

# Steganography Tool for Image/File Hiding

## **Total 4 Modules are Required**

**1 Tkinter Modules:** Tkinter is Python's standard library for creating Graphical User Interfaces (GUIs). It provides a set of modules and widgets that enable developers to build desktop applications with graphical interfaces.

**2 PIL Modules:** PIL is the Python Imaging Library which provides the python interpreter with image editing capabilities. The Image module provides a class with the same name which is used to represent a PIL image.

**3 OS Modules:** In the context of operating systems, modules are individual, independent components that perform specific functions and can be dynamically loaded and unloaded. This modular design allows for flexibility and easier maintenance, as individual parts can be updated or replaced without affecting the entire system

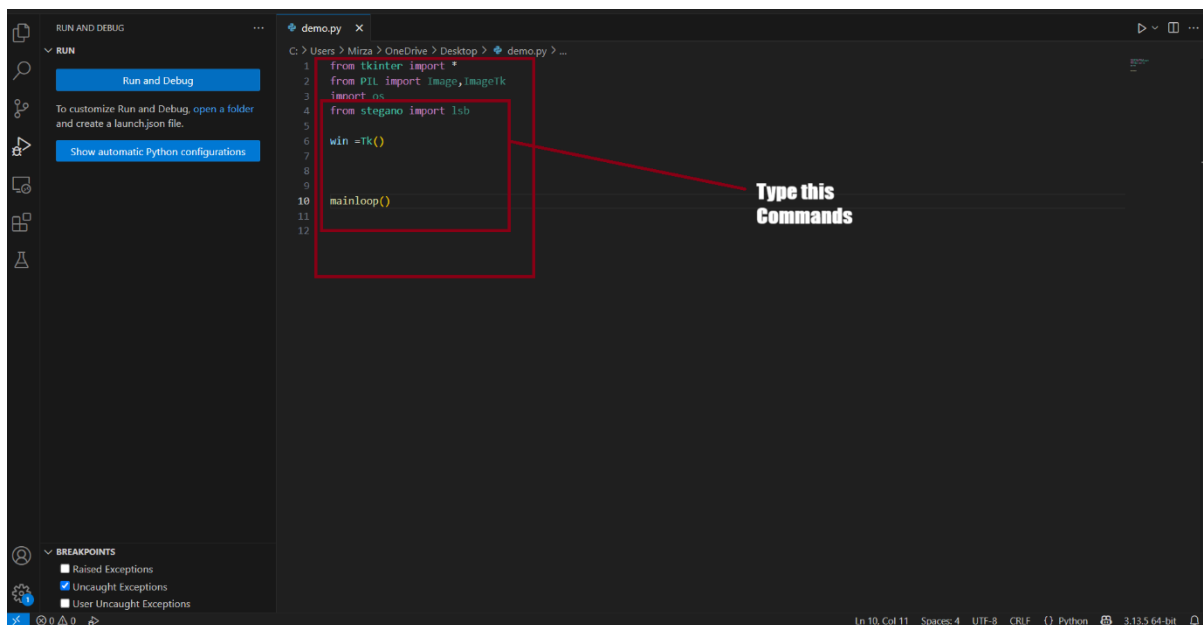
**4 Stegano Modules:** Stegano is a Python library designed for steganography, the art and science of concealing a message within another message. It focuses on hiding messages, not encrypting them, and is often used in conjunction with cryptography.

## **Note: Using Python to create Steganography Tool.**

### **Steps to Follow**

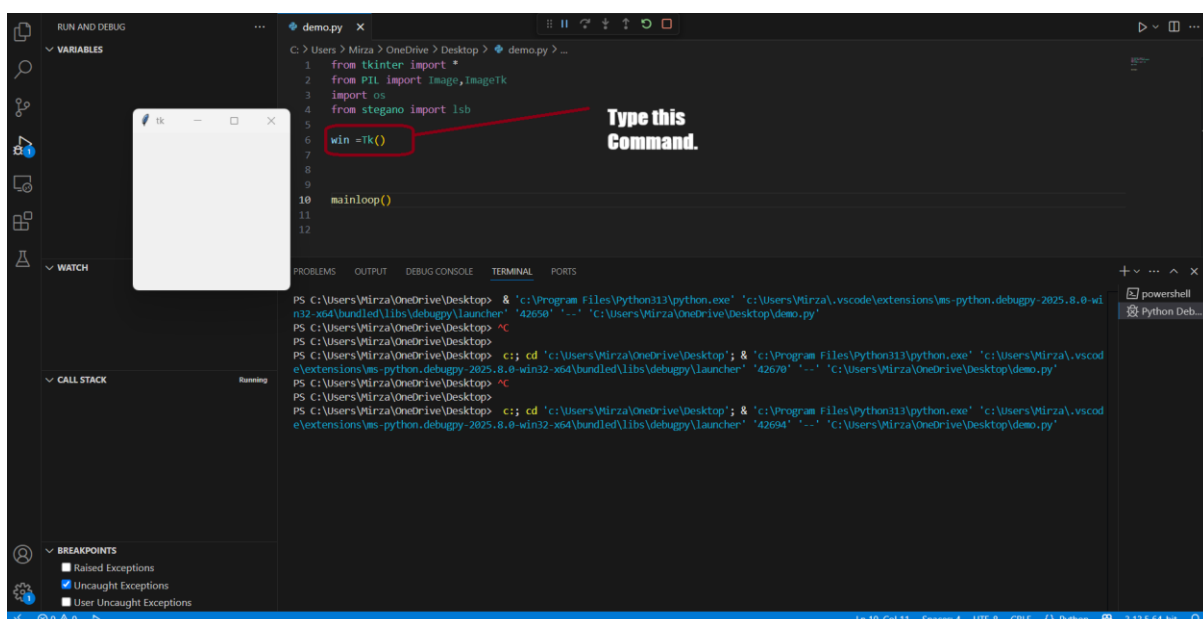
**Step 1:** Open Pycharm Application and created a Folder.

**Step 2:** Type the Commands which is provided in the SS Below.

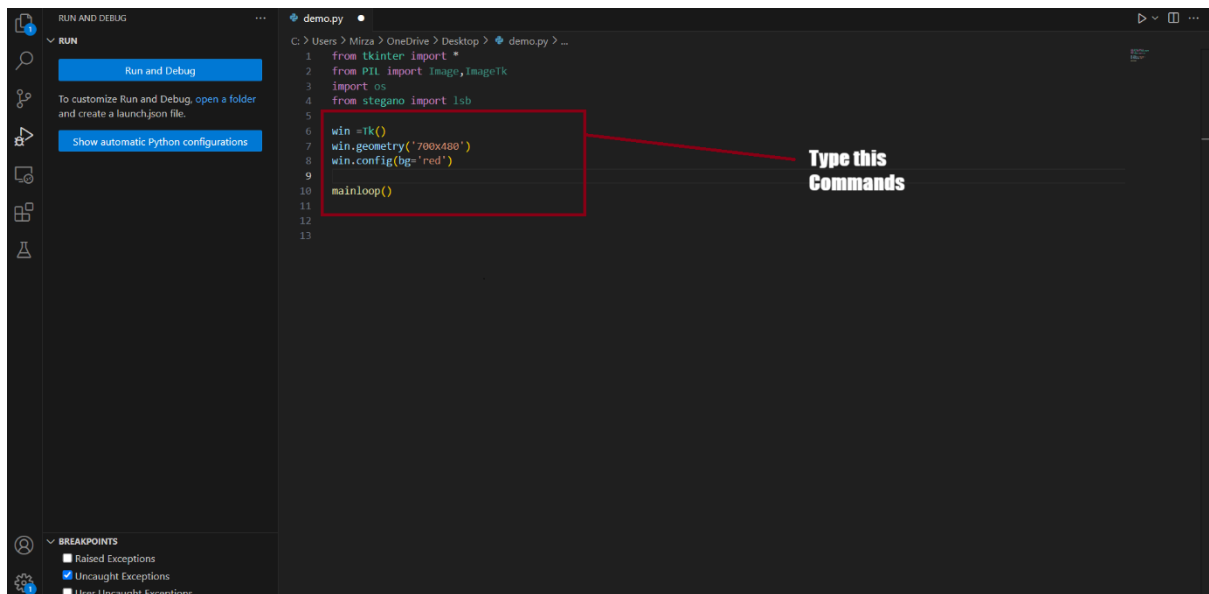


**Step 3:** Open terminal in Pycharm and use the Command " pip install Stegano, enter after installing close the terminal once the Stegano Module is Installed.

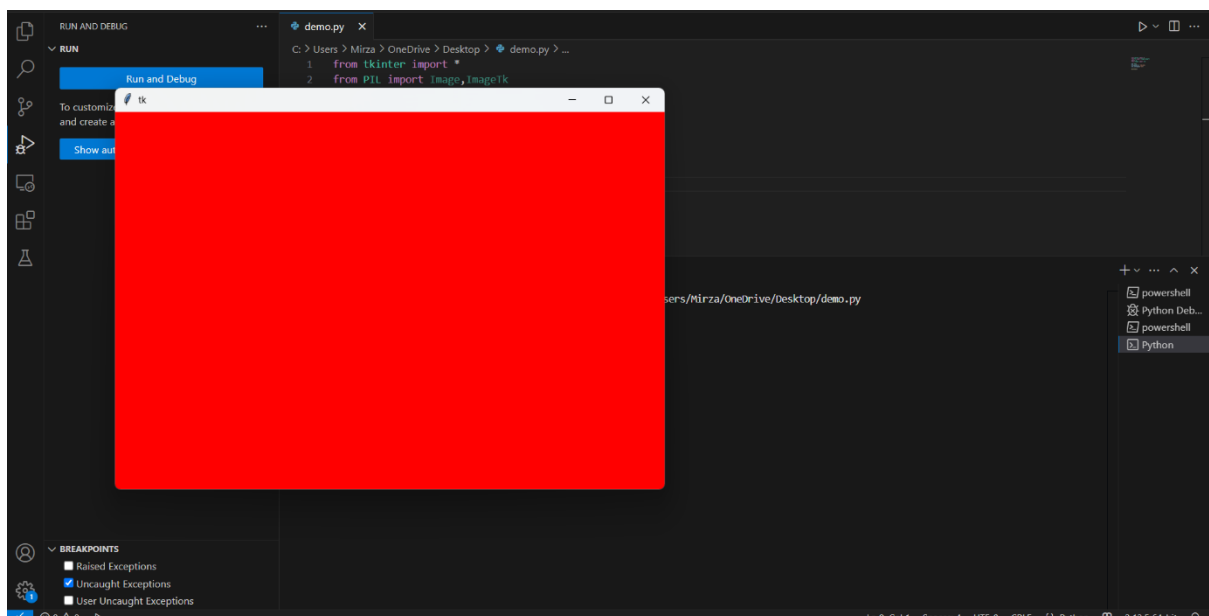
**Step 4:** Now create a window from tinker module by using the command given below in the SS.



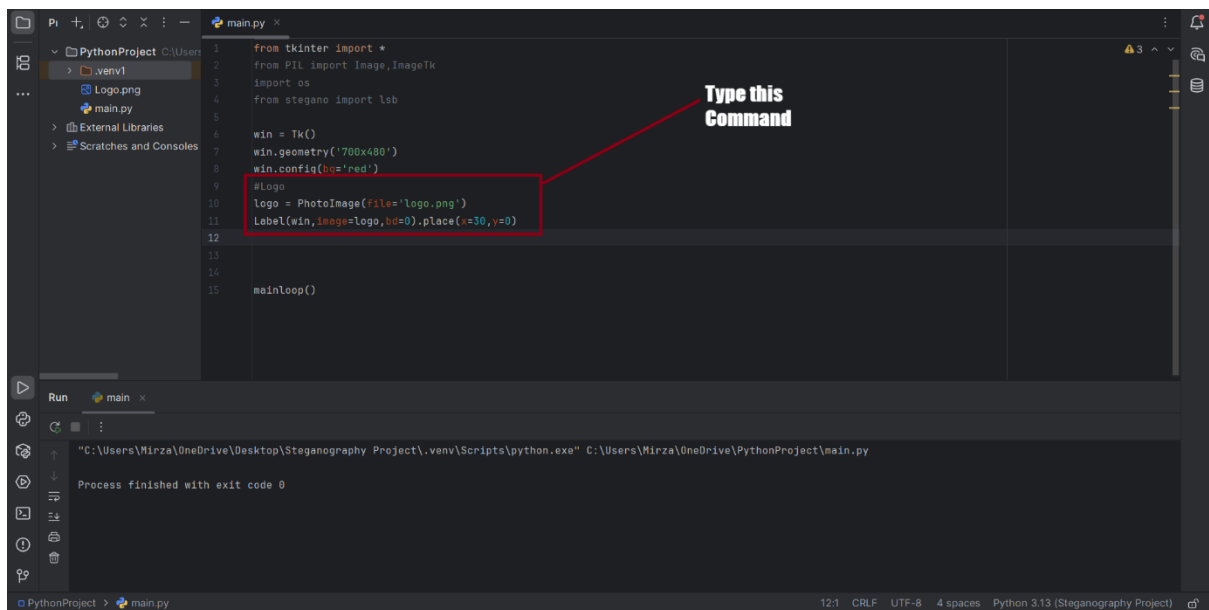
**Step 5:** We need to change the window size and the background color type the commands given in the SS Below.



**Result Of Step 5:** Then run the command to check the window size and background color in the below SS.



**Step 6:** Now we have to add the logo type the commands used in the below SS.



```
1 from tkinter import *
2 from PIL import Image, ImageTk
3 import os
4 from stegano import lsb
5
6 win = Tk()
7 win.geometry('700x480')
8 win.config(bg='red')
9
10 #Logo
11 logo = PhotoImage(file='logo.png')
12 Label(win, image=logo, bg=0).place(x=30, y=0)
13
14
15 mainloop()
```

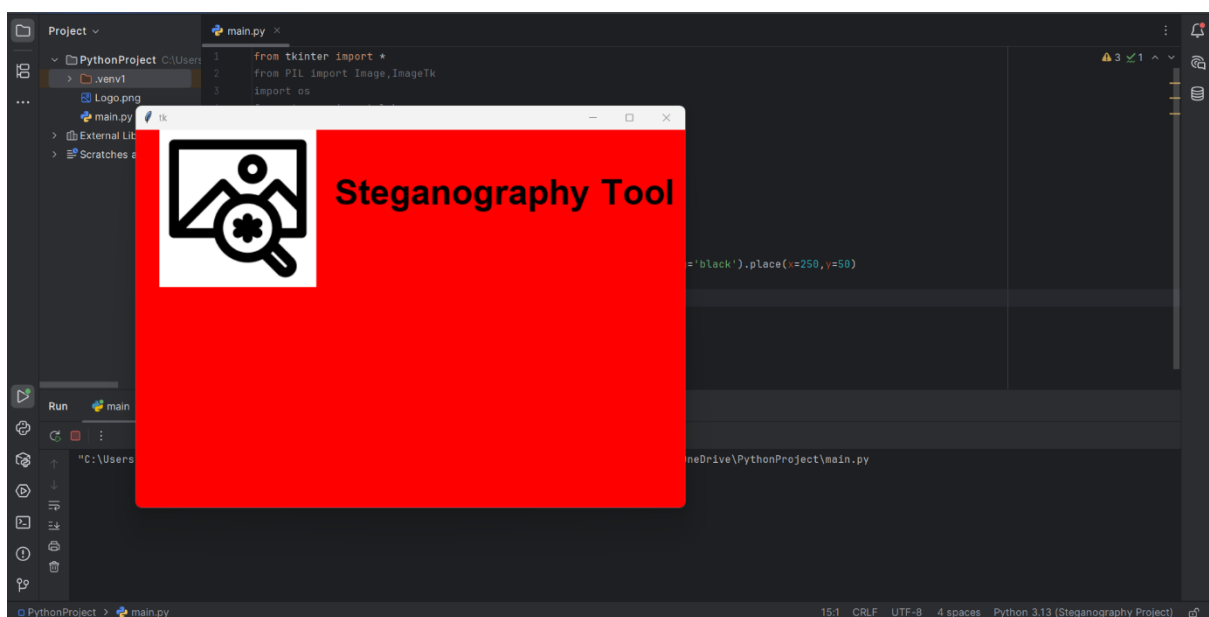
Type this Command

Run main x

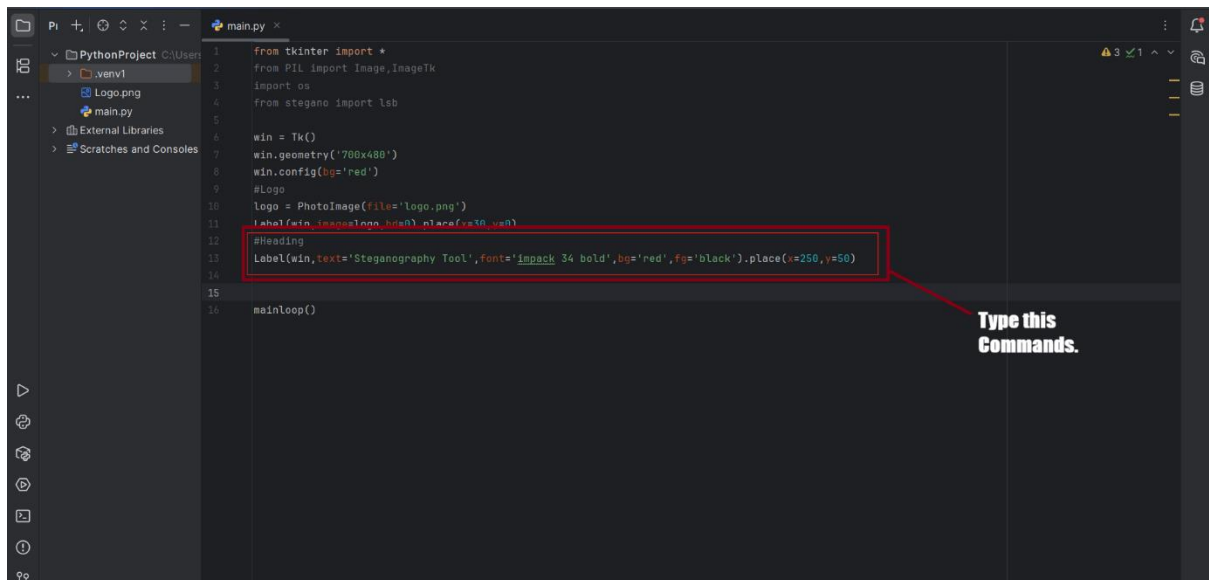
"C:\Users\Mirza\OneDrive\Desktop\Steganography Project\.venv\Scripts\python.exe" C:\Users\Mirza\OneDrive\PythonProject\main.py

Process finished with exit code 0

**Result of Step 6:** Then Run the command to check the result given in the below SS.



**Step 7:** Now we have to add the Heading Use the Command Given Below in the SS.

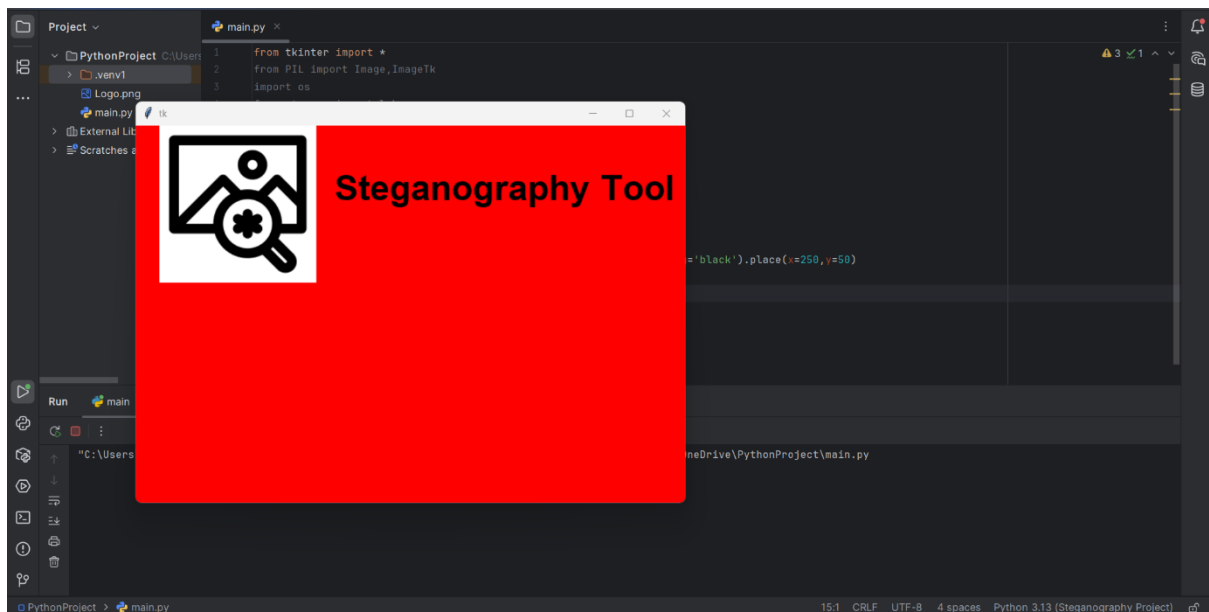


The screenshot shows a code editor with a file named `main.py`. The code is as follows:

```
1 from tkinter import *
2 from PIL import Image, ImageTk
3 import os
4 from stegano import lsb
5
6 win = Tk()
7 win.geometry('700x480')
8 win.config(bg='red')
9 #Logo
10 logo = PhotoImage(file='logo.png')
11 label(win_image=logo, bg=0).place(x=30, y=0)
12
13 #Heading
14 Label(win, text='Steganography Tool', font='inpack 34 bold', bg='red', fg='black').place(x=250, y=50)
15
16.mainloop()
```

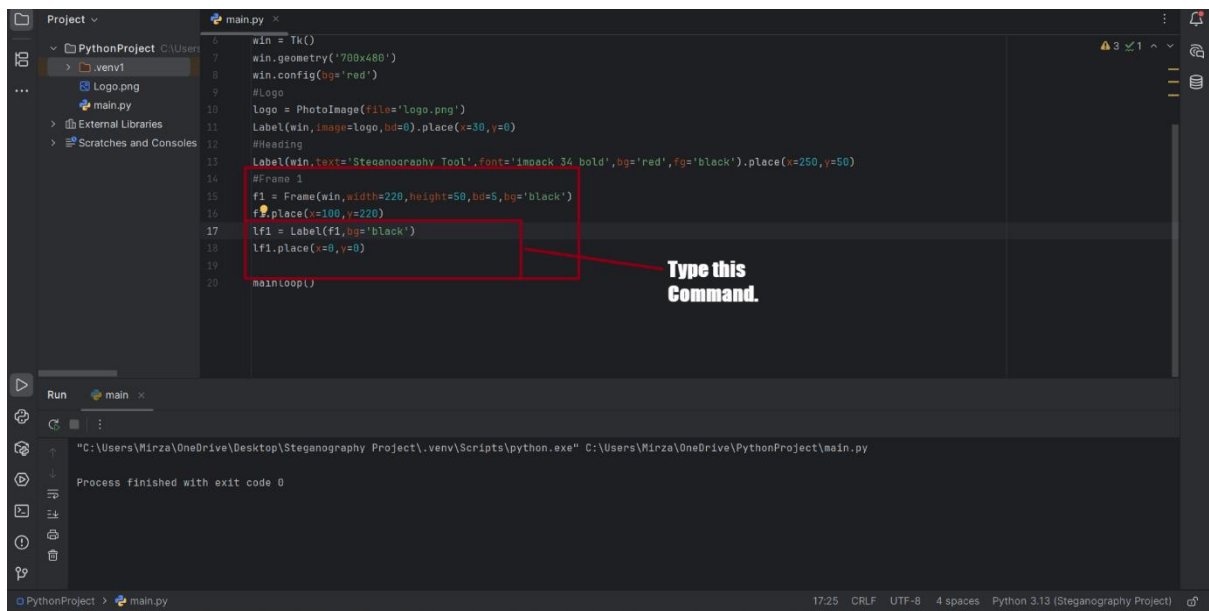
A red box highlights the line 14: `Label(win, text='Steganography Tool', font='inpack 34 bold', bg='red', fg='black').place(x=250, y=50)`. A red arrow points from this box to the text "Type this Commands." on the right side of the editor.

**Result of Step 7:** Then run the command to Check the Result given in the below SS.



**Step 8:** Now we have to add the frames use the command given Below in the SS.

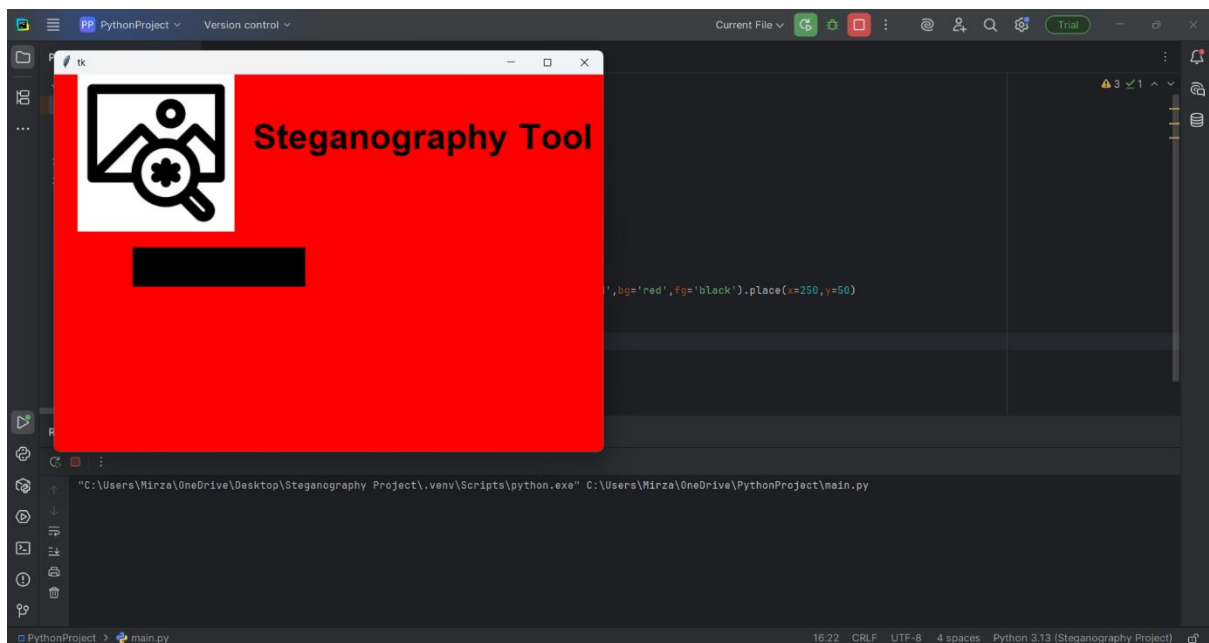
Frame 1 And Label 2



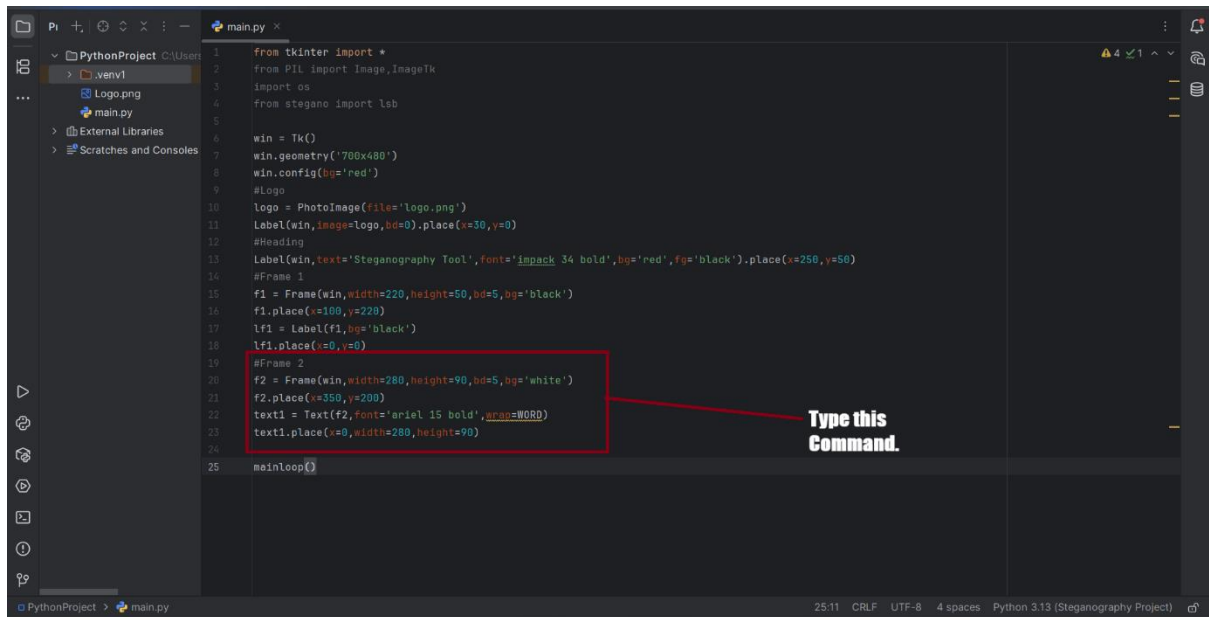
```
6 win = Tk()
7 win.geometry('700x480')
8 win.config(bg='red')
9 #Logo
10 logo = PhotoImage(file='logo.png')
11 Label(win, image=logo, bd=0).place(x=30, y=0)
12 #Heading
13 Label(win, text='Steganography Tool', font='impack 34 bold', bg='red', fg='black').place(x=250, y=50)
14 #Frame 1
15 f1 = Frame(win, width=220, height=50, bd=5, bg='black')
16 f1.place(x=100, y=220)
17 lf1 = Label(f1, bg='black')
18 lf1.place(x=0, y=0)
19
20 mainloop()
```

Type this Command.

**Result of Step 8 Frame 1 And Label 2:** Then run the command and check the result given in the below SS.



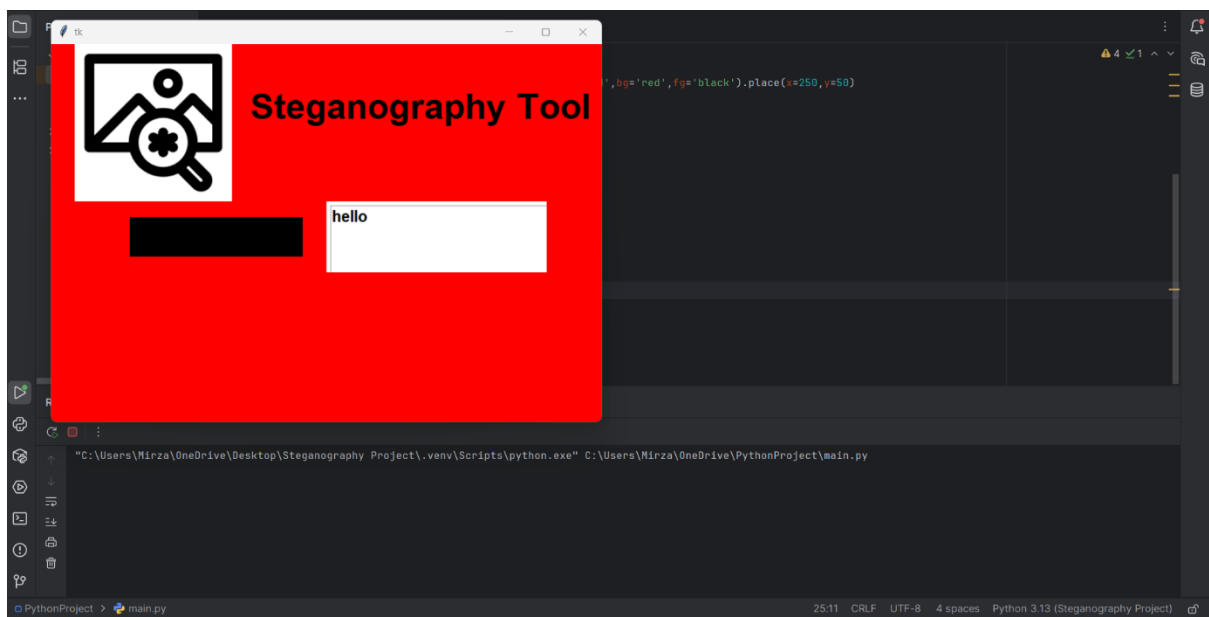
## Frame 2 and Text 1



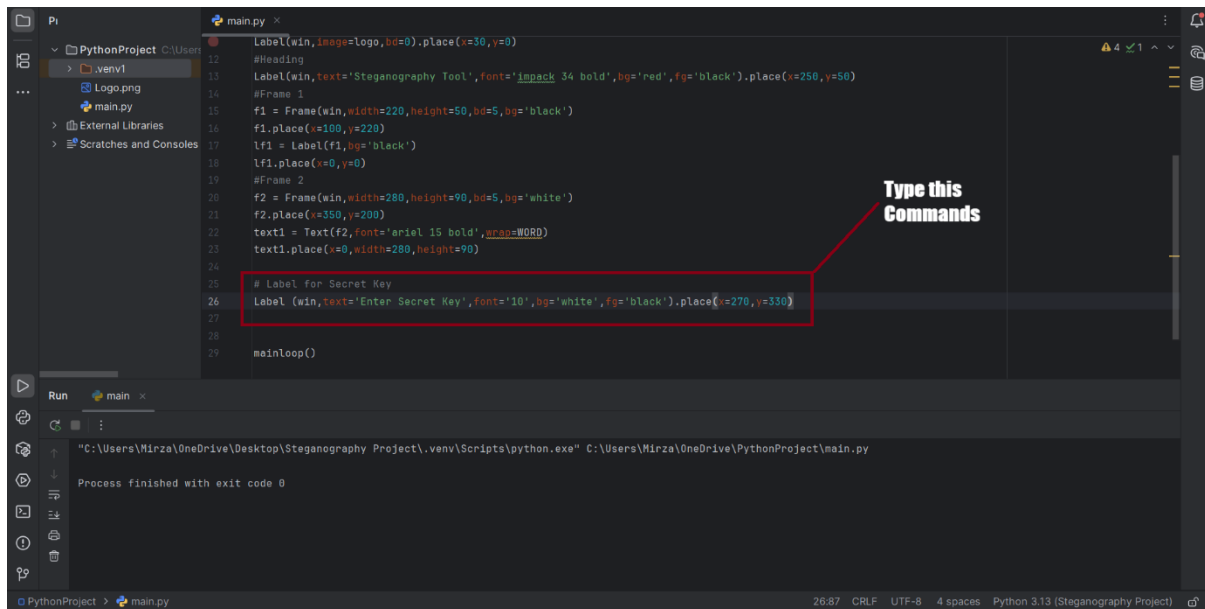
```
1 from tkinter import *
2 from PIL import Image, ImageTk
3 import os
4 from stegano import lsb
5
6 win = Tk()
7 win.geometry('700x480')
8 win.config(bg='red')
9
10 logo = PhotoImage(file='logo.png')
11 Label(win, image=logo, bd=0).place(x=30, y=0)
12 #Heading
13 Label(win, text='Steganography Tool', font='impack 34 bold', bg='red', fg='black').place(x=250, y=50)
14 #Frame 1
15 f1 = Frame(win, width=220, height=50, bd=5, bg='black')
16 f1.place(x=100, y=220)
17 l1 = Label(f1, bg='black')
18 l1.place(x=0, y=0)
19 #Frame 2
20 f2 = Frame(win, width=280, height=90, bd=5, bg='white')
21 f2.place(x=350, y=200)
22 text1 = Text(f2, font='arial 15 bold', wrap=WORD)
23 text1.place(x=0, width=280, height=90)
24
25.mainloop()
```

Type this Command.

**Result of Step 8 Frame 2 and Text 1:** Then run the command and check the result given in the below SS.

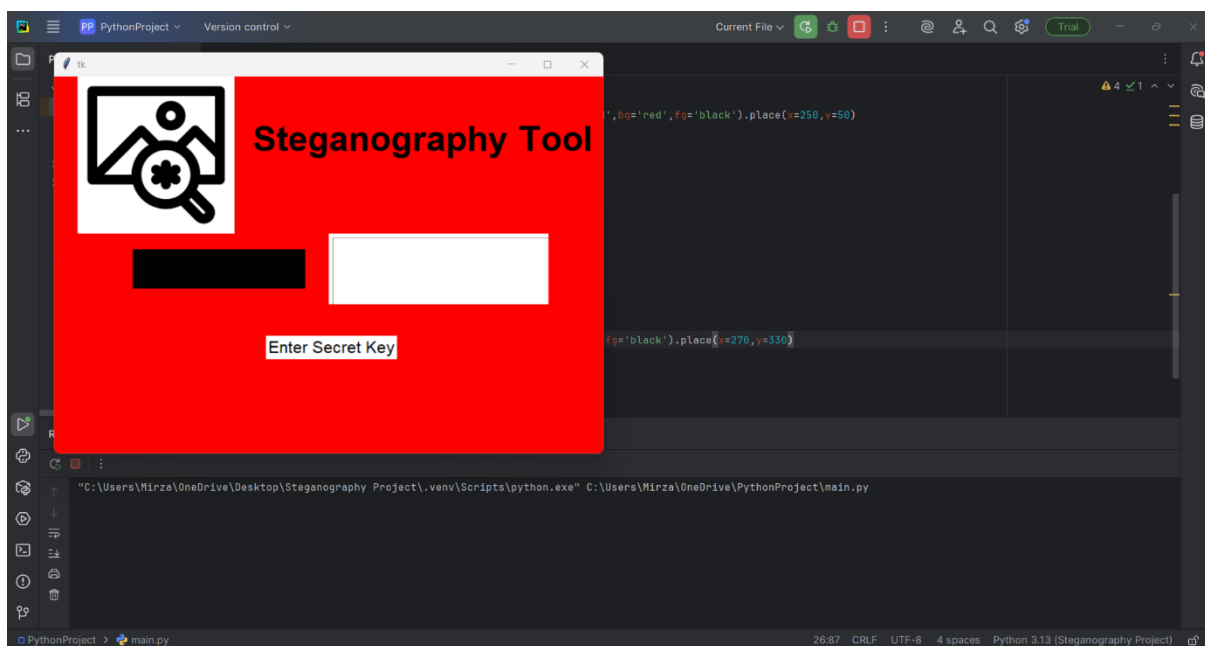


**Step 9:** Now we have to make Label for secret Key Use the Commands given below in the SS



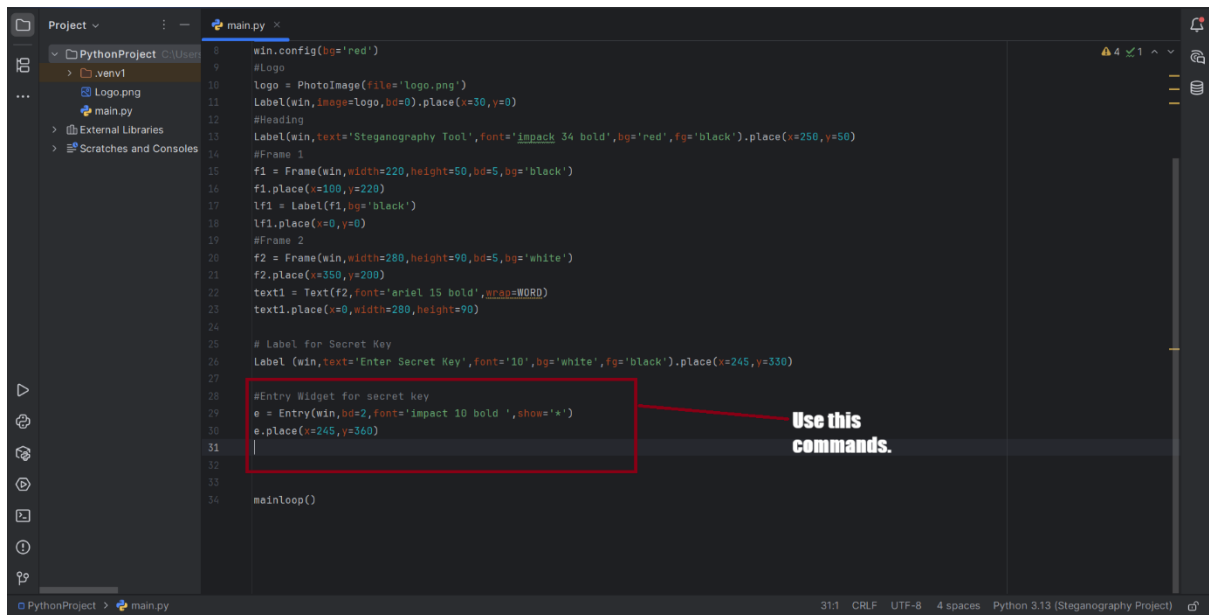
```
11 Label(win, image=logo, bd=0).place(x=30, y=0)
12 #Heading
13 Label(win, text='Steganography Tool', font='lucida 34 bold', bg='red', fg='black').place(x=250, y=50)
14 #Frame 1
15 f1 = Frame(win, width=220, height=50, bd=5, bg='black')
16 f1.place(x=100, y=220)
17 l1 = Label(f1, bg='black')
18 l1.place(x=0, y=0)
19 #Frame 2
20 f2 = Frame(win, width=280, height=90, bd=5, bg='white')
21 f2.place(x=350, y=200)
22 text1 = Text(f2, font='arial 15 bold', wrap=WORD)
23 text1.place(x=0, width=280, height=90)
24
25 # Label for Secret Key
26 Label(win, text='Enter Secret Key', font='10', bg='white', fg='black').place(x=270, y=330)
27
28
29.mainloop()
```

**Result of Step 9:** Then run the command and check the result given in the below SS.



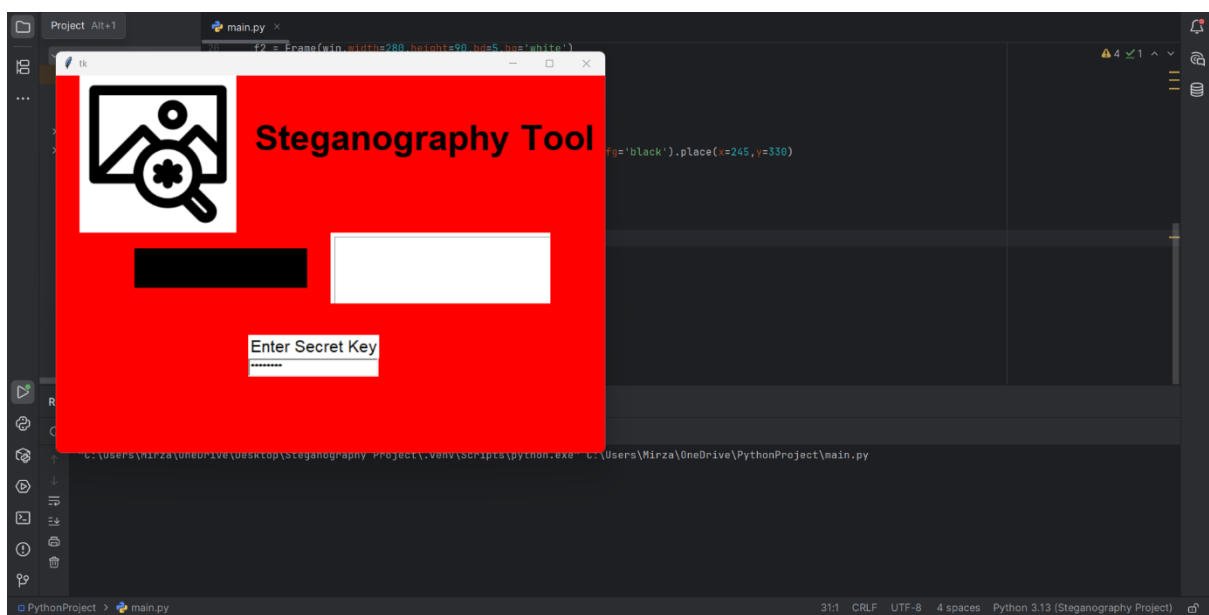


**Step 10:** Now we have to make entry widget for secret key use the commands given below in the SS.

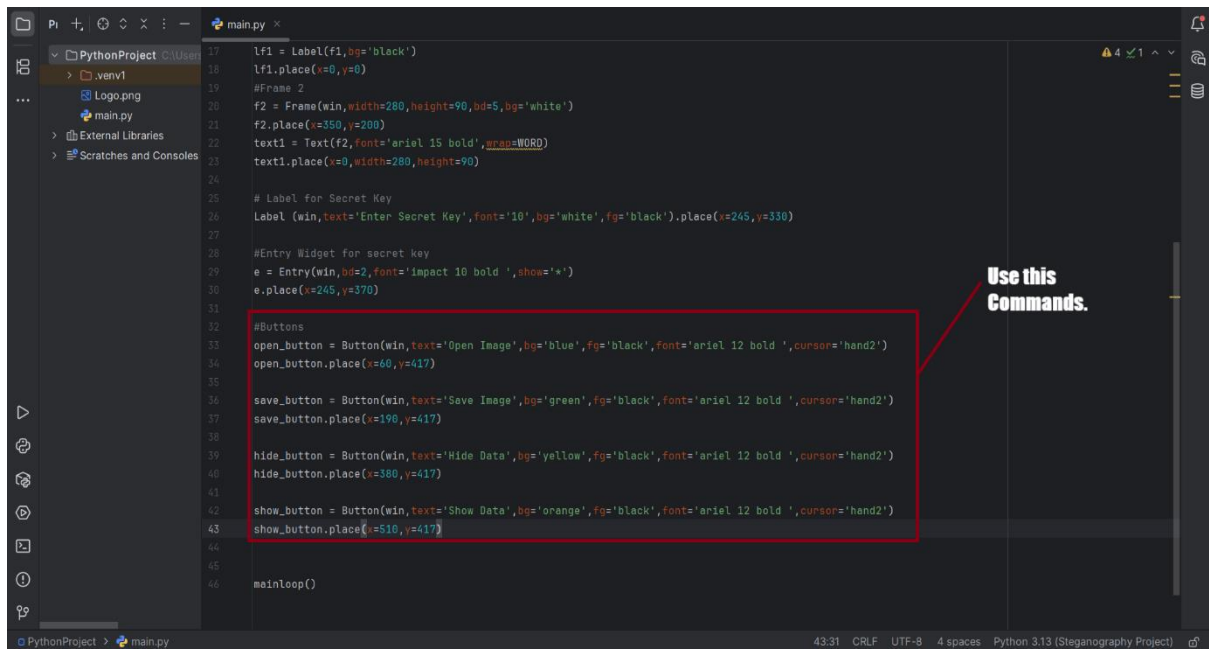


```
8 win.config(bg='red')
9 #Logo
10 logo = PhotoImage(file='logo.png')
11 Label(win,image=logo,bd=0).place(x=30,y=0)
12 #Heading
13 Label(win,text='Steganography Tool',font='impact 34 bold',bg='red',fg='black').place(x=250,y=50)
14 #Frame 1
15 f1 = Frame(win,width=220,height=50,bd=5,bg='black')
16 f1.place(x=100,y=220)
17 lf1 = Label(f1,bg='black')
18 lf1.place(x=0,y=0)
19 #Frame 2
20 f2 = Frame(win,width=280,height=90,bd=5,bg='white')
21 f2.place(x=350,y=200)
22 text1 = Text(f2,font='arial 15 bold',wrap=WORD)
23 text1.place(x=0,width=280,height=90)
24
25 # Label for Secret Key
26 Label(win,text='Enter Secret Key',font='10',bg='white',fg='black').place(x=245,y=330)
27
28 #Entry Widget for secret key
29 e = Entry(win,bd=2,font='impact 10 bold ',show='*')
30 e.place(x=245,y=360)
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```

**Result of Step 10:** Then run the command and check the result given in the below SS.

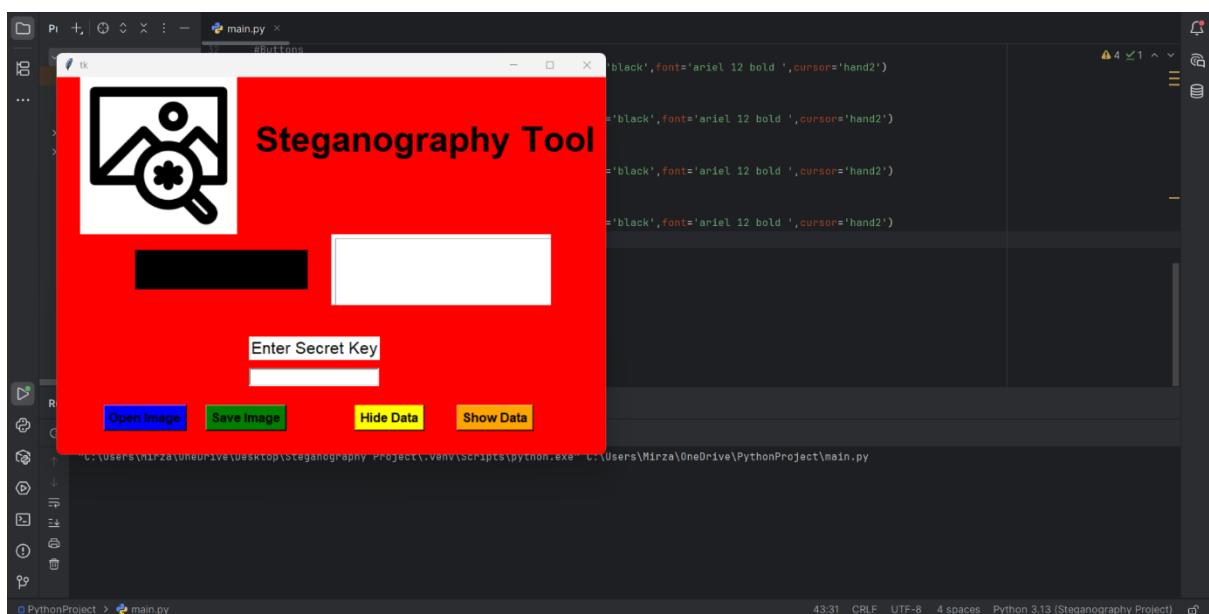


**Step 11:** Now we have to make 4 buttons for submitting the request use the commands given below in the SS.

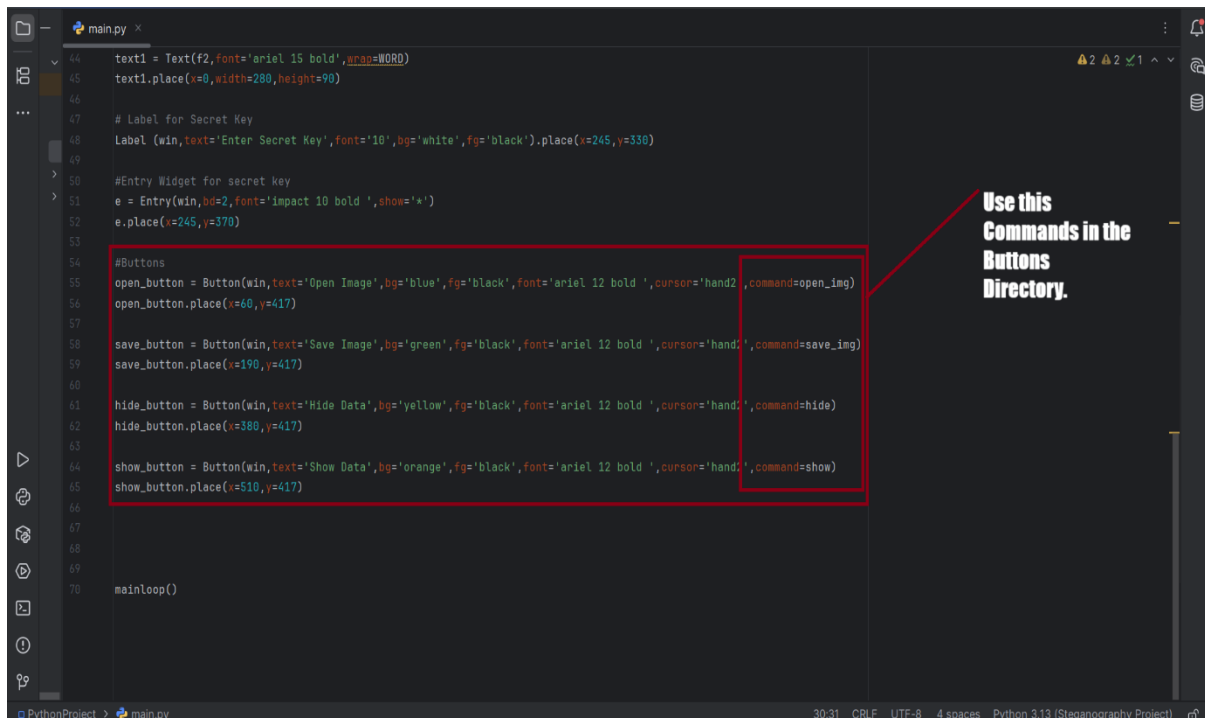


```
27 l1 = Label(f1,bg='black')
28 l1.place(x=0,y=0)
29 #Frame 2
30 f2 = Frame(win,width=280,height=90,bd=5,bg='white')
31 f2.place(x=350,y=200)
32 text1 = Text(f2,font='arial 15 bold',wrap=WORD)
33 text1.place(x=0,width=280,height=90)
34
35 # Label for Secret Key
36 Label(win,text='Enter Secret Key',font='10',bg='white',fg='black').place(x=245,y=330)
37
38 #Entry Widget for secret key
39 e = Entry(win,bd=2,font='impact 10 bold ',show='*')
40 e.place(x=245,y=370)
41
42 #Buttons
43 open_button = Button(win,text='Open Image',bg='blue',fg='black',font='arial 12 bold ',cursor='hand2')
44 open_button.place(x=60,y=417)
45
46 save_button = Button(win,text='Save Image',bg='green',fg='black',font='arial 12 bold ',cursor='hand2')
47 save_button.place(x=190,y=417)
48
49 hide_button = Button(win,text='Hide Data',bg='yellow',fg='black',font='arial 12 bold ',cursor='hand2')
50 hide_button.place(x=380,y=417)
51
52 show_button = Button(win,text='Show Data',bg='orange',fg='black',font='arial 12 bold ',cursor='hand2')
53 show_button.place(x=510,y=417)
54
55 mainloop()
```

**Result of Step 11:** Then run the command and check the result given in the below SS.



**Step 12:** Now we have to give the functions to the Particular Buttons provided use this Commands given below in the SS



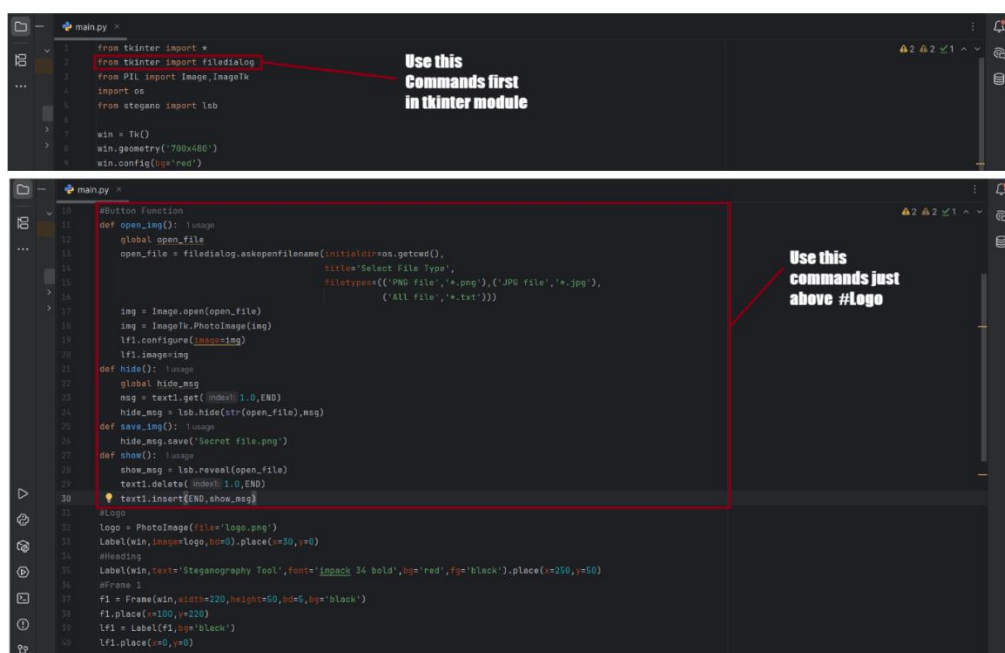
```

44 text1 = Text(f2,font='arial 15 bold',wrap=WORD)
45 text1.place(x=0,width=280,height=90)
46
47 # Label for Secret Key
48 Label(win,text='Enter Secret Key',font='10',bg='white',fg='black').place(x=245,y=330)
49
50 #Entry Widget for secret key
51 e = Entry(win,bd=2,font='impact 10 bold',show='*')
52 e.place(x=245,y=370)
53
54 #Buttons
55 open_button = Button(win,text='Open Image',bg='blue',fg='black',font='arial 12 bold',cursor='hand2',command=open_img)
56 open_button.place(x=60,y=417)
57
58 save_button = Button(win,text='Save Image',bg='green',fg='black',font='arial 12 bold',cursor='hand2',command=save_img)
59 save_button.place(x=190,y=417)
60
61 hide_button = Button(win,text='Hide Data',bg='yellow',fg='black',font='arial 12 bold',cursor='hand2',command=hide)
62 hide_button.place(x=380,y=417)
63
64 show_button = Button(win,text='Show Data',bg='orange',fg='black',font='arial 12 bold',cursor='hand2',command=show)
65 show_button.place(x=510,y=417)
66
67
68
69
70 mainloop()

```

Use this Commands in the Buttons Directory.

Use this Tkinter Module Command Before Open, Hide, Save and show commands as given in the SS below.



```

1 from tkinter import *
2 from tkinter import filedialog
3 from PIL import Image, ImageTk
4 import os
5 from stegano import lib
6
7 win = Tk()
8 win.geometry('700x480')
9 win.config(bg='red')

```

Use this Commands first in tkinter module

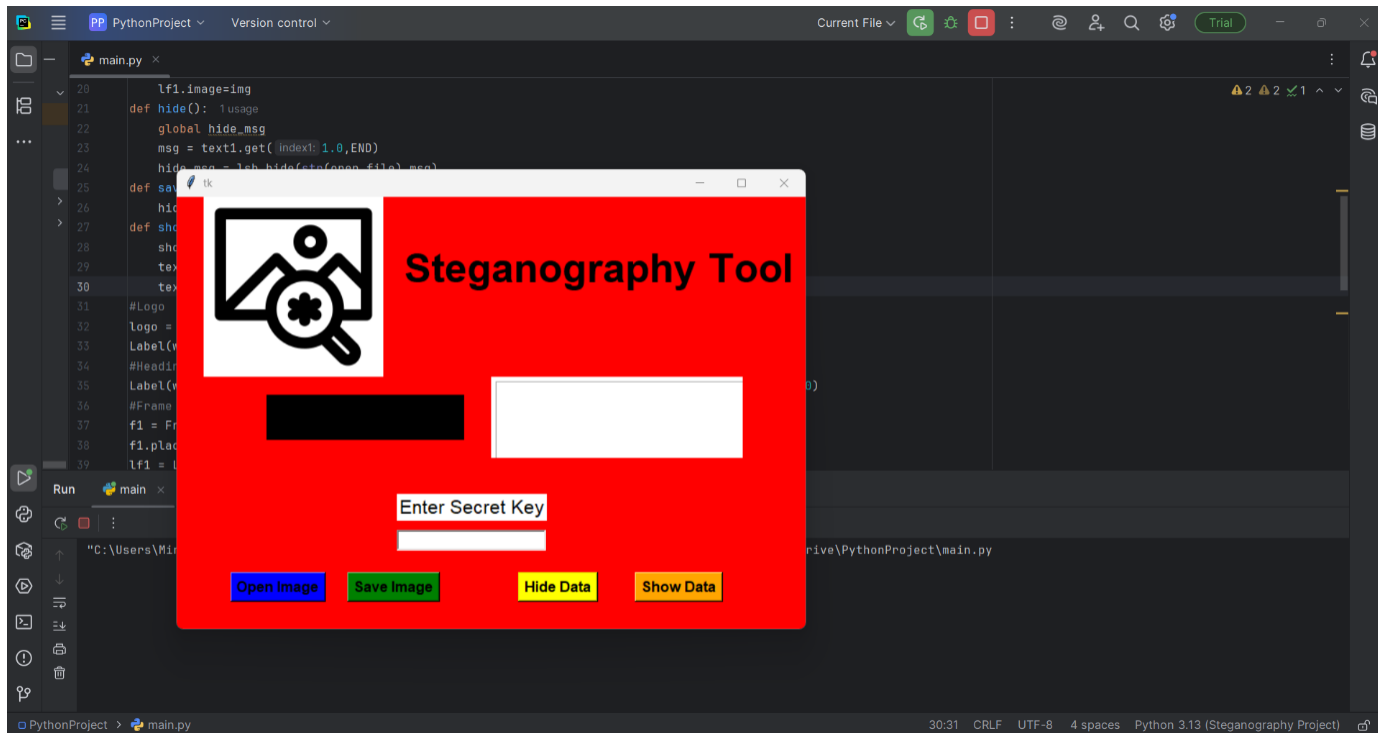
```

10 #Button Function
11 def open_img():
12     usage
13     global open_file
14     open_file = filedialog.askopenfilename(initialdir=os.getcwd(),
15     title='Select File Type',
16     filetypes=(('PNG file','*.png'),('JPG file','*.jpg'),
17     ('All file','*.txt')))
18
19     img = Image.open(open_file)
20     img = ImageTk.PhotoImage(img)
21     lfi.configure(image=img)
22     lfi.image = img
23
24 def hide():
25     usage
26     global hide_msg
27     msg = text1.get(1.0,END)
28     hide_msg = lib.hide(str(open_file),msg)
29
30 def save_img():
31     usage
32     hide_msg.save('Secret file.png')
33
34 def show():
35     usage
36     show_msg = lib.reveal(open_file)
37     text1.delete(1.0,END)
38     text1.insert(END,show_msg)
39
40 #Logo
41 Logo = PhotoImage(file='Logo.png')
42 Label(win,image=Logo,bd=0).place(x=30,y=0)
43
44 #Header
45 Label(win,text='Steganography Tool',font='Impact 34 bold',bg='red',fg='black').place(x=250,y=50)
46
47 #Frame 1
48 f1 = Frame(win,width=220,height=50,bd=5,bg='black')
49 f1.place(x=100,y=220)
50 lfi = Label(f1,bg='black')
51 lfi.place(x=0,y=0)
52
53 #Frame 2

```

Use this commands just above #Logo

**Result of Step 12:** Then run the command and check the result in the SS below



**Step 13:** Now we have to Give the conditions for the Required functions given in the SS below.

```
1 from tkinter import *
2 from tkinter import filedialog, messagebox
3 from PIL import Image, ImageTk
4 import os
5 from steganographic import lib
6
7 win = Tk()
8 win.geometry('700x600')
9 win.config(bg='red')
10
11 #Button Function
12 def open_img():
13     global open_file
14     open_file = filedialog.askopenfilename(initialdir=os.getcwd(),
15     title='Select File Type',
16     filetypes=(('PNG file', '*.png'), ('JPG file', '*.jpg'),
17     ('All file', '*.*')))
18
19 # Label for Secret Key
20 Label(win, text='Enter Secret Key', font='10', bg='white', fg='black').place(x=245, y=330)
21
22 #Entry Widget for secret key
23 code=StringVar()
24 e = Entry(win, textvariable=code, bg='white', font='Impact 10 bold', show='*')
25 e.place(x=245, y=370)
26
27 #Buttons
28 open_button = Button(win, text='Open Image', bg='blue', fg='black', font='arial 12 bold', cursor='hand2', command=open_img)
29 open_button.place(x=40, y=417)
30
31 save_button = Button(win, text='Save Image', bg='green', fg='black', font='arial 12 bold', cursor='hand2', command=save_img)
32 save_button.place(x=190, y=417)
33
34 hide_button = Button(win, text='Hide Data', bg='yellow', fg='black', font='arial 12 bold', cursor='hand2', command=hide)
35 hide_button.place(x=380, y=417)
```

```
11 def open_img():
12     if isinstance(open_file, str):
13         if os.path.isfile(open_file):
14             img = Image.open(open_file)
15             msg = lib.hide(str(open_file), img)
16             messagebox.showinfo('Info', 'Message is Successfully Hidden in the Image, Please save your Image')
17         else:
18             messagebox.showerror('Error', 'Please enter Secret Key')
19     elif password == '':
20         messagebox.showerror('Error', 'Please enter Secret Key')
21     else:
22         messagebox.showerror('Error', 'Wrong Secret Key')
23     code.set('')
24
25 def save_img():
26     hide_msg.save('Secret File.png')
27     hide_msg.showinfo('Info', 'Saved', message='Image has been successfully saved')
28
29 def show_msg():
30     password = code.get()
31     if password == '':
32         show_msg = lib.reveal(open_file)
33         text1.delete(1.0, END)
34         text1.insert(1.0, show_msg)
35     elif password == '':
36         messagebox.showerror('Error', 'Please enter Secret Key')
37     else:
38         messagebox.showerror('Error', 'Wrong Secret Key')
39     code.set('')
```

Use this command in tkinter Module

Use this commands code=StringVar() textvariable=code

Use this commands Properly and enter it in a proper way

## Result of Step 13:

Then run the command and check the result in the in the Screen Recording which will be given in the GitHub Repository as Demo Video of Steganography Tool.

**The Steganography Tool is Ready and we will be able to use the application.**