**Assignment** : LED light control with Arduino device.

**Equipment** : Arduino Uno R3, Breadboard, LED, 220 Ohm resistor, Battery 9V, LCD Display, Male to male jumper

**Arduino and LCD pin connection :**

|  |  |
| --- | --- |
| Arduino Pin | LCD Pin |
| GND | VSS |
| 5V | VDD |
| 6 | VO |
| 12 | RS |
| GND | RW |
| 11 | e |
| 5 | D4 |
| 4 | D5 |
| 3 | D6 |
| 2 | D7 |
| 5V | A |
| GND | K |

**Arduino and LED pin connection :**

|  |  |
| --- | --- |
| **Arduino Pin** | **LED Pin** |
| 8 | Red |
| 9 | Green |
| 10 | Blue |
| GND | Cathode |

**Program**

#include <LiquidCrystal.h> //For include Liquid Crystal library

int Contrast=110; // For LCD Contrast

int redPin = 8;

int greenPin = 9;

int bluePin = 10;

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

void setup() {

analogWrite(6,Contrast);

lcd.begin(16,2);

pinMode(redPin, OUTPUT);

pinMode(greenPin, OUTPUT);

pinMode(bluePin, OUTPUT);

}

void loop() {

lcd.clear();

setColor(255, 0, 0); // Red Color

lcd.setCursor(0,0);

lcd.print("Light Colour : ");

lcd.setCursor(0,1);

lcd.print("RED : (ON)");

delay(3000);

lcd.clear();

setColor(0, 255, 0); // Green Color

lcd.setCursor(0,0);

lcd.print("Light Colour : ");

lcd.setCursor(0,1);

lcd.print("GREEN : (ON)");

delay(3000);

lcd.clear();

setColor(0, 0, 255); // Blue Color

lcd.setCursor(0,0);

lcd.print("Light Colour : ");

lcd.setCursor(0,1);

lcd.print("BLUE : (ON)");

delay(3000);

lcd.clear();

blink();

}

void blink(){

lcd.setCursor(0,0);

lcd.print("...Light BLINK...");

for(int i=0; i<30; i++){

setColor(255, 0, 0); // Red Color

delay(100);

setColor(0, 255, 0); // Green Color

delay(100);

setColor(0, 0, 255); // Blue Color

delay(100);

setColor(255, 255, 255); // White Color

}

lcd.clear();

lcd.setCursor(0,0);

lcd.print("...THANK YOU...");

delay(4000);

}

void setColor(int redValue, int greenValue, int blueValue){

analogWrite(redPin, redValue);

analogWrite(greenPin, greenValue);

analogWrite(bluePin, blueValue);

}