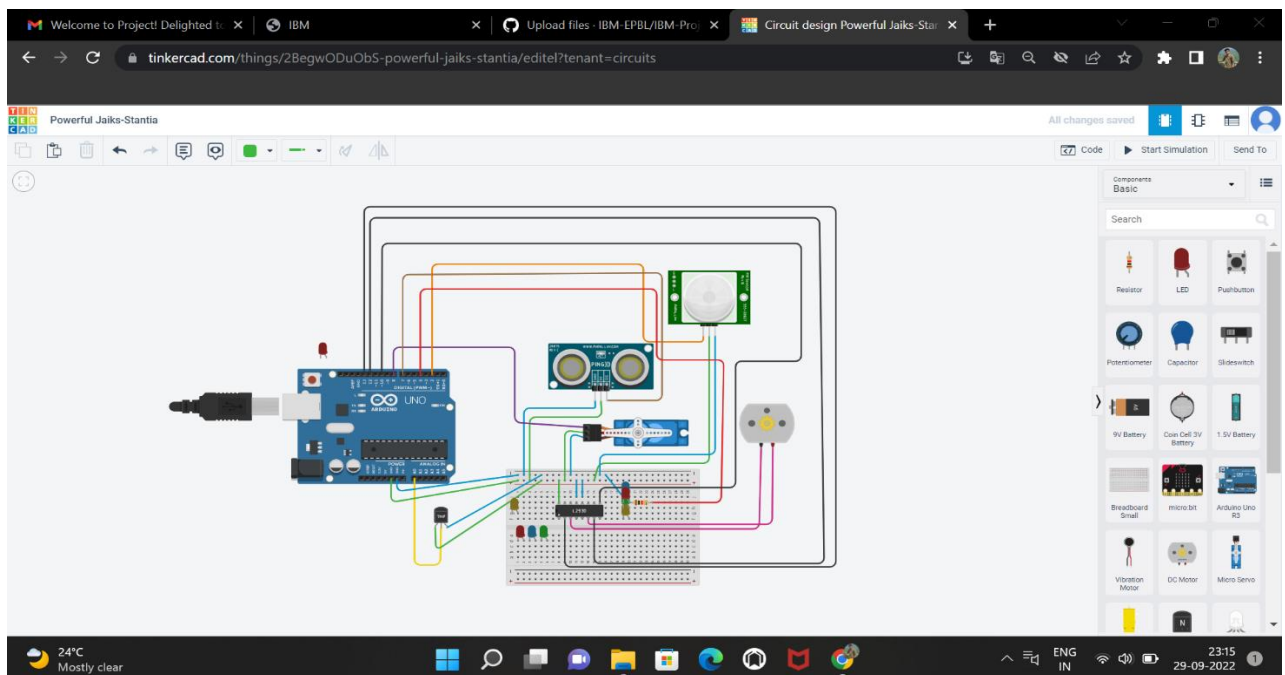


Assignment – 1

PIR SENSOR USING TINKERCAD

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WORKOUT DESIGN:



CODING:

```
#include<Servo.h>
```

```
int servoPin = 8;
```

```
Servo servo1;
```

```
void setup() {
```

```
// initialize serial communication:
```

```
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);

// The same pin is used to read the signal from the PING))) : a HIGH pulse
```

```
// whose duration is the time (in microseconds) from the sending of the ping
// to the reception of its echo off of an object.

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;
```

```
}
```