Lab 7

- Microcontroller Experiments using Arduino or MSP430: Display and I/O interfacing

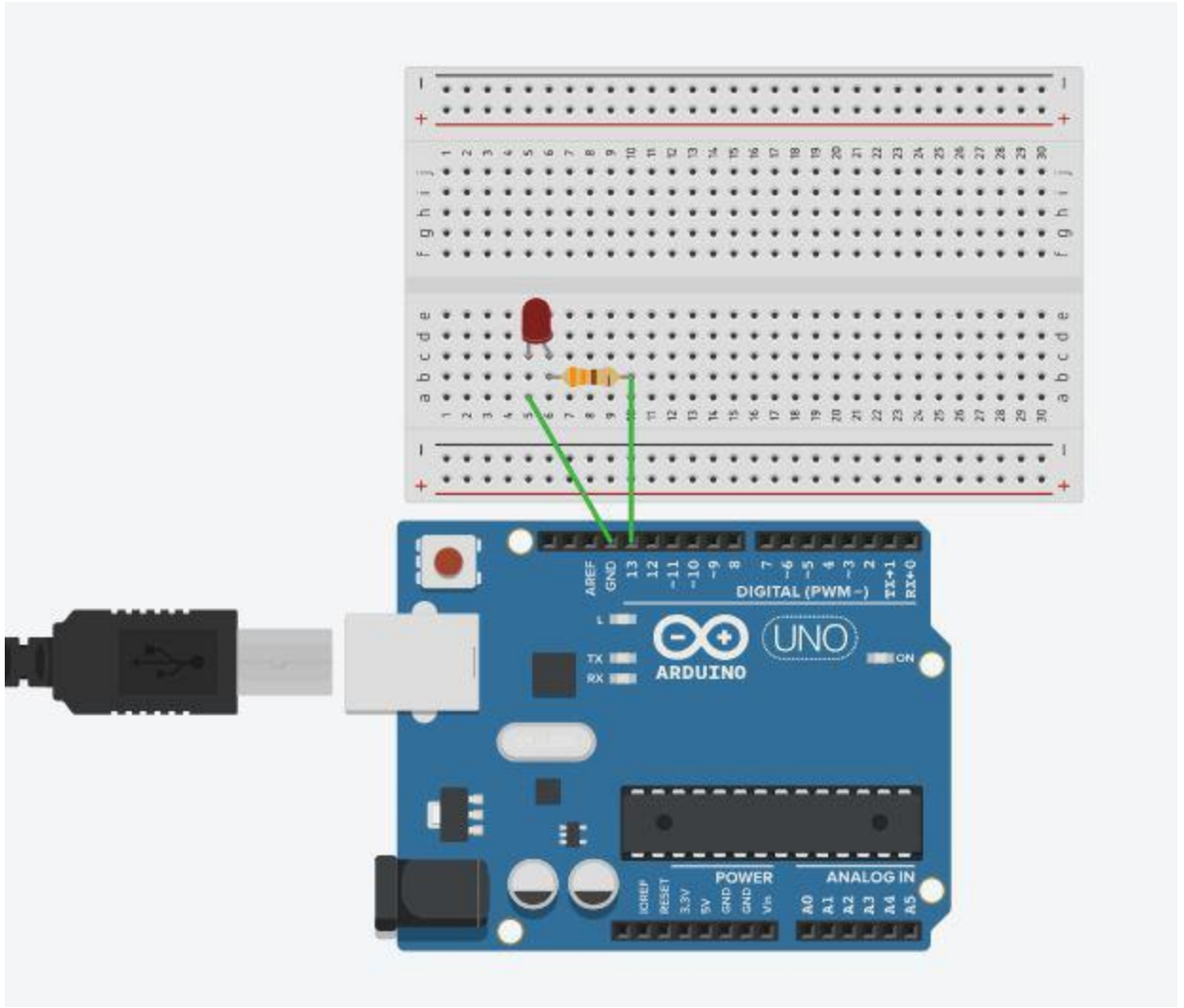
a. LED flash light

b. 7-segmented display

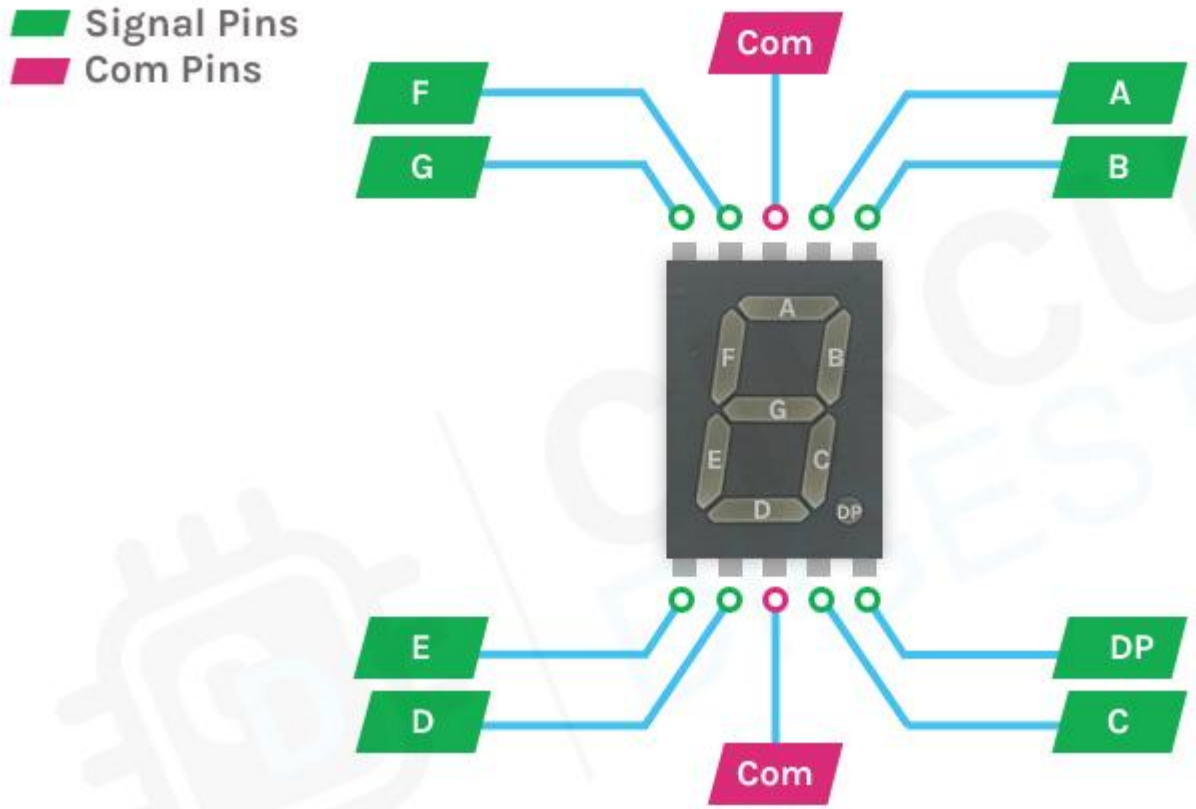
LED

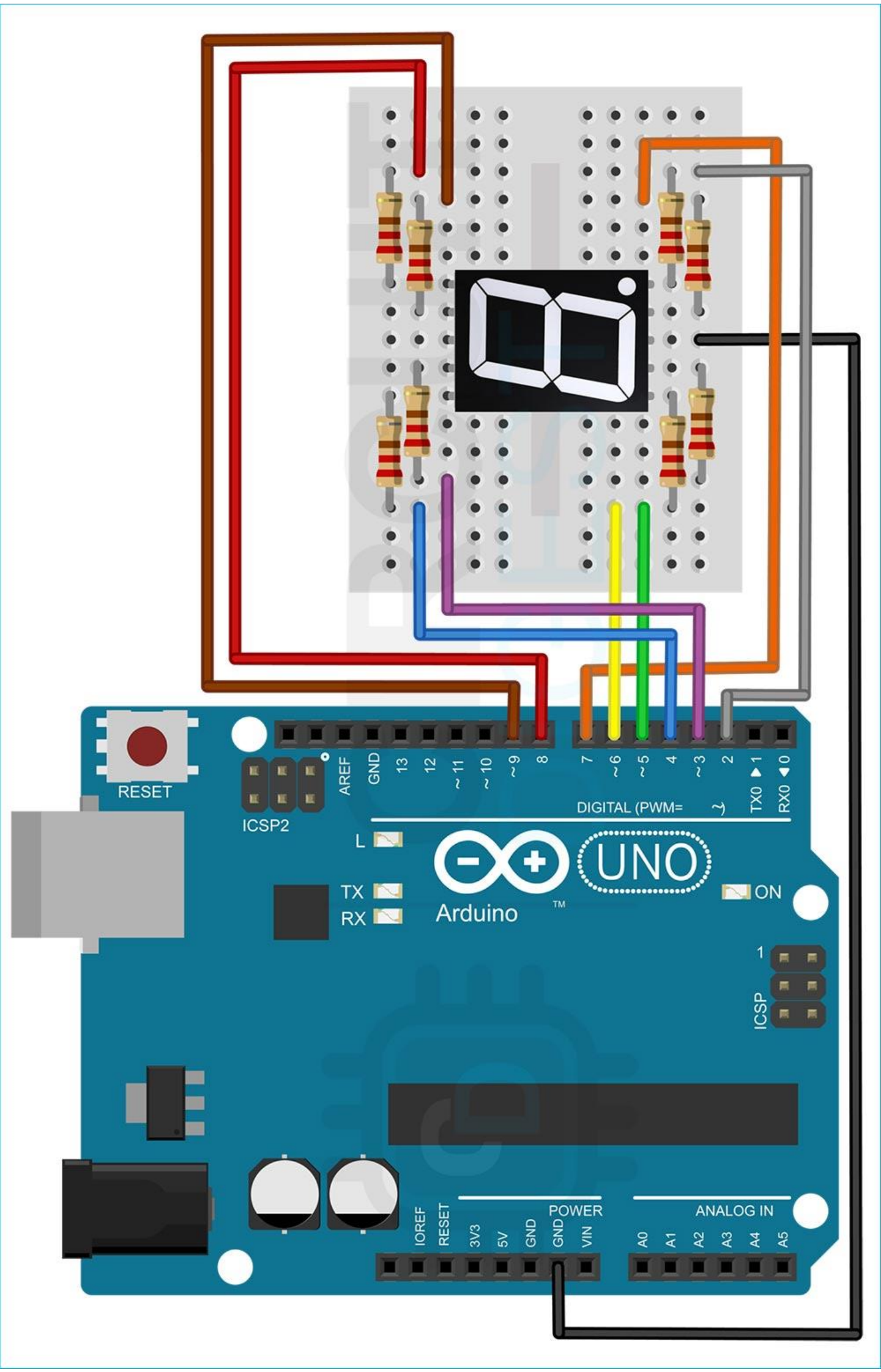
```
int LEDpin = 13;
int delayT = 1000;
void setup() {
  // put your setup code here, to run once:
pinMode(LEDpin, OUTPUT);
}
void loop() {
  // put your main code here, to run repeatedly:
digitalWrite(LEDpin, HIGH);
delay(delayT);
digitalWrite(LEDpin, LOW);
delay(delayT);
}
```

LED



7 Segment Display




RESET
ICSP2
AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
4
~3
2
TX0 1
RX0 0
DIGITAL (PWM=
L
TX
RX
Arduino
UNO
ON
ICSP
POWER
IOREF
RESET
3V3
5V
GND
GND
VIN
ANALOG IN
A0
A1
A2
A3
A4
A5

7 Segment Display

A	B	C	D	E	F	G	Display
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	

```
#include "SevSeg.h"

SevSeg sevseg;

void setup() {

byte numDigits = 1;

byte digitPins[] = {};

byte segmentPins[] = {9,8, 7, 6, 5, 4, 3, 2};

byte displayType = COMMON_CATHODE;

bool resistorsOnSegments = true;

sevseg.begin(displayType, numDigits, digitPins, segmentPins,
resistorsOnSegments); sevseg.setBrightness(90);

}
```

```
void loop() {
for(int i = 0; i <= 10; i++)
{
if (i == 10) { i = 0; }
sevseg.setNumber(i);
sevseg.refreshDisplay();
delay(1000);
}
}
```