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**Python Asynchronous 28-Aug-2020**

**1. Explain the role of the following functions in TKinter with syntax and example.**

a) tk()

tk helps to create a main window for GUI. We can assign a name to this method and change the name of the main window.

//syntax

m=tkinter.Tk()

from tkinter import ttk

b) ttk()

It is a module in Tkinter which provides access to the Tk themed widget set, introduced in Tk 8.5.

//syntax

from tkinter import ttk

c) mainloop()

mainloop() is an infinite loop used to run the application, wait for an event to occur and process the event as long as the window is not closed.

//syntax

import tkinter

m = tkinter.Tk()

//widgets are added here

m.mainloop()

d) IntVar()

IntVar, it's an integer which is in Python and used in Tkinter to score integer and the default value is 0

//syntax

x = IntVar() # Holds an integer; default value 0

**2. What does pack() do in tkinter? What are the other alternatives available in tkinter for the organisation of widgets? Elaborate briefly.**

The pack() geometry manager pack widgets in rows or columns. You can use options like fill, expand, and side to control this geometry manager. The manager handles all widgets that are packed inside the same master widget.

**Another alternative to pack is Grid.**

The Grid geometry manager puts the widgets in a 2-dimensional table. The master widget is split into a number of rows and columns, and each “cell” in the resulting table can hold a widget.

**3. With the help of suitable example explain the role of binding functions in tkinter.**

Binding function is used to deal with the events. We can bind Python’s Functions and methods to an event as well as we can bind these functions to any particular widget.

EXAMPLE of binding function for keyboard

from tkinter import \* from tkinter.ttk import \*

# function to call when keyboard buttons are pressed

def key\_press(event):

key = event.char

print(key, 'is pressed')

# creates tkinter window or root window

root = Tk()

root.geometry('200x100')

# here we are binding keyboard

# with the main window

root.bind('<Key>', lambda a : key\_press(a))

mainloop()

**4. Compare and contrast the following:**

**a) Spin box and List box**

The **Spinbox** widget is an alternative to the Entry widget. It provides the range of values to the user, out of which, the user can select the one.

The **Listbox** widget is a standard Tkinter widget used to display a list of alternatives. The list box can only contain text items, and all items must have the same font and colour. Depending on the widget configuration, the user can choose one or more alternatives from the list.

**b) canvas vs frame**

The **Canvas** widget provides structured graphics facilities for Tkinter. This is a highly versatile widget which can be used to draw graphs and plots, create graphics editors, and implement various kinds of custom widgets.

A **Frame** in Tk lets you organize and group widgets. It works like a container. It’s a rectangular area in which widgets can be placed. Those widgets need to be organized somehow, that's where a frame comes in.