Lesson 14 4 Digit 7 segment Display

Introduction

The way that you get each digit displaying something different is to switch them on and off again, in turn, faster than the eye can observe. Using the same circuitry to control more than one ‘thing’ is called multiplexing. We need some Python code to handle this for us, and we’ll do it using 12 of the Pi’s GPIO pins (4 to switch the digits and 8 to switch the segments). For this guide I used a module with an I2C interface which only requires four wires to be connected to the Raspberry Pi’s GPIO header.

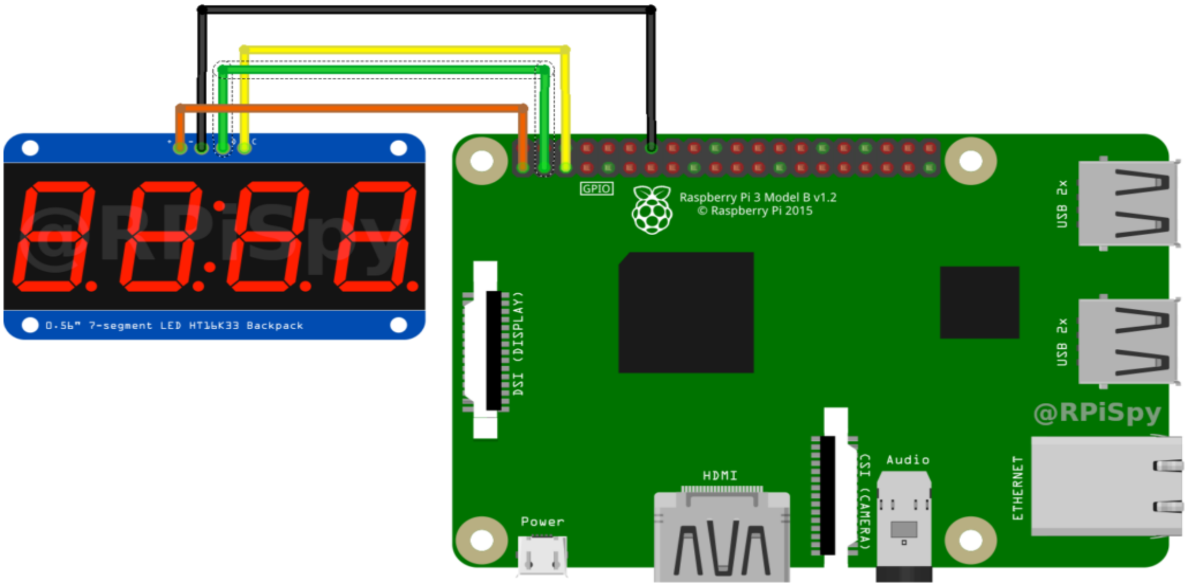
This tutorial will explain how to connect up the module, setup up the software and get some example Python scripts running.

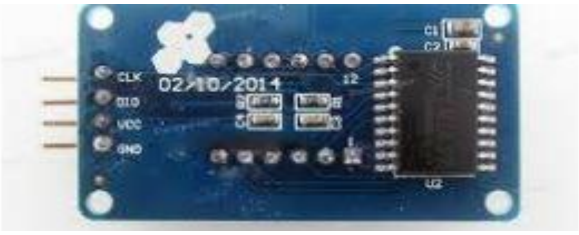
Components

- 1 Raspberry Pi
- 1- 4 digit 7-Segment I2c display
- Jumper wires

Hardware Setup

There are other 3.3V and Ground pins available on the Pi’ GPIO header so you can use those if you wish.





To actually set the contents of a particular digit, use a line like this one:

segment.writeDigit(0, int(hour / 10))

The first argument (0) is the digit position. Note that these positions are 0, 1, 3, and 4. Position 2 is reserved for the two dots in the center of the display. The second argument is the number to display.

Python Coding

Python Script to display Time

```
import sys

import time

import datetime

import RPi.GPIO as GPIO

import tm1637

#CLK -> GPIO23 (Pin 16)

#Di0 -> GPIO24 (Pin 18)

Display = tm1637.TM1637(23,24,tm1637.BRIGHT_TYPICAL)

Display.Clear()

Display.SetBrightnes(1)

while(True):

        now = datetime.datetime.now()

        hour = now.hour
        minute = now.minute

        second = now.second

        currenttime = [ int(hour / 10), hour % 10, int(minute / 10), minute % 10 ]

        Display.Show(currenttime)

        Display.ShowDoublepoint(second % 2)

        time.sleep(1)
```

Output

After successful connection and running code you will see current time of system on 4 digit 7-segment display.

Application

- Home Automation
- Temperature Monitoring System
- Smart Parking System