

Assignment 1

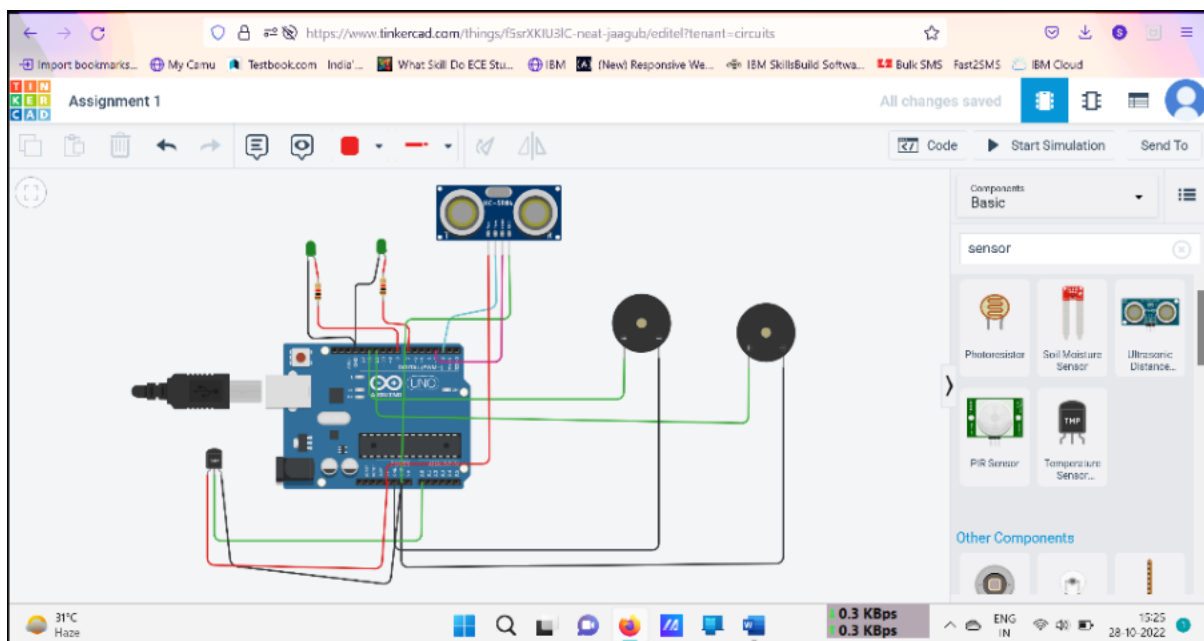
Tinkercad Simulation

Assignment Date	12 September 2022
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Maximum Marks	2 Marks

Question-1

Build a smart home in Tinkercad with 2 sensors, an Led, buzzer

Circuit:



Code :

```
int t=2;
```

```
int e=3;
```

```
void setup()
```

```

{
Serial.begin(9600);
pinMode(t,OUTPUT);
pinMode(e,INPUT);
pinMode(12,OUTPUT);
}

void loop() { //ultrasonic sensor
  digitalWrite(t,LOW);
  digitalWrite(t,HIGH);
  delayMicroseconds(10);
  digitalWrite(t,LOW);
  float dur=pulseIn(e,HIGH);
  float dis=(dur*0.0343)/2;
  Serial.print("Distance is: ");
  Serial.println(dis);

  //LED ON
  if(dis>=60)//(in terms of centimeter)
  {
    digitalWrite(8,HIGH);
    digitalWrite(7,HIGH);
  }

  //Buzzer For ultrasonic Sensor  if(dis>=60)
  {
    for(int i=0; i<=5; i=i+1)
    {tone(12,i);
      delay(1000);
    }
  }
}

```

```
noTone(12);  
delay(1000);  
}  
}
```

```
//Temperate Sensor  
double a= analogRead(A0);  
double t=(((a/1024)*5)-0.5)*100;  
Serial.print("Temp Value: ");  
Serial.println(t);  
delay(1000);
```

```
//LED ON  
if(t>=20)//(in terms of celsius)  
{  
    digitalWrite(8,HIGH);  
    digitalWrite(7,HIGH);  
}
```

```
//Buzzer for Temperature Sensor  
if(t>=20)  
{  
    for(int i=0; i<=5; i=i+1)  
    {tone(12,i);  
        delay(1000);  
        noTone(12);  
        delay(1000);
```

```
//LED OFF
if(t<20)
{
    digitalWrite(8,LOW);
    digitalWrite(7,LOW);
}
```

The screenshot displays the Tinkercad web interface. On the left, a 3D model shows an Arduino Uno R3 connected to a DHT11 sensor module and two push buttons. The sensor's VCC pin is connected to the Arduino's 5V pin, its GND pin to a GND pin, and its data pin to digital pin 2. One push button is connected to digital pin 4 (GND) and digital pin 5 (5V). The other push button is connected to digital pin 12 (GND) and digital pin 13 (5V). The right panel shows the following code:

```

1  int L=2;
2  int n=2;
3
4  void setup()
5  {
6    Serial.begin(9600);
7    pinMode(L,OUTPUT);
8    pinMode(n,INPUT);
9    pinMode(12,OUTPUT);
10 }
11
12 void loop() { //ALTERNATING MODES
13   digitalWrite(L,LOW);
14   digitalWrite(L,HIGH);
15   delayMicroseconds(100);
16   digitalWrite(L,LOW);

```

The bottom panel shows the Serial Monitor with the following output:

```

Temperature: 31.49
Humidity: 74.2%
Temperature: 31.49
Humidity: 74.2%

```

<https://www.tinkercad.com/things/f5srXKIU3IC>