

# ASSIGNMENT – 1

## HOME AUTOMATION

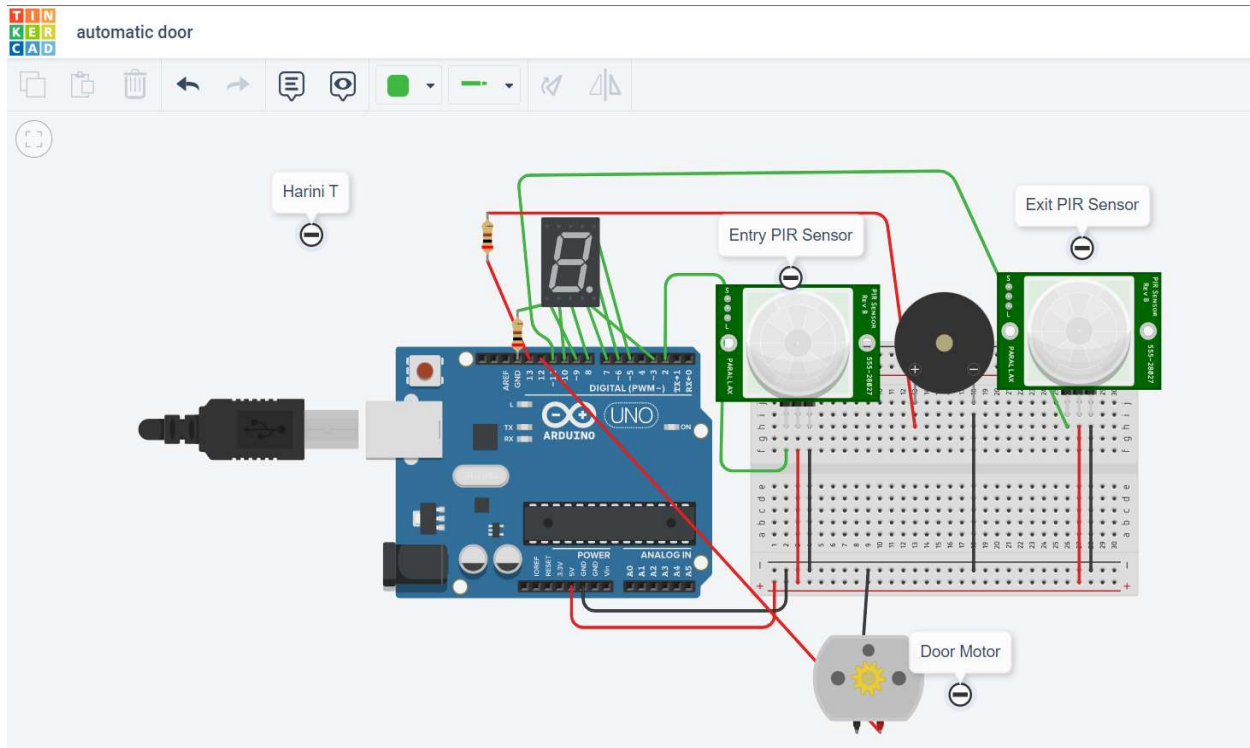
Assignment Date	19 September, 2022
Student Name	Harini T
Student Roll no	727819TUIT026
Maximum Marks	2 marks

### Question 1:

Home Automation using TinkerCAD (Minimum 2 sensors)

### Solution:

### Circuit Diagram:



**Source code:**

```
int A = 6;
```

```
int B = 5;
```

```
int C = 3;
```

```
int D = 10;
```

```
int E = 9;
```

```
int F = 7;
```

```
int G = 8;
```

```
int pins[7] = {A, B, C, D, E, F, G};
```

```
byte entryPin = 2;
```

```
byte exitPin = 11;
```

```
byte motorPin = 12;
```

```
byte buzzerPin = 13;
```

```
byte count;
```

```
int segCode[10][7] = {
```

```
    {1, 1, 1, 1, 1, 1, 0},
```

```
    {0, 1, 1, 0, 0, 0, 0},
```

```
    {1, 1, 0, 1, 1, 0, 1},
```

```
    {1, 1, 1, 1, 0, 0, 1},
```

```
    {0, 1, 1, 0, 0, 1, 1},
```

```
    {1, 0, 1, 1, 0, 1, 1},
```

```
    {1, 0, 1, 1, 1, 1, 1},
```

```
    {1, 1, 1, 0, 0, 0, 0},
```

```
    {1, 1, 1, 1, 1, 1, 1},
```

```
{1, 1, 1, 1, 0, 1, 1},  
};
```

```
void setup() {  
  for(int i = 0; i < 7; i++){  
    pinMode(pins[i], OUTPUT);  
    digitalWrite(pins[i], LOW);  
  }  
  Serial.begin(9600);  
  digitalWrite(motorPin, LOW);  
  count = 0;  
}
```

```
void loop() {  
  byte entryPIR = digitalRead(entryPin);  
  byte exitPIR = digitalRead(exitPin);  
  bool humanDetected = false;  
  if(entryPIR == HIGH){  
    if(count == 9)  
      tone(buzzerPin, 220, 5000);  
    else{  
      count++;  
      humanDetected = true;  
    }  
  }  
  if(exitPIR == HIGH && count > 0){  
    count--;  
    humanDetected = true;  
  }
```

```
}
```

```
displayNumber(count);
```

```
if(humanDetected == true){  
    digitalWrite(motorPin, HIGH);  
    delay(5000);  
    digitalWrite(motorPin, LOW);  
    humanDetected = false;  
}  
delay(100);  
}
```

```
void displayNumber(byte i){  
    for(int j = 0; j < 7; j++)  
    {  
        if(segCode[i][j] == 1)  
            digitalWrite(pins[j], HIGH);  
        else  
            digitalWrite(pins[j], LOW);  
    }  
}
```