Tkinter Programming

Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

Creating a GUI application using Tkinter is an easy task. All you need to do is perform the following steps –

- Import the ***Tkinter*** module.
- Create the GUI application 'main window'.
- Add one or more of the widgets to the GUI application.
- Enter the main event loop to take action against each event triggered by the user.

NOTE: It's not possible to hand over a regular Python variable to a widget through a variable or text-variable option. The only kinds of variables for which this works are variables that are subclassed from a class called Variable, defined in the Tkinter module. They are declared like this:

- x = StringVar() # Holds a string; default value ""
- x = IntVar() # Holds an integer; default value 0
- x = DoubleVar() # Holds a float; default value 0.0
- x = BooleanVar() # Holds a boolean, returns 0 for False and 1 for True

To read the current value of such a variable, call the method get(). The value of such a variable can be changed with the set() method.

Example

```
import tkinter # note that module name has changed from Tkinter in
Python 2 to tkinter in Python 3
top = tkinter.Tk()
# Code to add widgets will go here...
top.mainloop()
```

Button In Tkinter:

```
from tkinter import *
from tkinter import messagebox

top = Tk()
top.geometry("100x100")
def helloCallBack():
   msg = messagebox.showinfo( "Hello Python", "Hello World")

B = Button(top, text = "Hello", command = helloCallBack)
B.place(x = 50,y = 50)
top.mainloop()
```

Tkinter Canvas

```
from tkinter import *

from tkinter import messagebox

top = Tk()

C = Canvas(top, bg = "blue", height = 250, width = 300)

coord = 10, 50, 240, 210
arc = C.create_arc(coord, start = 0, extent = 180, fill = "red")
line = C.create_line(10,10,200,200,fill = 'white')
C.pack()
top.mainloop()
```

Tkinter Checkbutton

```
from tkinter import *

import tkinter

top = Tk()
CheckVar1 = IntVar()
CheckVar2 = IntVar()
C1 = Checkbutton(top, text = "Music", variable = CheckVar1, \
                 onvalue = 1, offvalue = 0, height=5, \
                 width = 20, )
C2 = Checkbutton(top, text = "Video", variable = CheckVar2, \
                 onvalue = 1, offvalue = 0, height=5, \
                 width = 20)
C1.pack()
C2.pack()
top.mainloop()
```

Tkinter Entry

```
from tkinter import *

top = Tk()
L1 = Label(top, text = "User Name")
L1.pack( side = LEFT)
E1 = Entry(top, bd = 5)
E1.pack(side = RIGHT)

top.mainloop()
```

Tkinter Frame

```
from tkinter import *

root = Tk()
frame = Frame(root)
frame.pack()

bottomframe = Frame(root)
```

```
bottomframe.pack( side = BOTTOM )

redbutton = Button(frame, text = "Red", fg = "red")
redbutton.pack( side = LEFT)

greenbutton = Button(frame, text = "Brown", fg="brown")
greenbutton.pack( side = LEFT )

bluebutton = Button(frame, text = "Blue", fg = "blue")
bluebutton.pack( side = LEFT )

blackbutton = Button(bottomframe, text = "Black", fg = "black")
blackbutton.pack( side = BOTTOM)

root.mainloop()
```

Label

```
from tkinter import *

root = Tk()

var = StringVar()
label = Label( root, textvariable = var, relief = RAISED )

var.set("Iam a Label...")
label.pack()
root.mainloop()
```

Listbox

```
from tkinter import *

import tkinter

top = Tk()

Lb1 = Listbox(top)
Lb1.insert(1, "Python")
Lb1.insert(2, "Perl")
Lb1.insert(3, "C")
Lb1.insert(4, "PHP")
Lb1.insert(5, "JSP")
```

```
Lb1.insert(6, "Ruby")

Lb1.pack()
top.mainloop()
```

```
# Connect to MySQL DB using tkinter module

import tkinter as tk
import mysql.connector
from tkinter import *


def getDetails():
    user = Username.get()
    passw = password.get()

    print(f"The name entered by you is {user} {passw}")
    logintodb(user, passw)


def logintodb(user, passw):

    # If password is enetered by the
    # user
    if passw:
        db = mysql.connector.connect(host ="localhost",
                                     user = user,
                                     password = passw,
                                     db ="mydb1")
        cursor = db.cursor()

    # If no password is enetered by the
    # user
    else:
        print("Username and password unmatched...")

    # A Table in the database
    savequery = "show databases"

    try:
        cursor.execute(savequery)
        myresult = cursor.fetchall()
```

```
        # Printing the result of the
        # query
        for x in myresult:
            print(x)
        print("Query Executed successfully")

    except:
        db.rollback()
        print("Error occured")


top = tk.Tk()
top.geometry("300x300")
top.title("DBMS Login Page")


# Defining the first row
lblfrstrow = tk.Label(top, text ="Username -", )
lblfrstrow.place(x = 50, y = 20)

Username = tk.Entry(top, width = 35)
Username.place(x = 150, y = 20, width = 100)

lblsecrow = tk.Label(top, text ="Password -")
lblsecrow.place(x = 50, y = 50)

password = tk.Entry(top, width = 35)
password.place(x = 150, y = 50, width = 100)

submitbtn = tk.Button(top, text ="Login",
                      bg ='blue', command = getDetails)
submitbtn.place(x = 150, y = 135, width = 55)

top.mainloop()
```