Arduino – קוד

```
 //C++ code
//
#include <Wire.h <
#include <LiquidCrystal_I2C.h<
#include <Servo.h<

//int seconds = 10;

//Adafruit_LiquidCrystal lcd_1(0;(
LiquidCrystal_I2C lcd_1(0x27, 16, 2;(

 //C++ code
 //Warning system for extreme temperatures

int ldrPin = A0;
int tempSensor = A1;
int servoPin = 9;
int ledRed = 2;
int ledGreen = 4;
int ledYellow = 7;
 //Duration in milliseconds (5 seconds = 5000 milliseconds(
const unsigned long duration = 10000;
 //Variables to track time
unsigned long startTime;
unsigned long currentTime;

bool flag = false;
```

```
int ldrValue =0 ;
int seconds = 0;
double celsius = 0 ;
int angle = 0 ;

Servo servo;



void setup()
}
//  lcd_1.begin(16, 2;(
  lcd_1.init;()
  pinMode(ledRed, OUTPUT;(
  pinMode(ledGreen, OUTPUT;(
  pinMode(ledYellow, OUTPUT;(
  pinMode(tempSensor, INPUT;(
  pinMode(ldrPin, INPUT;(

  servo.attach(servoPin;(
 //    Initialize the start time
  startTime = millis;()
//  servo.write(0;(
  Serial.begin(9600;(



{

void loop()
}
  ldrValue = analogRead(ldrPin;(
```

```
            Serial.print("LDR reading;(" =
            Serial.println(ldrValue);    // the raw analog reading

  celsius = printTemp(tempSensor;(

  if (!isLedOn(ledRed}((
     checkTemp(celsius{;(

  if (nightCheck(ldrValue)&& isLedOn(ledRed)){ // if min light and red led is on- start system
//     printScreen("System on;("!
     digitalWrite(ledYellow, HIGH;(
     if (!flag}(
       startTime = millis;()
       printScreen(String(startTime;((
       flag = true;
{
     startEngine;()
{
  else}
//     lcd_1.setBacklight(0;(
     printScreen("OFF;("
{
{

bool isLedOn(int led) { // check if the led is on.
  return ( digitalRead(led;((
{

double printTemp (int tempSensor){ //prints the current temp
 int temp = map(((analogRead(tempSensor) - 20) * 3.04), 0, 1023, -40, 125) -338;
```

```
  if (millis()%5 ==1}(
      Serial.println(temp      ;(
{
    return temp;
{

void printScreen(String print){ // print in LCD
  lcd_1.setCursor(0, 1;(
  lcd_1.print(print;(
  lcd_1.setBacklight(1;(
{



void startEngine (){ // start servo spin- system on !
  currentTime = millis();  // Get the current time
  if (currentTime - startTime >= duration) { // Check if the duration has elapsed
    servo.write(0); // Turn off the servo
    digitalWrite(ledYellow, LOW;(
    digitalWrite(ledGreen, HIGH;(
    digitalWrite(ledRed, LOW;(
    angle = 0;
    flag = false;
    lcd_1.clear;()
    printScreen("OFF;("
 {
  else if (angle <= 180}(
   servo.write(angle;(
   angle;++
{
```

```
  else}
   servo.write(angle;(
   angle;--
 {
{

bool nightCheck(int ldrValue){ //checks if the light is low= night time.
  if (ldrValue < 100 && isLedOn(ledRed}((
   return true;
{  else}
   return false ;
{
{

void checkTemp(double temp){  // turns the relevant leds on and off

  if (temp > 27 && !isLedOn(ledYellow}((
   digitalWrite(ledGreen, LOW;(
//   Serial.println(digitalRead(ledGreen;((
   digitalWrite(ledRed, HIGH;(



{  else if((temp < 27) && !isLedOn(ledYellow}( (
   digitalWrite(ledGreen, HIGH;(
   digitalWrite(ledRed, LOW;(

{  else}
   digitalWrite(ledGreen, LOW;(
   digitalWrite(ledRed, LOW;(
{
```

{