ASSIGNMENT-1 IOT

QUESTION: Make a smart home with tinkercad using 2 sensor, led, buzzer

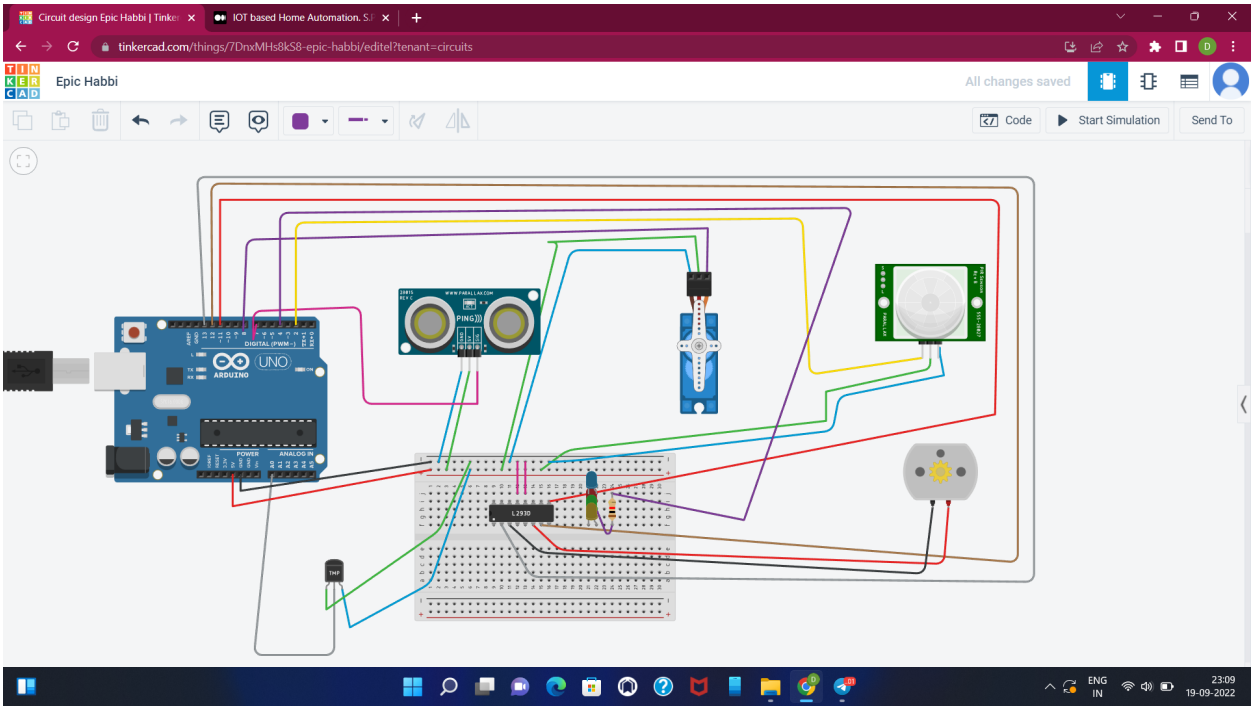
AIM: Design and Coding for IOT based Home Automation.

DESIGN TOOL: Tinkercad

Component used:

1. Arduino Uno R3
2. Ultrasonic Distance Sensor
3. Micro Servo
4. PIR Sensor
5. Breadboard (small)
6. 1 kΩ Resistor
7. Temperature Sensor
8. H-bridge Motor Driver
9. DC Motor
10. LED's

CIRCUIT DIAGRAM:



CODE:

```
#include<Servo.h>
const int pingPin = 7;
int servoPin = 8;
Servo servo1;
void setup()
{
Serial.begin(9600);
servo1.attach(servoPin);
pinMode(2,INPUT);
pinMode(4,OUTPUT);
pinMode(11,OUTPUT);
pinMode(12,OUTPUT);
pinMode(13,OUTPUT);
pinMode(A0,INPUT);
digitalWrite(2,LOW);
digitalWrite(11,HIGH);

}
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);

// convert the time into a distance
inches = microsecondsToInches(duration);
cm = microsecondsToCentimeters(duration);


//Serial.print(inches);
```

```
//Serial.print(“in, “);
//Serial.print(cm);
//Serial.print(“cm”);
//Serial.println();
//delay(100);
servo1.write(0);

if(cm < 40)
{
servo1.write(90);
delay(2000);
}
else
{
servo1.write(0);
}

// PIR with LED starts
int pir = digitalRead(2);

if(pir == HIGH)
{
digitalWrite(4,HIGH);
delay(1000);
}
else if(pir == LOW)
{
digitalWrite(4,LOW);
}

//temp with fan

float value=analogRead(A0);
float temperature=value*0.48;

Serial.println(“temperature”);
Serial.println(temperature);
```

```
if(temperature > 20)
{
digitalWrite(12,HIGH);
digitalWrite(13,LOW);
}
else
{
digitalWrite(12,LOW);
digitalWrite(13,LOW);
}
}
long microsecondsToInches(long microseconds)
{
return microseconds / 74 / 2;
}
long microsecondsToCentimeters(long microseconds)
{
return microseconds / 29 / 2;
}
```