جامعة حلب

كلية الهندسة الكهربائية والالكترونية

مخبر النظم الالكترونية المتقدمة

«محاضرات القسم العملي لمقرر النظم الالكترونية القابلة للبرمجة»

التجربة التاسعة

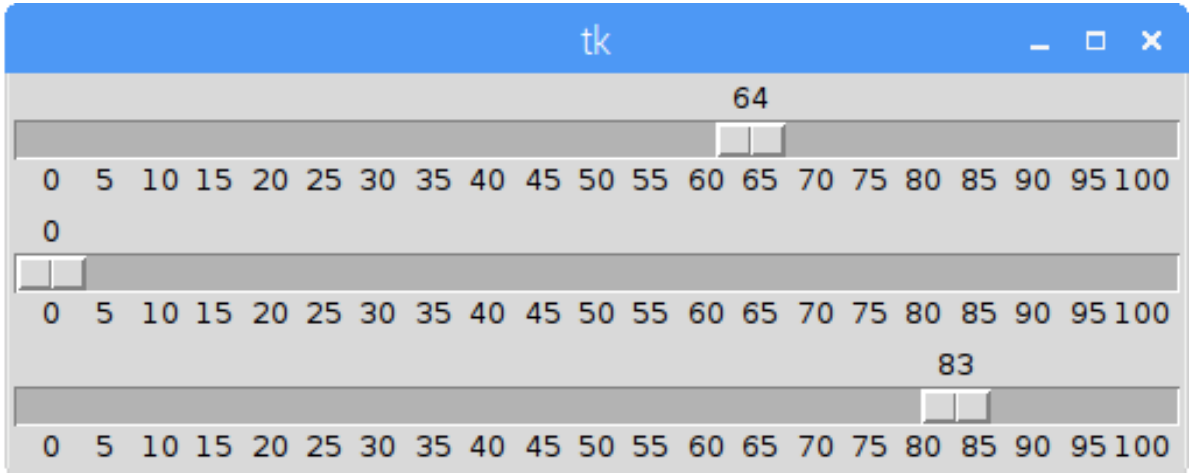
إعداد: م. علا جزماتي

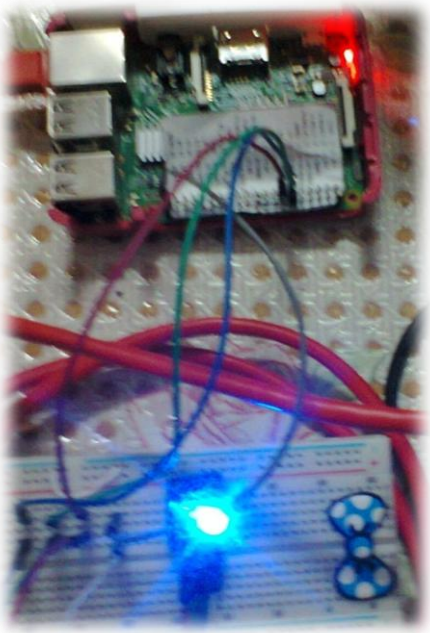
الفصل الثاني

2017

1

RGB LED GUI



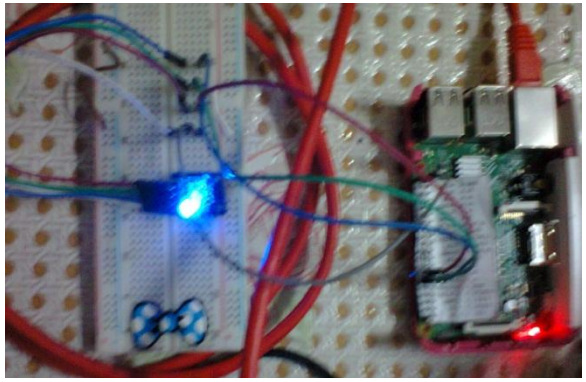


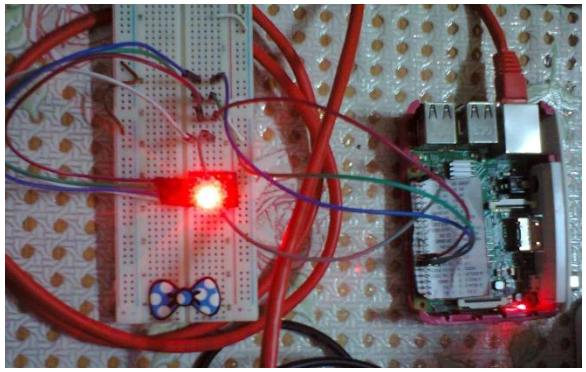
Aula Jazmati

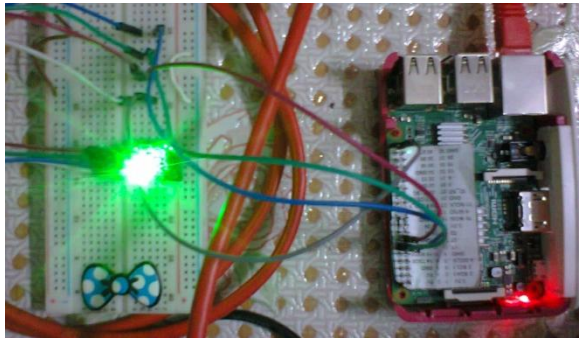
2017-2018

RGB LED GUI

```
1  from tkinter import *
2  import time
3  import RPi.GPIO as io
4  io.setmode(io.BOARD)
5  io.setwarnings(False)
6  Top = Tk()
7  io.setup(11,io.OUT)
8  io.setup(15,io.OUT)
9  io.setup(13,io.OUT)
10 pr = io.PWM(11,50)
11 pr.start(5)
12 pg = io.PWM(15,50)
13 pg.start(5)
14 pb = io.PWM(13,50)
15 pb.start(5)
16 def updater1(dutyr):
17     dutyr = w1.get()
18     pr.ChangeDutyCycle(float(dutyr))
19     print(dutyr)
20 def updater2(dutyg):
21     dutyg = w2.get()
22     pg.ChangeDutyCycle(float(dutyg))
23     print(dutyg)
```

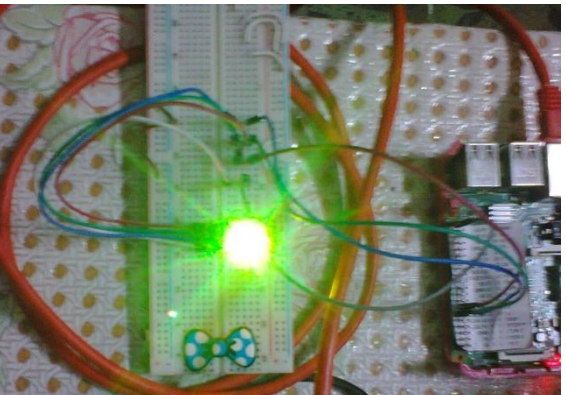


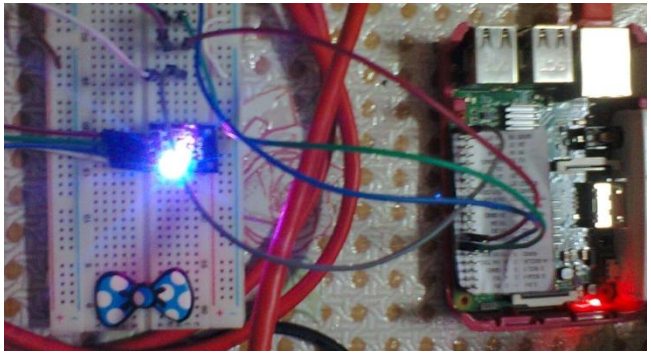


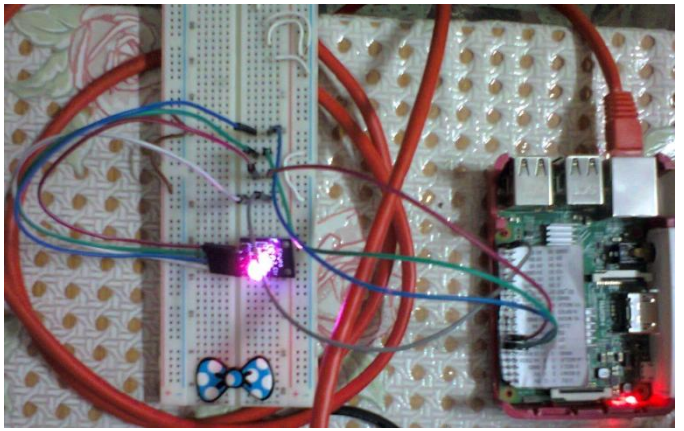


RGB LED GUI

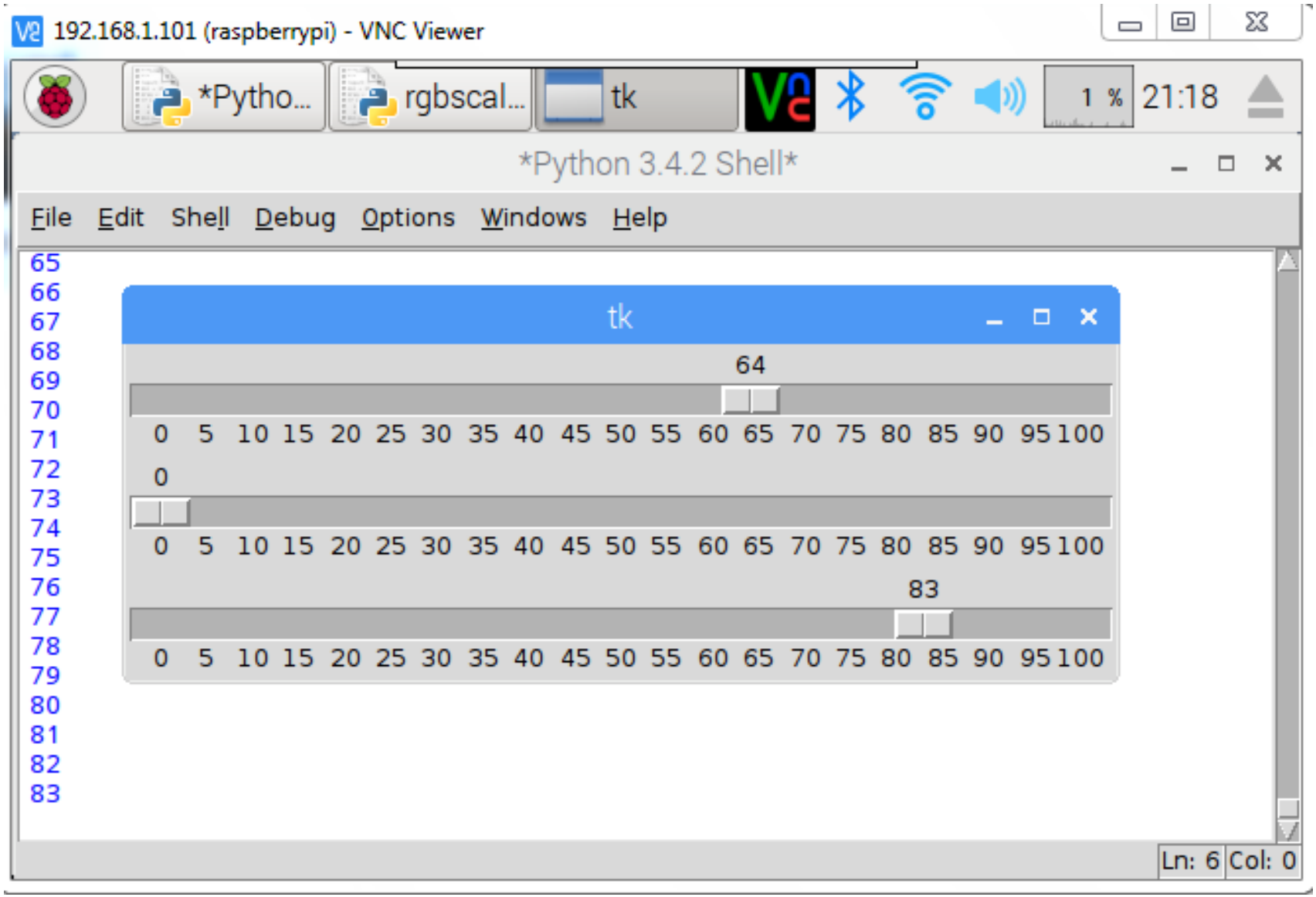
```
24  def updater3(dutyb):
25      dutyb = w3.get()
26      pb.ChangeDutyCycle(float(dutyb))
27      print(dutyb)
28  w1 = Scale(Top ,from_=0,to =100,orient = HORIZONTAL ,length =500,tickinterval=5,command = updater1)
29  w1.set(5)
30  w1.pack()
31  w2 = Scale(Top ,from_=0,to =100,orient = HORIZONTAL,length =500,tickinterval=5,command = updater2)
32  w2.set(5)
33  w2.pack()
34  w3 = Scale(Top ,from_=0,to =100,orient = HORIZONTAL,length =500,tickinterval=5,command = updater3)
35  w3.set(5)
36  w3.pack()
37  mainloop()
```







RGB LED GUI


192.168.1.101 (raspberrypi) - VNC Viewer
*Pytho...
rgbscal...
tk
1 %
21:18
Python 3.4.2 Shell
File Edit Shell Debug Options Windows Help
65
66
67
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76
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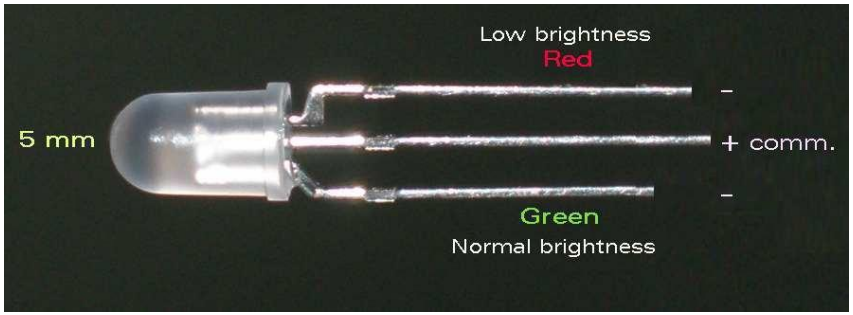
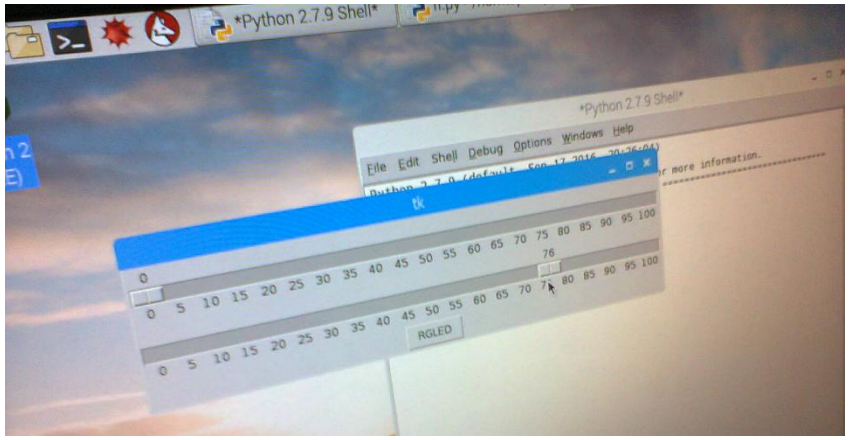
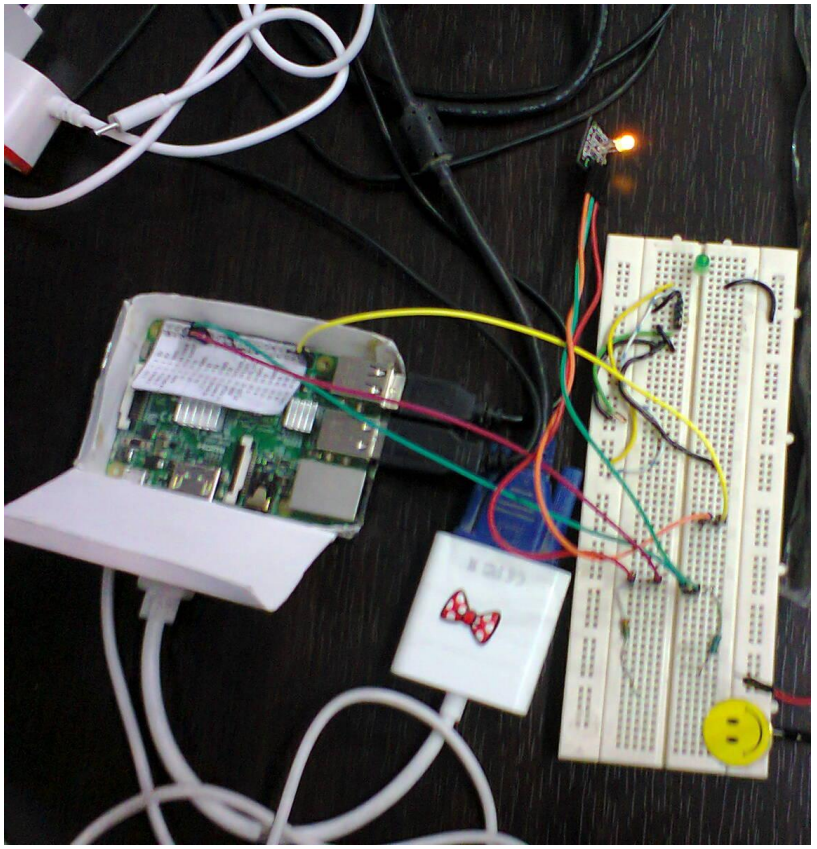
78
79
80
81
82
83
tk
64
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
83
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
Ln: 6 Col: 0

2

RG LED GUI


Low brightness
Red
5 mm
+ comm.
Green
Normal brightness


Python 2.7.9 Shell
File Edit Shell Debug Options Windows Help
tk
RGLED



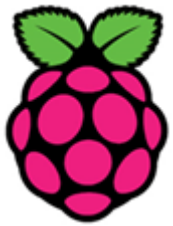
RGlednew.py - /home/pi/RGle

File Edit Format Run Options Windows Help

```
# -*- coding: utf-8 -*-
import time
import RPi.GPIO as GPIO
from Tkinter import *
GPIO.setmode(GPIO.BOARD)
red = 11 #pin numbers to match LED legs
green = 12

GPIO.setup(red, GPIO.OUT) #setup all the pins
GPIO.setup(green, GPIO.OUT)


Freq = 50 #Hz
```

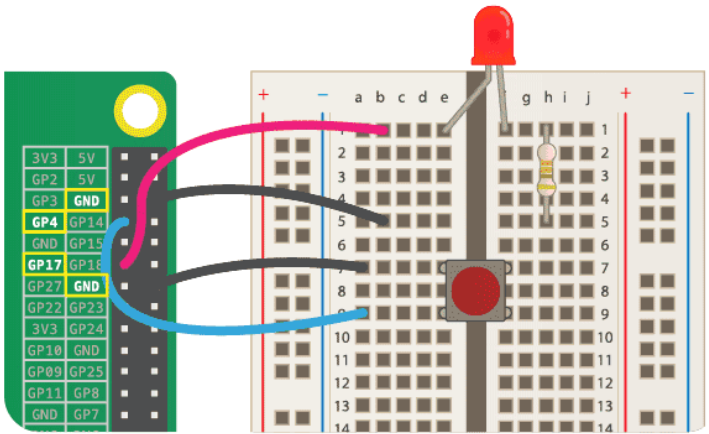
```
#setup all the colours
RED = GPIO.PWM(red, Freq) #Pin, frequency
RED.start(80) #Initial duty cycle of 0, so off
GREEN = GPIO.PWM(green, Freq)
GREEN.start(80)
top = Tk()
def updater(duty1):
    duty1 = w.get()
    RED.ChangeDutyCycle(int(duty1))
def updateg(duty2):
    duty2 = w1.get()
    GREEN.ChangeDutyCycle(int(duty2))
def update2():
     print(w.get(),w1.get())
```

```
w= Scale(top,from_=0,to=99 , orient = HORIZONTAL ,
command=updater)
w.set(50)
w.pack()

w1= Scale(top,from_=0,to=99,length =500,tickinterval=5, orient =
HORIZONTAL, command=updateg)
w1.set(50)
w1.pack()

Button(top, text='Red Green LED', command=update2).pack()

mainloop()
```



Thank You

Homework :



صمم واجهة تحتوي على زر للتحكم بتشغيل LED موصول إلى القطب 11 من اللوحة.