

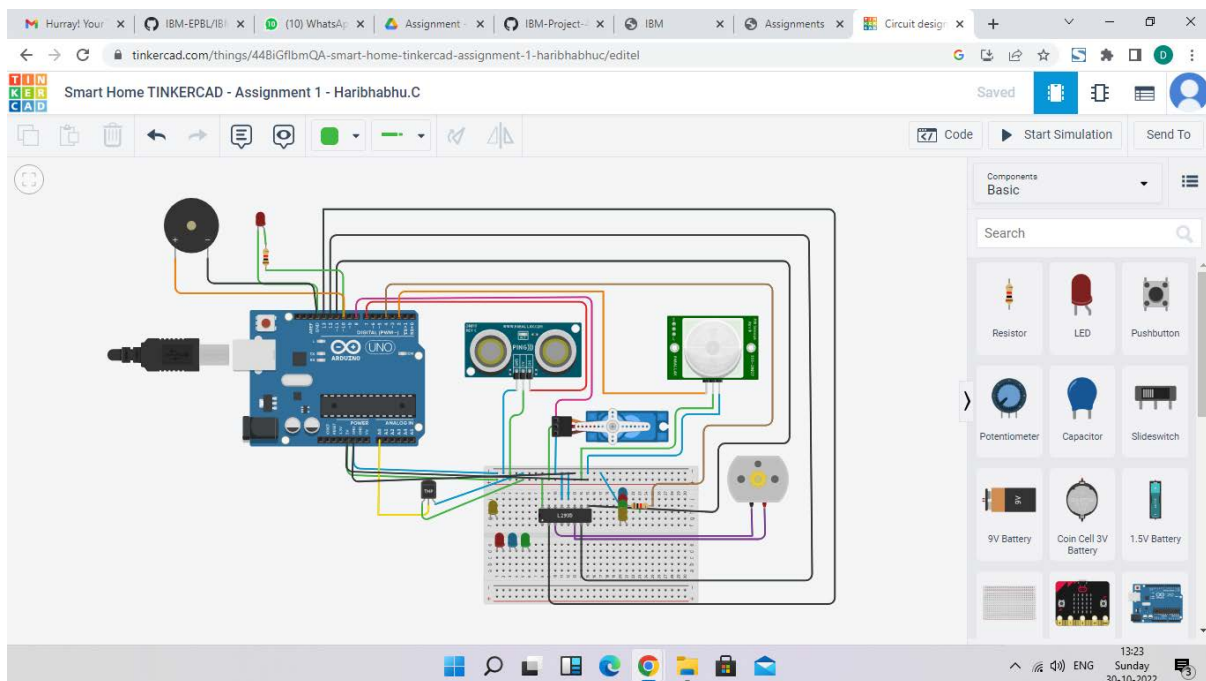
Assignment -1

Assignment Date	21 September 2022
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Student Roll Number	713319CS034
Maximum Marks	2 Marks

Question-1:

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

Solution :



```
#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);  
pinMode(2, INPUT);  
pinMode(10,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);
    delay(2000);
}
else
{
    servo1.write(0);
}

int pir = digitalRead(2);

if(pir == HIGH)
{
    digitalWrite(4,HIGH);
    delay(1000);
}
else if(pir == LOW)
{
    digitalWrite(4,LOW);
}
Serial.println(digitalRead(2));
if (digitalRead(2) == 1) {
    digitalWrite(10, HIGH);
} else {
    digitalWrite(10, LOW);
}
delay(10);

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;
```

```
}
```