



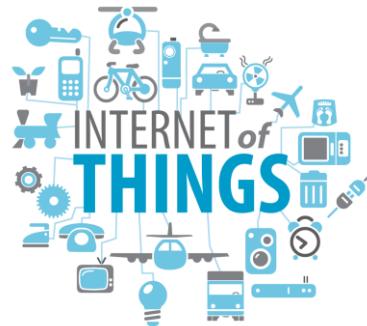
UNIVERSITY OF SCIENCE - VNUHCM

Faculty of Information Technology

INTERNET OF THINGS

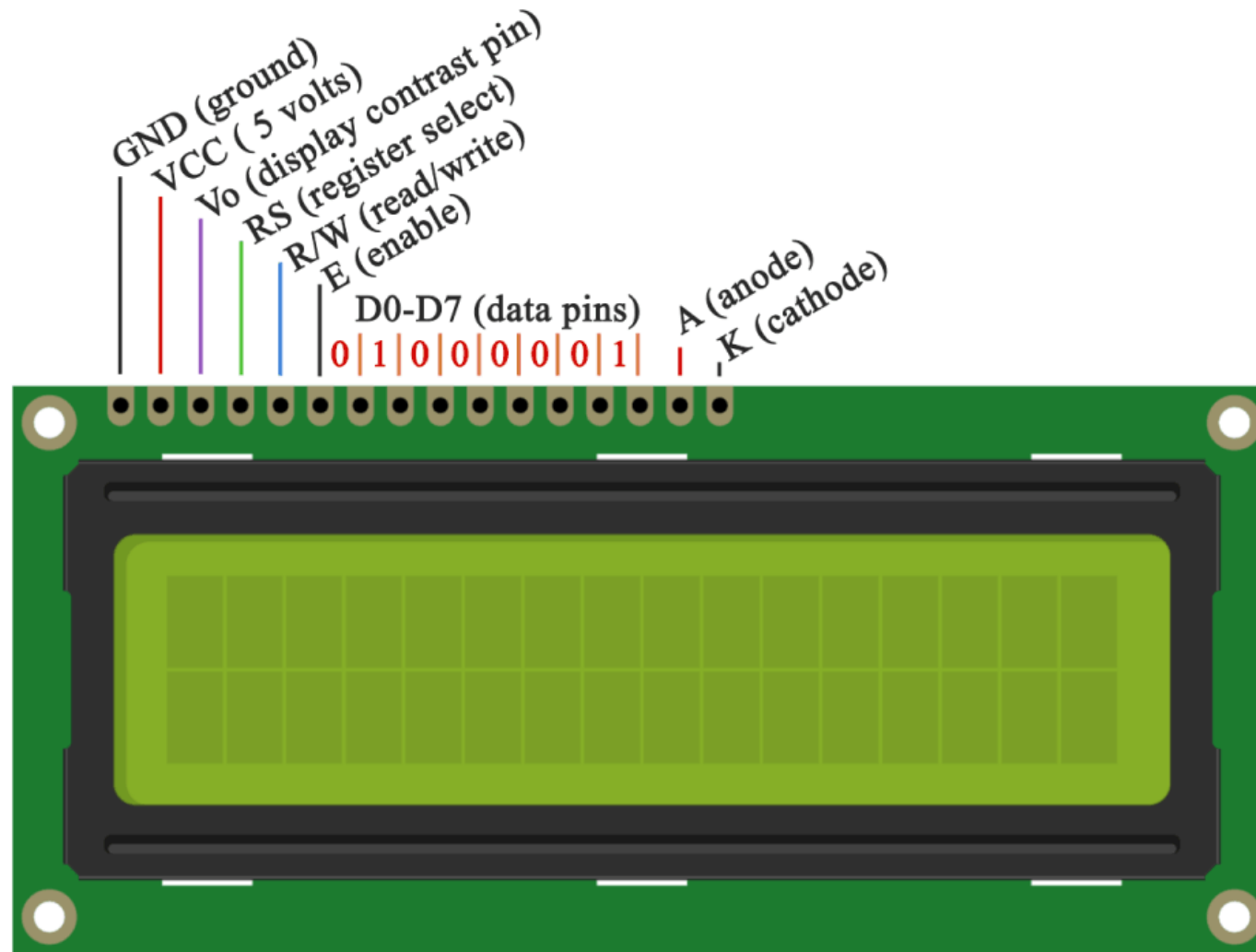
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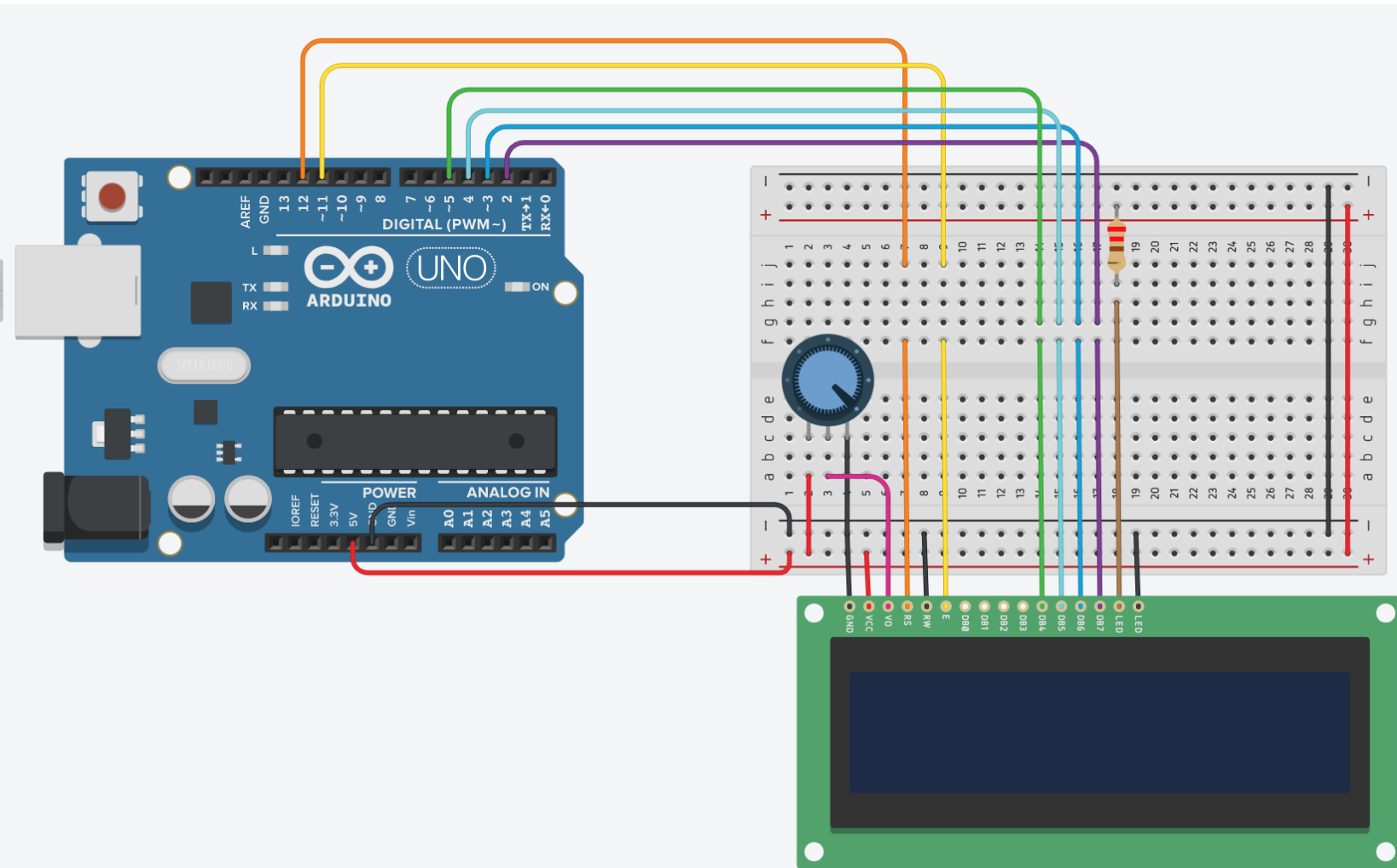
LCD





LCD
Liquid Crystal
Display





LCD Module	Arduino Pin	Potentiometer
VSS	GND	1
VDD	5v	3
V0		2
RS	12	
RW	GND	
E	11	
D4	5	
D5	4	
D6	3	
D7	2	
A	5V	
K	GND	

Upper 4bit Lower 4bit		LLLL	LLLH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)																
LLLH	(2)																
LLHL	(3)																
LLHH	(4)																
LHLL	(5)																
LHLH	(6)																
LHHL	(7)																

```
// include the library code:
#include <LiquidCrystal.h>

// initialize the library with the numbers of the interface pins
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

void setup() {
    // set up the LCD's number of columns and rows:
    lcd.begin(16, 2);
    // Print a message to the LCD.
    lcd.print("hello, world!");
}

void loop() {
    // set the cursor to column 0, line 1
    // (note: line 1 is the second row, since counting begins with 0):
    lcd.setCursor(0, 1);
    // print the number of seconds since reset:
    lcd.print(millis() / 1000);
}
```

LiquidCrystal library

Autoscroll

Blink

Cursor

Display

Scroll

Reference:

<https://www.arduino.cc/en/Reference/LiquidCrystal>



Display Temperature + Humidity on LCD
