



Tkinter Listbox

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Summary: in this tutorial, you'll learn how to use the Tkinter Listbox widget to display a list of items.

Introduction to the Tkinter Listbox

A Listbox widget displays a list of single-line text items. A Listbox allows you to browse through the items and select one or multiple items at once.

To create a Listbox, you use the `tk.Listbox` class like this:

```
listbox = tk.Listbox(container, listvariable, height)
```

In this syntax:

- The `container` is the parent component of the Listbox.
- The `listvariable` links to a `tkinter.Variable` object. More explanation on this later.
- The `height` is the number of items that the Listbox will display without scrolling.

List items

To populate items to a Listbox, you first create a `Variable` object that is initialized with a list of items. And then you assign this `Variable` object to the `listvariable` option as follows:

```
list_items = tk.Variable(value=items)
listbox = tk.Listbox(
    container,
    height,
    listvariable=list_items
)
```

To add, remove, or rearrange items in the Listbox, you just need to modify the `list_items` variable.

Select mode

The `selectmode` option determines how many you can select and how the mouse drags will affect the items:

- `tk.BROWSE` – allows a single selection. If you select an item and drag it to a different line, the selection will follow the mouse. This is the default.
- `tk.EXTENDED` – select any adjacent group of items at once by clicking the first item and dragging to the last line.
- `tk.SINGLE` – allow you to select one line and you cannot drag the mouse.
- `tk.MULTIPLE` – select any number of lines at once. Clicking on any line toggles whether it is selected or not.

Binding the selected event

To execute a function when the selected items change, you bind that function to the `<<ListboxSelect>>` event:

```
listbox.bind('<<ListboxSelect>>', callback)
```

Tkinter Listbox widget example

The following program displays a Listbox that contains a list of programming languages. When you select one or more items, the program displays the selected ones in a message box:

```
import tkinter as tk
from tkinter import ttk
from tkinter.messagebox import showinfo

# create the root window
root = tk.Tk()
root.title('Listbox')

# create a list box
langs = ('Java', 'C#', 'C', 'C++', 'Python',
         'Go', 'JavaScript', 'PHP', 'Swift')

var = tk.Variable(value=langs)

listbox = tk.Listbox(
    root,
    listvariable=var,
    height=6,
    selectmode=tk.EXTENDED
)

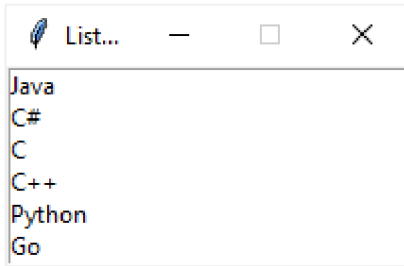
listbox.pack(expand=True, fill=tk.BOTH)

def items_selected(event):
    # get all selected indices
    selected_indices = listbox.curselection()
    # get selected items
    selected_langs = ",".join([listbox.get(i) for i in selected_indices])
    msg = f'You selected: {selected_langs}'
    showinfo(title='Information', message=msg)
```

```
listbox.bind('<<ListboxSelect>>', items_selected)

root.mainloop()
```

Output:



How it works.

First, create a **Variable** that holds a list of programming languages:

```
langs = ('Java', 'C#', 'C', 'C++', 'Python',
         'Go', 'JavaScript', 'PHP', 'Swift')

var = tk.Variable(value=langs)
```

Second, create a new **Listbox** widget and assign the **var** object to the **listvariable** :

```
listbox = tk.Listbox(
    root,
    listvariable=var,
    height=6,
    selectmode=tk.EXTENDED
)
```

The **height** shows six programming languages without scrolling. The **selectmode=tk.EXTENDED** allows multiple selections.

Third, define a function that will be invoked when one or more items are selected. The **items_selected()** function shows a list of currently selected list items:

```
def items_selected(event):  
    # get all selected indices  
    selected_indices = listbox.curselection()  
  
    # get selected items  
    selected_langs = ",".join([listbox.get(i) for i in selected_indices])  
    msg = f'You selected: {selected_langs}'  
    showinfo(title='Information', message=msg)
```

Finally, bind the `items_selected` function with the `'<<ListboxSelect>>'` event:

```
listbox.bind('<<ListboxSelect>>', items_selected)
```

Adding a scrollbar to the Listbox

The following program illustrates how to add a scrollbar to a Listbox:

```
import tkinter as tk  
from tkinter import ttk  
from tkinter.messagebox import showinfo  
  
# create the root window  
root = tk.Tk()  
  
root.title('Listbox')  
  
# create a list box  
langs = ('Java', 'C#', 'C', 'C++', 'Python',  
         'Go', 'JavaScript', 'PHP', 'Swift')  
  
var = tk.Variable(value=langs)  
  
listbox = tk.Listbox(  
    root,
```

```
listvariable=var,
height=6,
selectmode=tk.EXTENDED)

listbox.pack(expand=True, fill=tk.BOTH, side=tk.LEFT)

# Link a scrollbar to a list
scrollbar = ttk.Scrollbar(
    root,
    orient=tk.VERTICAL,
    command=listbox.yview
)

listbox['yscrollcommand'] = scrollbar.set

scrollbar.pack(side=tk.LEFT, expand=True, fill=tk.Y)

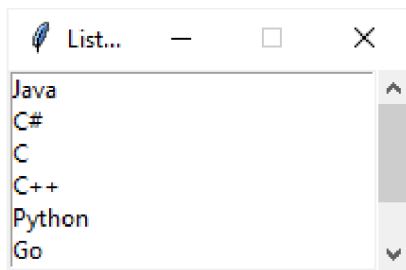
def items_selected(event):
    # get selected indices
    selected_indices = listbox.curselection()
    # get selected items
    selected_langs = ",".join([listbox.get(i) for i in selected_indices])
    msg = f'You selected: {selected_langs}'

    showinfo(title='Information', message=msg)

listbox.bind('<<ListboxSelect>>', items_selected)

root.mainloop()
```

Output:



For more information on how to link a scrollbar to a scrollable widget, check out the [scrollbar widget tutorial](https://www.pythontutorial.net/tkinter/tkinter-scrollbar/) (<https://www.pythontutorial.net/tkinter/tkinter-scrollbar/>) .

Summary

- Use the `tk.Listbox(container, height, listvariable)` to create a Listbox widget; a `listvariable` should be a `tk.StringVar(value=items)` .
- Bind a callback function to the `'<<ListboxSelect>>'` event to execute the function when one or more list items are selected.