

Calculator:

# Python program to create a simple GUI

# calculator using Tkinter

# import everything from tkinter module

from tkinter import \*

# globally declare the expression variable

expression = ""

# Function to update expression

# in the text entry box

def press(num):

    # point out the global expression variable

global expression

# concatenation of string

expression = expression + str(num)

# update the expression by using set method

equation.set(expression)

# Function to evaluate the final expression

def equalpress():

    # Try and except statement is used

    # for handling the errors like zero

    # division error etc.

    # Put that code inside the try block

    # which may generate the error

    try:

        global expression

        # eval function evaluate the expression

        # and str function convert the result

        # into string

        total = str(eval(expression))

```
equation.set(total)
```

```
# initialize the expression variable
```

```
# by empty string
```

```
expression = ""
```

```
# if error is generate then handle
```

```
# by the except block
```

```
except:
```

```
equation.set(" error ")
```

```
expression = ""
```

```
# Function to clear the contents
```

```
# of text entry box
```

```
def clear():
```

```
    global expression
```

```
    expression = ""
```

```
    equation.set("")
```

```
# Driver code
```

```
if __name__ == "__main__":
```

# create a GUI window

```
gui = Tk()
```

# set the background colour of GUI window

```
gui.configure(background="light green")
```

# set the title of GUI window

```
gui.title("Simple Calculator")
```

# set the configuration of GUI window

```
gui.geometry("270x150")
```

# StringVar() is the variable class

# we create an instance of this class

```
equation = StringVar()
```

# create the text entry box for

# showing the expression .

```
expression_field = Entry(gui, textvariable=equation)
```

# grid method is used for placing

# the widgets at respective positions

# in table like structure .

```
expression_field.grid(columnspan=4, ipadx=70)
```

```
# create a Buttons and place at a particular
# location inside the root window .
# when user press the button, the command or
# function affiliated to that button is executed .
button1= Button(gui, text=' 1 ', fg='black', bg='red',
                 command=lambda: press(1), height=1, width=7)
button1.grid(row=2, column=0)

button2 = Button(gui, text=' 2 ', fg='black', bg='red',
                 command=lambda: press(2), height=1, width=7)
button2.grid(row=2, column=1)

button3 = Button(gui, text=' 3 ', fg='black', bg='red',
                 command=lambda: press(3), height=1, width=7)
button3.grid(row=2, column=2)

button4 = Button(gui, text=' 4 ', fg='black', bg='red',
                 command=lambda: press(4), height=1, width=7)
button4.grid(row=3, column=0)

button5 = Button(gui, text=' 5 ', fg='black', bg='red',
                 command=lambda: press(5), height=1, width=7)
button5.grid(row=3, column=1)

button6 = Button(gui, text=' 6 ', fg='black', bg='red',
```

```
command=lambda: press(6), height=1, width=7)
button6.grid(row=3, column=2)

button7 = Button(gui, text=' 7 ', fg='black', bg='red',
command=lambda: press(7), height=1, width=7)
button7.grid(row=4, column=0)

button8 = Button(gui, text=' 8 ', fg='black', bg='red',
command=lambda: press(8), height=1, width=7)
button8.grid(row=4, column=1)

button9 = Button(gui, text=' 9 ', fg='black', bg='red',
command=lambda: press(9), height=1, width=7)
button9.grid(row=4, column=2)

button0 = Button(gui, text=' 0 ', fg='black', bg='red',
command=lambda: press(0), height=1, width=7)
button0.grid(row=5, column=0)

plus = Button(gui, text=' + ', fg='black', bg='red',
command=lambda: press("+"), height=1, width=7)
plus.grid(row=2, column=3)

minus = Button(gui, text=' - ', fg='black', bg='red',
command=lambda: press("-"), height=1, width=7)
```

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

```
multiply = Button(gui, text=' * ', fg='black', bg='red',
```

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

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

```
divide = Button(gui, text=' / ', fg='black', bg='red',
```

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

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

```
equal = Button(gui, text=' = ', fg='black', bg='red',
```

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

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

```
clear = Button(gui, text='Clear', fg='black', bg='red',
```

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

```
clear.grid(row=5, column='1')
```

```
Decimal= Button(gui, text='.', fg='black', bg='red',
```

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

```
Decimal.grid(row=6, column=0)
```

```
# start the GUI
```

```
gui.mainloop()
```