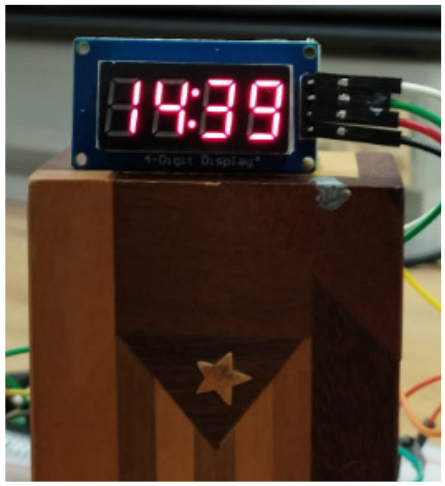
Turning the 7 Segment Display into a digital clock



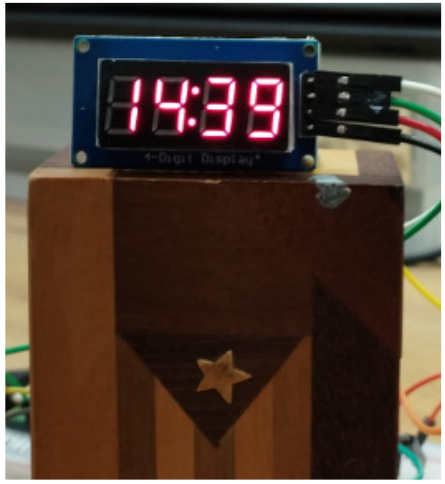
Python has a library called time
We have used the sleep module from time
Remember this:
from time import sleep
sleep(5) - gives us a 5 seconds delay

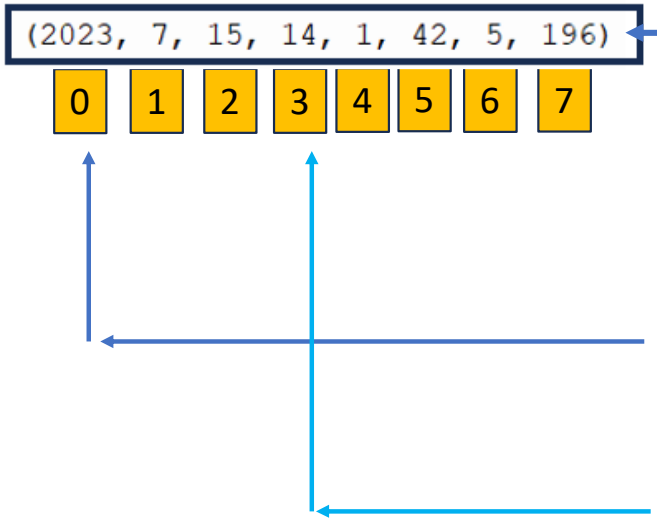
time has another module/function called localtime
from time import localtime

```
>>> from time import localtime
>>> print(localtime())
(2023, 7, 15, 14, 1, 42, 5, 196)
```

localtime() gives us the current date time information
It is organized as a tuple.
A tuple is a collection of data, separated by comma inside 2 round brackets
(Y, M, D, H, M, S, Day of Week, No of days from Jan 1)

Turning the 7 Segment Display into a digital clock





localtime()

We can assign it to a variable called timenow
timenow=localtime()

Each data in the tuple has an index number by which it can be addressed

year = timenow[0]
print(year)
Result: 2023

hr=timenow[3]
print(hr)
Result : 14

Can you get the minute?

Once you know how to get the hr and min from localtime()
you can send the hr and min data to the 7 segment display

To show the hr and min on the 7 segment display:
tm.number(hr,min)

<u>This is Ex 2.</u>
Complete the following, to turn the display into a digital clock
You only need to refresh the display only after 1 minute as this digital clock do not show time in seconds. You need sleep(??)

```
import tm1637
from machine import Pin
from time import sleep, localtime
tm = tm1637.TM1637(clk=Pin(4), dio=Pin(5))
tm.show("    ")  #to blank out the display
while True:
    ……
    ……
    ……
```

Please give Ex2 your best shot.
Send me your surrender emoji and I will dispatch the answer to you.

INTRODUCING PYTHON TUPLE

Solution to Ex 2

[digitalclock_tm1637.py] *

```
1  import tm1637
2  from machine import Pin
3  from time import sleep, localtime
4  tm = tm1637.TM1637(clk=Pin(4), dio=Pin(5))
5  tm.show("    ")
6
7
8  while True:
9      timenow=localtime()
10
11
12     hr=timenow[3]
13
14
15     minute=timenow[4]
16
17
18     tm.numbers(hr,minute)
19
20
21     sleep(60)
22
23
```

localtime() gives us the date/time information in this format

(2023, 7, 17, 10, 22, 24, 0, 198)

Here we are giving this info a name called timenow

timenow becomes a snap shot of this time

10

22

10 22

We have space on the 7 segment display for hh and mm only, so we need only to refresh the display every minute (60 seconds)