IT-407 Lab Assignment 1

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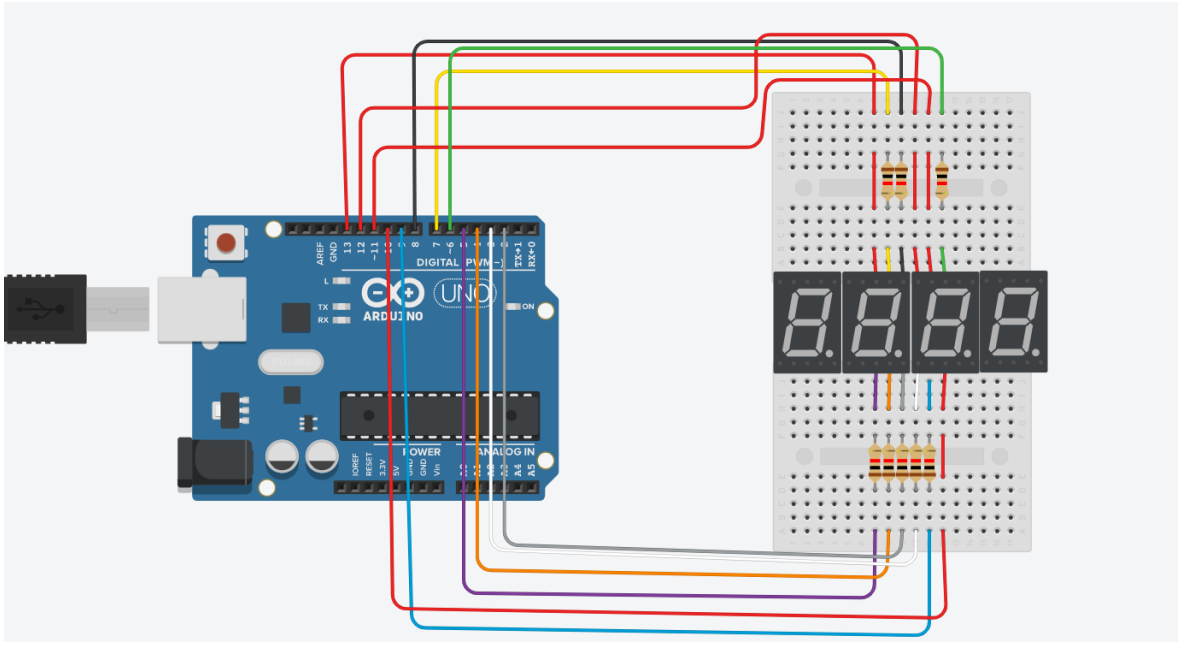
Question 1. Interfacing 4-Digit 7-Segment Display with Arduino tinkercad.

Block Screenshot:

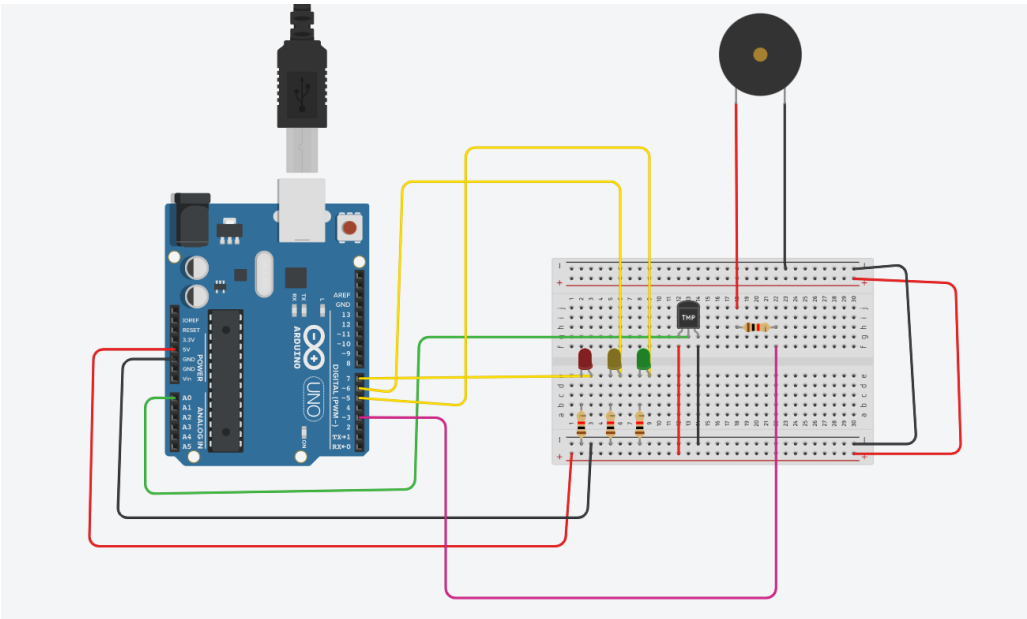


Code Screenshot:

```
        digitalWrite(POWER_PINS[i], LOW);
    }
    for (byte i = 0; i < SEGMENT_LENGTH; i++) {
        pinMode(SEGMENT_PINS[i], OUTPUT);
        digitalWrite(SEGMENT_PINS[i], HIGH);
    }
}

void loop() {
    x %= 10000;

    for (byte k = 0; k < POWER_LENGTH; k++) {
        for (byte j = 0; j < (100 / POWER_LENGTH); j++) {

            unsigned int y = 1;
            for (byte i = 0; i < POWER_LENGTH; i++) {
                y *= 10;

                setLED(POWER_PINS[i], DIGITS[(x / (y / 10)) % 10]
            }

            delay(1);
        }
    }
    x++;
}

void setLED(byte powerPin, unsigned int segmentValue, bool enable
    digitalWrite(powerPin, enabled ? HIGH : LOW);
    for (byte i = 0; i < SEGMENT_LENGTH; i++) {
        if ((segmentValue & SEGMENTS[i]) > 0) {
            digitalWrite(SEGMENT_PINS[i], enabled ? LOW : HIGH);
        }
    }
    delay(1);
```

Question 2. Temperature Monitoring System with a Piezo Buzzer using Tinkercad Components Required: 3-LEDs(Red,Green, Yellow), Temperature Sensor, Piezo Buzzer if Temerature<25 then Green LED should glow if Temerature>25 and Temerature<50 then Yellow LED should glow if Temerature>50 then RED LED should glow and buzzer should on

Block Screenshot:

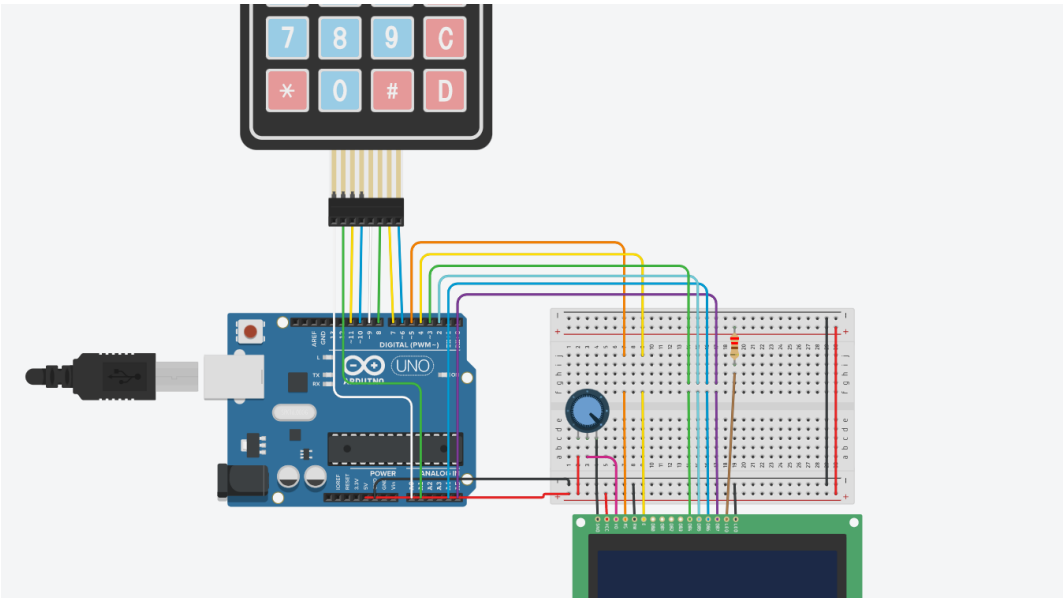


Code Screenshot:

```
Serial.print(celsius);
Serial.print(" C, ");


 if (celsius < 25) {
  digitalWrite(5, HIGH);
  digitalWrite(6, LOW);
  digitalWrite(7, LOW);
}
if (celsius >= 25 && celsius < 50) {
  digitalWrite(5, LOW);
  digitalWrite(6, HIGH);
  digitalWrite(7, LOW);
}
if (celsius >= 50) {
  digitalWrite(5, LOW);
  digitalWrite(6, LOW);
  digitalWrite(7, HIGH);
  tone(3, 220, 100);
  delay(100);
}

delay(1000);
```

Question 3. Print Keypad Value on LCD with Arduino

Block Screenshot:



Code Screenshot:

```
#include <Keypad.h>
#include <LiquidCrystal.h>

LiquidCrystal lcd(5, 4, 3, 2, A4, A5);


const byte ROWS = 4; //four rows
const byte COLS = 4; //three columns
char keys[ROWS][COLS] = {
  {'1','2','3','A'},
  {'4','5','6','B'},
  {'7','8','9','C'},
  {'*','0','#','D'}
};
byte rowPins[ROWS] = {A0, A1, 11, 10}; //connect to the row pinou
byte colPins[COLS] = {9, 8, 7, 6}; //connect to the column pinout
int LCDRow = 0;


Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS,


void setup(){
   Serial.begin(9600);
   lcd.begin(16, 2);
   lcd.setCursor(LCDRow, 0);
   }

void loop(){
  char key = keypad.getKey();

  if (key){
    Serial.println(key);
    lcd.print(key);
    lcd.setCursor (++LCDRow, 0);
```