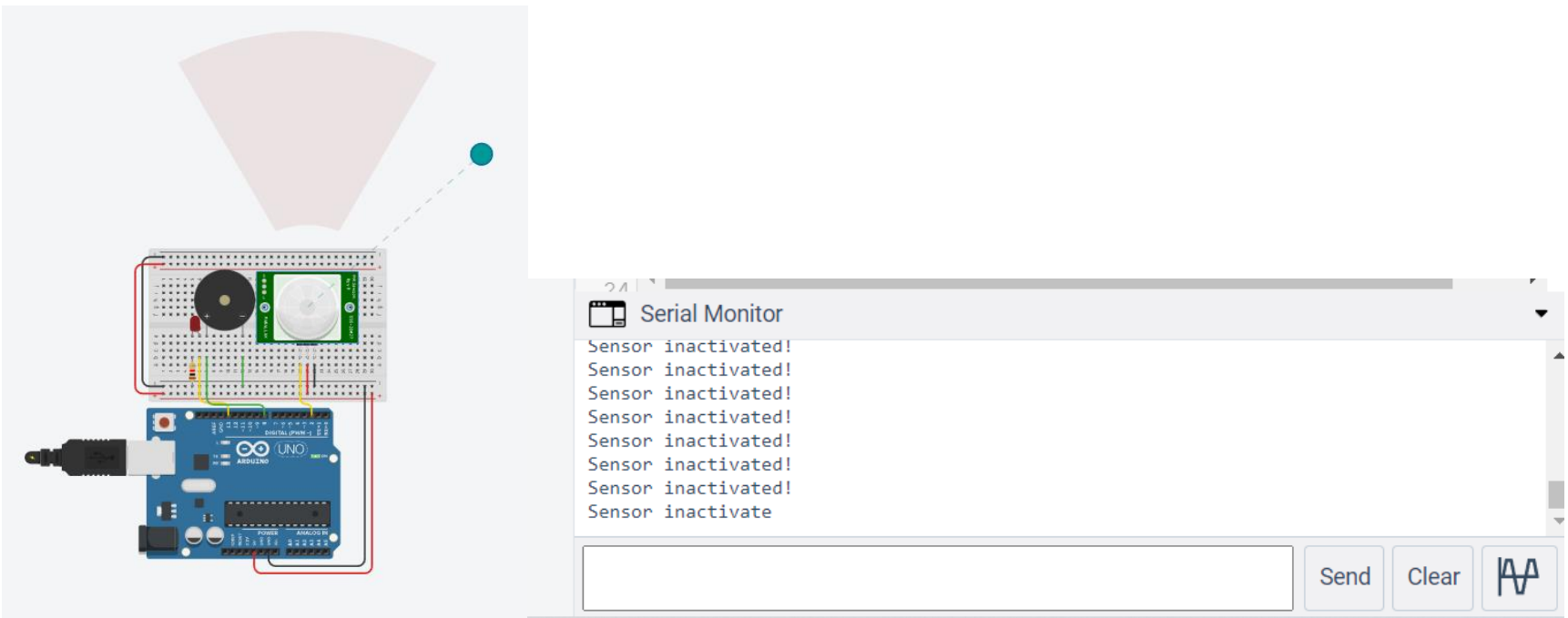


Schematic Diagram

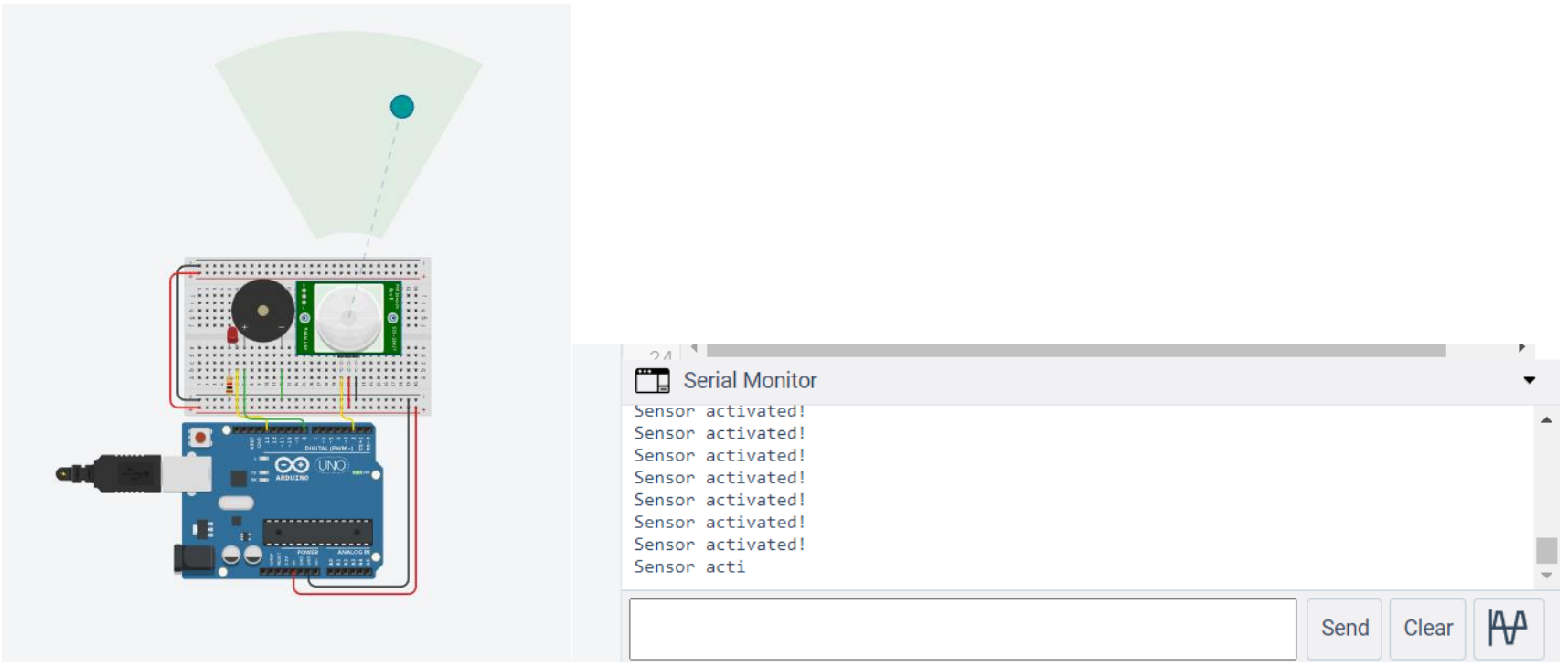


Simulation Results :-

If any motion is detected by PIR Sensor, it prints “Sensor activated!” on the serial monitor, buzzer starts to ring and LED lights up. If no motion is detected by PIR Sensor, it prints “Sensor inactivated!” on the serial monitor.



When no obstacle is detected, serial monitor prints “Sensor inactivated!” and neither LED glows up nor buzzer rings.



When an obstacle is detected, serial monitor prints “Sensor activated!” and both LED glows up and buzzer rings.

Any other applications with the components (optional)

This PIR Sensor can find its application in many places. This technology can be used in automated water taps which senses hands motion below it and allows water flow out of it. This technology can also be used at counting number of people who have crossed the door to enter a room to keep an estimate of number of people.

Conclusion

PIR sensor detects any movement in its range of influence and rings the buzzer and lights up the LED. It cannot identify what object moved but tells only that a movement occurred.

References

https://www.arduino.cc/

https://www.arduino.cc/reference/en/

https://create.arduino.cc/projecthub/techvaler/burglar-alarm-using-pir-sensor-f979d3

https://youtu.be/1sw4EwbxCCM