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Batch C  
SY CE

Experiment 6 :

AIM:

Create a calculator using the tkinter library.

THEORY:

Tkinter is a Python Package for creating GUI applications.

Python has a lot of GUI frameworks, but Tkinter is the only framework that's built into the Python standard library.

Tkinter has several strengths; it's cross-platform, so the same code works on Windows, macOS, and Linux.

Tkinter is lightweight and relatively painless to use compared to other frameworks.

This makes it a compelling choice for building GUI applications in Python, especially for applications where a modern shine is unnecessary, and the top priority is to build something that's functional and cross-platform quickly.

CODE:

```
from tkinter import *
expression = ""
def press(num):
    global expression
    expression = expression + str(num)
    equation.set(expression)
def equalpress():
    try:
        global expression
        total = str(eval(expression))
        equation.set(total)
        expression = ""
    except:
        equation.set(" error ")
        expression = ""
def clear():
    global expression
    expression = ""
    equation.set("")
if __name__ == "__main__":
    gui = Tk()
```

```

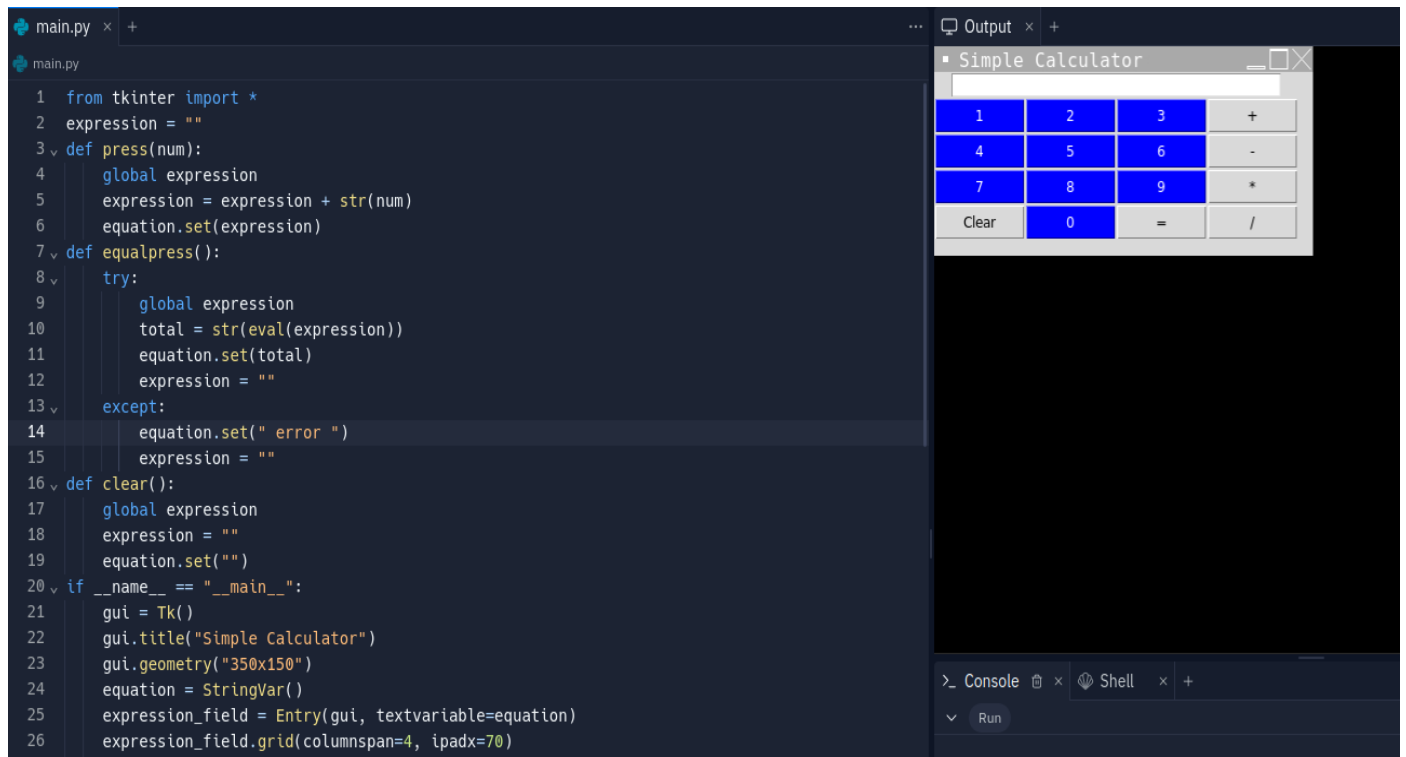
gui.title("Simple Calculator")
gui.geometry("350x150")
equation = StringVar()
expression_field = Entry(gui, textvariable=equation)
expression_field.grid(columnspan=4, ipadx=70)
button1 = Button(gui, text=' 1 ', bg = 'blue',fg='white',
                  command=lambda: press(1), height=1, width=7)
button1.grid(row=2, column=0)
button2 = Button(gui, text=' 2 ', bg = 'blue',fg='white',
                  command=lambda: press(2), height=1, width=7)
button2.grid(row=2, column=1)
button3 = Button(gui, text=' 3 ', bg = 'blue',fg='white',
                  command=lambda: press(3), height=1, width=7)
button3.grid(row=2, column=2)
button4 = Button(gui, text=' 4 ', bg = 'blue',fg='white',
                  command=lambda: press(4), height=1, width=7)
button4.grid(row=3, column=0)
button5 = Button(gui, text=' 5 ', bg = 'blue',fg='white',
                  command=lambda: press(5), height=1, width=7)
button5.grid(row=3, column=1)
button6 = Button(gui, text=' 6 ', bg = 'blue',fg='white',
                  command=lambda: press(6), height=1, width=7)
button6.grid(row=3, column=2)
button7 = Button(gui, text=' 7 ', bg = 'blue',fg='white',
                  command=lambda: press(7), height=1, width=7)
button7.grid(row=4, column=0)
button8 = Button(gui, text=' 8 ', bg = 'blue',fg='white',
                  command=lambda: press(8), height=1, width=7)
button8.grid(row=4, column=1)
button9 = Button(gui, text=' 9 ', bg = 'blue',fg='white',
                  command=lambda: press(9), height=1, width=7)
button9.grid(row=4, column=2)
button0 = Button(gui, text=' 0 ', bg = 'blue',fg='white',
                  command=lambda: press(0), height=1, width=7)
button0.grid(row=5, column=1)
plus = Button(gui, text=' + ', fg='black',
              command=lambda: press("+"), height=1, width=7)
plus.grid(row=2, column=3)
minus = Button(gui, text=' - ', fg='black',
               command=lambda: press("-"), height=1, width=7)
minus.grid(row=3, column=3)
multiply = Button(gui, text=' * ', fg='black',
                  command=lambda: press("*"), height=1, width=7)
multiply.grid(row=4, column=3)

```

```

divide = Button(gui, text=' / ', fg='black',
                command=lambda: press("/"), height=1, width=7)
divide.grid(row=5, column=3)
equal = Button(gui, text=' = ', fg='black',
               command=equalpress, height=1, width=7)
equal.grid(row=5, column=2)
clear = Button(gui, text='Clear', fg='black',
               command=clear, height=1, width=7)
clear.grid(row=5, column=0)
gui.mainloop()

```



main.py

```
25 expression_field = Entry(gui, textvariable=equation)
26 expression_field.grid(columnspan=4, ipadx=70)
27 button1 = Button(gui, text=' 1 ', bg = 'blue',fg='white',
28                 command=lambda: press(1), height=1, width=7)
29 button1.grid(row=2, column=0)
30 button2 = Button(gui, text=' 2 ', bg = 'blue',fg='white',
31                 command=lambda: press(2), height=1, width=7)
32 button2.grid(row=2, column=1)
33 button3 = Button(gui, text=' 3 ', bg = 'blue',fg='white',
34                 command=lambda: press(3), height=1, width=7)
35 button3.grid(row=2, column=2)
36 button4 = Button(gui, text=' 4 ', bg = 'blue',fg='white',
37                 command=lambda: press(4), height=1, width=7)
38 button4.grid(row=3, column=0)
39 button5 = Button(gui, text=' 5 ', bg = 'blue',fg='white',
40                 command=lambda: press(5), height=1, width=7)
41 button5.grid(row=3, column=1)
42 button6 = Button(gui, text=' 6 ', bg = 'blue',fg='white',
43                 command=lambda: press(6), height=1, width=7)
44 button6.grid(row=3, column=2)
45 button7 = Button(gui, text=' 7 ', bg = 'blue',fg='white',
46                 command=lambda: press(7), height=1, width=7)
47 button7.grid(row=4, column=0)
48 button8 = Button(gui, text=' 8 ', bg = 'blue',fg='white',
49                 command=lambda: press(8), height=1, width=7)
50 button8.grid(row=4, column=1)
51 button9 = Button(gui, text=' 9 ', bg = 'blue',fg='white',
52                 command=lambda: press(9), height=1, width=7)
53 button9.grid(row=4, column=2)
54 button0 = Button(gui, text=' 0 ', bg = 'blue',fg='white',
55                 command=lambda: press(0), height=1, width=7)
56 button0.grid(row=5, column=1)
57 plus = Button(gui, text=' + ', fg='black',
58               command=lambda: press("+"), height=1, width=7)
59 plus.grid(row=2, column=3)
60 minus = Button(gui, text=' - ', fg='black',
61               command=lambda: press("-"), height=1, width=7)
62 minus.grid(row=3, column=3)
```

Ln 14, Col 33 • Spaces: 2 History

Output

Simple Calculator

5+2

1	2	3	+
4	5	6	-
7	8	9	*
Clear	0	=	/

Console

Shell

Run

Run

Run

Run



main.py

main.py

40

command=lambda: press(5), height=1, width=7)

41

button5.grid(row=3, column=1)

42

button6 = Button(gui, text=' 6 ', bg = 'blue',fg='white',

43

command=lambda: press(6), height=1, width=7)

44

button6.grid(row=3, column=2)

45

button7 = Button(gui, text=' 7 ', bg = 'blue',fg='white',

46

command=lambda: press(7), height=1, width=7)

47

button7.grid(row=4, column=0)

48

button8 = Button(gui, text=' 8 ', bg = 'blue',fg='white',

49

command=lambda: press(8), height=1, width=7)

50

button8.grid(row=4, column=1)

51

button9 = Button(gui, text=' 9 ', bg = 'blue',fg='white',

52

command=lambda: press(9), height=1, width=7)

53

button9.grid(row=4, column=2)

54

button0 = Button(gui, text=' 0 ', bg = 'blue',fg='white',

55

command=lambda: press(0), height=1, width=7)

56

button0.grid(row=5, column=1)

57

plus = Button(gui, text=' + ', fg='black',

58

command=lambda: press("+"), height=1, width=7)

59

plus.grid(row=2, column=3)

60

minus = Button(gui, text=' - ', fg='black',

61

command=lambda: press("-"), height=1, width=7)

62

minus.grid(row=3, column=3)

63

multiply = Button(gui, text=' \* ', fg='black',

64

command=lambda: press("\*"), height=1, width=7)

65

multiply.grid(row=4, column=3)

66

divide = Button(gui, text=' / ', fg='black',

67

command=lambda: press("/"), height=1, width=7)

68

divide.grid(row=5, column=3)

69

equal = Button(gui, text=' = ', fg='black',

70

command=equalpress, height=1, width=7)

71

equal.grid(row=5, column=2)

72

clear = Button(gui, text='Clear', fg='black',

73

command=clear, height=1, width=7)

74

clear.grid(row=5, column=0)

75

gui.mainloop()

Output

Simple Calculator

5/0

1	2	3	+
4	5	6	-
7	8	9	*
Clear	0	=	/

Console

Shell

Run

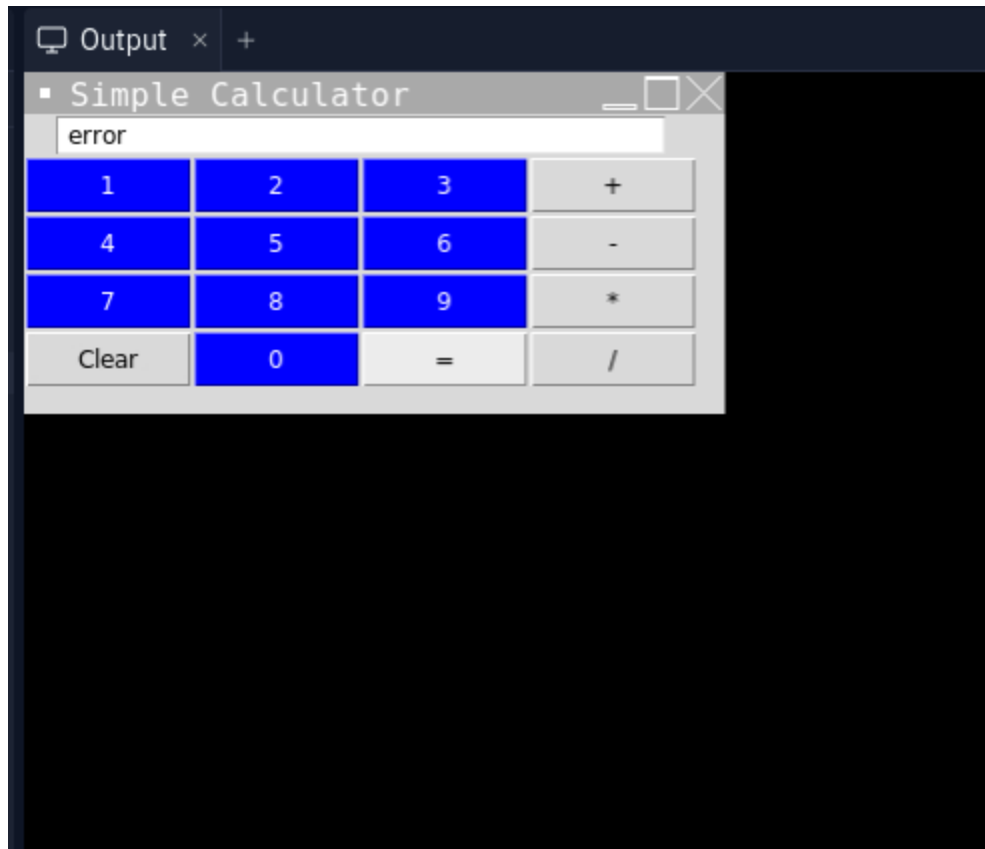
Run

Run

Run

Run

Ln 14, Col 33 • Spaces: 2 History



CONCLUSION: Thus we learnt about the tkinter, the Python Package for creating GUI applications.