## **IOT LAB CONSOLIDATED REPORT**

**USN:1BM18CS142** 

## Name – Vivek Rajeev

Program No. – 01

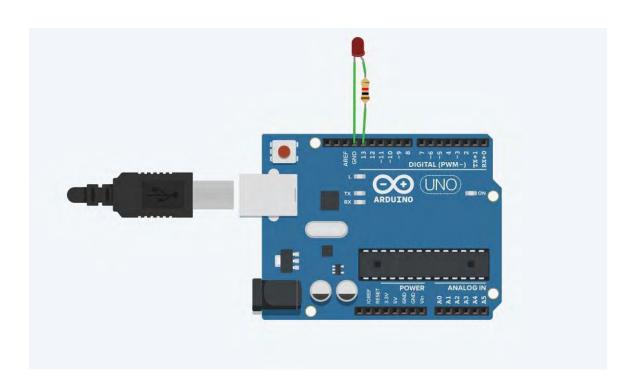
Program Title - LED Blinking

#### AIM

Turn the LED on for a second, then off for a second, repeatedly.

### **HARDWARES REQUIRED**

- Arduino Board
- LEDs



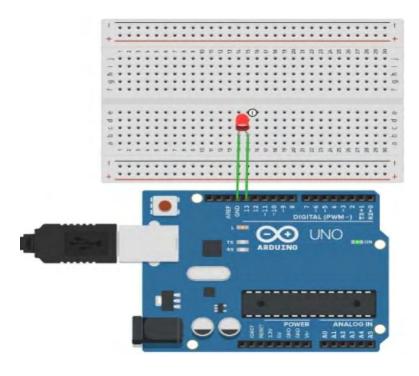
	IOTLAB	VIVER RAJEEV 1BM18CS142	
1)	Blink program ->	200	
	void setup () { pinMode (13, OUTPUT); }		
	void loop () { digitalWrite (13, HIGH); //		
	delay (1000); // Wait for 1000 milliseconds  digital write (13, LOW); // two the LED OFF  delay (1000); // WAIT FOR 1000 milliseconds		
	dolay (1000) // WITH NOT	(OOO MINISECONO)	
	UNO AROUNO		
		Jun -	

```
void setup()
{
  pinMode(13, OUTPUT);
}

void loop()
{
  digitalWrite(13, HIGH);
  delay(1000); // Wait for 1000 millisecond(s)
  digitalWrite(13, LOW);
  delay(1000); // Wait for 1000 millisecond(s)
}
```

## **OUTPUT**

The LED was found to be blinking at an interval of 1000 ms.



# Name – Vivek Rajeev

Program No. – 02

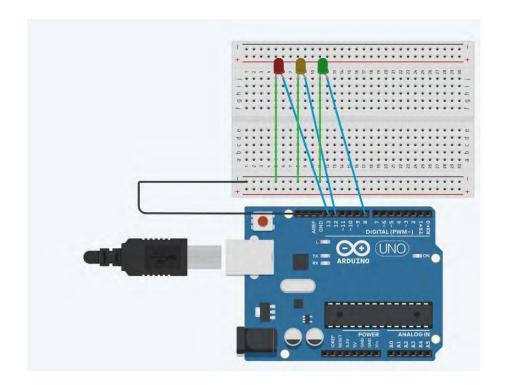
Program Title – Traffic Controller

### **AIM**

Traffic Signal Simulator.

## **HARDWARES REQUIRED**

- Arduino Board
- LEDs
- Breadboard



	IOT - LAB	VIVEK RAJEEV 1BM18CS142
2)	Traffic Light	
	void setup ()	
	{ Sonial b = in (9600).	
	Serial-begin (9600); pinMode (13,0UTPUT);	
	prinmode (12, OUTPUT).	
	pinMode (11,0UTPUT); 3	
0	void loop ()	
	<b>\{</b>	
	digital Write (13, HIGH);	
	digital Write (12, LOW);	
	digital write (11, 10w);	
	delay (5000);	
	digital write (13, LOW);	
	digital write (12, 1+16+1); digital write (11, LOW);	
	delay (1000);	
	digitalurite (13, Lau);	
-	digital write (12, LOW);	
	digital write (12, 2000)	
	digital Write (11, HIGH);	
	anny (sees)	
	BREAD BOARD	
	Some	
	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	S AKONINO S C	
	TES -	
		1- 8
		Ma

```
void setup()
{
  pinMode(13, OUTPUT);
  pinMode(12,OUTPUT);
  pinMode(8,OUTPUT);
}

void red()
{
  digitalWrite(13, HIGH);
  digitalWrite(12,LOW);
```

```
digitalWrite(8,LOW);
}
void yellow()
{
 digitalWrite(13, LOW);
 digitalWrite(12,HIGH);
 digitalWrite(8,LOW);
}
void green()
{
 digitalWrite(13, LOW);
 digitalWrite(12,LOW);
 digitalWrite(8,HIGH);
}
void loop()
{
 red();
 delay(3000);
 yellow();
 delay(1500);
 green();
 delay(3000);
```

```
yellow();
delay(1500);
}
```

# OUTPUT

All the three LEDs blink one after the other at an interval of 1000ms.

## Name – Vivek Rajeev

Program No. – 03

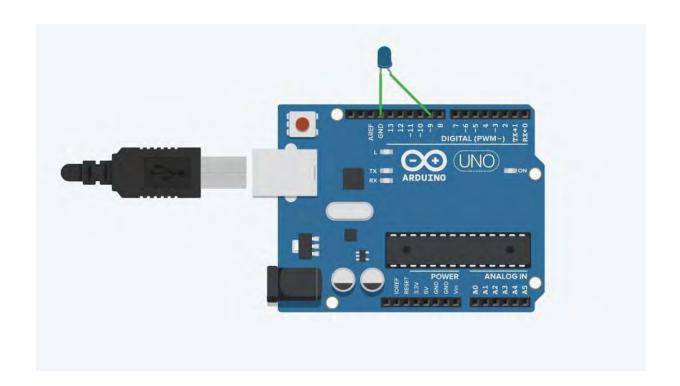
Program Title – LED fading without potentiometer

### **AIM**

Demonstrate to show LED fading.

## **HARDWARES REQUIRED**

- Arduino Board
- LED bulb



```
PROGRAM : 3 - FADING LED USING POTENTIOMETER
                                                    VIVEK RAJEEV
                                                    18M18CS142
Alm: Demonstrate a fading LEO (analog output)
HARDWARE REQUIREMENTS: Ardwino Board, LED, connecting wine, resistor
CIRCUIT DIAGRAM :
                         POTENTIOMETER
 CODE :
      void setup ()
     { Serial - begin (9600)
       pin mode (9,00 TPUT); }
      void loop ()
    { int analog = analog Road (AO);
       int brightness = map (analog, 0, 1023, 0, 255);
      analogwnite (a, brightness);
      Sonial - print (" \n Analog Values: ").
       Sonial print (analog):
      Sorial . print ("In Brightness value");
      Serial · print (brightness); }
```



```
void setup()
{
 pinMode(2, OUTPUT);
}
void loop()
{
 for(int fade =0;fade <=255; fade+=5)
 {
  analogWrite(9,fade);
     delay(30);
 }
 for(int fade = 255; fade>=0;fade-=5)
 {
     analogWrite(9, fade);
  delay(30);
 }
```

}

# OUTPUT

Fading of LED.

## Name – Vivek Rajeev

Program No. – 04

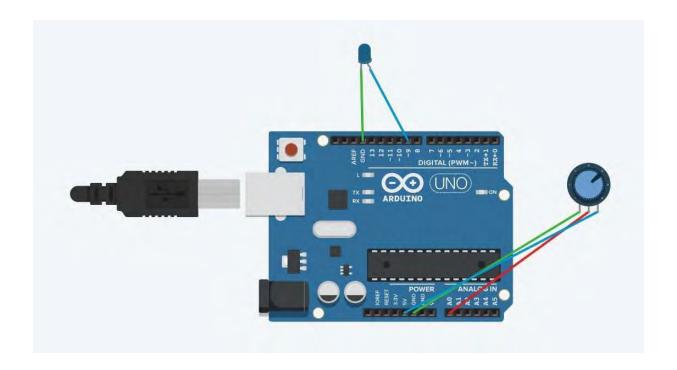
Program Title – LED fading with potentiometer

AIM

Demonstrate to show LED fading(analog output).

## **HARDWARES REQUIRED**

- Arduino Board
- LED bulb
- Potentiometer



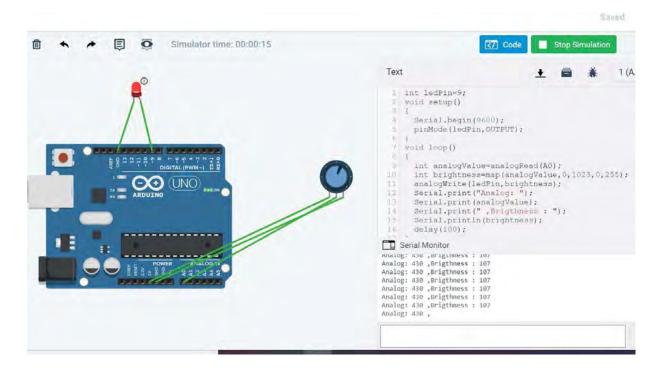
```
PROGRAM:4 - FADING LED
                                                   VIVEK RAJEEV
                                                   IBMIECS 142
Am: Demonstrate facting of a LED
HARDLUARE REDUIRED: Arduino Beard, LED, Connacting Wire, nessister
Circuit Diagram:
 CODE :
    int brightness = 0
    void setup ()
      pinModo (11) obomnid
    () doop bion
   { for (brightness = 0; brightness < = 255; brightness + = 5)
      ¿ (analogularite (1), brightness).
        delay (30); 3
     for (brightness = 255; brightness > =0; brightness = 5)
      { analog Write (11, brightness);
        delay (30); 3
```

```
int LED_PIN = 9;
void setup()
{
 Serial.begin(9600);
 pinMode(LED_PIN, OUTPUT);
}
void loop()
{
 int analogValue = analogRead(A0);
 int brightness = map(analogValue, 0, 1023, 0, 255);
 analogWrite(LED_PIN, brightness);
 Serial.print("Analog: ");
 Serial.print(analogValue);
 Serial.print(", Brightness: ");
 Serial.println(brightness);
```

```
delay(100);
}
```

#### **OUTPUT**

Fading of LED with potentiometer.



## Name – Vivek Rajeev

Program No. – 05

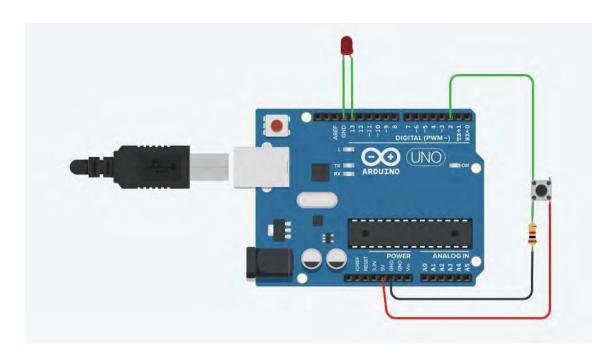
Program Title – ON/OFF LED using Push Button

### **AIM**

Demonstrate to show ON/OFF of a LED using push button (Digital Output).

### **HARDWARES REQUIRED**

- Arduino Board
- LED bulb
- Push Button
- Resistor



PROGRAM NO: 5 - LED USING PUSH BUTTON VIVEK RAJEEN 18M18CS142 AIM: Demenstrate to show ON/OFF of a LED using puch button HARDWARE REQUIREMENTS: Andumo Board, LED, bush button, resisten CIRCUIT DIAGRAM : 555558 CODE : int buttonstate = 0 void setup () ¿ pinMade (13, OUTPUT); pin Made (2, INPUT); 3 void loop () { buttonstate = digital Read (2); if (button State = = HGH) { digital write (13, HIGH); } else { digitallunite (13, 1000); }

```
int buttonstate=0;
void setup()
{
 pinMode(13, OUTPUT);
 pinMode(2, OUTPUT);
}
void loop()
{
 buttonstate=digitalRead(2);
 if(buttonstate == HIGH)
 {digitalWrite(13,HIGH);}
 else
 {digitalWrite(13,LOW);}
}
```

### **OUTPUT**

ON/OFF of a LED using push button (Digital Output).

## Name -Vivek Rajeev

Program No. – 06

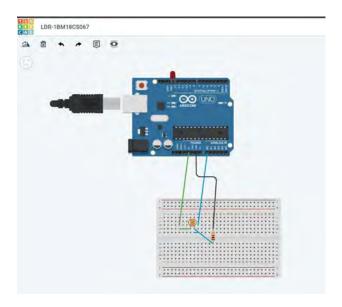
Program Title – LDR

#### **AIM**

Demonstrate to show on/off of a LED using LDR night light simulation.

### **HARDWARES REQUIRED**

- Arduino Board
- Photoresistor
- Resistor
- LED
- Breadboard Small



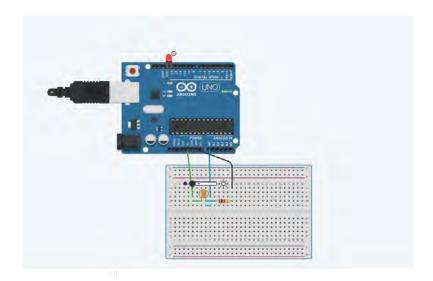
```
VIVEK RAJEE V
PROGRAM NO: 6 - ON/OFF LED USING LOR
                                                   IBM ISCS 142
AIM: Demonstrate to show ON /OFF OF a LED
    using LDR - NIGHT LIGHT SIMULATOR
HARDWARE REQUIREMENTS: ARDUIND BOARD LEd, broad board, resisten,
                        connecting wire, photoresisten
CIRCUIT DIAGRAM :
         REF
CODE :
    const int ledPin = 8;
    comst int edition = AO;
    void setup ()
    { Sonial - begin (9600);
      pinnode (ladein, OUTPUT);
      primode Clarain, INPUT); 3
    () deal biev
     & int ldretatus = analogRead (ldr.Pin);
       Serial printer (ldr8tatus);
       if ( edr. Status <=10)
        { digital Write (led Pin, HIGH);
          Serial printer ("LOR is dank, LED is ON").
       else
        { digital Write (ladPin, LOW);
          Serial - printen (" - -- - "); 3
```

wil

```
const int ledPin = 13;
const int IdrPin = A0;
void setup()
{
      Serial.begin(9600);
      pinMode(ledPin, OUTPUT);
      pinMode(IdrPin, INPUT);
}
void loop()
{
     int ldrStatus = analogRead(ldrPin);
      Serial.println(ldrStatus);
     if(ldrStatus <=10)
     {
```

# OUTPUT

Design a system to show on/off of a LED using LDR night light simulation.



## Name – Vivek Rajeev

Program No. – 07

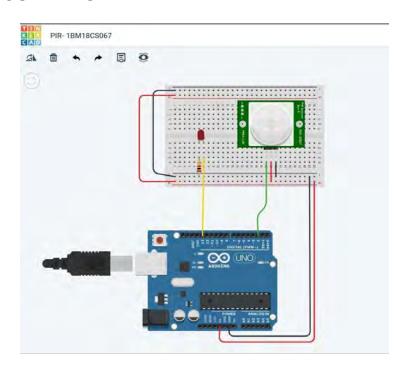
Program Title - PIR

#### **AIM**

Demonstrate to show working of PIR sensor.

### **HARDWARES REQUIRED**

- Arduino Board
- PIR sensor
- Resistor
- LED pin
- Breadboard Small



```
VIVEK RAJEEV
PROGRAM: 7 - PIR SENSOR
                                                         IBM/8CS142
nim: Domonstrate the working of a possive infrared someons
     3en307
HAPDWARE REQUIREMENTS: ARDUINO BOARD, LED, Mobilston, broad board,
                        connecting wires, PIR serson.
CIRCUIT DIAGRAM:
                                  875323
CODE :
   int led = 13;
  int 8 enson = 6;
  int state = Low;
  int val = 0;
  void setup()
  { pinmode (lod, OUTPUT).
     primode (sensor, INPUT);
    Serial · begin (9600);
  void loop ()
 { val = digital Read (sensor);
    if (val == HIGH)
    { digital write (led, HIGH),
      delay (10); &
     if (state = = LOW)
     E Serial printen ("Motion detected!").
        State = HIGH; 3
   else }
      digital Write (led , LOW);
     delay 600;
      if delay (16);
```

if (state = = HIGH)

{ Scalal . paintln (" Metion stopped");

state = LOW; }

}

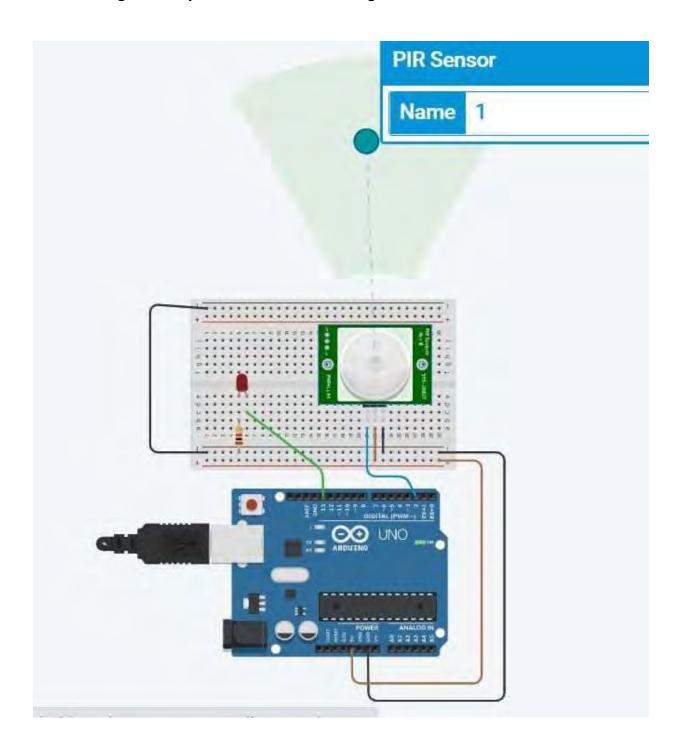
w

```
int sensorState = 0;
void setup()
{
 pinMode(2, INPUT);
 pinMode(13, OUTPUT);
 Serial.begin(9600);
}
void loop()
{
 sensorState = digitalRead(2);
 if (sensorState == HIGH) {
 digitalWrite(13, HIGH);
  Serial.println("Sensor activated!");
 } else {
  digitalWrite(13, LOW);
  Serial.println("Sensor deactivated!");
 }
```

delay(5); }

## OUTPUT

Designed a system to show working of PIR Sensor.



## Name - Vivek Rajeev

Program No. - 08

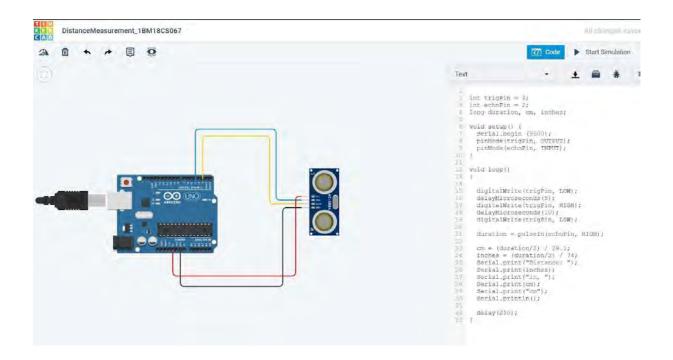
Program Title - Distance Measurement using ultrasonic sensor

#### **AIM**

Design a system to measure the distance between objects.

## **HARDWARES REQUIRED**

- Arduino Board
- Ultrasonic sensor HC-SR04



PROGRAM 9: ULTRASONIC RANGE FINDER	VIVER RAJ IBMISCSI
· · · · · · · · · · · · · · · · · · ·	
Aim: Design a system to moasure	distance between
Hardware Required: Arduine UNO, 1-	HC-SROY
Circuit Diagram:	
	=r
V CC DIS 014 013	
0[2 01]	
A5 06 2	
H3 00 1	1
PL 00 00	
GND	11.
(ode:	
int trighin = 13;	
int echopin = 10;	
void setup() {	
Sonia 0: hagin (9600).	
pinMode (trigPin, OUTPUT); pinMode (4, OUTPUT);	
pinthode (4) out of );	OUTPUT) ; &
printede (2)  printede (2)  printede (2)  printede (2)	); }
	3
void loop() {  . float duration distance;	

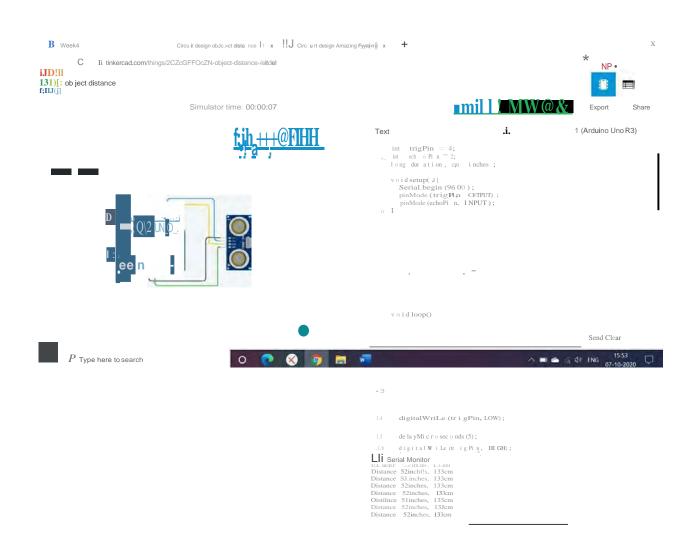
digitalWhite (thigPin, LOW).
delay Microseconds (2):
diaitallonite (trigini, HIGH).
dolay Microseconds (10);
digital Write (trig Pin, Loco);
duration = bulse To (achoPin, HIGH);
distance = (dwarfion/2) * 0.0344;
if (distance > = 200 11 distance < =2)
§ Serial - print ("Distance = ").
Sorial. println("Out of range").
digital write (2, HGH);
digital write (4, Low), 3
else {
Sorial printes ("Distance = ");
sorial-printe (distance);
Serial-println ("cm");
delay (500);
digital Write (4, HGH).
digitalurite (2, Low), z
dolay (500); 3
3 -01 -114.51
Output: lesign a system to measure the distance between
objects using altramonic device.
I WY WE SEE THE
0.7100
Camlin

```
int trigPin = 4;
int echoPin = 2;
long duration, cm, inches;
void setup() {
   Serial.begin (9600);
   pinMode(trigPin, OUTPUT);
   pinMode(echoPin, INPUT);
}
void loop()
{
```

```
digitalWrite(trigPin, LOW);
 delayMicroseconds(5);
 digitalWrite(trigPin, HIGH);
 delayMicroseconds(10);
 digitalWrite(trigPin, LOW);
 duration = pulseIn(echoPin, HIGH);
 cm = (duration/2) / 29.1;
 inches = (duration/2) / 74;
 Serial.print("Distance: ");
 Serial.print(inches);
 Serial.print("inch, ");
 Serial.print(cm);
 Serial.print("cm");
 Serial.println();
 delay(250);
}
```

### **OUTPUT**

Design a system to measure the distance between objects using ultrasonic device.



## Name -Vivek Rajeev

Program No. – 09

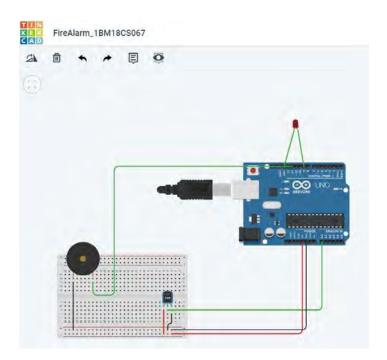
Program Title - Fire Alarm using flame Sensor

#### **AIM**

Design an alert system using a flame sensor.

## **HARDWARES REQUIRED**

- Arduino Board
- Piezo
- Temperature Sensor
- Breadboard small



PROGRAM 8 : FIRE ALERT SYSTEM	VIVEK RAJEI 18M18CS 142
Aim: - Design on along system wing flam	N Senson
Hardware Required: - Arduine UND, Temps	mature Senson, LE
Code :-	
int temporature Pin = 0;	
10+ buzzen = 12;	
void setup()	
ξ '	
Serial - begin (9600);	
pinMode (buzzer, OUTPUT);	
primode (9, OUTPUT); 3	7 de (4
float getholtage (int pin)	
§ .	
return (analog Read (pin) + 0.00488	2.814); 3
float voltage, degreec;	<i>p</i> <sub>10</sub> \ .
voltage = getholtage Ctemporatur	
degreesc = (voltage - 0-5) * 10	03.0 ;
digital Write (9, LOW);	
if (dogreec > 37) { Serial - print & (dogreen);	
Serial - printer (assess);	
digitalunite (buzzen, LOW)	
dia the (9 High):	
digital write (9, HIGH); tone (12, 10000, 100);	
delay (200); }	
ase E	
	Camlin/

modely of the second of the Sorial - print ( degree ) Serial print (" SAVE !!) dolay (200); Diagram: CB 0 action to at **G**( Output: Goated a system to alort a user of fire with the help of burzen & LED

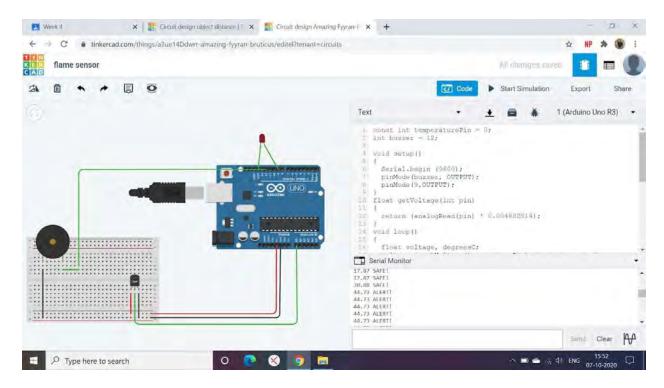
Camlin

OF RUIT

```
const int temperaturePin = 0;
int buzzer = 12;
void setup()
{
 Serial.begin (9600);
 pinMode(buzzer, OUTPUT);
 pinMode(9, OUTPUT);
}
void loop()
{
 float voltage, degreesC;
 voltage = getVoltage(temperaturePin);
 degreesC = (voltage-0.5)*100.0;
 if(degreesC < 37)
```

```
{
  Serial.print(degreesC);
      Serial.println(" SAFE!");
 }
 if(degreesC > 37)
 {
  Serial.print(degreesC);
  Serial.println("FIRE !!!");
  digitalWrite(9, HIGH);
  digitalWrite(buzzer, LOW);
  tone(12, 10000,100);
  delay(100);
 }
}
float getVoltage(int pin)
{
 return (analogRead(pin) * 0.004882814);
}
```

Designed an alert system using flame sensor.



# Name – Vivek Rajeev

Program No. – 10

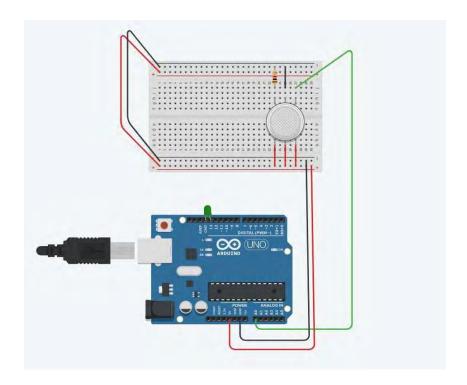
Program Title – Gas Sensor

### **AIM**

To design a smart gas leakage indicator system.

# HARDWARES REQUIRED

- Arduino Board
- Gas sensor
- Resistor
- LED
- Breadboard Small



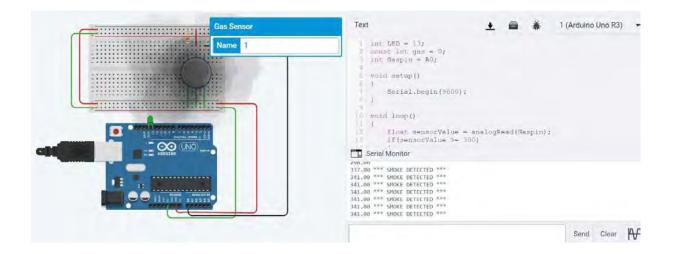
Aim : T	co donign c	sman	- gan	loakas	ge indic	aton
Hardwa	rom Roginad	: ARDUIN	OUNO	, ejas &	enson, f	Penisto
	7.0	LED				
Circuit	Diagram		Try-			
Cirain	Stagran		1			
	VC	D <sub>15</sub>	++,	-	= 11	
	• (C	D14 6	+ +	el el		
	ARDUINO	012 011		2003290		
	50 UNO	D10 D2 D8				
	0.5	97 96				1
	Agr Agr	05 04 03			=	-
	A3 A4	02	+ -		11,-	
	Aes GNO	Do				
Code	*			·		
10-	took LED :	= 13;				
Ce	anst int gas	=0;				
Įň:	+ Gaspin = +	Ao;				
Vo	oid setup ()	)				
1 2	Serial-bogi	n (9600)	); 3			
VC	oid loop(	)				

if (sensionValue > = 300) digital Write (LED, HIGH); Sorial - print (sensor Value); Serial - println (" - smoke detected") de dolay (senson Value); else 3 digital Write (LED, LOW) Social println ("Sensor value: 'Sersor value: delay (1000); 3 Output: dosigned a smant gas lakage indicator system Camlin

```
int LED = 13;
const int gas = 0;
int Gaspin = A0;
void setup()
{
     Serial.begin(9600);
}
void loop()
{
     float sensorValue = analogRead(Gaspin);
     if(sensorValue >= 300)
     {
           digitalWrite(LED, HIGH);
           Serial.print(sensorValue);
           Serial.println(" *** SMOKE DETECTED ***");
           delay(sensorValue);
```

```
else
{
          digitalWrite(LED, LOW);
          Serial.println("Serial Value : ");
          Serial.println(sensorValue);
}
delay(1000);
}
```

Designed a smart gas leakage indicator system.



# Name – Vivek Rajeev

Program No. – 11

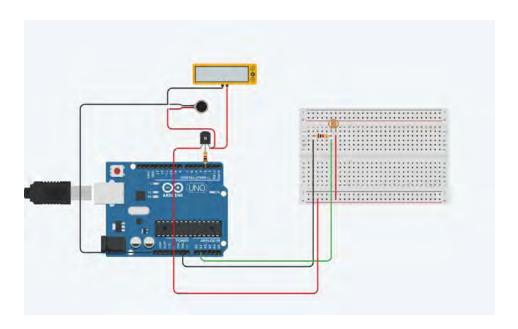
Program Title – Vibration motor and LDR

#### AIM

To design an automated day indicator system.

#### HARDWARES REQUIRED

- Arduino Board
- NPN Transistor
- Resistor
- Vibration motor
- Multimeter
- Photoresistor



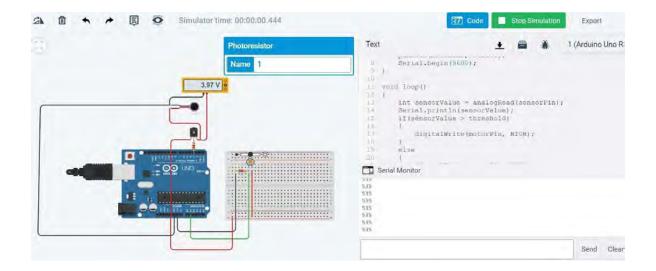
# WRITE-UP

PROGRAM 11: VIBRATION MOTOR & ALDR	
AIM: Design an automated day indicate	<u>n</u>
Handlaro Roquired: ARDVINO UNO, broadbox	nd, LDR
NPN transistor, multimater, resisto	ns
Code:	
int motorpin = 3;	
int servonPin = A1;	e L
int threshold = 400;	•
void setup () {	1.5
pin Mode (motorpin, OUTPUT);	2
Sorial-begin (9600); 2	
4 - 11 - 12 - 1 - 2 - 1 - 2 - 1 - 2 - 1 - 2 - 1 - 2 - 1 - 2 - 2	
void loop () }	. p- >
int sensor/value = analrogRoad (ser	wentin)
Sorial. printen (sononholue).	
if (senson Value > threshoold)	
2 digital Write (3, HIGH); }	
algital will et 37 main 2/2	
else {	
digital (Urite (3, LOW))	
delay (1000); 3	
3	
Output: Donigned an automated day ind	licator s

```
int motorPin = 3;
int sensorPin = A1;
int threshold = 400;
void setup()
{
     pinMode(motorPin, OUTPUT);
     Serial.begin(9600);
}
void loop()
{
     int sensorValue = analogRead(sensorPin);
     Serial.println(sensorValue);
     if(sensorValue > threshold)
     {
           digitalWrite(motorPin, HIGH);
```

```
}
else
{
    digitalWrite(motorPin, LOW);
}
```

Designed an automated day indicator system.



# Name – Vivek Rajeev

Program No. – 12

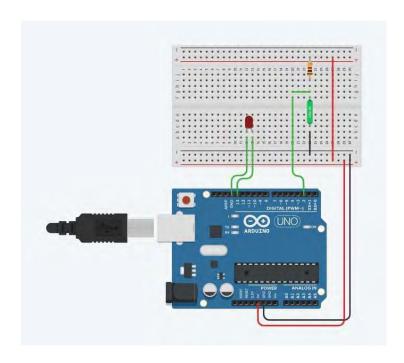
Program Title – Tilt Sensor

#### **AIM**

Design a Smart Package handling system (Tilt sensor and LED)

### **HARDWARES REQUIRED**

- Arduino Board
- Breadboard Small
- LEDs
- Tilt Sensor
- Resistor

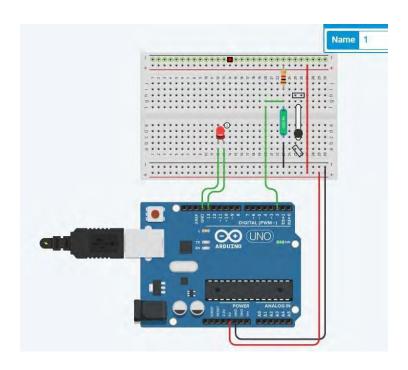


# **WRITE-UP**

ROGRAM 12: Design	a smart package handling
	System
Alm: Dorign a sm and (EO)	art package handling system CTilt sonx
	Say car and banned your Kund
	Ardumo Board, Broadboard Small,
	Soneon, Resistan
•	
Code:	S male of the
int telt =	13; 200 A - 12 4 15
int led =	13; 200 - 1 - 100 - 10 - 10
void setu	pC)
5	turks around strains
2 prinmode (+	ilt, INPUT)
an Mode (	led, OUTPUT);
	0 1 - 1 - 1 - 2 -
void loop	(2) 2000 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ξ	1115
2 introdin	907-11-11-11-11-11-11-11-11-11-11-11-11-11
reading =	= digital Kead (+++);
if (nead in	To Street + E Joseph Microsoft
digitalu	unite (led, Low);
else	* 35-2
digital	Wnite Clod, HIGH); 3
	4
	· alta Luciale
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	A.
1071	an an Aberra
	•

```
int tilt = 2;
int led = 13;
void setup()
{
 pinMode(tilt, INPUT);
 pinMode(led, OUTPUT);
}
void loop()
{
 int reading;
 reading = digitalRead(tilt);
 if(reading)
 digitalWrite(led, LOW);
 else
  digitalWrite(led, HIGH);
}
```

Designed a Smart Package handling system using Tilt Sensor and LED.



## Name - Vivek Rajeev

Program No. – 13

Program Title – IR based SERVO Motor controller

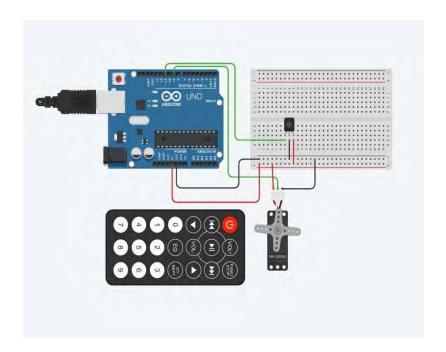
\_\_\_\_\_

#### AIM

Design IR based SERVO Motor controller. (Clockwise and Counterclockwise rotation of shaft).

#### HARDWARES REQUIRED

- Arduino Board,
- Breadboard Small,
- IR Sensor,
- IR Remote,
- Micro Servo



PROGRAM 12 : IR BASED SERVO MOTOR

A	in: Design IR based serve motor controller
Ho	andware Required: Arduino UNO, brondboard, IR services,
_	IR Romote, Micro Servis.
0	ode :
	#include < Sorva-N>
	# include < Iromote-h>
	int RECV_PIN = 11;
	PRIECU ITTIECN (REOLPIN)
	decode-results results;
	Sorro myservo;
	void setup () }
	Serial-bogin (96007;
	innocr-enable IR In (); 3
	void loop() {
	if (invacuo decode (greoults))
	5
	Switch (results - value)
	5
	CODE OXFDOOFF:
	myservo-attach (9);
	Serial - print (" start");
	break;
	case 0 x FD609F:
	my servo · worte (360)
	my servo · wote (360), Sojal - printly ("Clockarise");
	broak;
	case 0x FDB20DE:

The second secon	
	6
	•
Social ewite &	
Sorial-println ("agunter clockwise");	-
break you	
The second secon	
default:	
Senial - print ("Unrecognized code recieved = On"). Senial - printer (results " value, HEX).	
Senial-frinter (rapults value, HEX).	
brook; 3	
J 114 . V 11	
innecv. nexume(); 33	
	-
1 10 M A SUB	-
	-
	-
	-
[ audi + 240+	
	-
	11
Camlin	_

```
#include <Servo.h>
#include <IRremote.h>

int RECV_PIN = 11;
IRrecv irrecv(RECV_PIN);
decode_results results;
```

```
Servo myservo;
void setup(){
 Serial.begin(9600);
 irrecv.enableIRIn();
}
void loop(){
  if (irrecv.decode(&results))
 {
  switch (results.value)
  {
   case 0xFD00FF:
           myservo.attach(9);
     Serial.println("Start");
     break;
   case 0xFD609F:
            myservo.write(360);
           Serial.println("Clockwise");
     break;
   case 0xFD20DF:
            myservo.write(-360);
            Serial.println("Counter Clockwise");
     break;
   default:
```

```
Serial.print("Unrecognized code received: 0x");
Serial.println(results.value, HEX);
break;
}
irrecv.resume();
}
```

Designed a Smart Package handling system using Tilt Sensor and LED.

```
Starting..
Clockwise..
Clockwise..
Counter Clockwise..
Counter Clockwise..
Unrecognized code received: 0xFD48B7
```

# Name – Vivek Rajeev

Program No. – 14

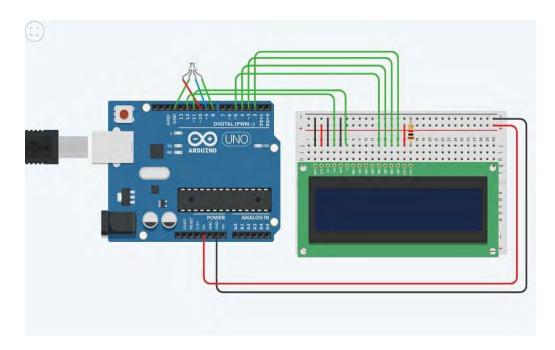
Program Title - RGB Led and LCD

### **AIM**

Design a display system to print the RED, BLUE and Green colors (RGB Led and LCD).

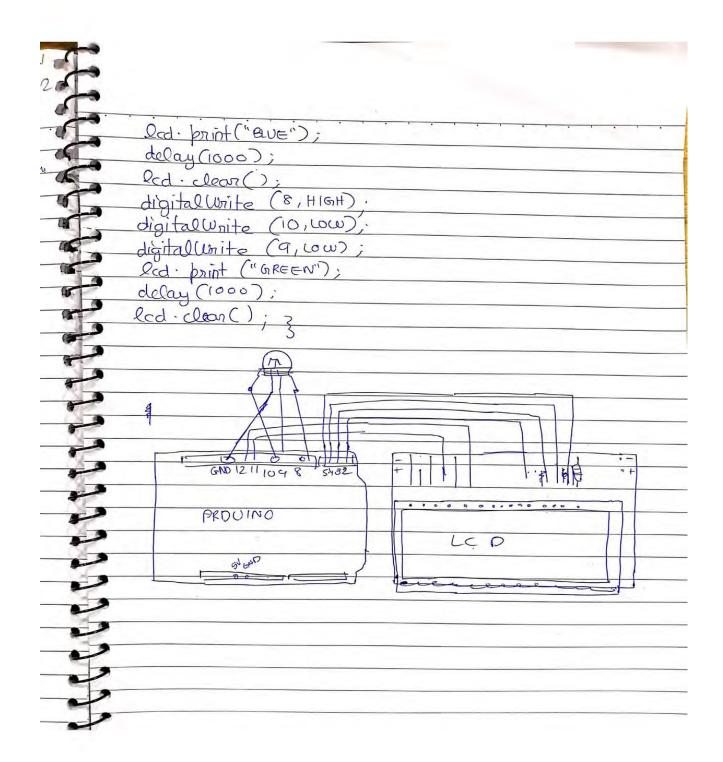
#### HARDWARES REQUIRED

- Arduino Board
- Breadboard Small
- LCD 16x2
- RGB LED
- Resistor



# WRITE-UP

I.O.7. LAB → RGB with LCD	VIVER RAJGEV
TOT	1BM18CS142
I.O.7. LAB → RGB with LCD	<b>a</b>
<u> </u>	
0	- 1 11
Aim: Bisplan Design a display system to	erint the colour
sonsed by RGB led . '	
Hardware Required: Arduire Broard, Bread broard	1. LCD 16X2
ROBLED, Resistor	4 )
10/0 (6/2)	
(ode:	•
#include < liquidGrystal . n?	
Liquid Grystal Ocd (12, 11, 5, 4, 3, 2).	•
V	
void setup ()	
<u> </u>	•
2 (cd · bagin (16,2);	
binMorlo (8, OUTPUT).	*
pinMode (9, OUTPUT);	
pinmode (10, OUTPUT).	
pinMode (9, OUTPUT); pinMode (10, OUTPUT); lcd-print ("RGB (alor Print"); 3	
	×
void loop ()	
\$ 10 6 3	
\( \delta \delta \text{(1000)};	•
digitalwrite (10, HIGH)	
digital Write (9, LOW):	•
digitalWrite (8, LOW);	
VCd. Print ("KED");	
allay (1000)	
xca · Clear ();	
aigitallbrite (9, HIGH)	
argitaturité (8, Low);  lcd. print ("RED");  delay (2000);  lcd. clear (2;  digitallbrite (9, HIGH);  digitallbrite (810, Low);  digital write (8, Low);	
digital limite (8, LOW).	



```
#include <LiquidCrystal.h>
LiquidCrystal lcd(12,11,5,4,3,2);
int red=10;
int green=8;
int blue=9;
void setup()
{
pinMode(10, OUTPUT);
pinMode(9, OUTPUT);
pinMode(8, OUTPUT);
}
void loop()
{
 lcd.setCursor(0,0);
 lcd.print("RGB Color Print!");
 delay(1000);
 lcd.clear();
 RGB_color(255,0,0);//red
 lcd.print("RED");
 delay(1000);
```

```
Icd.clear();

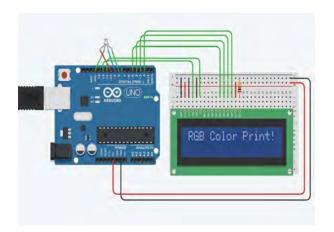
RGB_color(0,255,0);//Green
Icd.print("GREEN");
delay(1000);
Icd.clear();

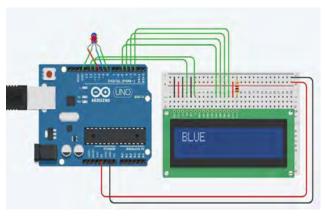
RGB_color(0,0,255);//Blue
Icd.print("BLUE");
delay(1000);
Icd.clear();
```

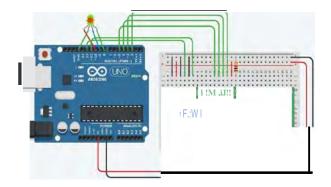
```
RGB_color(0,0,0);//White
lcd.print("WHITE");
delay(1000);
    lcd.clear();
}

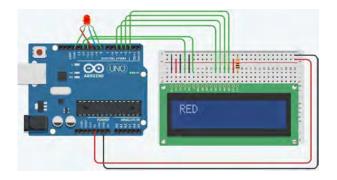
void RGB_color(int red_value, int green_value, int blue_value)
{
    analogWrite(red,red_value);
    analogWrite(green,green_value);
    analogWrite(blue,blue_value);
}
```

Designed a display system to print the RED,BLUE and Green colors (RGB Led and LCD).









# Name – Vivek Rajeev

Program No. – 15

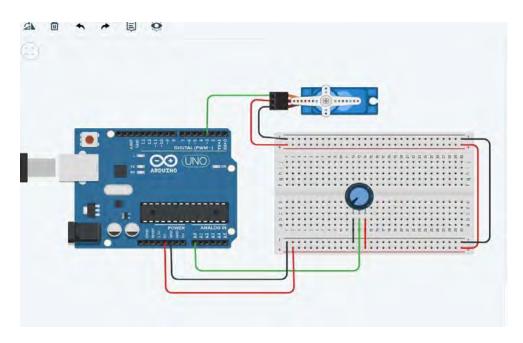
Program Title – Smart irrigation system

## AIM

Design a smart irrigation system (Potentiometer, Servo motor shaft).

### **HARDWARES REQUIRED**

- Arduino Board
- Breadboard Small
- Potentiometer
- Servo motor shaft



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PROGRAM 15 : SMART IRRIGATION SYSTEM

-	Aim: Nesign a smart irrigation system (Potentionater
+	Serve motor short shaft
	Handware Required: Arduine Board, Breadboard, Potentione
+	Sonviometer
	Code:
	# include < Servo-67
-	Servo myservo;
	int potpin = 0;
	int val = 0;
	1111 100 = 07
	void setup () {
1	mysonvo-attach (9); z
+	void loop() {
	val = analogkead (potpin);
	val = map (val, 0, 1023, 0, 180);
	myservo unite (val);
	delay(15);
	3
+	
+	
+	
+	
+	
+	
+	

```
#include <Servo.h>

Servo myservo; // create servo object to control a servo

// twelve servo objects can be created on most boards

int pos = 0; // variable to store the servo position

int sensorPin = A0; // select the input pin for the potentiometer

int sensorValue = 0; // variable to store the value coming from the sensor void setup() {

myservo.attach(3); // attaches the servo on pin 9 to the servo object

Serial.begin(9600);
```

```
}
void loop() {
// read the value from the sensor:
sensorValue = analogRead(sensorPin);
Serial.println (sensorValue);
if(sensorValue>500)
{
for (pos = 0; pos <= 180; pos += 1) { // goes from 0 degrees to 180
degrees
 // in steps of 1 degree
  myservo.write(pos);
                               // tell servo to go to position in variable 'pos'
                           // waits 15ms for the servo to reach the position
 delay(15);
}
for (pos = 180; pos \rightarrow = 0; pos \rightarrow = 1) { // goes from 180 degrees to 0 degrees
  myservo.write(pos);
                                // tell servo to go to position in variable 'pos'
 delay(15);
                           // waits 15ms for the servo to reach the position
}
delay (1000);
}
```

Designed a smart irrigation system (Potentiometer, Servo motor shaft).

