HW6_#Hooman Ileayi#

Comptrafficlight.py

```
Import tkinter as tk
import tkinter.ttk as ttk

:class CompLamp
""" .Serves as one lamp within a traffic light object """
:def __init__(self, parent, width, order, color="red", *args, **kwargs)
.Creates a new lamp to be used in a traffic light object """
parent: The traffic light owning this lamp
width: The width of the case of the circular lamp
order: Distance of this lamp from the top of the traffic light
color: The lamp's initial color (defaults to "red")
args: Additional arguments to pass to the ttk.Frame superclass constructor*
""" kwargs: Additional keyword arguments to pass to the ttk.Frame superclass constructor**
self.frame = ttk.Frame(parent.frame, *args, **kwargs)
,"self.canvas = tk.Canvas(self.frame, width=width, height=width, bg="gray
(highlightthickness=0
()self.canvas.pack
self.color = color
offset = width//8
,self.lamp = self.canvas.create_oval(offset, offset
,offset*٧
,offset*٧
('fill='black
self.frame.grid(row=order, column=0)
"self.state = "off

:def turn_on(self)
""" Illuminates the lamp """
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"self.state = "on
self.canvas.itemconfigure(self.lamp, fill=self.color)

:def turn_off(self)
""" Turns off the lamp """
"self.state = "off
self.canvas.itemconfigure(self.lamp, fill='black')

:def resize(self, width)
self.canvas.config(width=width, height=width)
offset = width//8
self.canvas.coords(self.lamp, offset, offset, 7*offset, 7*offset)

:class CompTrafficLight
""" Models a simple traffic light widget """
:def __init__(self, root, wd, initial_color="red", *args, **kwargs)
.Makes a new traffic light object """
.root is the parent widget
.wd is the pixels width
.The light's initial color is initial_color
Clients may pass additional arguments to the constructor of the
""" .light's frame via *args and **kwargs
:if initial_color not in ("red", "yellow", "green")
raise ValueError(initial_color + " is not a valid color")
self.frame = ttk.Frame(root, width=wd, *args, **kwargs)
self.frame.grid(row=0, column=0)
self.color = initial_color
,('self.lamps = dict(zip(('red', 'yellow', 'green
,('CompLamp(self, wd, 0, 'red)
,CompLamp(self, wd, 1, 'yellow')
(((CompLamp(self, wd, 2, 'green')
```

()self.lamps[self.color].turn_on

:def change(self)

""" .Changes the traffic light's color to the next color in the sequence """

:'if self.color == 'red

'new_color = 'green

:'elif self.color == 'green

'new_color = 'yellow

:'elif self.color == 'yellow

'new_color = 'red

()self.lamps[self.color].turn_off

self.color = new_color

()self.lamps[self.color].turn_on

:def resize(self, width)

""" .Changes the traffic light's frame width according to the parameter passed by the caller """

:()for lamp in self.lamps.values

lamp.resize(width)

😊//easy as an ABC