Report on

Joy of Programming using Python

Summer Internship Program

COUNTDOWN CLOCK AND TIMER

A Project By:

Shristi Shukla (CS, 1911021)

Under the Guidance of

Ms. Pratima Singh

Mr. Binayak Parashar

AJAY KUMAR GARG ENGINEERING COLLEGE, GHAZIABAD

YEAR 2020-21

INDEX

ABSTRACT

A countdown clock and timer is a virtual clock on a landing page that counts down from a certain number to indicate beginning or end of an event or offer. This project provides detailing of creating a virtual timer using python 3. The inclusion of python modules and libraries make the code simple and compact. A very popular time module is used to handle time related tasks. Tkinter –a standard GUI library for python is also being used for providing a user-friendly interface. Tk GUI widget toolkit which provides a powerful object oriented interface is used to make the output more presentable.

COUNTDOWN CLOCK AND TIMER

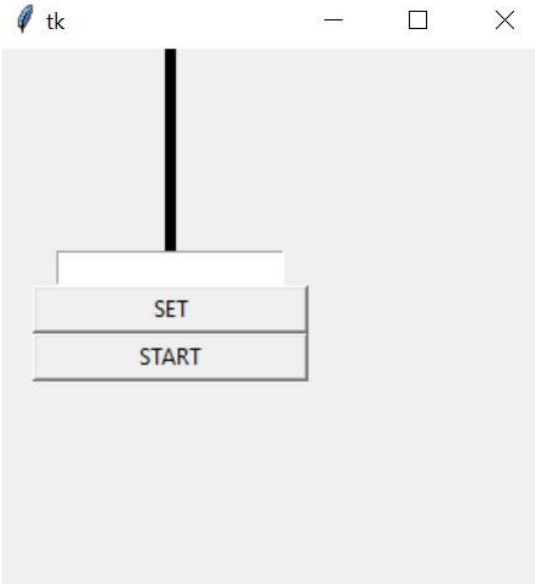
Input format: Set the timer and click on start button.

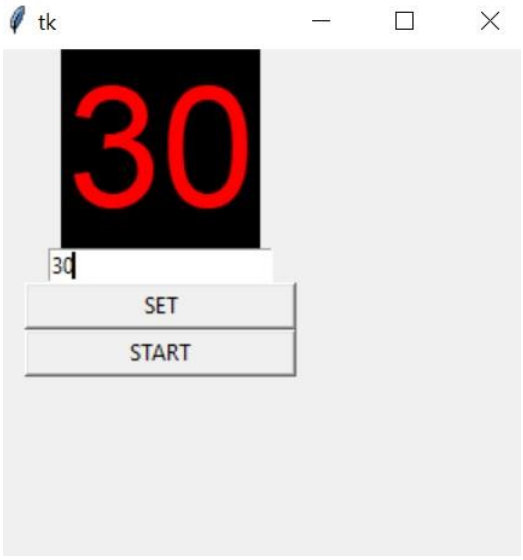
Output format: Message will be displayed when time is over.

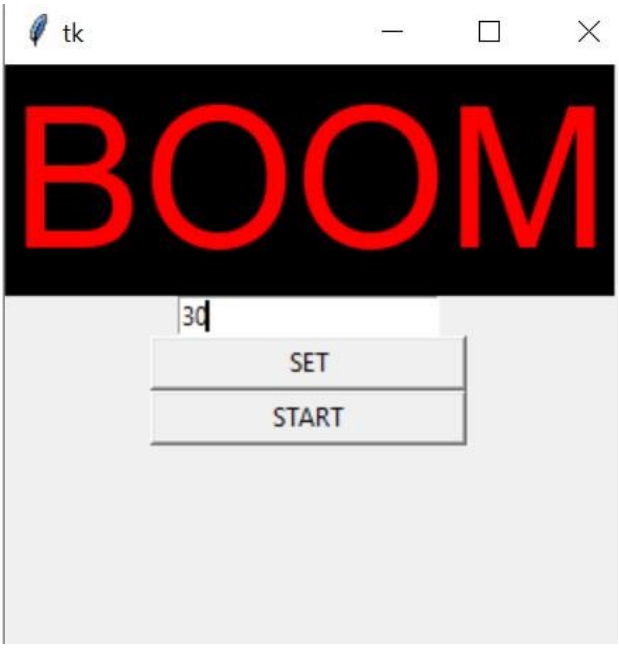
Code:

```
from tkinter import*

t=0
def set_timer():
    global t
    t=t+int(e1.get())
    return t

def countdown():
    global t
    if t>0:
        l1.config(text=t)
        t=t-1
        l1.after(1000,countdown)
    elif t==0:
        print("END")
        l1.config(text="BOOM")


root=Tk()

root.geometry("300x300")

l1=Label(root,font= "ariel 70", bg="black", fg="red")
l1.grid(row=0,column=5)

times=StringVar()
e1=Entry(root,textvariable=times)
e1.grid(row=3,column=5)

b1=Button(root,text="SET", width=20, command=set_timer)
b1.grid(row=4, column=5,padx=20)

b2=Button(root,text="START", width=20, command=countdown)
b2.grid(row=6, column=5,padx=20)

root.mainloop()

```

Output:







Explanation:

Tkinter, a standard GUI library for python is first being imported. Then the widgets are used to create a main window. The button widget is used to display

set and start buttons in the application. The label widget is used to provide a single-line caption for other widgets. Tkinter also exposes geometry manager classes like pack and grid. The **grid ()** method organizes widgets in a table-like structure in the parent widget. Using these labels a main window is created. The event loop is an infinite loop that takes action against each event triggered by the user. The input taken from user is of string type and so it is converted to integer in **set_timer ()**. In **countdown ()**, a while loop runs till time is not 0. The **after ()** gives a way to schedule things to run after a period of time has elapsed. The time then decrements so that while loop can converge. After the completion of loop, it prints "BOOM" which indicates the end of countdown.

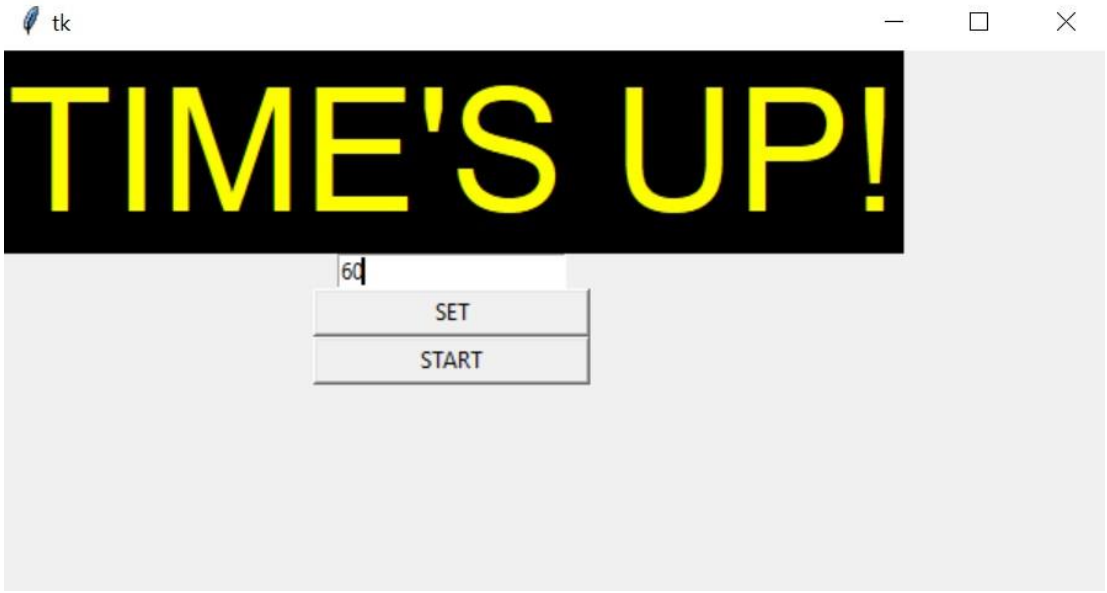
Test cases:

i) Rapid Fire Round –a team is asked to answer ten questions under 60 seconds. After the end of countdown, it displays "TIME'S UP!" message.

```
1   from tkinter import*
2
3   t=0
4   def set_timer():
5       global t
6       t=t+int(e1.get())
7       return t
8
9   def countdown():
10      global t
11      if t>0:
12          l1.config(text=t)
13          t=t-1
14          l1.after(1000,countdown)
15      elif t==0:
16          print("END")
17          l1.config(text="TIME'S UP!")
18
19
```

```
root=Tk()

root.geometry("300x300")

l1=Label(root,font= "ariel 70", bg="black", fg="red")
l1.grid(row=0,column=5)

times=StringVar()
e1=Entry(root,textvariable=times)
e1.grid(row=3,column=5)

b1=Button(root,text="SET", width=20, command=set_timer)
b1.grid(row=4, column=5,padx=20)

b2=Button(root,text="START", width=20, command=countdown)
b2.grid(row=6, column=5,padx=20)

root.mainloop()

```

Output:



ii) Use by TV channels –

TV channels use it for telecast of any of its important program like movie premiere or major sporting event for the purpose of promoting it or advertising it.