ICTACADEMY®

Advanced Widgets

⚠	ℹ	↺	TRY IT
Error/ Warning	Information	Flashback	Class Exercise

AGENDA

1. Working with advanced widgets - Listbox
2. Working with advanced widgets - Combobox
3. Working with advanced widgets - Treeview

1. Working with Advanced Widgets - Listbox

Working with advanced widgets - listbox

Listbox

The Listbox widget in Tkinter is used to display a list of items from which a user can select one or more.

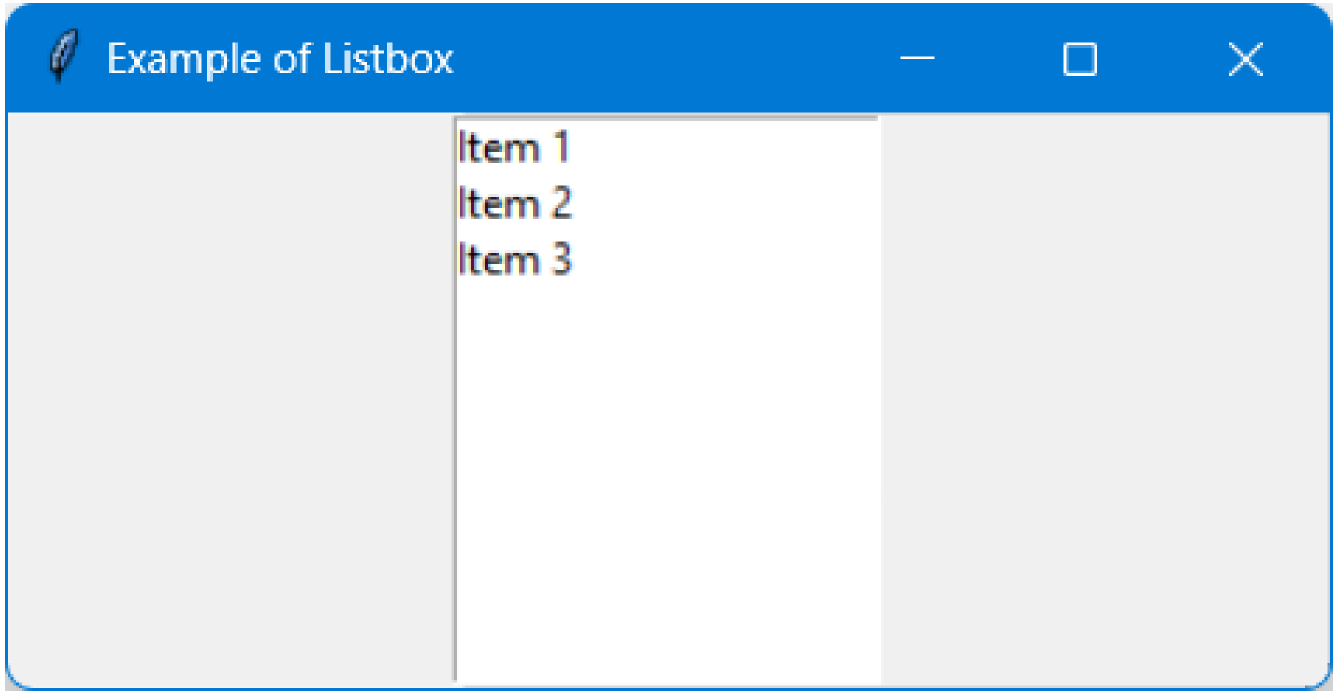
Step to Implement

- Create a Listbox by initializing it with tk.Listbox.
- Add it to the Tkinter window using the layout function.

Working with advanced widgets - listbox

Example – GUI of Listbox

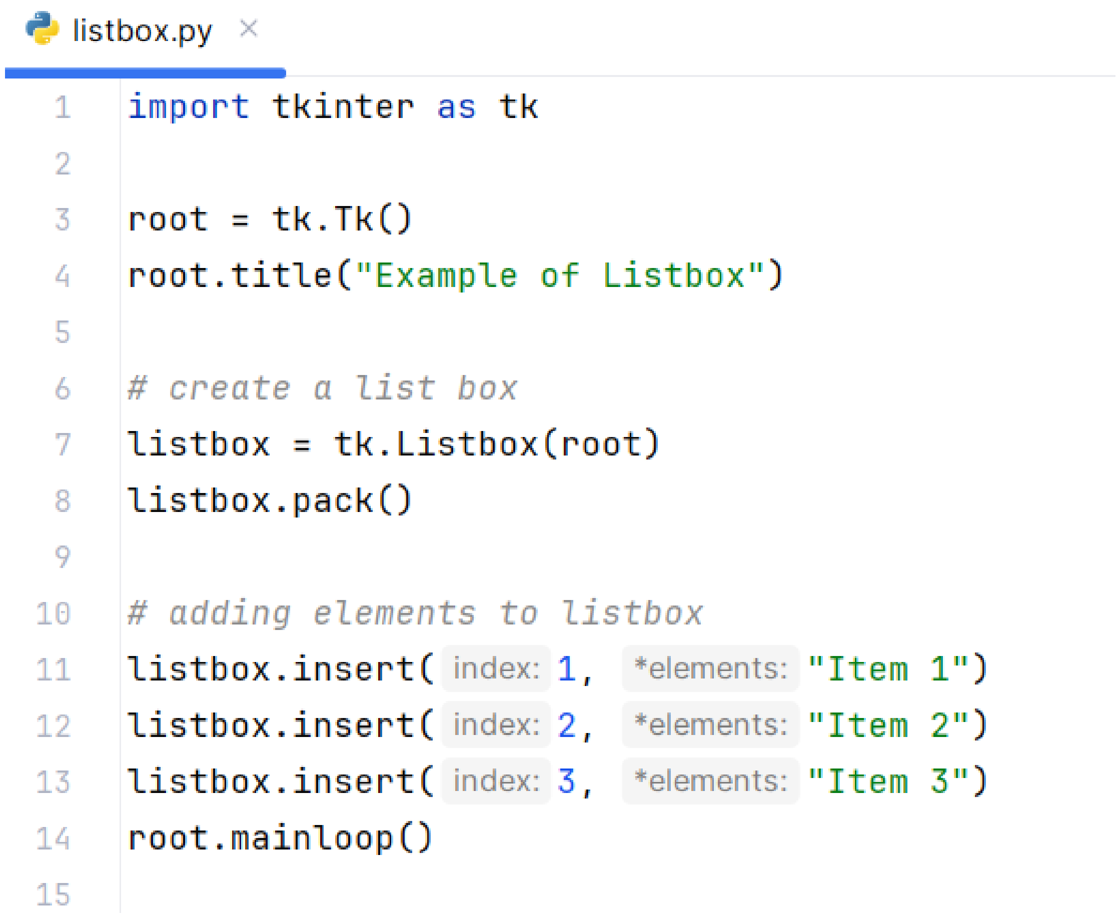
Create a Tkinter application that uses a listbox.



Item 1
Item 2
Item 3

Working with advanced widgets - listbox

Example – Code of Listbox



```python
import tkinter as tk

root = tk.Tk()
root.title("Example of Listbox")

# create a list box
listbox = tk.Listbox(root)
listbox.pack()

# adding elements to listbox
listbox.insert( index: 1,  *elements: "Item 1")
listbox.insert( index: 2,  *elements: "Item 2")
listbox.insert( index: 3,  *elements: "Item 3")
root.mainloop()

```

Working with advanced widgets - listbox

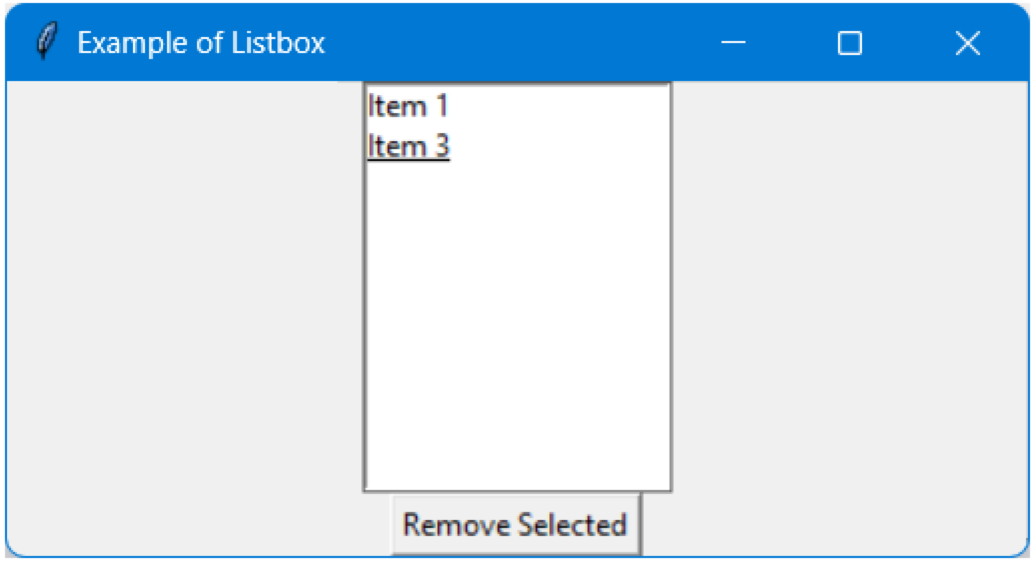
Explanation - Example of Listbox

- tk.Listbox(root): Creates a Listbox widget in the root window.
- listbox.pack(): Adds the Listbox to the window using the pack layout manager.
- listbox.insert(index, item): Inserts an item into the Listbox at the specified index.

Working with advanced widgets - listbox

TRY IT

Extend the previous example by allowing the user to remove a selected item from the Listbox.



2. Working with Advanced Widgets - Combobox

Working with advanced widgets - combobox

Combobox

The Combobox widget in Tkinter, which is a part of the ttk module, is a drop-down list that allows the user to select one item from a list of choices.

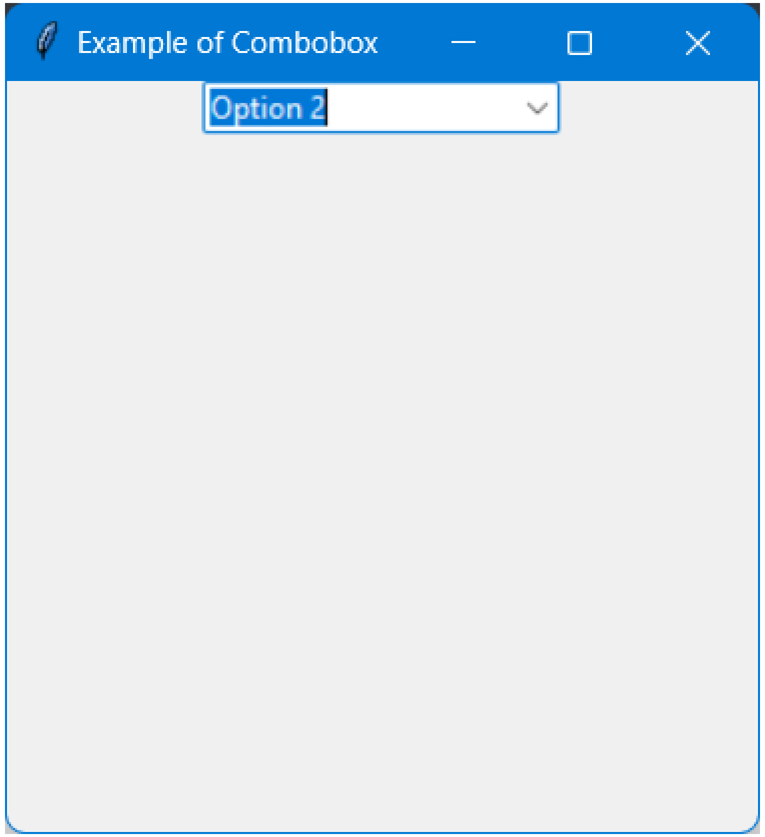
Step to Implement

- Create a Combobox using ttk.Combobox.
- Add it to the Tkinter window with layout function.

Working with advanced widgets - combobox

Example – GUI of Combobox

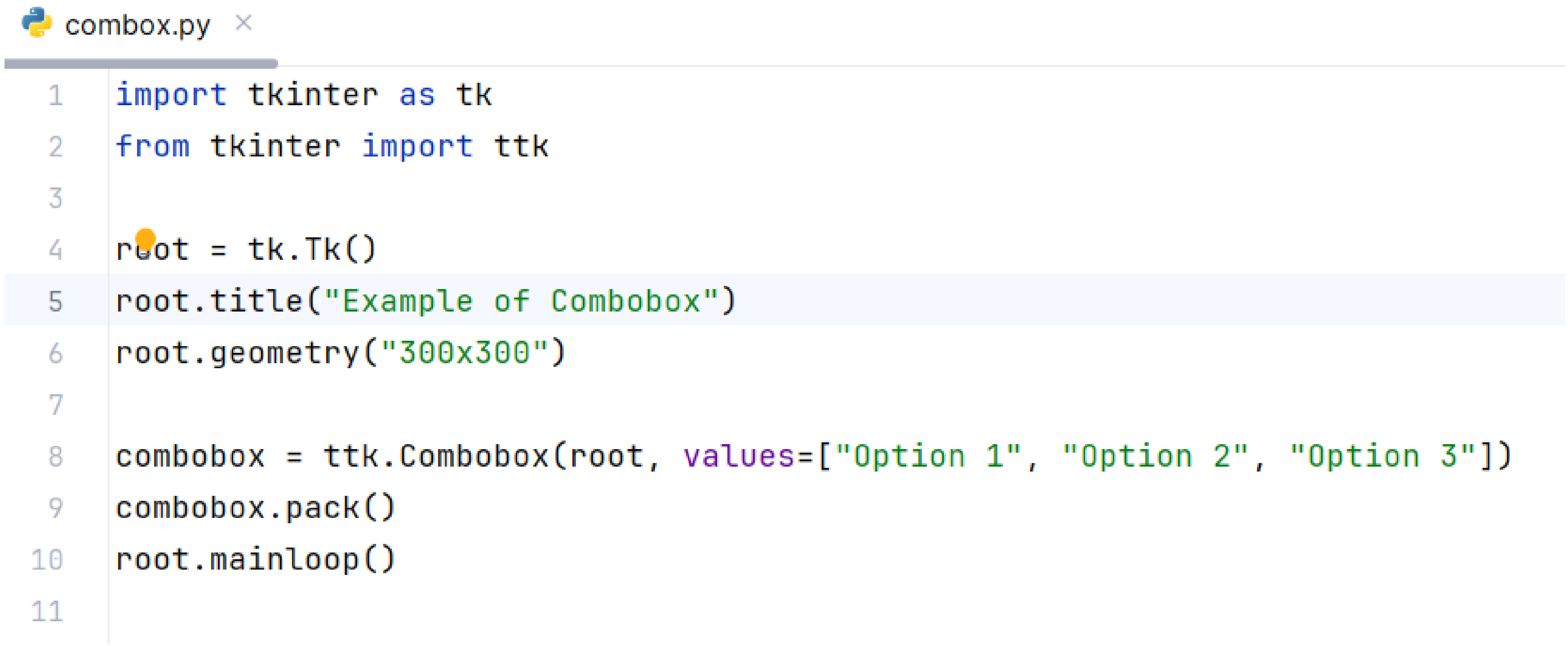
Create a Tkinter application that uses a combobox.



Option 2

Working with advanced widgets - combobox

Example – Code of Combobox



```python
import tkinter as tk
from tkinter import ttk

root = tk.Tk()
root.title("Example of Combobox")
root.geometry("300x300")

combobox = ttk.Combobox(root, values=["Option 1", "Option 2", "Option 3"])
combobox.pack()
root.mainloop()

```

Working with advanced widgets - combobox

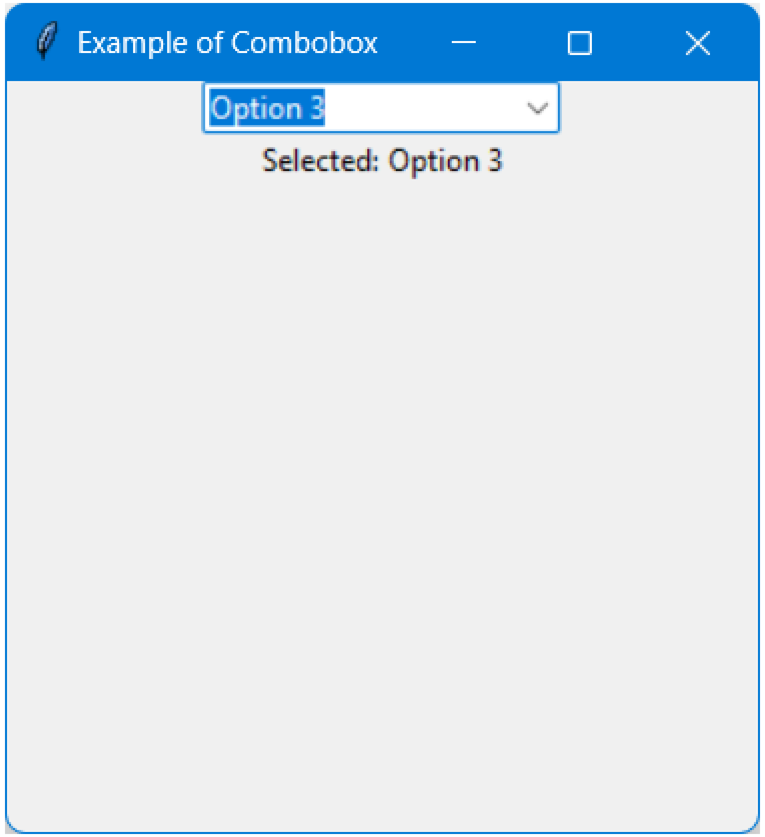
Explanation - Example of Combobox

- ttk.Combobox(root, values=[]): Creates a Combobox widget in the root window with specified options.
- combobox.pack(): Adds the Combobox to the window using the pack layout manager.

Working with advanced widgets - combobox

TRY IT

Extend the previous example by displaying the selected item in a label when the selection changes.



Option 3

Selected: Option 3

2. Working with Advanced Widgets - Treeview

Working with advanced widgets - treeview

Treeview

The Treeview widget in Tkinter, part of the ttk module, is used to display a hierarchical collection of items, such as a directory structure or an organizational chart.

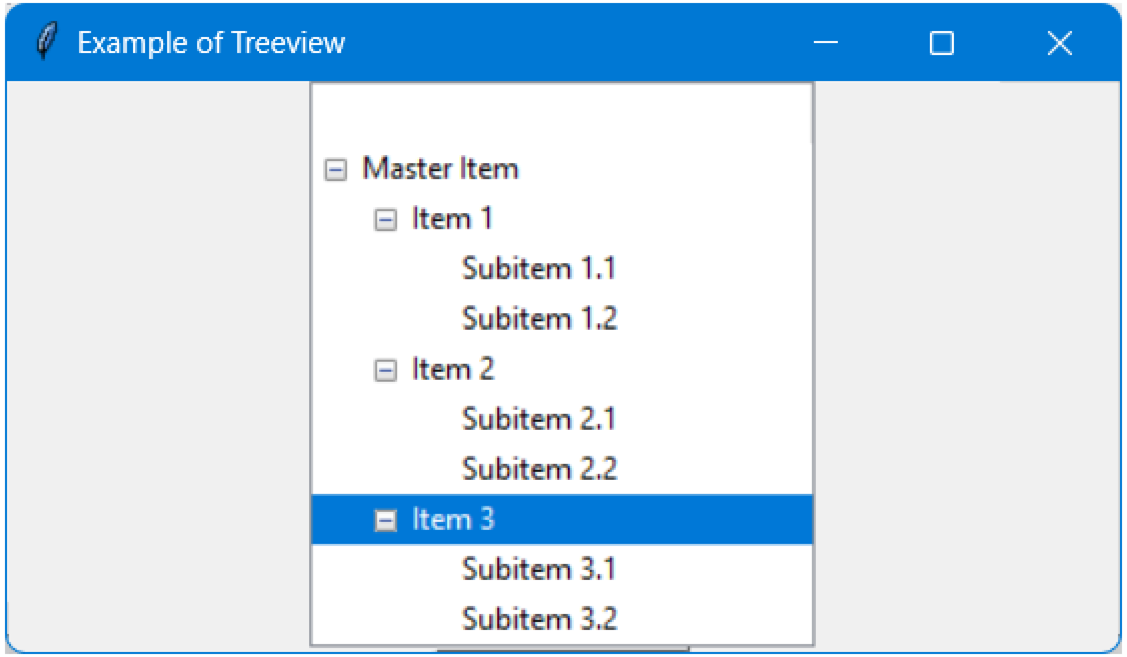
Step to Implement

- Create a Treeview using ttk.Treeview.
- Add it to the Tkinter window with layout function.

Working with advanced widgets - treeview

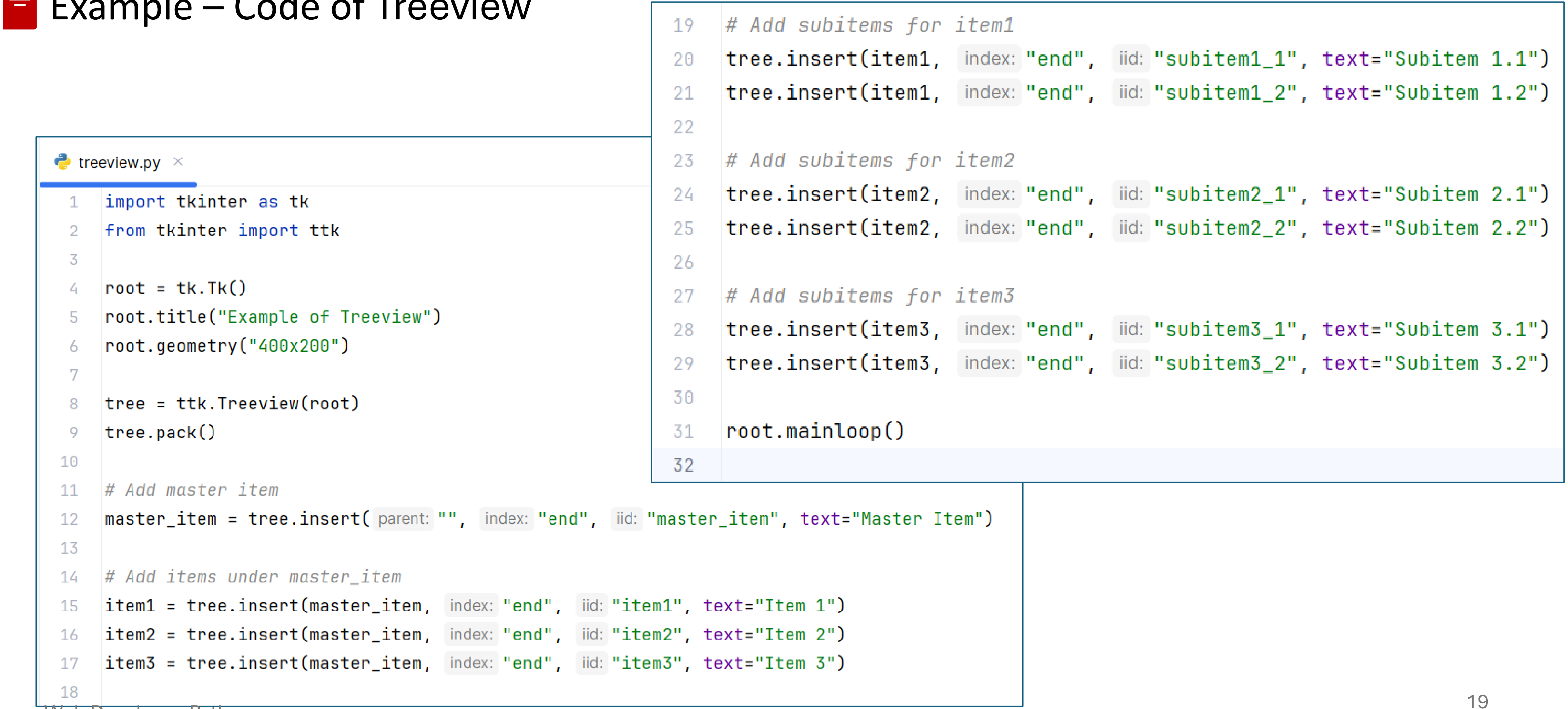
Example – GUI of Treeview

Create a Tkinter application that places item1, item2, and item3 under a top-level item called master_item. And each item with will have two subitems (Subitem 1.1 … Subitem 3.2).



Working with advanced widgets - treeview

Example – Code of Treeview



```python
import tkinter as tk
from tkinter import ttk

root = tk.Tk()
root.title("Example of Treeview")
root.geometry("400x200")

tree = ttk.Treeview(root)
tree.pack()

# Add master item
master_item = tree.insert( parent: "",  index: "end",  iid: "master_item", text="Master Item")

# Add items under master_item
item1 = tree.insert(master_item,  index: "end",  iid: "item1", text="Item 1")
item2 = tree.insert(master_item,  index: "end",  iid: "item2", text="Item 2")
item3 = tree.insert(master_item,  index: "end",  iid: "item3", text="Item 3")

# Add subitems for item1
tree.insert(item1,  index: "end",  iid: "subitem1_1", text="Subitem 1.1")
tree.insert(item1,  index: "end",  iid: "subitem1_2", text="Subitem 1.2")

# Add subitems for item2
tree.insert(item2,  index: "end",  iid: "subitem2_1", text="Subitem 2.1")
tree.insert(item2,  index: "end",  iid: "subitem2_2", text="Subitem 2.2")

# Add subitems for item3
tree.insert(item3,  index: "end",  iid: "subitem3_1", text="Subitem 3.1")
tree.insert(item3,  index: "end",  iid: "subitem3_2", text="Subitem 3.2")

root.mainloop()
```

Working with advanced widgets - treeview

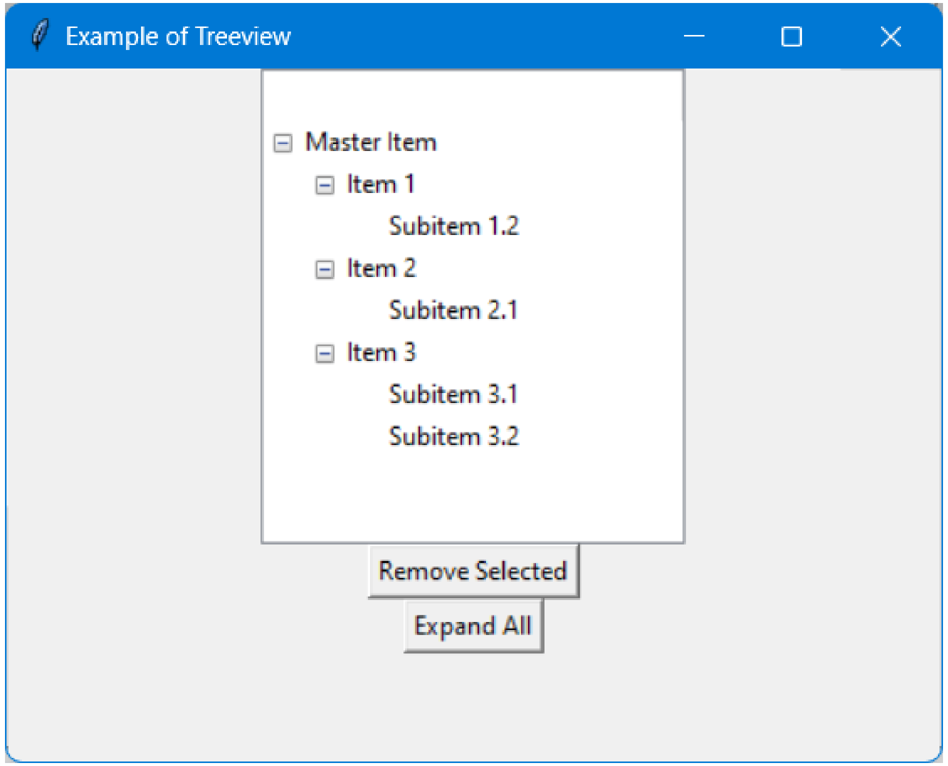
Explanation - Example of Treeview

- master_item = tree.insert("", "end", "master_item", text="Master Item"): Adds a top-level item called master_item.
- tree.insert(master_item, "end", "item1", text="Item 1"): Adds item1 under master_item.
- Similar lines add item2 and item3 under master_item.

Working with advanced widgets - treeview

TRY IT

Extend the previous example by adding two buttons to remove the selected item ad expand the entire tree accordingly.



Advanced widgets

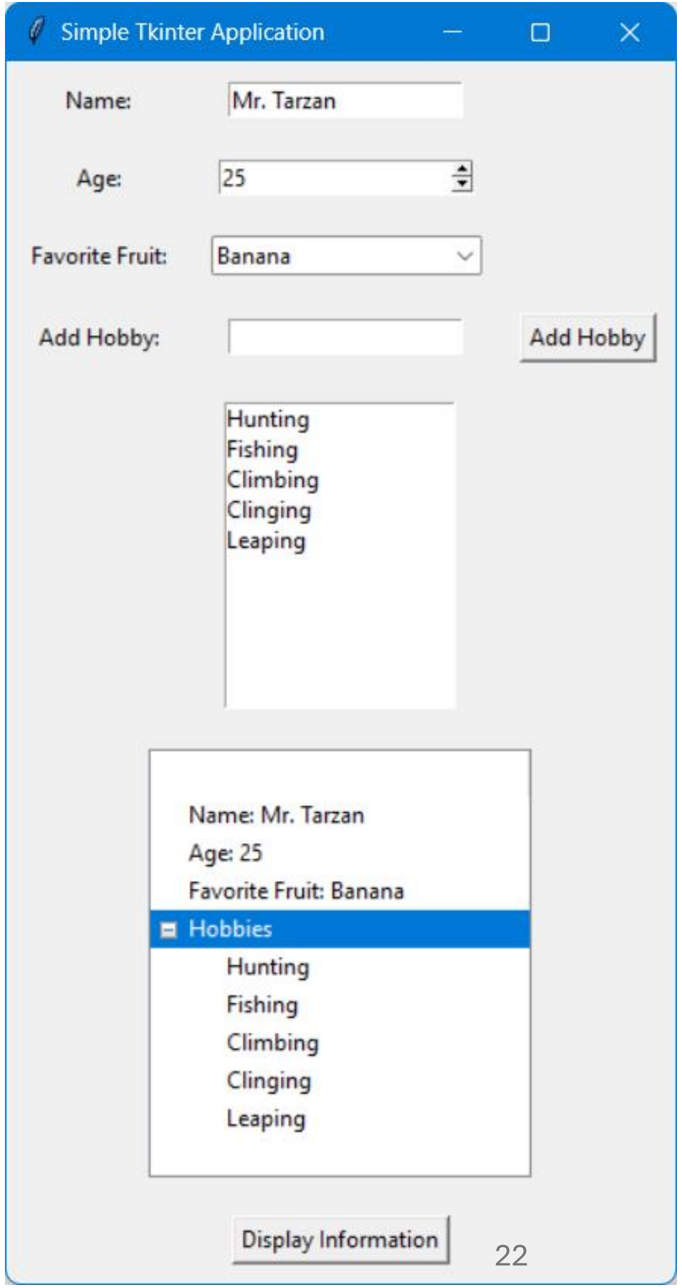
TRY IT

Case Study: Building a Simple Tkinter Application with Spinbox

Objective:
Build an application where users can input their name and age, select their favorite fruit from a combobox, add their favorite hobbies to a listbox, and display a hierarchical view of their input in a treeview.

Instructions:

- Create the main window.
- Add a Label and Entry for the user to input their name.
- Add a Label and Spinbox for the user to select their age.
- Add a Label and Combobox for the user to select their favorite fruit.
- Add a Label, Entry, Button, and Listbox for the user to add and display their hobbies.
- Add a Button to display the collected information in a Treeview.



Simple Tkinter Application

Name: Mr. Tarzan

Age: 25

Favorite Fruit: Banana

Add Hobby:

Hunting
Fishing
Climbing
Clinging
Leaping

```
Name: Mr. Tarzan
Age: 25
Favorite Fruit: Banana
⊟ Hobbies
    Hunting
    Fishing
    Climbing
    Clinging
    Leaping
```

Question?

Thank you