

Six Nations Polytechnic

STEM/STEAM - Tech Wednesdays

March 2018 – Class #2

StepByStep Instructions



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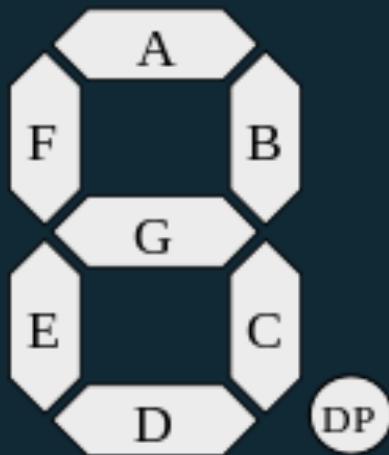
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https://en.wikipedia.org/wiki/Six_Nations_Polytechnic

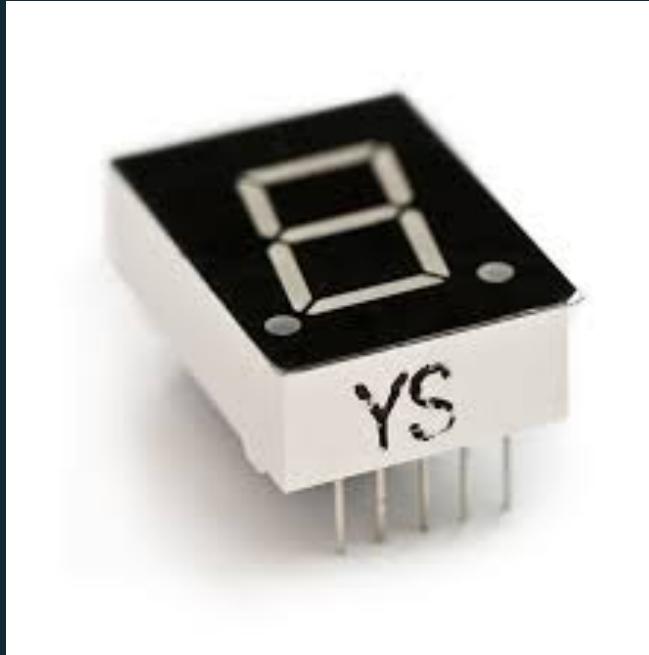


7-Segment LED What can you do with it.



Goal

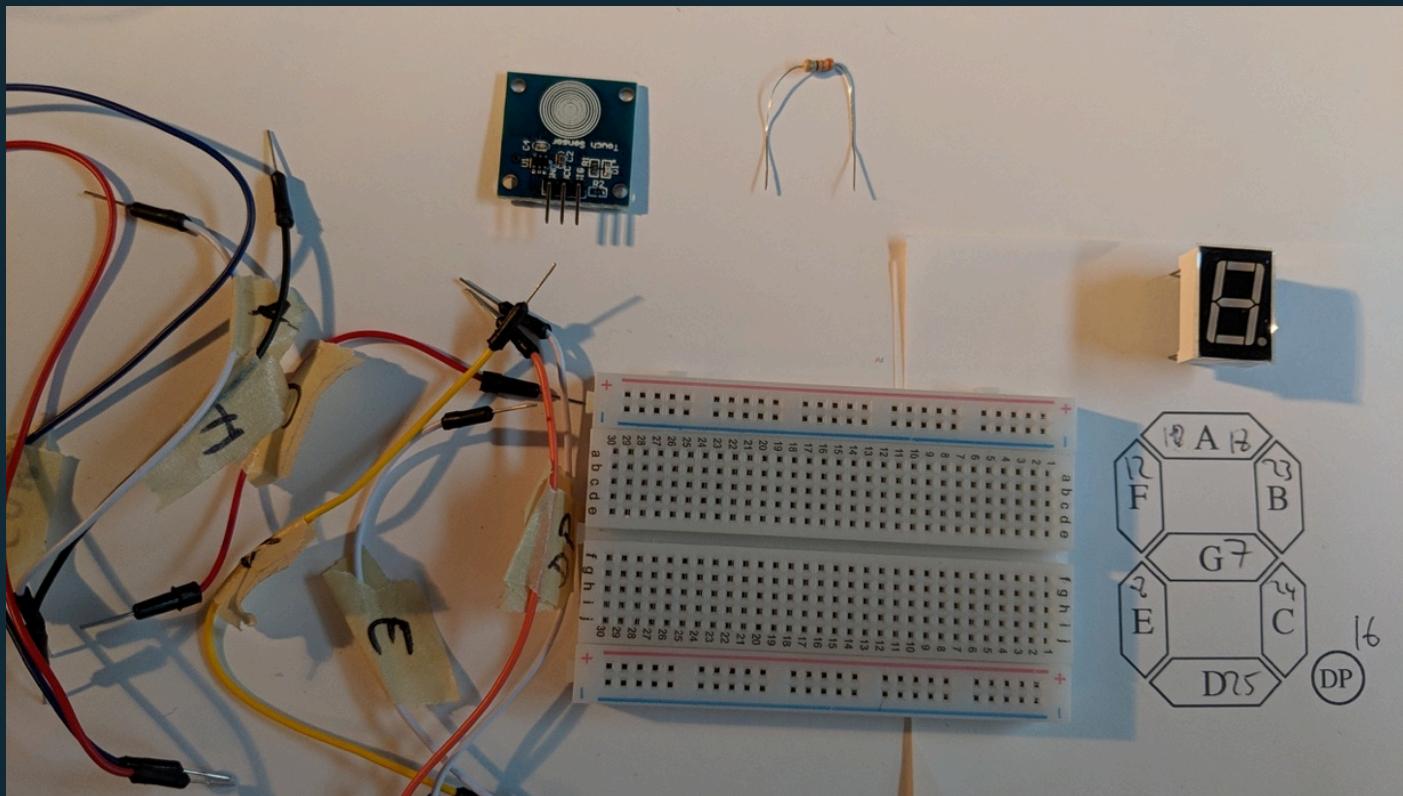
We use the 7-Seg LED and a touch sensor to create counter



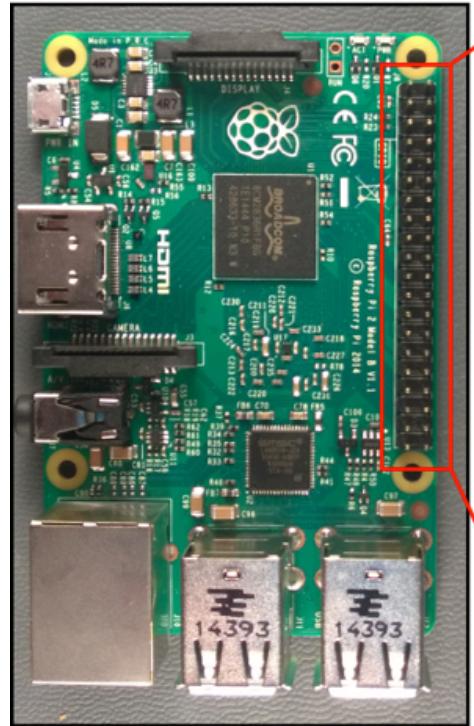
7-Segment LED step by step instructions

Following the instruction to wire the PI and the
7-Segment LED and the touch sensor

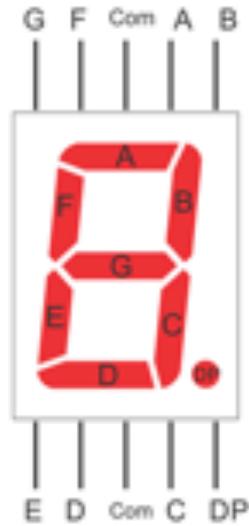
Here the materials, Cables, Touchsensor, LED , Resistor



Wiring Diagram



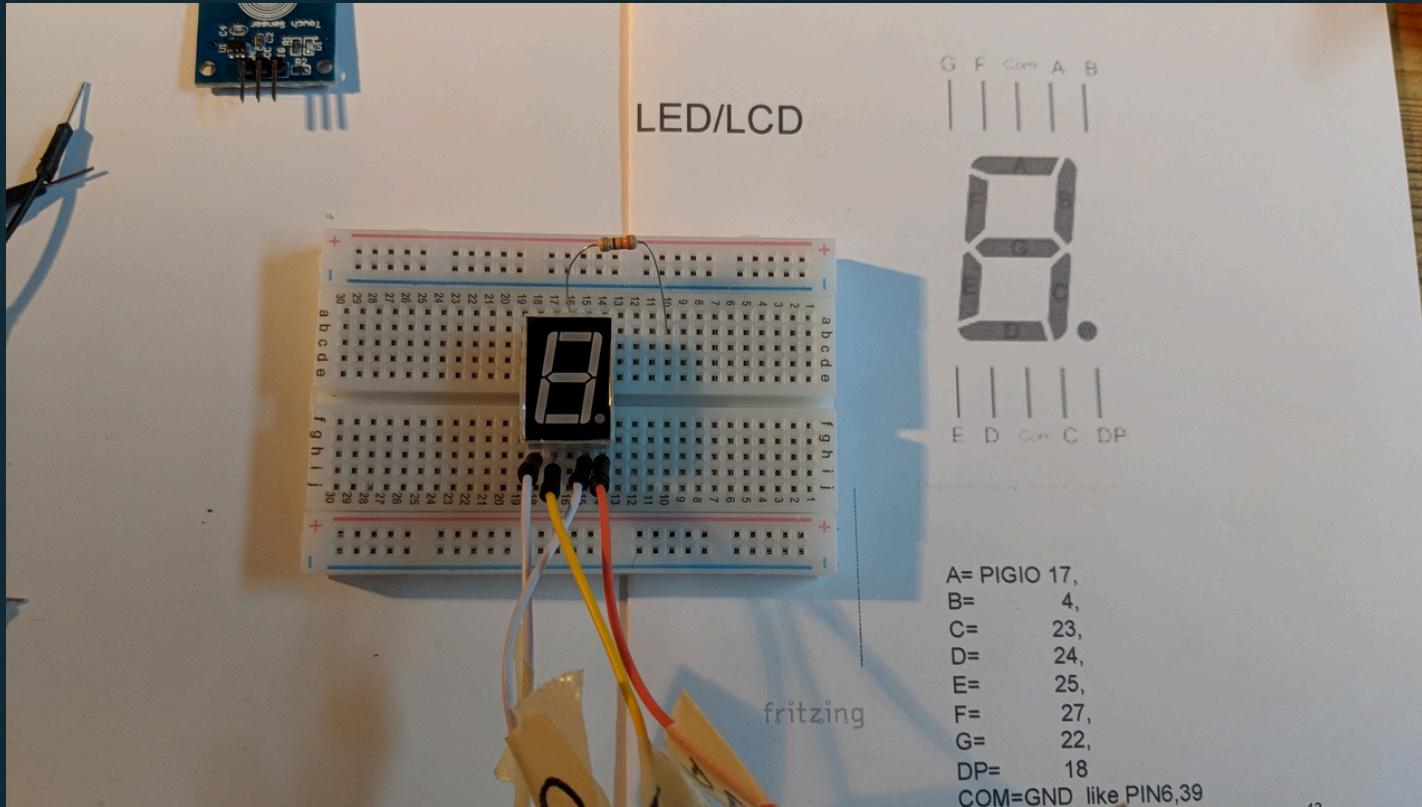
Alternate Function	
I2C1 SDA	3.3V PWR
I2C1 SCL	GPIO 2
	GPIO 3
	GPIO 4
	GND
	GPIO 17
	GPIO 27
	GPIO 22
	3.3V PWR
SPI0 MOSI	GPIO 10
SPI0 MISO	GPIO 9
SPI0 SCLK	GPIO 11
	GND
Reserved	27
	GPIO 5
	GPIO 6
	GPIO 13
SPI1 MISO	GPIO 19
	GPIO 26
	GND
Alternate Function	
	2 5V PWR
	4 5V PWR
	6 GND
	8 UART0 TX
	10 UART0 RX
	12 GPIO 18
	14 GND
	16 GPIO 23
	18 GPIO 24
	20 GND
	22 GPIO 25
	24 GPIO 8
	26 GPIO 7
	28 Reserved
	30 GND
	32 GPIO 12
	34 GND
	36 GPIO 16
	38 GPIO 20
	40 GPIO 21
	SPI0 CS0
	SPI0 CS1
	SPI1 CS0
	SPI1 MOSI
	SPI1 SCLK



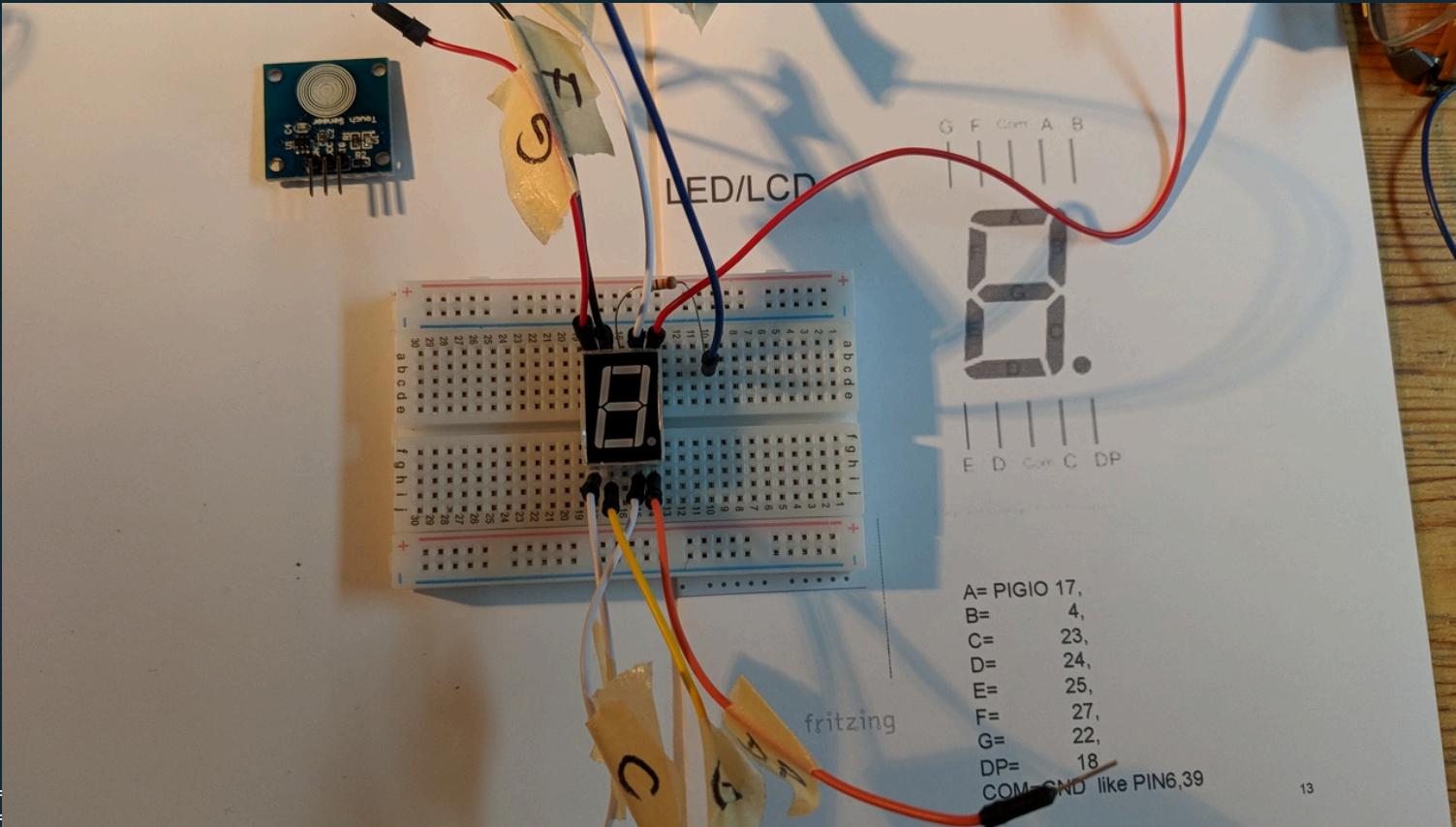
7 Segment Display - Pin Out Diagram

A= GPIO 17,
B= 4,
C= 23,
D= 24,
E= 25,
F= 27,
G= 22,
DP= 18
COM=GND like PIN (gray) 14,6,
B14393 101

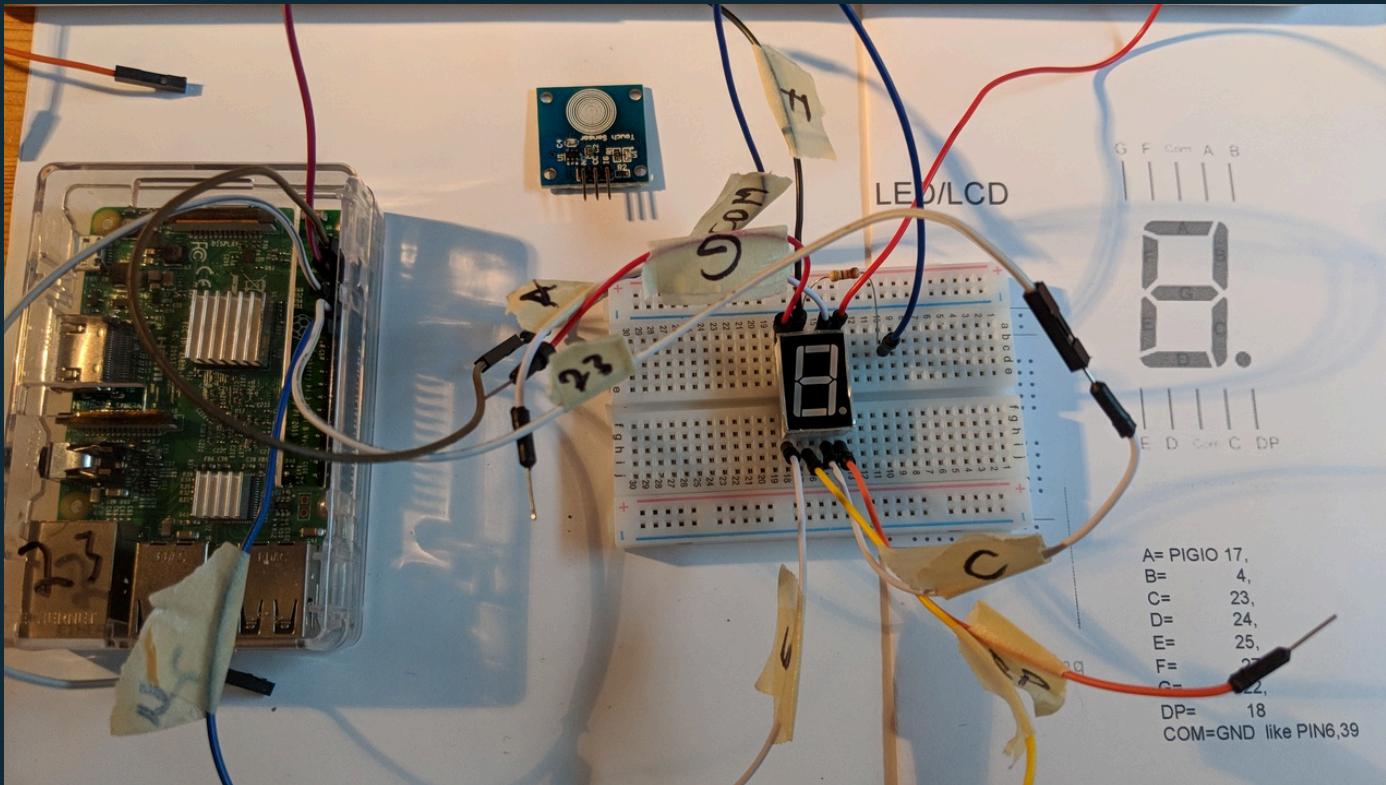
Add the cables for port E,D,C,DP TIP: add label to the cables



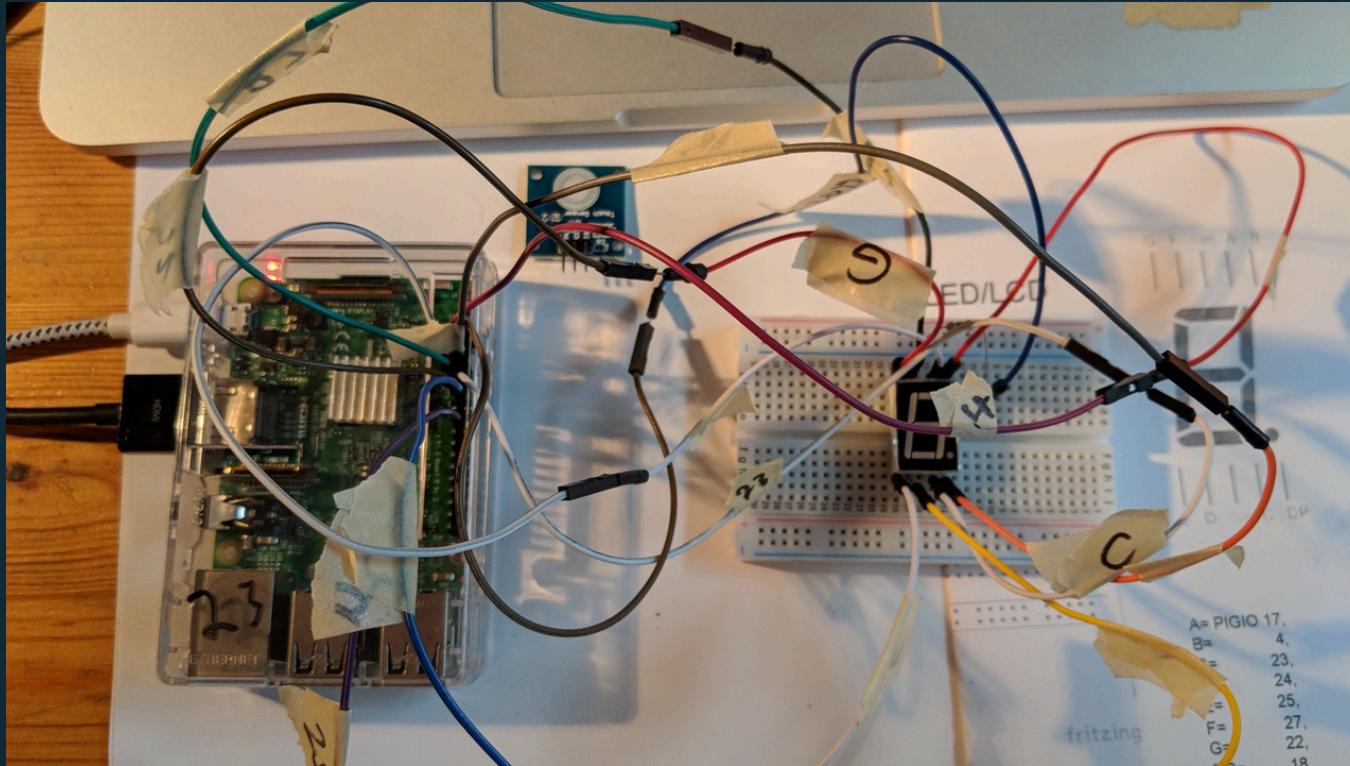
Add the G,F,A,B wires



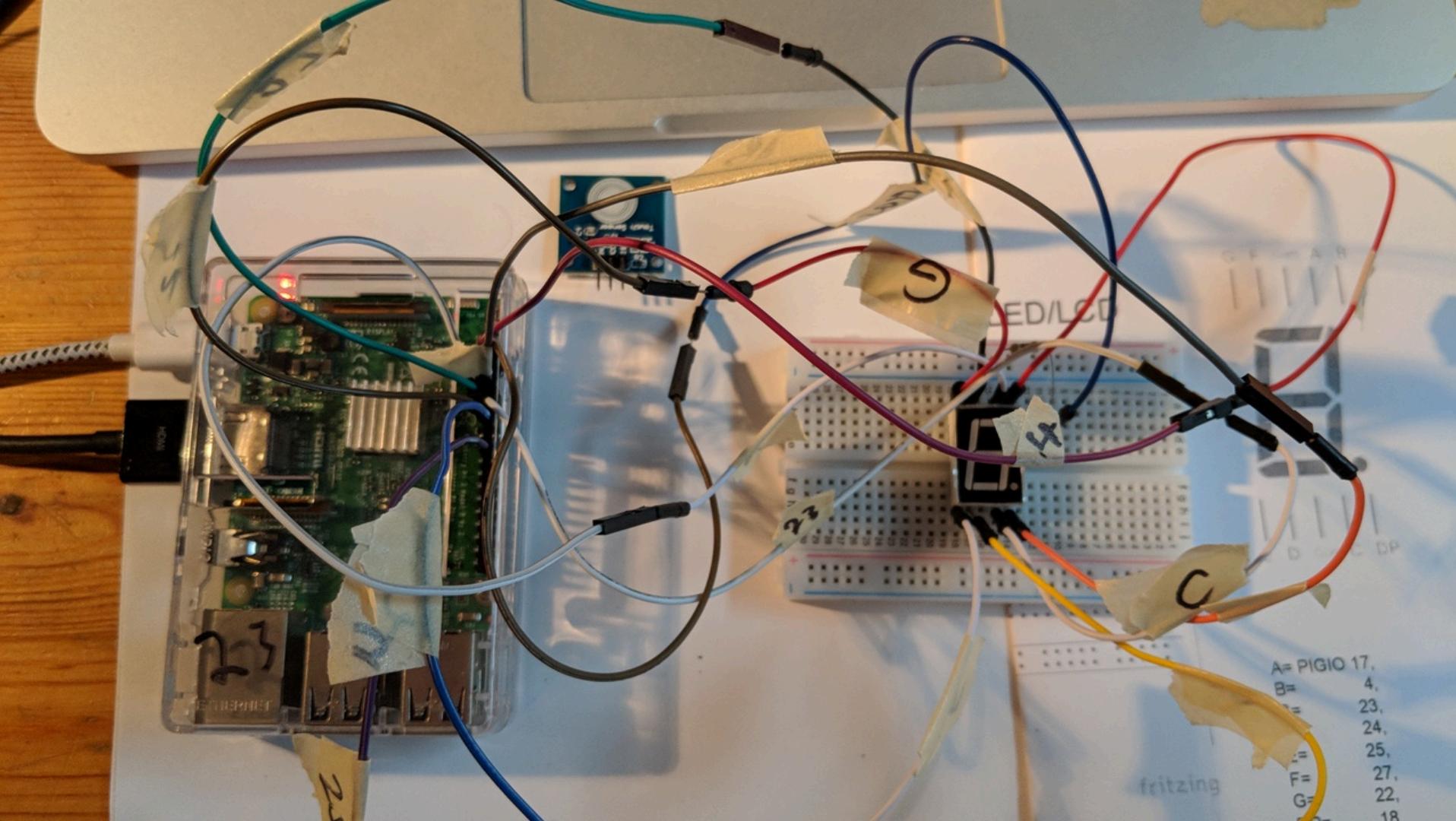
Connect the wire to the PI label the PI wires – use the wiring diagram



E= 25,
F= 27,
G= 22,
DP= 18
COM=GND like PIN (9)



**A= GPIO 17,
B= 4,
C= 23,
D= 24,
E= 25,
F= 27,
G= 22,
DP= 18
COM=GND like PIN (gray)**

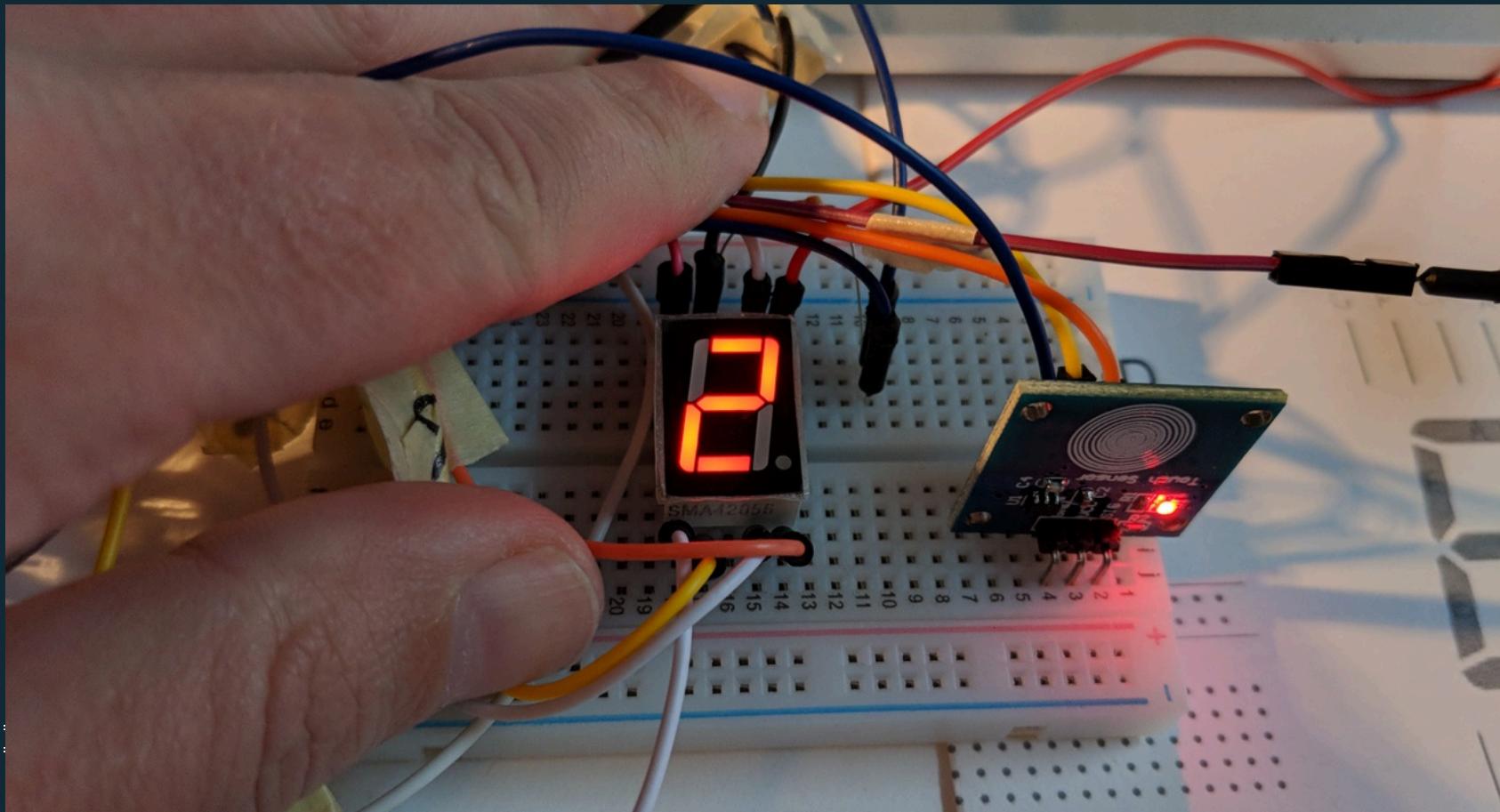


A= PIGPIO 17,
B= 4,
C= 23,
D= 24,
E= 25,
F= 27,
G= 22,
H= 18

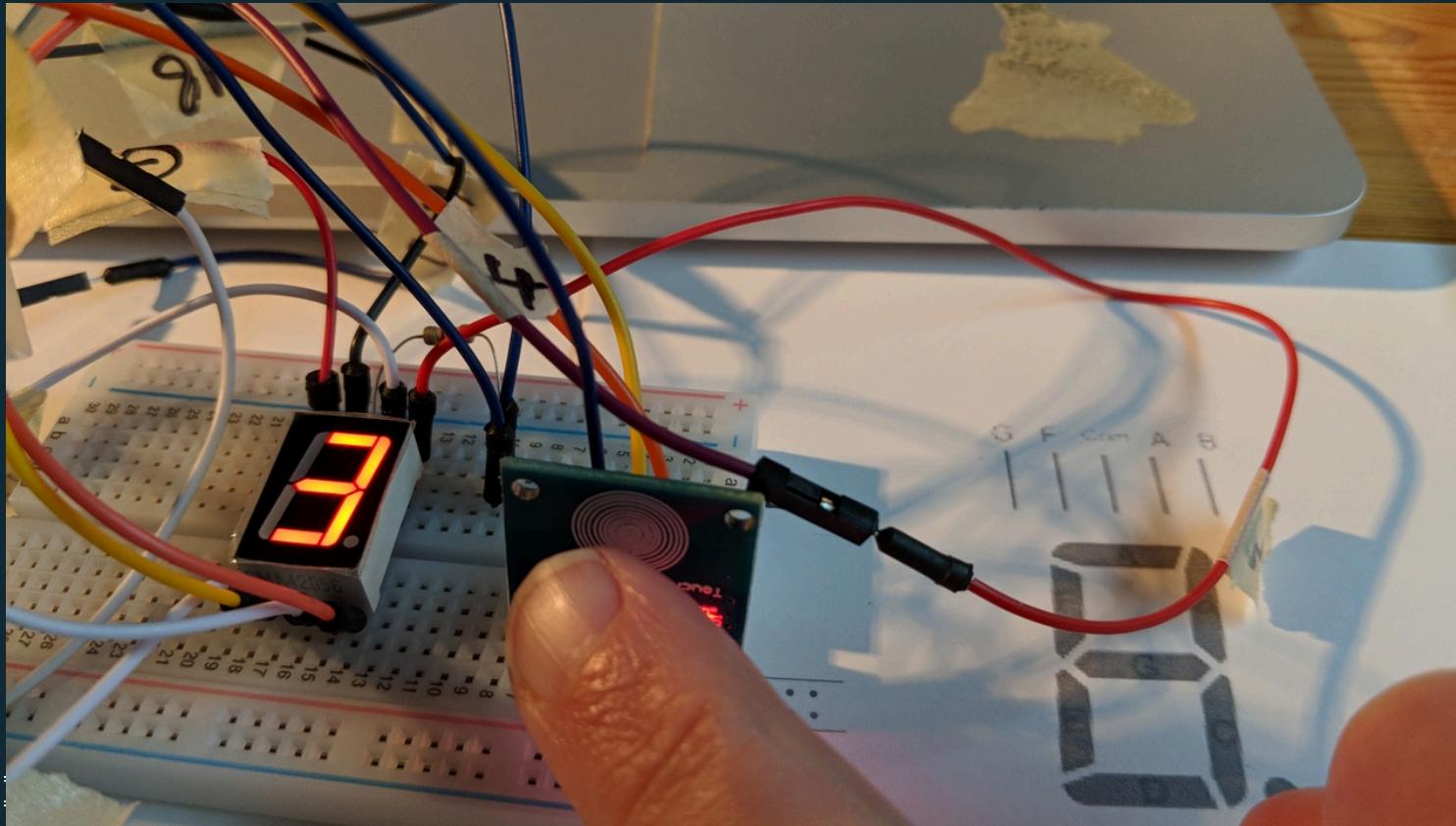
Wire the Touch Sensor

Add GND, Power and the PIN 21 for the Touchsensor

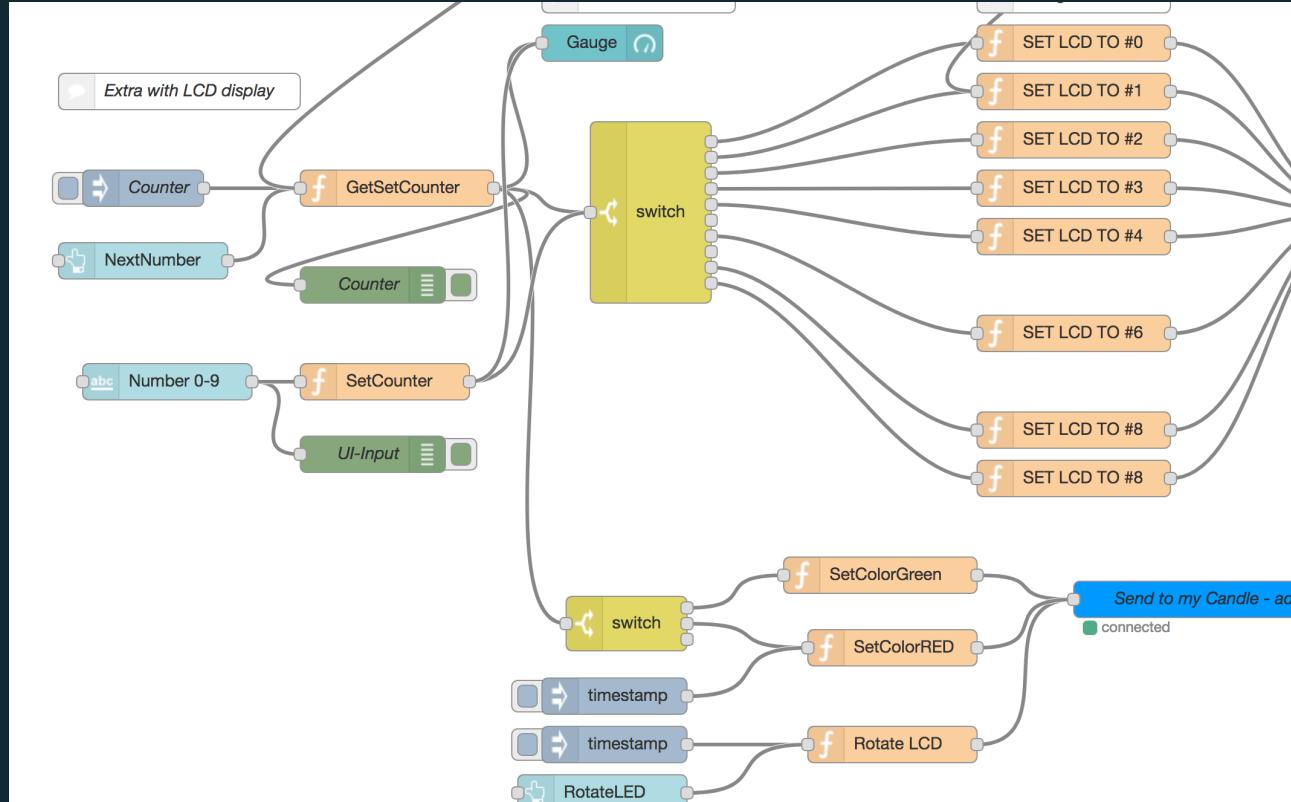
Boot up the PI and switch the candle on



Once we connected ... use the touch sensor



Adjust the code to add the missing digits code for 5, 7 in node-red



Extra lets create a Digital clock

Team up with more other Teams so you have 6 LED in your Group.

Create Digital clock which displays 24 Hour clock

HH:MM:SS

