   IBM ASSIGNMENT -1

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Smart Home Automation System Using IoT:

Code:

#include<Servo.h>

#include<LiquidCrystal.h>

LiquidCrystal lcd(A1,10,9,6,5,3);

float value;

int tmp = A0;

const int pingPin = 7;

int servoPin = 8;

Servo servo1;

void setup()

{

Serial.begin(9600);

servo1.attach(servoPin);

lcd.begin(16, 2);

pinMode(2,INPUT);

pinMode(4,OUTPUT);

pinMode(11,OUTPUT);

//pinMode(10,INPUT);

//pinMode(2,OUTPUT);

//pinMode(8,OUTPUT);

//pinMode(9,output);

//pinMode(11,OUTPUT);

//pinMode(13,OUTPUT);

//pinMode(14,OUTPUT);

pinMode(12,OUTPUT);

pinMode(13,OUTPUT);

pinMode(A0,INPUT);

digitalWrite(2,LOW);

digitalWrite(11,HIGH);

//digitalWrite(5,OUTPUT);

digitalWrite(3,OUTPUT);

digitalWrite(7,OUTPUT);

digitalWrite(11,OUTPUT);

digitalWrite(13,OUTPUT);

//digitalWrite(A0,OUTPUT);

}

void loop()

{

long duration, inches, cm;

pinMode(pingPin, OUTPUT);

digitalWrite(pingPin, LOW);

delayMicroseconds(2);

digitalWrite(pingPin, HIGH);

delayMicroseconds(5);

digitalWrite(pingPin, LOW);

pinMode(pingPin, INPUT);

duration = pulseIn(pingPin, HIGH);

inches = microsecondsToInches(duration);

cm = microsecondsToCentimeters(duration);

servo1.write(0);

if(cm < 40)

{

servo1.write(90);

lcd.setCursor(0,1);

lcd.print("Door:OPEN");

}

else

{

servo1.write(0);

lcd.setCursor(0,1);

lcd.print("Door:CLOSED");

}

int pir = digitalRead(2);

if(pir == HIGH)

{

digitalWrite(4,HIGH);

lcd.setCursor(10,0);

lcd.print("LED:ON");

// delay(500);

}

else if(pir == LOW)

lcd.setCursor(12,0);

lcd.print("OFF");

{

digitalWrite(4,LOW);

}

value = analogRead(tmp)\*0.004882814;

value = (value - 0.5) \* 100.0;

lcd.setCursor(0,0);

lcd.print("Tmp:");

lcd.print(value);

delay(1000);

Serial.println("temperature");

Serial.println(value);

if(value > 20)

{

digitalWrite(12,HIGH);

digitalWrite(13,LOW);

}

else

{

digitalWrite(12,LOW);

digitalWrite(13,LOW);

}

lcd.clear();

}

long microsecondsToInches(long microseconds) {

return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds) {

return microseconds / 29 / 2;

}