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CPE 406
Assignment # 3
Date Submitted: 03/08/2021

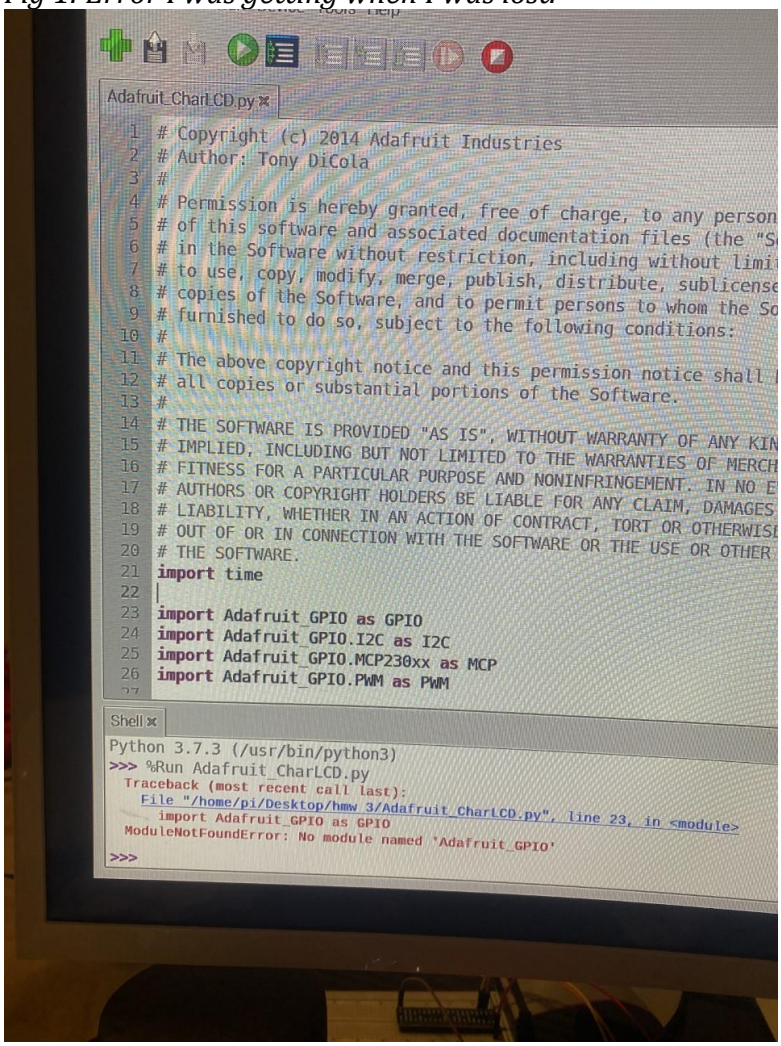
Assignment Description:

This assignment was hooking up a circuit to turn on a LCD then coding the given code “controlling_LCD_display.py” and make it display on the LCD. The changes that need to be made are changing to various relationships in the code. The first thing the code did was print hello world, then it will print show cursor, then print cursor blink, then word scroll going right then to left.

Problems Encountered:

I had a lot of problems in this lab to be quite honest. My main problem was downloading the ADA_fruit. For whatever reason I would download it from the github and it had an error every time. I will post the error under this text. The last lecture I attended was very helpful because Mathew shares his code with us and it really helped me figure out what was happening. I had to enable ic2 then download and install smbus. It was a very cool project after getting it all figured out.

Fig 1: Error I was getting when I was lost.

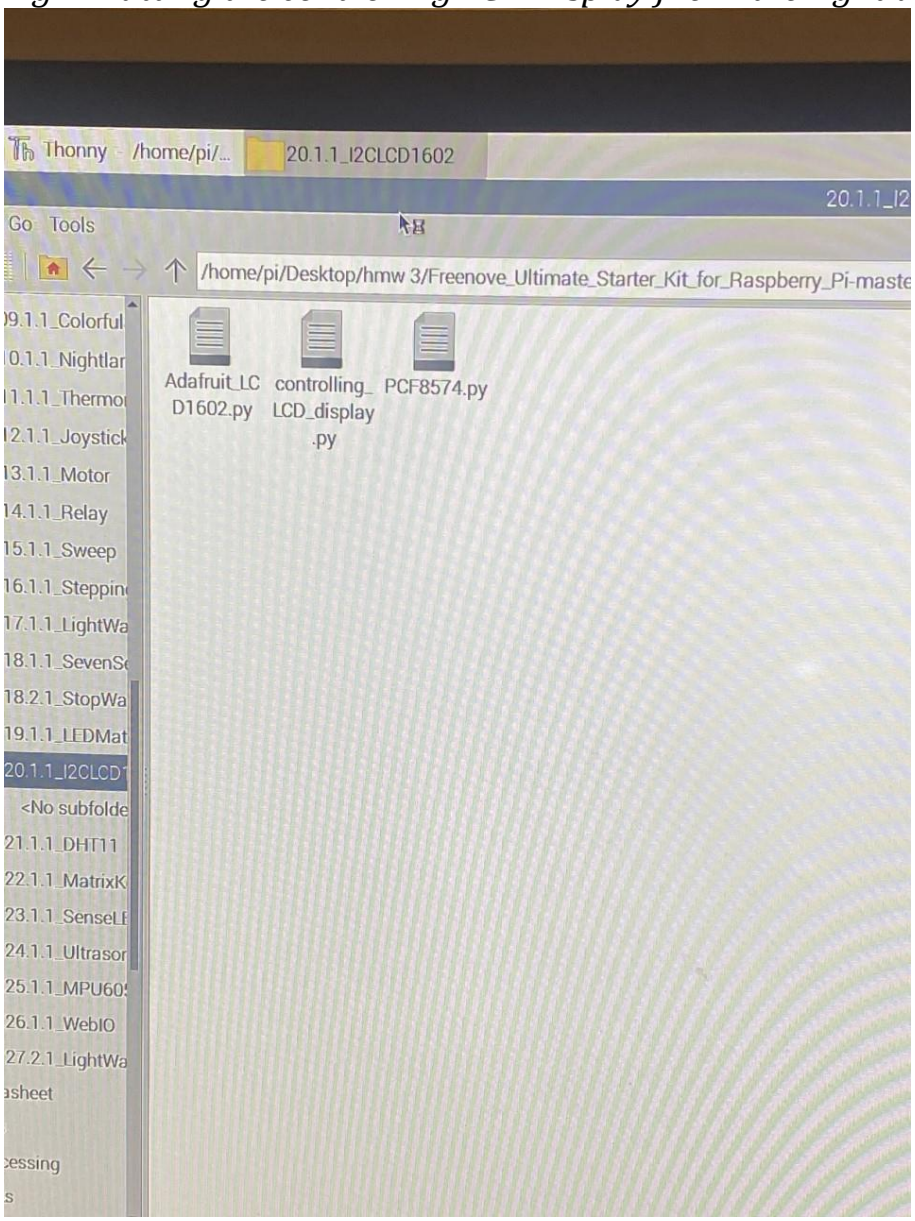


Lessons Learned:

The lessons I learned was to ask for help earlier instead of being stuck for days and trying to figure it out myself. I learned how to connect LCD which I've never done before and I messed around with it to see what it can do with other code. I also learned how to resolve OS and app version conflicts from reading the material in the homework.

Description of Completed Lab:

Fig 2: Putting the controlling LCD Display file in the right directory



Before I had many problems by not putting the file in the right directory that was giving me some issues to begin with. Below this text I will post a video demonstrating the modified code on my lcd.

Video below:

https://youtu.be/RgHJilZmkik

Fig 3: Modified code

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Modifed it but orginally from mathew.

import time
from PCF8574 import PCF8574_GPIO

from Adafruit_LCD1602 import Adafruit_CharLCD
# Define LCD column and row size for 16x2 LCD.
lcd_columns = 16
lcd_rows = 2
# Initialize the LCD using the pins
mcp = PCF8574_GPIO(0x27)

lcd = Adafruit_CharLCD(pin_rs=0, pin_e=2, pins_db=[4,5,6,7], GPIO=mcp)

lcd.begin(16,2)
# Turn backlight on
mcp.output(3,1)
# Print a two line message
lcd.message('Hello\nworld!')
# Wait 5 seconds
sleep_time = 2.5
time.sleep(sleep_time)
# Demo showing the cursor.
lcd.clear()
lcd.cursor()
lcd.message('Show cursor')
time.sleep(sleep_time)
# Demo showing the blinking cursor.
lcd.clear()
lcd.blink()
lcd.message('Blink cursor')
time.sleep(sleep_time)
# Stop blinking and showing cursor.
lcd.noCursor()
lcd.noBlink()
# Demo scrolling message right/left.
lcd.clear()
message = 'Scroll'
lcd.message(message)
for i in range(lcd_columns-len(message)+1):
    time.sleep(0.5)
    lcd.scrollDisplayRight()
for i in range(lcd_columns-len(message)):
    time.sleep(0.5)
    lcd.DisplayLeft()
# Turn backlight off.
time.sleep(2)
lcd.clear()
mcp.output(3,0)
```

Please click the first link above to find my video on Youtube.