**Ultrasonic Sensors:**

#include <HCSR04.h>

// defines pins numbers

int trigPin = 9;

int echoPin = 10;

// defines variables

long duration;

int distance;

void setup() {

pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output

pinMode(echoPin, INPUT); // Sets the echoPin as an Input

Serial.begin(9600); // Starts the serial communication

}

void loop() {

// Clears the trigPin

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

// Sets the trigPin on HIGH state for 10 micro seconds

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

// Reads the echoPin, returns the sound wave travel time in microseconds

duration = pulseIn(echoPin, HIGH); }

**Bluetooth:**

#define ledPin 7

int state = 0;

void setup() {

pinMode(ledPin, OUTPUT);

digitalWrite(ledPin, LOW);

Serial.begin(38400); // Default communication rate of the Bluetooth module

}

void loop() {

if(Serial.available() > 0){ // Checks whether data is coming from the serial port

state = Serial.read(); // Reads the data from the serial port

}

if (state == '0') {

digitalWrite(ledPin, LOW); // Turn LED OFF

Serial.println("LED: OFF"); // Send back, to the phone, the String "LED: ON"

state = 0;

}

else if (state == '1') {

digitalWrite(ledPin, HIGH);

Serial.println("LED: ON");;

state = 0;

}

}