



Experiment No. 8
Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes
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## Experiment No. 8

**Title:** Creating GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes

**Aim:** To study and create GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes

**Objective:** To introduce GUI, TKinter in python

### Theory:

Python offers multiple options for developing GUI (Graphical User Interface). Out of all the GUI methods, tkinter is the most commonly used method. It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter is the fastest and easiest way to create the GUI applications. Creating a GUI using tkinter is an easy task.

To create a tkinter app:

Importing the module – tkinter

Create the main window (container)

Add any number of widgets to the main window

Apply the event Trigger on the widgets.

Importing tkinter is same as importing any other module in the Python code. Note that the name of the module in Python 2.x is 'Tkinter' and in Python 3.x it is 'tkinter'.

### Program:

```
import tkinter as tk
```

```
from tkinter import messagebox
```

```
def stop_application():
```



```
root.destroy()
```

```
def submit_form():
```

```
    name = entry_name.get()
```

```
    email = entry_email.get()
```

```
    age = entry_age.get()
```

```
    # Check if any language is selected
```

```
    if language_var.get() == "":
```

```
        messagebox.showerror("Error", "Please select your favorite programming language.")
```

```
        return
```

```
    # Get the selected language
```

```
    language = language_var.get()
```

```
    # Get the selected gender
```

```
    gender = gender_var.get()
```

```
    # Get the checked hobbies
```

```
    hobbies = [hobby for hobby, var in hobbies_vars.items() if var.get()]
```

```
    # Display submitted information
```



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```
message = f"Name: {name}\nEmail: {email}\nAge: {age}\nLanguage: {language}\nGender: {gender}\nHobbies: {' '.join(hobbies)}"
```

```
messagebox.showinfo("Form Submitted", message)
```

```
root = tk.Tk()
```

```
root.title("Comprehensive GUI Application")
```

```
# Labels
```

```
label_name = tk.Label(root, text="Name:")
```

```
label_name.grid(row=0, column=0, padx=10, pady=5, sticky="e")
```

```
label_email = tk.Label(root, text="Email:")
```

```
label_email.grid(row=1, column=0, padx=10, pady=5, sticky="e")
```

```
label_age = tk.Label(root, text="Age:")
```

```
label_age.grid(row=2, column=0, padx=10, pady=5, sticky="e")
```

```
label_language = tk.Label(root, text="Favorite Programming Language:")
```

```
label_language.grid(row=3, column=0, padx=10, pady=5, sticky="e")
```

```
label_gender = tk.Label(root, text="Gender:")
```

```
label_gender.grid(row=4, column=0, padx=10, pady=5, sticky="e")
```



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```
label_hobbies = tk.Label(root, text="Hobbies:")
```

```
label_hobbies.grid(row=5, column=0, padx=10, pady=5, sticky="e")
```

```
# Entry Widgets
```

```
entry_name = tk.Entry(root)
```

```
entry_name.grid(row=0, column=1, padx=10, pady=5)
```

```
entry_email = tk.Entry(root)
```

```
entry_email.grid(row=1, column=1, padx=10, pady=5)
```

```
entry_age = tk.Entry(root)
```

```
entry_age.grid(row=2, column=1, padx=10, pady=5)
```

```
# Dropdown Menu
```

```
languages = ["Python", "Java", "C++", "JavaScript", "Ruby", "Other"]
```

```
language_var = tk.StringVar()
```

```
language_var.set("") # Default value
```

```
dropdown_language = tk.OptionMenu(root, language_var, *languages)
```

```
dropdown_language.grid(row=3, column=1, padx=10, pady=5, sticky="ew")
```

```
# Radio Buttons
```

```
gender_var = tk.StringVar()
```

```
gender_var.set("Male") # Default value
```



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```
radio_male = tk.Radiobutton(root, text="Male", variable=gender_var, value="Male")
```

```
radio_male.grid(row=4, column=1, padx=10, pady=5, sticky="w")
```

```
radio_female = tk.Radiobutton(root, text="Female", variable=gender_var, value="Female")
```

```
radio_female.grid(row=4, column=1, padx=10, pady=5, sticky="e")
```

```
# Checkboxes
```

```
hobbies_list = ["Reading", "Gaming", "Traveling", "Music", "Sports"]
```

```
hobbies_vars = { }
```

```
for i, hobby in enumerate(hobbies_list):
```

```
    var = tk.BooleanVar()
```

```
    checkbox = tk.Checkbutton(root, text=hobby, variable=var)
```

```
    checkbox.grid(row=6+i, column=1, padx=10, pady=2, sticky="w")
```

```
    hobbies_vars[hobby] = var
```

```
# Buttons
```

```
submit_button = tk.Button(root, text="Submit", command=submit_form)
```

```
submit_button.grid(row=7+len(hobbies_list), column=0, columnspan=2, padx=10, pady=10)
```

```
stop_button = tk.Button(root, text="Stop", command=stop_application)
```

```
stop_button.grid(row=8+len(hobbies_list), column=0, columnspan=2, padx=10, pady=10)
```

```
root.mainloop()
```



### Output:

A screenshot of a Python Tkinter GUI application titled "Comprehensive GUI Application". The window contains a form with the following elements: a "Name:" label followed by a text entry field containing "Yash Chavan"; an "Email:" label followed by a text entry field containing "yash@gmail.com"; an "Age:" label followed by a text entry field containing "19"; a "Favorite Programming Language:" label followed by a dropdown menu showing "Python"; a "Gender:" label followed by two radio buttons, "Male" (selected) and "Female"; a "Hobbies:" label followed by five checkboxes: "Reading" (checked), "Gaming" (checked), "Traveling" (unchecked), "Music" (checked), and "Sports" (unchecked). At the bottom of the form are two buttons: "Submit" and "Stop".

### Conclusion:

Through Experiment No. 8, the process of creating GUI applications using Python's tkinter library was explored comprehensively. Various widgets such as labels, textboxes, radio buttons, checkboxes, and custom dialog boxes were utilized to develop an interactive form. This experiment served as an effective introduction to GUI development in Python, showcasing its versatility and ease of use. Overall, the hands-on experience provided valuable insights into the capabilities of tkinter and its practical applications in building graphical interfaces for Python programs.