

Code -

```
import tkinter as tk

def on_button_click():
    label.config(text="Button clicked!")

# Create the main window
window = tk.Tk()
window.title("Tkinter Example")

# Create a label
label = tk.Label(window, text="Hello, Tkinter!")
label.pack(pady=10)

# Create a button
button = tk.Button(window, text="Click me!", command=on_button_click)
button.pack()

# Start the Tkinter event loop
window.mainloop()
```

This code creates a window with a label and a button. When the button is clicked, the **on_button_click** function is called, which updates the label's text. This is a simple illustration of creating a graphical user interface (GUI) using Tkinter in Python.

Explanation -

Let's understand the above code with a suitable explanation -

1. **Import Tkinter module:**

```
import tkinter as tk
```

This line imports the **tkinter** module and aliases it as **tk** for convenience.

2. **Define a function for button click:**

```
def on_button_click():
    label.config(text="Button clicked!")
```

This function will be called when the button is clicked. It updates the text of the label widget to "Button clicked!"

3. Create the main window:

```
window = tk.Tk()
window.title("Tkinter Example")
```

This creates the main window object using `tk.Tk()` and sets its title to **"Tkinter Example"**.

4. Create a label widget:

```
label = tk.Label(window, text="Hello, Tkinter!")
label.pack(pady=10)
```

A label widget is created with the initial text **"Hello, Tkinter!"** and is packed into the main window with some padding (`pady`).

5. Create a button widget:

```
button = tk.Button(window, text="Click me!", command=on_button_click)
button.pack()
```

A button widget is created with the label **"Click me!"** and associated with the `on_button_click` function. It is also packed into the main window.

6. Start the Tkinter event loop:

```
window.mainloop()
```

This starts the Tkinter event loop, which listens for events (such as button clicks) and keeps the GUI responsive.

When you run this program, a window will appear with a label and a button. Clicking the button will trigger the `on_button_click` function, updating the label's text. This example demonstrates the basic structure of a Tkinter application with a simple GUI.