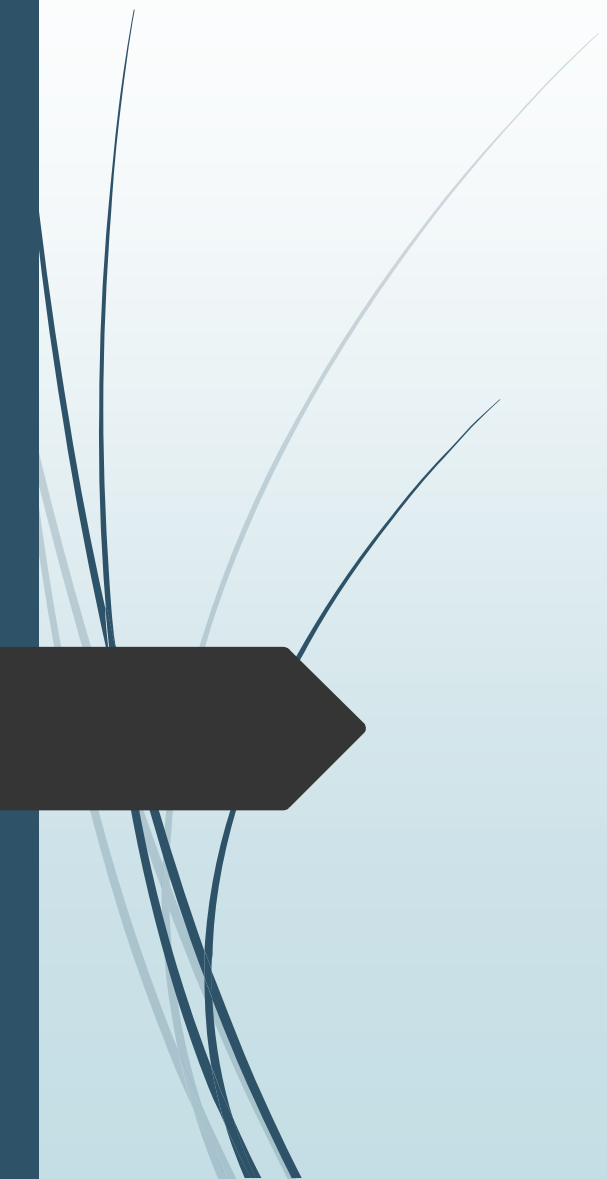


Tkinter

Tkinter Programming

- Tkinter is the standard GUI library for Python.
- GUI-GRAPHICAL USER INTERFACE
- Python when combined with Tkinter provides a fast and easy way to create GUI applications.
- Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

- Creating a GUI application using Tkinter is an easy task. All you need to do is perform the following steps −
  - Import the *Tkinter* module.
  - Create the GUI application main window.
  - Add one or more of the above-mentioned widgets to the GUI application.
  - Enter the main event loop to take action against each event triggered by the user.

Import the Tkinter module.

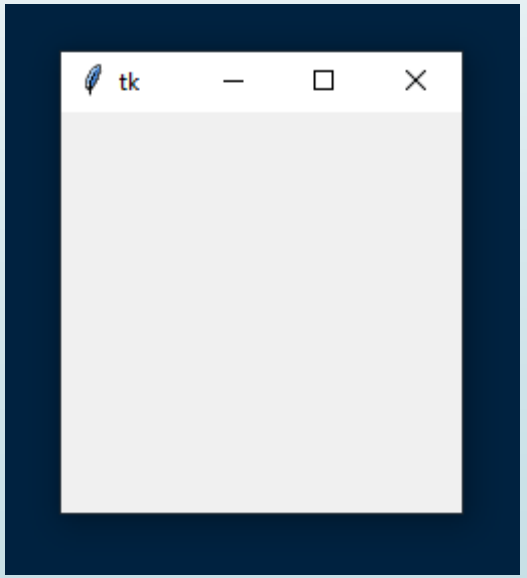
- Tkinter is a module .So , we have to import tkinter in IDLE (Python)
- **from tkinter import***

root=Tk()

- The root window is created.
- The root window is a main application window in our programs.
- It has a title bar and borders.
- It must be created before any other widgets.

- **root = Tk()**

```
from tkinter import*
root=Tk()
```



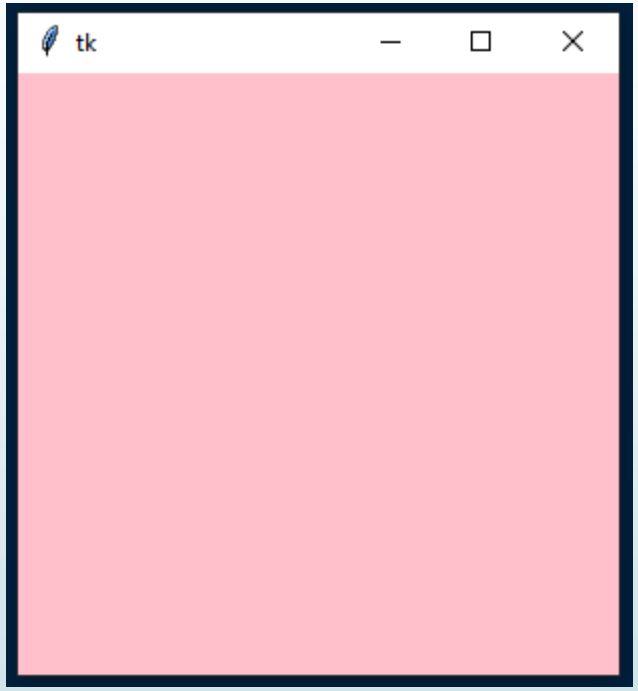
root.geometry(“width x height")

- The geometry method sets a size for the window and positions it on the screen.
- The two parameters are the width and height of the window.

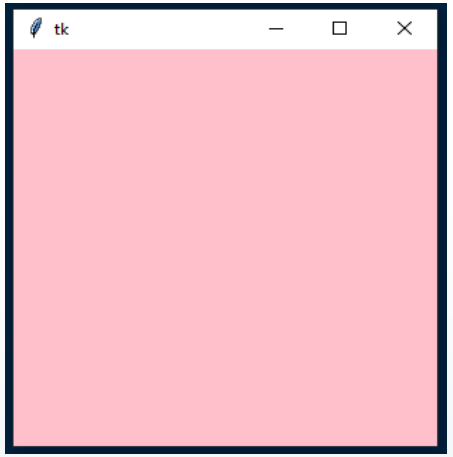
- **root.geometry(“300x300")**

root.config()

- Used to give configurations.
- **root.config(bg="pink")**

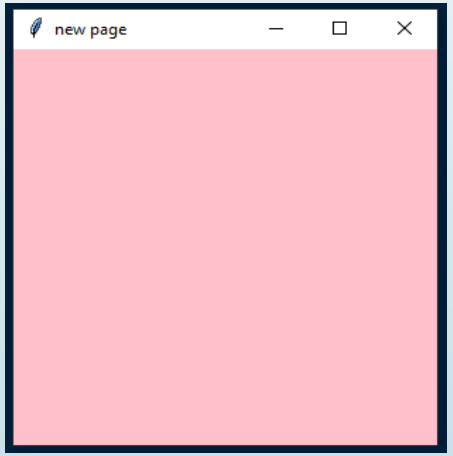


root.title()



- The root window has a title that defaults to tk.
- It also has three system buttons including Minimize, Maximize, and Close.
- To change the window's title, you use the title() method

- **root.title("new page")**

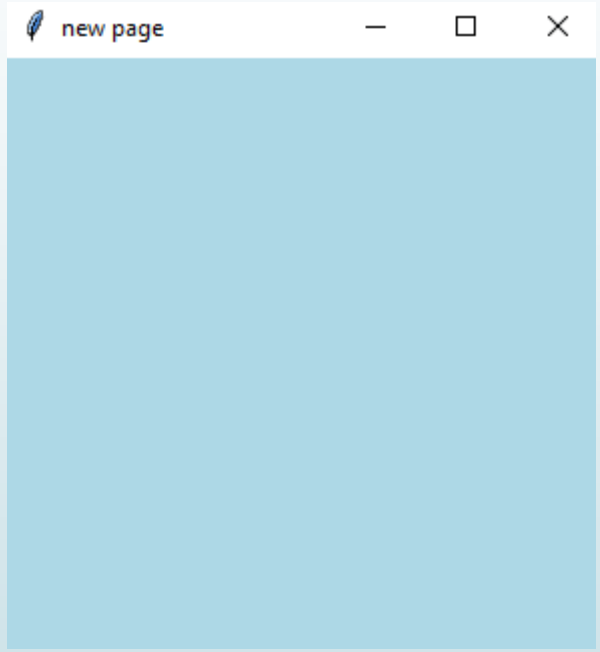


resizable()

- resizable() method is used to allow Tkinter root window to change it's size according to the users need as well we can prohibit resizing of the Tkinter window.
- **Arguments to be passed:**
  - In resizable() method user can pass either 1 or True, to make the window resizable.
  - To make window non-resizable user can pass 0 or False.

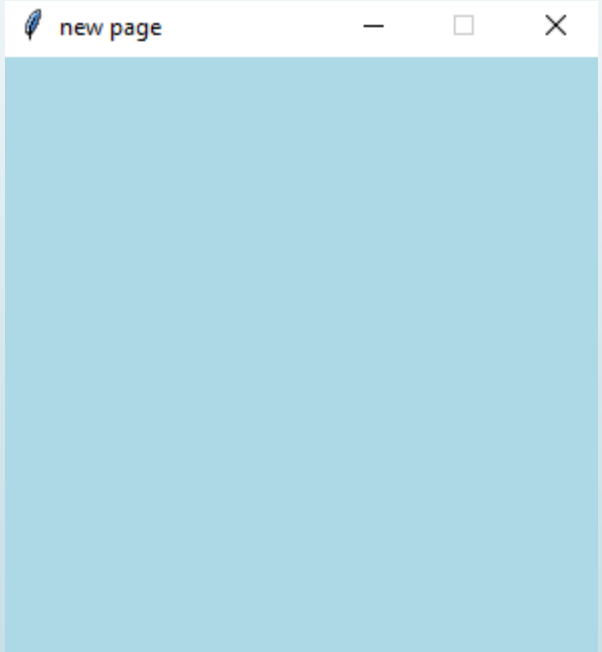
window resizable.

```
from tkinter import*
root=Tk()
root.geometry("300x300")
root.config(bg="lightblue")
root.title("new page")


root.resizable(1,1)
root.mainloop()
```



window non-resizable

```
from tkinter import*
root=Tk()
root.geometry("300x300")
root.config(bg="lightblue")
root.title("new page")


root.resizable(0,0)
root.mainloop()
```



mainloop():

- There is a method known by the name mainloop() is used when your application is ready to run.
- mainloop() is an infinite loop used to run the application, wait for an event to occur and process the event as long as the window is not closed.

- **root.mainloop()**

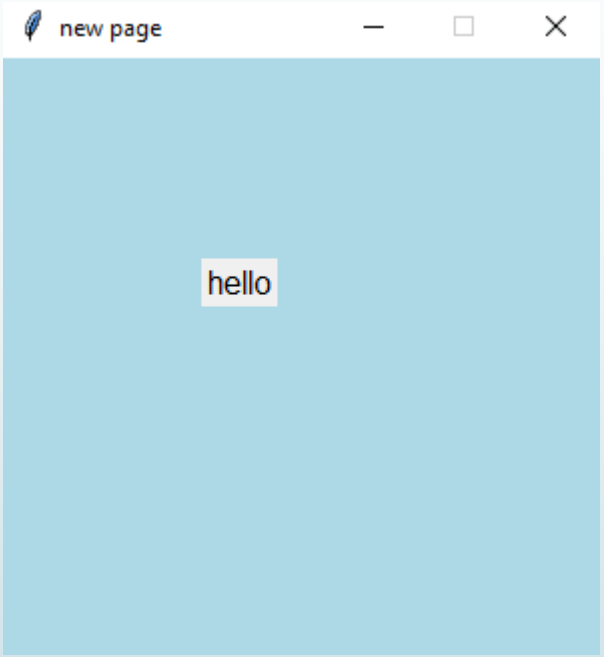
- **Label**

  It is used to display text on the screen

  c=Label(root,text="hello",font=('arial',12))

  c.place(x=100,y=100)

```
from tkinter import*
root=Tk()
root.geometry("300x300")
root.config(bg="lightblue")
root.title("new page")

a=Label(root,text="hello",font=('arial',12))
a.place(x=100,y=100)

root.resizable(0,0)
root.mainloop()
```



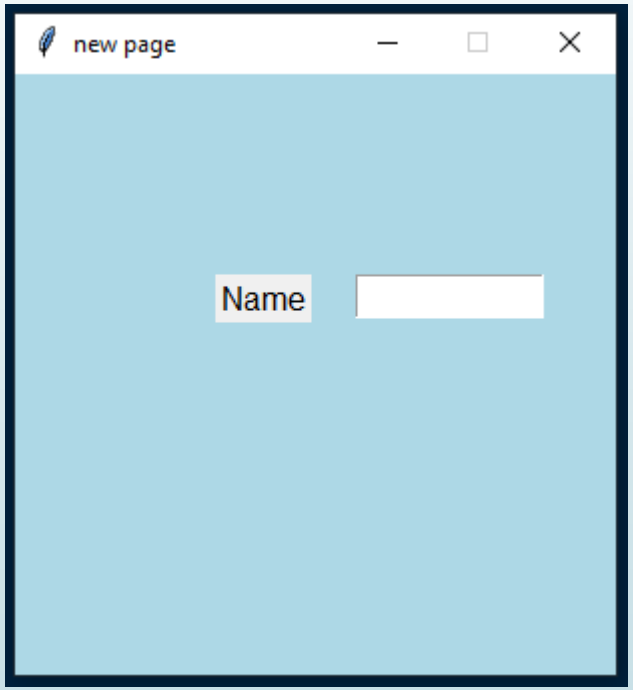
- **Entry**

  It is used to input single line text entry from user

  e=Entry(root)

  e.place(x=300,y=200)

```
from tkinter import*
root=Tk()
root.geometry("300x300")
root.config(bg="lightblue")
root.title("new page")

a=Label(root,text="Name",font=('arial',12))
a.place(x=100,y=100)

e=Entry(root,font=(12),width=10)
e.place(x=170,y=100)

root.resizable(0,0)
root.mainloop()
```

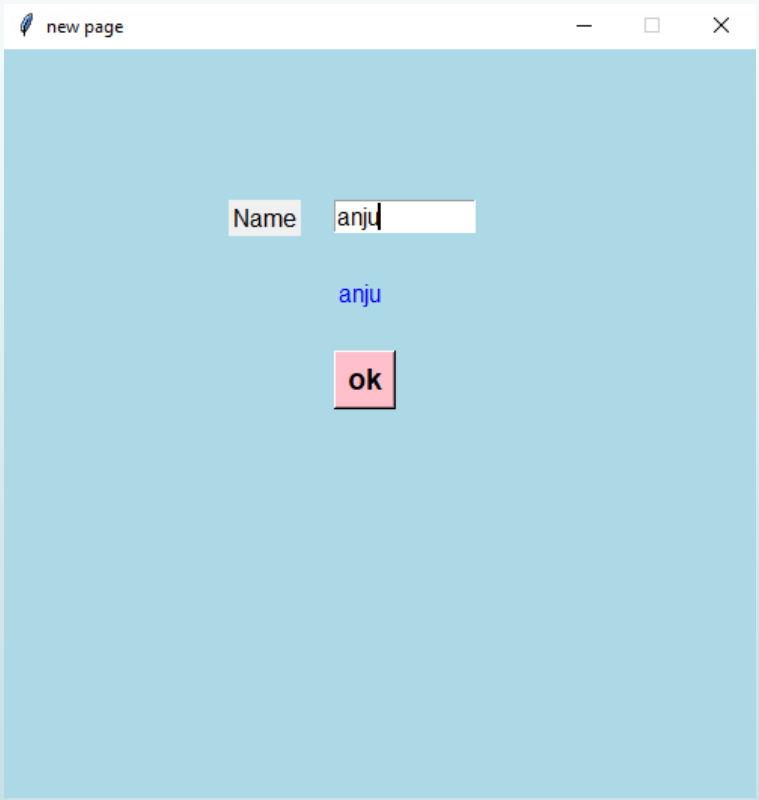


- **Button**

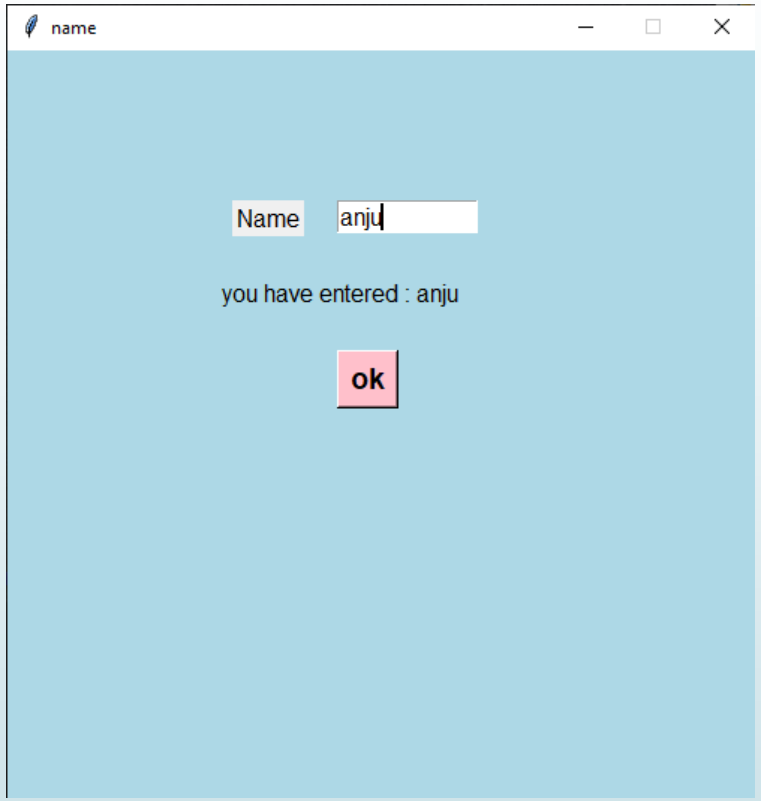
  It is used to add buttons to your application

  button=Button(root,text="ok",font=("arial",16,"bold","italic"),bg="white",fg="black",command=name)

  button.place(x=245,y=250)


new page
Name
anju
anju
ok

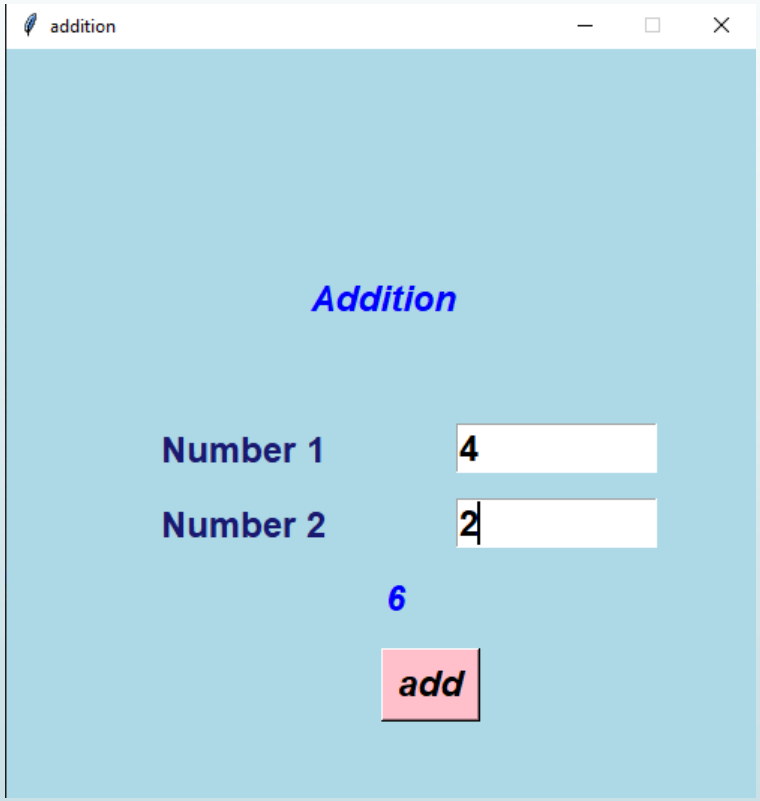
```
from tkinter import*
root=Tk()
root.geometry("500x500")
root.config(bg="lightblue")
root.title("new page")

nl=StringVar()

def fun():
    global na
    var=nl.get()
    na.config(text=var)


a=Label(root,text="Name",font=('arial',12))
a.place(x=150,y=100)

e=Entry(root,font=(12),width=10,textvariable=nl)
e.place(x=220,y=100)

button=Button(root,text="ok",font=("arial",14,"bold"),bg="pink",fg="black",command=fun)
button.place(x=220,y=200)

na=Label(root,font=(12),bg="lightblue",fg="blue",text="")
na.place(x=220,y=150)

root.resizable(0,0)
root.mainloop()
```


name
Name
anju
you have entered : anju
ok

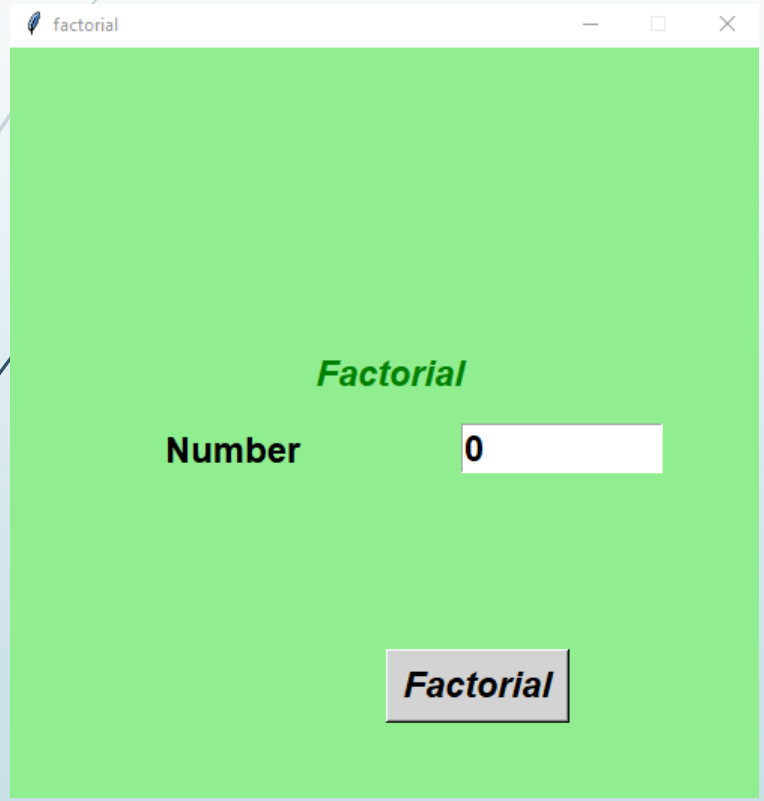
```
from tkinter import*
root=Tk()
root.geometry("500x500")
root.config(bg="lightblue")
root.title("name")

n1=StringVar()

def fun():
    global na
    var="you have entered : "+n1.get()
    na.config(text=var)


a=Label(root,text="Name",font=('arial',12))
a.place(x=150,y=100)

e=Entry(root,font=(12),width=10,textvariable=n1)
e.place(x=220,y=100)

button=Button(root,text="ok",font=("arial",14,"bold"),bg="pink",fg="black",command=fun)
button.place(x=220,y=200)

na=Label(root,font=(12),bg="lightblue",text="")
na.place(x=140,y=150)

root.resizable(0,0)
root.mainloop()
```

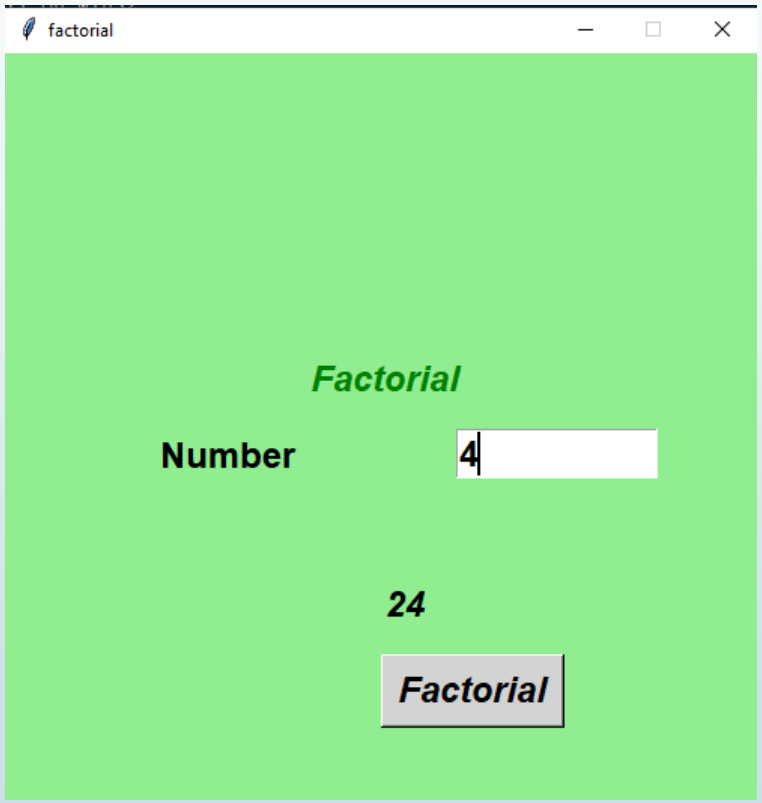

add name
print full name
first name
anju
second name
a
my name is : anju a
full name

```
from tkinter import*
root=Tk()
root.geometry("500x500")
root.config(bg="lightgreen")
root.title("add name")

n1=StringVar()
n2=StringVar()

def fun():
    global elab
    total="my name is : " +n1.get()+" "+n2.get()
    elab.config(text=total)

a=Label(root,text="print full name",font=("arial",18,"bold","italic"),bg="lightgreen",fg="green")
a.place(x=200,y=150)

a1=Label(root,text="first name ",font=("arial",18,"bold",),bg="lightgreen",fg="black")
a1.place(x=100,y=250)

e1=Entry(root,font=("arial",18,"bold"),width=10,textvariable=n1)
e1.place(x=300,y=250)

a2=Label(root,text="second name ",font=("arial",18,"bold",),bg="lightgreen",fg="black")
a2.place(x=100,y=300)

e2=Entry(root,font=("arial",18,"bold"),width=10,textvariable=n2)
e2.place(x=300,y=300)

elab=Label(root,text="",font=("arial",18,"bold","italic"),bg="lightgreen",fg="green")
elab.place(x=150,y=350)

addbutton=Button(root,text="full name",font=("arial",18,"bold","italic"),bg="lightgrey",fg="green",command=fun)
addbutton.place(x=250,y=400)

root.resizable(0,0)

root.mainloop()
```


addition
Addition
Number 1
4
Number 2
2
6
add

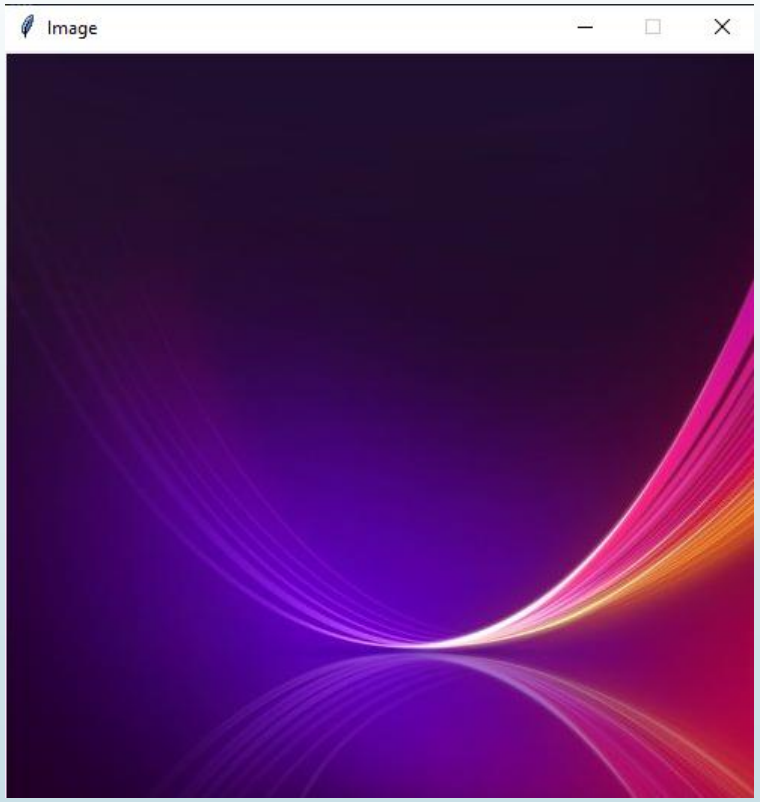
```
from tkinter import*
root=Tk()
root.geometry("500x500")
root.config(bg="lightblue")
root.title("addition")

var1=IntVar()
var2=IntVar()

def fun():
    global elab
    total=var1.get()+var2.get()
    elab.config(text=total)

a=Label(root,text="Addition",font=("arial",18,"bold","italic"),bg="lightblue",fg="blue")
a.place(x=200,y=150)

n1=Label(root,text="Number 1 ",font=("arial",18,"bold",),bg="lightblue",fg="midnightblue")
n1.place(x=100,y=250)

e1=Entry(root,font=("arial",18,"bold"),width=10,textvariable=var1)
e1.place(x=300,y=250)

n2=Label(root,text="Number 2 ",font=("arial",18,"bold",),bg="lightblue",fg="midnightblue")
n2.place(x=100,y=300)

e2=Entry(root,font=("arial",18,"bold"),width=10,textvariable=var2)
e2.place(x=300,y=300)

elab=Label(root,text="",font=("arial",18,"bold","italic"),bg="lightblue",fg="blue")
elab.place(x=250,y=350)

addbutton=Button(root,text="add",font=("arial",18,"bold","italic"),bg="pink",fg="black",command=fun)
addbutton.place(x=250,y=400)

root.resizable(0,0)
root.mainloop()
```


factorial
Factorial
Number
0
Factorial


factorial
Factorial
Number
4
24
Factorial

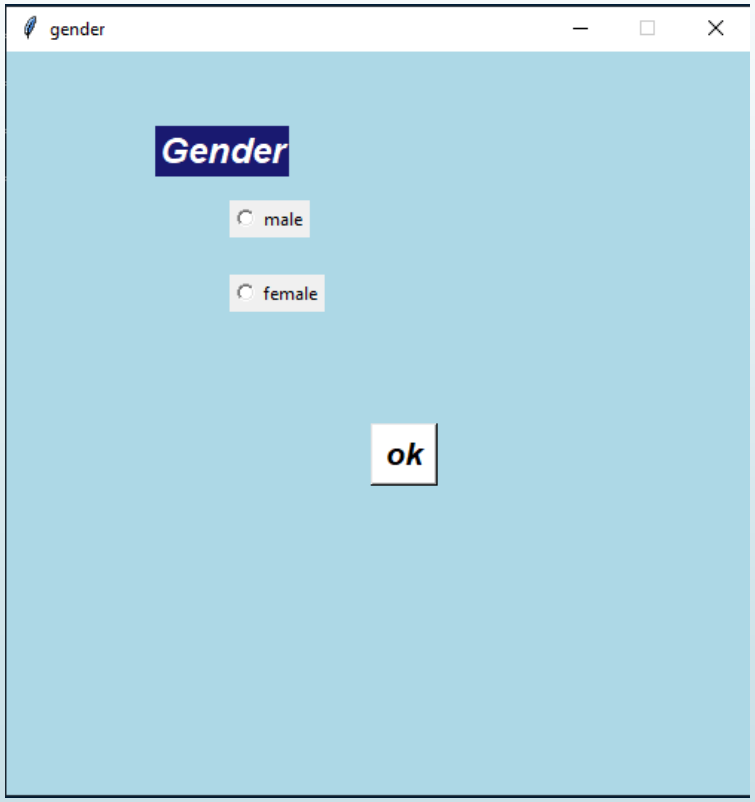
```
from tkinter import*
root=Tk()
root.geometry("500x500")
root.title("factorial")
root.config(bg="lightgreen")

n1=IntVar()

def fun():
    global elab
    a=n1.get()
    f=1
    for i in range(1,a+1):
        f=f*i
    elab.config(text=f)

lab=Label(root,text="Factorial",font=("arial",18,"bold","italic"),bg="lightgreen",fg="green")
lab.place(x=200,y=200)

l1=Label(root,text="Number ",font=("arial",18,"bold",),bg="lightgreen",fg="black")
l1.place(x=100,y=250)

l1entry=Entry(root,font=("arial",18,"bold"),width=10,textvariable=n1)
l1entry.place(x=300,y=250)

elab=Label(root,text="",font=("arial",18,"bold","italic"),bg="lightgreen",fg="black")
elab.place(x=250,y=350)

addbutton=Button(root,text="Factorial",font=("arial",18,"bold","italic"),bg="lightgrey",fg="black",command=fun)
addbutton.place(x=250,y=400)

root.resizable(0,0)
root.mainloop()
```

Image



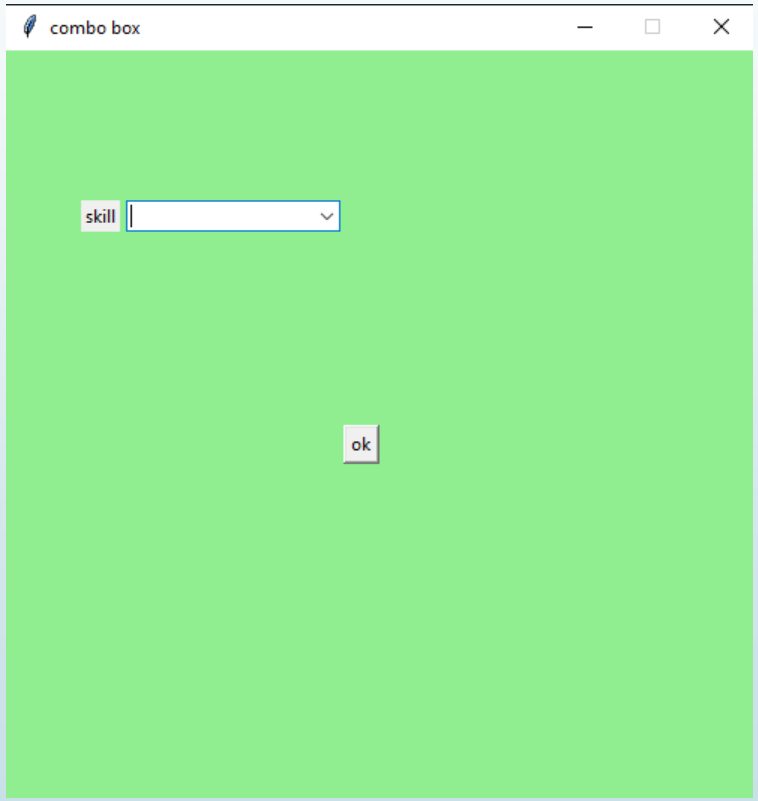

```
from tkinter import*
from PIL import ImageTk
root=Tk()
root.geometry("500x500")
root.config(bg="lightblue")
root.title("Image")

b=ImageTk.PhotoImage(file="img1.jpg")
a=Label(root,image=b)
a.place(x=0,y=0)

root.resizable(0,0)
root.mainloop()
```

Radio button



```
from tkinter import*
root=Tk()
root.geometry("500x500")
root.title("gender")
root.config(bg="lightblue")

i=IntVar()


def  name():
    if i.get()==1:
        a.config(text="you are a male")
    elif i.get()==2:
        a.config(text="you are a female")
    else:
        a.config(text="choose an option")



gender=Label(root,text="Gender",font=("arial",18,"bold","italic"),bg="midnightblue",fg="white")
gender.place(x=100,y=50)

b1=Radiobutton(root,text="male",variable=i,value=1)
b1.place(x=150,y=100)

b2=Radiobutton(root,text="female",variable=i,value=2)
b2.place(x=150,y=150)

a=Label(root,text="",font=("arial",16,"bold","italic"),bg="lightblue",fg="black")
a.place(x=200,y=200)

button=Button(root,text="ok",font=("arial",16,"bold","italic"),bg="white",fg="black",command=name)
button.place(x=245,y=250)


root.resizable(0,0)

root.mainloop()
```

Combobox



```python
from tkinter import*
from tkinter.ttk import Combobox            #import combobox
root=Tk()
root.geometry("500x500")
root.config(bg="lightgreen")
root.title("combo box")

var=StringVar()

def box():
    if var.get()=="python":
        emplabel.config(text="you have selected python")
    elif var.get()=="c++":
        emplabel.config(text="you have selected c++")
    elif var.get()=="c":
        emplabel.config(text="you have selected c")
    elif var.get()=="JavaScript":
        emplabel.config(text="you have selected JavaScript")
    elif var.get()=="php":
        emplabel.config(text="you have selected php")
    else:
        emplabel.config(text="choose the options")

Skill=Label(root,text="skill")
Skill.place(x=50,y=100)

c=Combobox(root,textvariable=var,value=["python","c++","c","JavaScript","php"])
c.place(x=80,y=100)

emplabel=Label(root,text="",bg="lightgreen")
emplabel.place(x=200,y=200)

b=Button(root,text="ok",command=box)
b.place(x=225,y=250)

root.resizable(0,0)
root.mainloop()
```

Message box

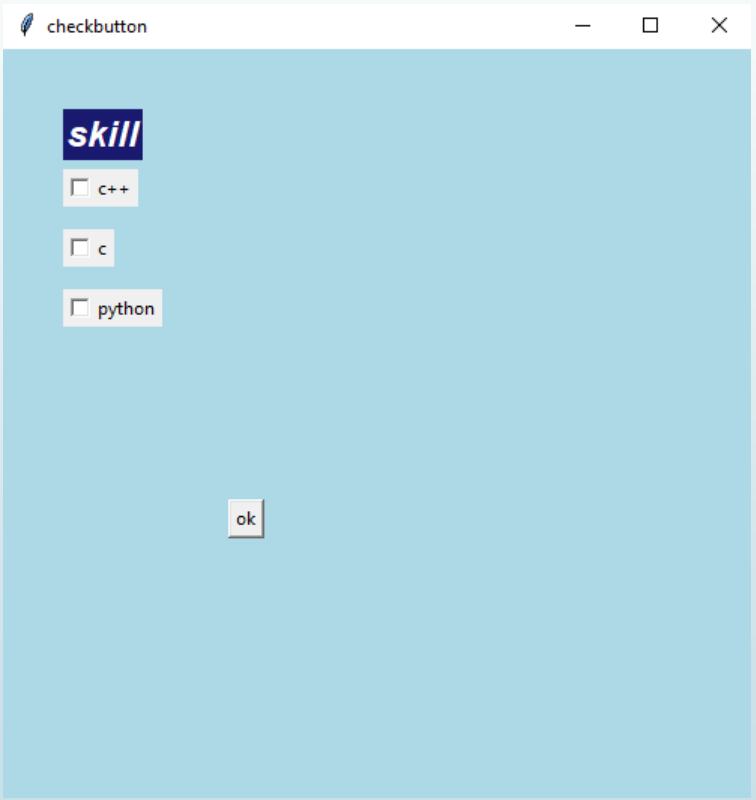
```
from tkinter import*
from tkinter import messagebox            #import messagebox

root=Tk()
root.geometry("500x500")
def fun():
    messagebox.showinfo(title="info",message="fill the field")
    #messagebox.showerror(title="error",message="fill the field")
    #messagebox.showwarning("Warning","fill the field")
    #messagebox.askokcancel(title="info",message="fill the field")
    #messagebox.askyesno(title="info",message="fill the field")


okbutton=Button(root,text="ok",command=fun)
okbutton.place(x=250,y=400)

root.mainloop()
```

Check button



```
from tkinter import*
from tkinter import messagebox
root=Tk()
root.geometry("500x500")
root.config(bg="lightblue")
root.title("checkbutton")

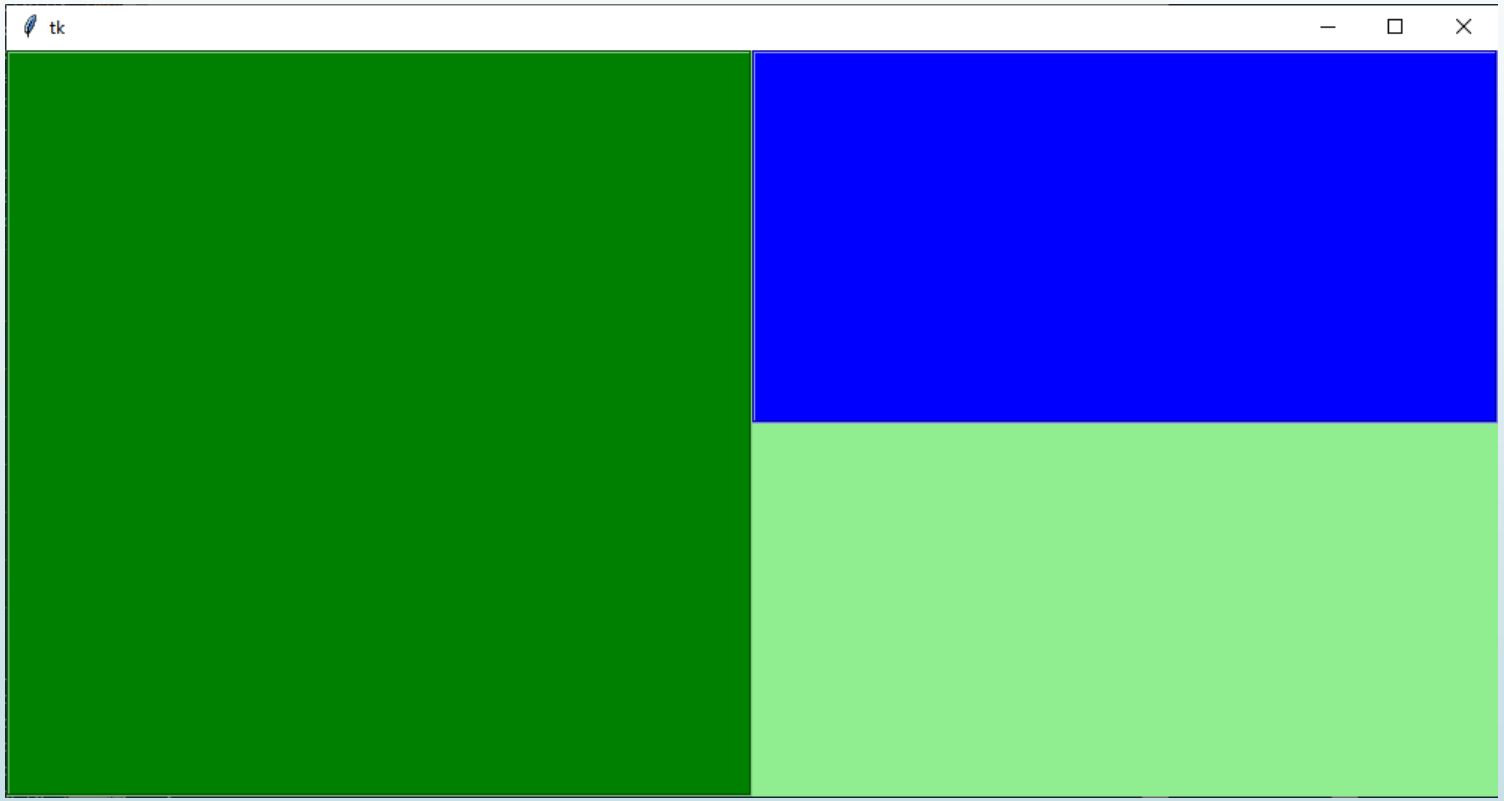
var1=IntVar()
var2=IntVar()
var3=IntVar()
def work():
    if var1.get()==1 and var2.get()==1 and var3.get()==1:
        messagebox.showinfo(title="info",message="your skills are c++,c,python")
    elif var1.get()==1 and var2.get()==1 :
        messagebox.showinfo(title="info",message="your skills are c++,c")
    elif var1.get()==1 and var3.get()==1:
         messagebox.showinfo(title="info",message="your skills are c++ ,python")
    elif var2.get()==1 and var3.get()==1:
        messagebox.showinfo(title="info",message="your skills are c ,python")
    elif var1.get()==1:
        messagebox.showinfo(title="info",message="your skill is c++")
    elif var2.get()==1 :
        messagebox.showinfo(title="info",message="your skills are c")
    elif var3.get()==1 :
        messagebox.showinfo(title="info",message="your skills are python")
    elif var1.get()==0  and var2.get()==0 and var3.get()==0:
        messagebox.showinfo(title="info",message="nothing have selected")

Skill=Label(root,text="skill",font=("arial",18,"bold","italic"),bg="midnightblue",fg="white")
Skill.place(x=40,y=40)
c1=Checkbutton(root,text="c++",variable=var1)#onvalue=1,offvalue=0
c1.place(x=40,y=80)
c2=Checkbutton(root,text="c",variable=var2)
c2.place(x=40,y=120)

c3=Checkbutton(root,text="python",variable=var3)
c3.place(x=40,y=160)

addbutton=Button(root,text="ok",command=work)
addbutton.place(x=150,y=300)
```

Frame



13.tkinter_frame.py - D:\idle_python\tkinter\13.tkinter_frame.py (3.10.1)

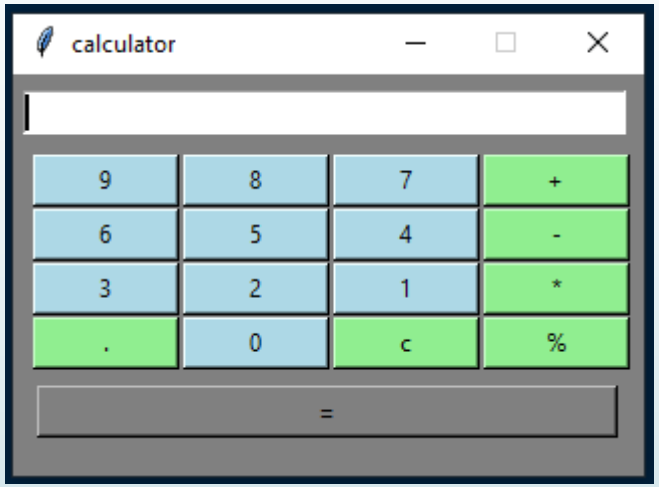
File Edit Format Run Options Window Help

```
from tkinter import*
root=Tk()
root.geometry("1000x500")
root.config(bg="lightgreen")

frame1=LabelFrame(root,width=500,height=500,bg="green")
frame1.place(x=0,y=0)

frame2=LabelFrame(root,width=500,height=250,bg="blue")
frame2.place(x=500,y=0)
```

calculator



14.tkinter_calculator.py - D:\idle_python\tkinter\14.tkinter_calculator.py (3.10.1)

File Edit Format Run Options Window Help

```
from tkinter import*
root=Tk()
root.geometry("315x200")
root.title("calculator")
root.config(bg="grey")

temp=""
var=StringVar()

def output(num):
    global temp
    temp=temp+str(num)
    var.set(temp)

def clear():
    global temp
    var.set("")
    temp=""

def eql():
    global temp
    total=eval(temp)
    var.set(total)
    temp=str(total)

llentry=Entry(root,width=33,font=(16),textvariable=var)
llentry.place(x=5,y=8)

b9=Button(root,text=9,width=9,bg="light blue",command=lambda:output(9))
b9.place(x=10,y=40)

b8=Button(root,text=8,width=9,bg="light blue",command=lambda:output(8))
b8.place(x=85,y=40)

b7=Button(root,text=7,width=9,bg="light blue",command=lambda:output(7))
b7.place(x=160,y=40)

addbutton=Button(root,text="+",width=9,bg="light green",command=lambda:output("+"))
addbutton.place(x=235,y=40)

```

14.tkinter_calculator.py - D:\idle_python\tkinter\14.tkinter_calculator.py (3.10.1)

File Edit Format Run Options Window Help

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40
41 b6=Button(root,text=6,width=9,bg="light blue",command=lambda:output(6))
42 b6.place(x=10,y=67)
43
44 b5=Button(root,text=5,width=9,bg="light blue",command=lambda:output(5))
45 b5.place(x=85,y=67)
46
47 b4=Button(root,text=4,width=9,bg="light blue",command=lambda:output(4))
48 b4.place(x=160,y=67)
49
50 subbutton=Button(root,text="-",width=9,bg="light green",command=lambda:output("-"))
51 subbutton.place(x=235,y=67)
52
53 b3=Button(root,text=3,width=9,bg="light blue",command=lambda:output(3))
54 b3.place(x=10,y=94)
55
56 b2=Button(root,text=2,width=9,bg="light blue",command=lambda:output(2))
57 b2.place(x=85,y=94)
58
59 b1=Button(root,text=1,width=9,bg="light blue",command=lambda:output(1))
60 b1.place(x=160,y=94)
61
62 mulbutton=Button(root,text="*",width=9,bg="light green",command=lambda:output("*"))
63 mulbutton.place(x=235,y=94)
64
65 dotbutton=Button(root,text=".",width=9,bg="light green",command=lambda:output("."))
66 dotbutton.place(x=10,y=121)
67
68 b0=Button(root,text=0,width=9,bg="light blue",command=lambda:output(0))
69 b0.place(x=85,y=121)
70
71 cbutton=Button(root,text="c",width=9,bg="light green",command=clear)
72 cbutton.place(x=160,y=121)
73
74 divbutton=Button(root,text="/",width=9,bg="light green",command=lambda:output("/"))
75 divbutton.place(x=235,y=121)
76
77 equalbutton=Button(root,text="=",width=40,bg="grey",command=eql)
78 equalbutton.place(x=12,y=155)
79 root.resizable(0,0)
80 root.mainloop()
```

Thank You!