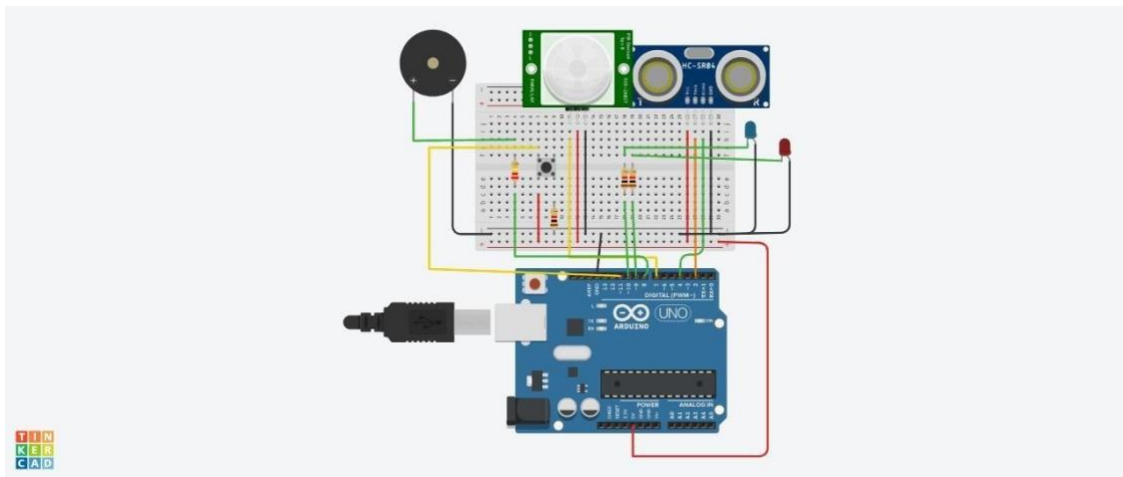


## Assignment-1

Assignment Date	16 November2022
Student Name	G.Akilan
Student Roll No	814419106302
Maximum Marks	2 Marks

Smart Home:

Circuit:



Components:

Components	Quantity
Push Button	1
Red LED	1
Blue LED	1
PIEZO Buzzer	1
Ultrasonic Distance Sensor	1
PIR Sensor	2
Resistor (220,560,10K)	2
Arduino R3	1
Breadboard Small	1

Code:

```
const int trigPin = 2;
```

```
const int echoPin = 4;
```

```
const int pirPin = 7;
```

```
int pirState = LOW;
```

```
const int buzzerPin = 8;
```

```
const int redLED = 9;
```

```
int redBright = 0;
```

```
int redFade = 5;
```

```
const int greenLED = 10;
```

```
int greenBright = 0;
```

```
int greenFade = 5;
```

```
const int button = 13;
```

```
void setup() {
```

```
  pinMode(echoPin, INPUT);
```

```
  pinMode(pirPin, INPUT);
```

```
  pinMode(button, INPUT);
```

```
  pinMode(trigPin, OUTPUT);
```

```
  pinMode(redLED, OUTPUT);
```

```
  pinMode(greenLED, OUTPUT);
```

```
  pinMode(buzzerPin, OUTPUT);
```

```
  Serial.begin(9600);
```

```
}
```

```
void distance()
```

```
long durationInDigit;
```

```
long distanceInInches;
```

```
digitalWrite (trigPin, LOW);
```

```
delayMicroseconds(2);
```

```
digitalWrite (trigPin, HIGH);
```

```
delayMicroseconds(10);
```

```
digitalWrite (trigPin, LOW);  
durationInDigit = pulseIn(echoPin, HIGH);  
distanceInInches = durationInDigit/74/2;
```

```
Serial.println(distanceInInches);
```

```
if (distanceInInches > 15 && distanceInInches < 30) {  
    digitalWrite(greenLED, HIGH);  
    digitalWrite(redLED, LOW);  
}
```

```
if (distanceInInches < 10) {  
    digitalWrite(redLED, HIGH);  
    digitalWrite(greenLED, LOW);  
}
```

```
if (distanceInInches > 10 && distanceInInches < 15){  
    digitalWrite(redLED, LOW);  
    digitalWrite(greenLED, LOW);  
}
```

```
if (distanceInInches < 5) {  
    digitalWrite(redLED, HIGH);  
    tone(8, 250, 2000);  
    digitalWrite(greenLED, 0);  
}
```

```
if (distanceInInches > 5 && distanceInInches < 10){  
    digitalWrite(redLED, HIGH);  
    digitalWrite(buzzerPin, 0);  
    digitalWrite(greenLED, 0);  
}
```

```

    if (distanceInInches > 30 || distanceInInches < 0){
        Serial.println("Distance Incalculable");
    }

    delay(500);
}

void reset() {
    if (digitalRead(button), HIGH);
    digitalWrite(pirState, LOW);
    digitalWrite(redLED, LOW);
    digitalWrite(greenLED, HIGH);
    digitalWrite(buzzerPin, 0);
    //digitalWrite(echoPin, 0);
}

void loop() {

    distance();

    int pirState = digitalRead(pirPin);

    if (pirState==1) {
        Serial.println("Motion Detected!!!");
        digitalWrite(greenLED, LOW);
        digitalWrite(redLED, HIGH);
        digitalWrite(buzzerPin, 1);
        delay(500);
    }
}

```

```
    if (pirState==0) {  
        Serial.println("Detecting...");  
        digitalWrite(greenLED, HIGH);  
        digitalWrite(redLED, LOW);  
        digitalWrite(buzzerPin, 0);  
        delay(500);  
    }  
  
}
```