Introduction to Graphical User Interface

Introduction

- A user interface (UI) is a software component used for communication between users and computers.
- A Graphical User Interface (GUI) is a type of UI that uses graphics, such as icons or widgets for interactions.
- Python provides many packages and libraries for the development of GUI. The widely used GUI packages in python are Tkinter, QT5, PyGUI, and PySlide2.
- Among GUI packages, Tkinter has a wide range of applications.

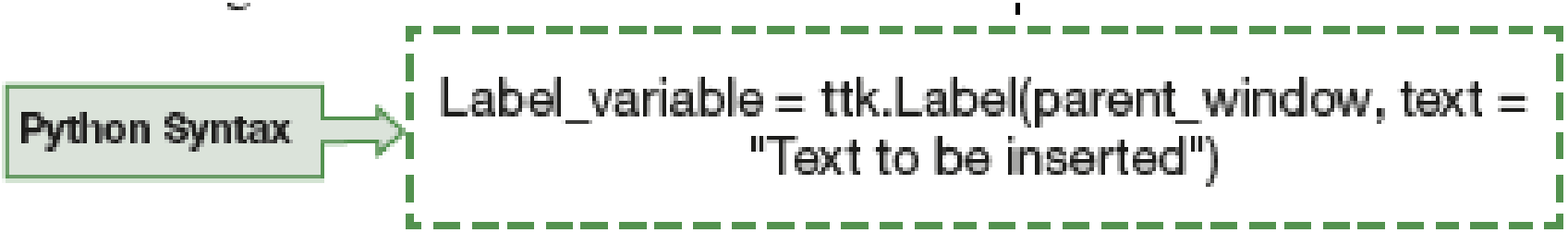
Tkinter Module

- The Packages tkinter is used to develop the GUI using Tcl/Tk toolkit.
- The packages tkinter is a default packages in Python.
- Tool Command Language(TCL) is a dynamic interpreted programming language that is commonly embedded into C as an interface to Tk Toolkit.
- Using Tkinter, most of the GUIs are developed, The Steps to be followed for importing the package tkinter while creating GUI are as follows

1. Creation of main window
2. Adding widgets to the main window
3. Applying event triggers
4. Initiating mainloop()

Display Text with label widgets

- The label widget refers to the display box that displays either texts or images. Usually, the labels are used to display information and instructions, identify the controls, and feedback. The syntax for inserting the label widget into the main window is as follows.



Button Widgets

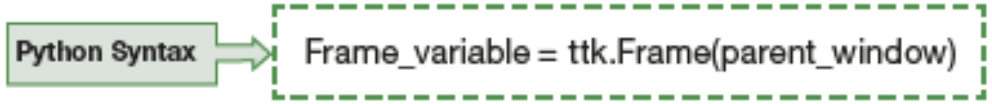
- Buttons are one of the most widely used in UI for interacting with the user.
- The packages tkinter allows the button to be composed of text, image or composite of both as well.
- The syntax for creating a button is as follows:

Radio Buttons

- The radio buttons are used to choose one of many options that are available for the users.
- The syntax for creating radio buttons is as follows

Frame Widget

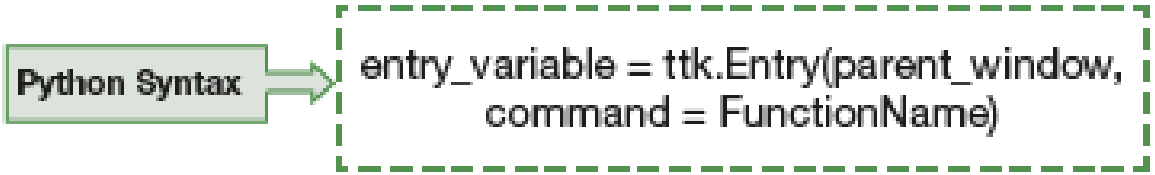
- Frame widget comprises a collection of other widgets like a container. Frame widget is used for grouping and organizing the widgets in the window. The syntax for the frame widget is as follows.



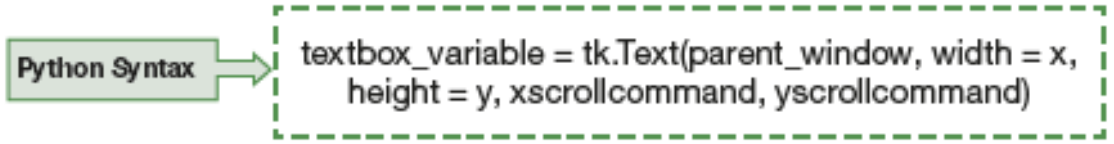
- In the above syntax, an instance is created for the class Frame in the module ttk to create a frame in the window and it contains the mandatory argument that is the parent window variable.
- Other optional parameters shall be visited on the demand.

Input Text Box

- The input text box is named as "Entry" in the tkinter package where the text box is created, and it is used to receive a single-line text entry from the user.
- The syntax for Entry is shown below.



- The text boxes can also be created using the text method associated with the class Tk. The syntax for the text method is as follows.



- In the above syntax, the following arguments are used.
- 1) parent_window: The instance of the class Tk represents the parent window.
- 2) width: The width of the textbox.
- 3) height: The height of the textbox.
- 4) xscrollcommand: It makes the text box horizontally scrollable.
- 5) yscrollcommnad: It makes the text box vertically scrollable.