Networking for Software Developers

This is a group lab that will contribute towards your final project. One person will submit this work.

# Lab 7 – Display a value in a Gauge.

We will build a GUI to display a value. Most display either show the value as a bar (either vertical or horizontal) or a circular gauge. You will build a tkinter application to display a single value. You will also provide a text field to change the value. You will also provide additional information to add credibility to your display.

If you are displaying the indoor temperature, you should state the units and the low value, normal range and high value

Use only the basic widget that were covered in class: buttons, labels, entries etc. and canvas primitives like lines, rectangles and arcs. Avoid any complicated designs, that might be difficult to customize.

## Due:

See course shell.

## Requirements:

1. You will use the same quantity that you selected in the previous lab (from temperature, humidity, barometric pressure, customers at a mall, or just with an alternate descriptor).
2. Design and build a GUI application class that will model a display for your sensor reasonably well.
3. You must provide an Entry (Textbox) and a Button to change the value.
4. There are marks for aesthetics.
5. You must not have magic numbers in your code
6. Error checking of input
7. User must be able to easily read the display

See the appendix of this document for some code sample and possible directions to explore.

#### Submission

1. Your code file will be named group\_«your\_group\_number»\_display\_gauge.py e.g. group\_1\_display\_gauge.py and group\_1\_display\_bar.py
2. Must be uploaded to course dropbox.
3. See course shell for due data.

#### Rubrics

|  |
| --- |
| Gauge |
| [class] /1 |
| [clean design of app] /2 |
| [label/entry/button] /2 |
| [explanation of the gui] /3 |
| [display value accurately] /2 |
| [aesthetics] /6 |
| [coding quality] /2 |
| [Total] /20 |

## Sample Code:

The following example the use of the canvas widget in tkinter

https://anzeljg.github.io/rin2/book2/2405/docs/tkinter/colors.html

from tkinter import Tk, Canvas, Frame, BOTH, W

class Example(Frame):

def \_\_init\_\_(self):

super().\_\_init\_\_()

self.initUI()

def initUI(self):

self.master.title('Lab 9 A & B')

self.pack(fill=BOTH, expand=1)

canvas = Canvas(self)

canvas.create\_line(15, 25, #start x,y

200, 25) #end x,y

canvas.create\_line(300, 35, 300, 200,

dash=(4, 2)) #line style

canvas.create\_line(55, 85, #first point

155, 85, #second point

105, 180, #third point

55, 85) #back to first point

canvas.create\_arc(200, 100, #top left

260, 160, #bottom right

start=45, extent=135, #start angle how far to go

outline='#77f', fill='#f11', width=2)

canvas.create\_oval(200, 150, #top left

280, 230, #bottom right

outline='#f11', fill='#1f1', width=2)

canvas.create\_rectangle(

320, 140, #top left

370, 190, #bottom right

outline='#222', fill='#f76')

canvas.create\_text(20, 220, anchor=W, font='Purisa',

text='Narendra is the greatest!')

canvas.pack(fill=BOTH, expand=1)

root = Tk()

ex = Example()

root.geometry('400x250+300+300')

root.mainloop()

