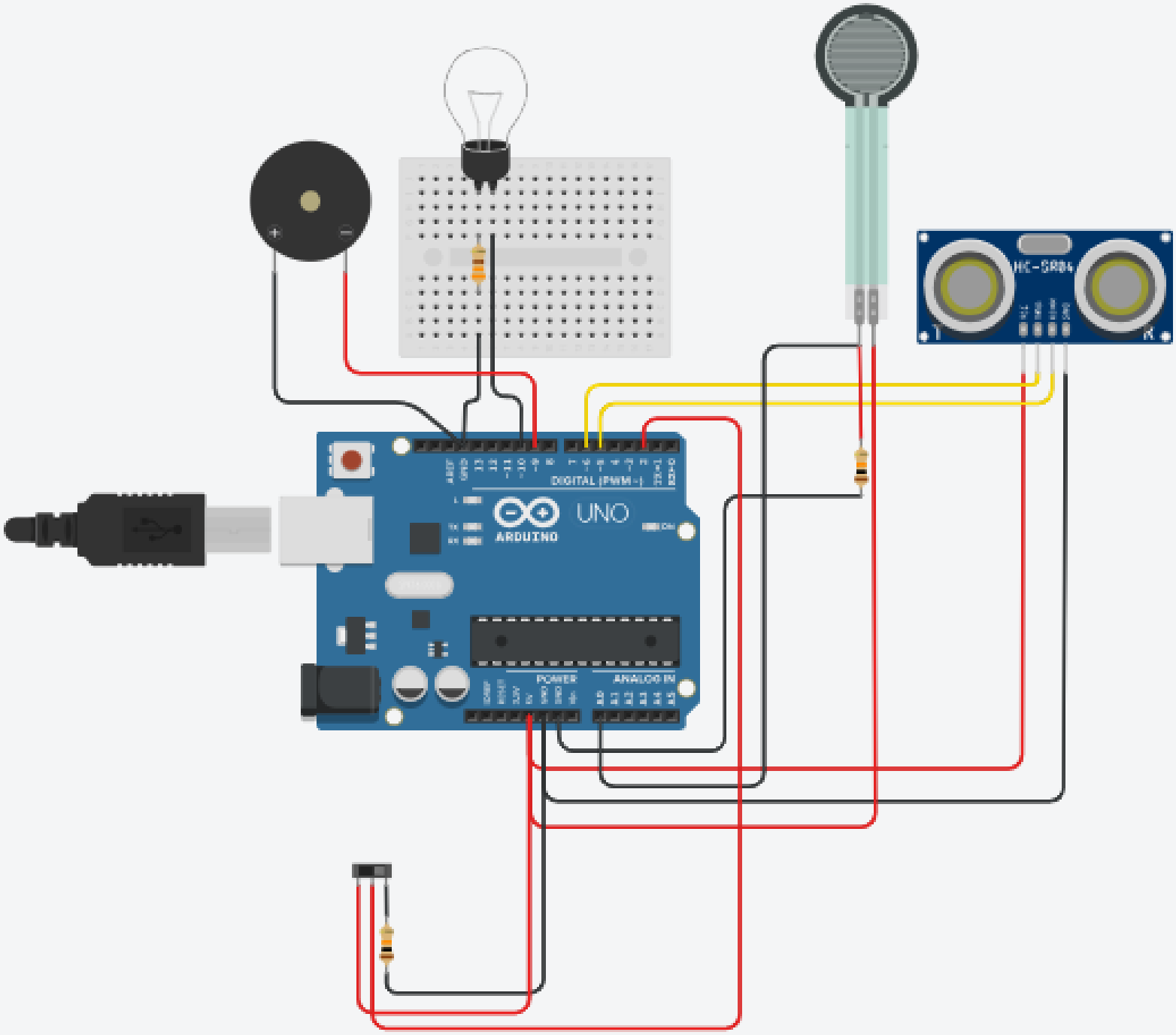
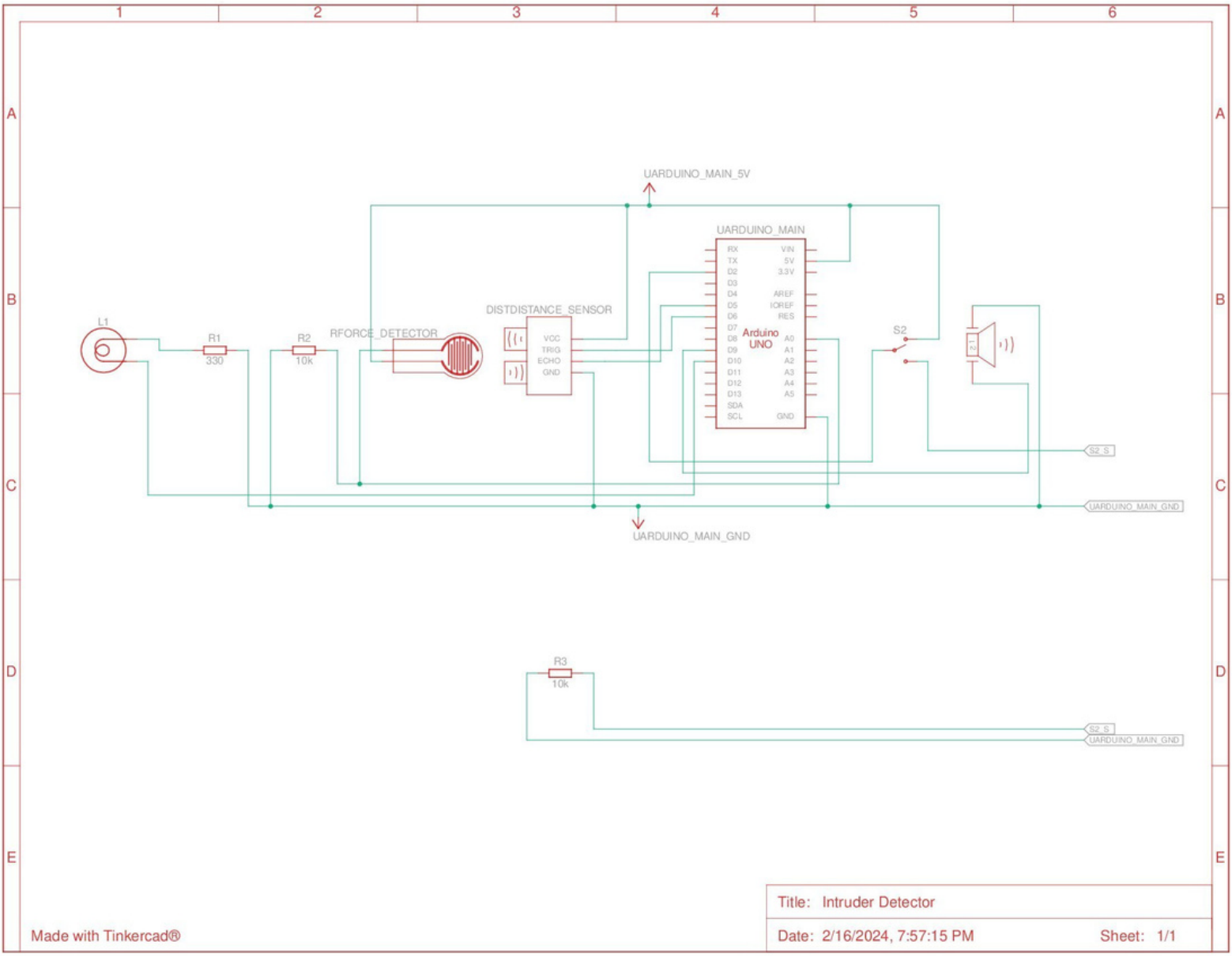
Assignment

Name: Abdul Wahab

Roll No.: 20L-2122

Section: BCS-8A


HC-SR04
UNO
ARDUINO
DIGITAL (PWM~)
POWER
ANALOG IN


1
2
3
4
5
6
A
B
C
D
E
UARDUINO_MAIN_5V
UARDUINO_MAIN
RX
TX
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
SDA
SCL
VIN
5V
3.3V
AREF
IOREF
RES
A0
A1
A2
A3
A4
A5
GND
Arduino
UNO
L1
R1
330
R2
10K
RFORCE_DETECTOR
DISTDISTANCE_SENSOR
VCC
TRIG
ECHO
GND
S2
S2_S
UARDUINO_MAIN_GND
R3
10k
Made with Tinkercad®
Title: Intruder Detector
Date: 2/16/2024, 7:57:15 PM
Sheet: 1/1

```
// C++ code
// https://www.tinkercad.com/things/iVHwMUeKbFZ-stunning-vihelmo/editel?
sharecode=QLqD48mVV55H2QZpbTZsAWWASJPJOUZ2vDeB1GfO7eI
int distance = 0;

int force = 0;

int switchPin = 2;

long readUltrasonicDistance(int triggerPin, int echoPin)
{
pinMode(triggerPin, OUTPUT); // Clear the trigger
 digitalWrite(triggerPin, LOW);
 delayMicroseconds(2);
 // Sets the trigger pin to HIGH state for 10 microseconds
 digitalWrite(triggerPin, HIGH);
 delayMicroseconds(10);
 digitalWrite(triggerPin, LOW);
 pinMode(echoPin, INPUT);
 // Reads the echo pin, and returns the sound wave travel time in microseconds  return
pulseIn(echoPin, HIGH);
}

void setup()
{
pinMode(switchPin, INPUT);
 pinMode(A0, INPUT);
 Serial.begin(9600);
 pinMode(10, OUTPUT);
 pinMode(9, OUTPUT);
}

void loop()
{
bool isArmed = digitalRead(switchPin);
 if (isArmed) {
 distance = 0.01723 * readUltrasonicDistance(6, 5);
 force = analogRead(A0);
 Serial.println(distance);
 Serial.println(force);
 if (distance <= 250) {
 digitalWrite(10, HIGH);
 delay(5000);
 } else {
 digitalWrite(10, LOW);
   }
 if (force > 700) {
 tone(9, 523, 500); // play tone 60 (C5 = 523 Hz)
 } else {
 noTone(9);
   }
 }
else { // If the switch is off (not armed)
 digitalWrite(10, LOW); // Turn off the lamp
 noTone(9); // Turn off the buzzer
  }
 delay(10); // Delay a little bit to improve simulation performance
}
```