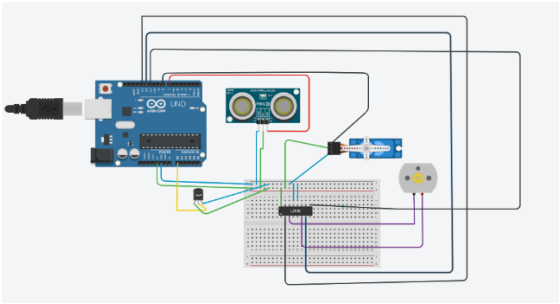
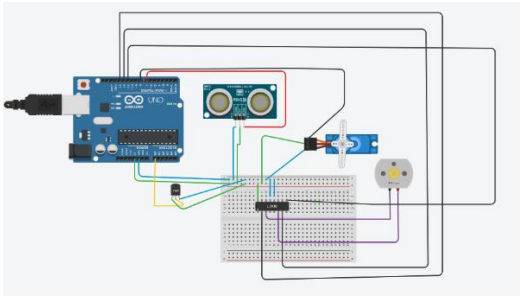
ASSIGNMENT

CIRCUIT

OFF



ON



PROGRAM

```
#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);

}

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 < 60)
 servo1.write(90);
   delay(2000);
 }
 else
 {
   servo1.write(0);
 }
 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;
}
```