Calculator

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from tkinter import *

win = Tk() # This is to create a basic window
win.geometry("312x324")  # this is for the size of the window
win.resizable(0, 0)  # this is to prevent from resizing the window
win.title("Calculator")

####################Starting with functions ####################
# 'btn_click' function :
# This Function continuously updates the
# input field whenever you enter a number

def btn_click(item):
    global expression
    expression = expression + str(item)
    input_text.set(expression)

# 'bt_clear' function :This is used to clear
# the input field

def bt_clear():
    global expression
    expression = ""
    input_text.set("")

# 'bt_equal':This method calculates the expression
# present in input field

def bt_equal():
    global expression
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    result = str(eval(expression)) # 'eval':This function is used to evaluates the string expression directly
    input_text.set(result)
    expression = ""


expression = ""


# 'StringVar()' :It is used to get the instance of input field


input_text = StringVar()


# Let us creating a frame for the input field


input_frame = Frame(win, width=312, height=50, bd=0, highlightbackground="black", highlightcolor="black", highlightthickness=2)


input_frame.pack(side=TOP)


#Let us create a input field inside the 'Frame'


input_field = Entry(input_frame, font=('arial', 18, 'bold'), textvariable=input_text, width=50, bg="#eee", bd=0, justify=RIGHT)


input_field.grid(row=0, column=0)


input_field.pack(ipady=10) # 'ipady' is internal padding to increase the height of input field


#Let us creating another 'Frame' for the button below the 'input_frame'


btns_frame = Frame(win, width=312, height=272.5, bg="grey")


btns_frame.pack()
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# first row

clear = Button(btns_frame, text = "C", fg = "black", width = 32, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: bt_clear()).grid(row = 0, column = 0, columnspan = 3, padx = 1, pady = 1)

divide = Button(btns_frame, text = "/", fg = "black", width = 10, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: btn_click("/")).grid(row = 0, column = 3, padx = 1, pady = 1)

# second row

seven = Button(btns_frame, text = "7", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(7)).grid(row = 1, column = 0, padx = 1, pady = 1)

eight = Button(btns_frame, text = "8", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(8)).grid(row = 1, column = 1, padx = 1, pady = 1)

nine = Button(btns_frame, text = "9", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(9)).grid(row = 1, column = 2, padx = 1, pady = 1)

multiply = Button(btns_frame, text = "*", fg = "black", width = 10, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: btn_click("*")).grid(row = 1, column = 3, padx = 1, pady = 1)

# third row

four = Button(btns_frame, text = "4", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(4)).grid(row = 2, column = 0, padx = 1, pady = 1)

five = Button(btns_frame, text = "5", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(5)).grid(row = 2, column = 1, padx = 1, pady = 1)

six = Button(btns_frame, text = "6", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(6)).grid(row = 2, column = 2, padx = 1, pady = 1)
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minus = Button(btns_frame, text = "-", fg = "black", width = 10, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: btn_click("-")).grid(row = 2, column = 3, padx = 1, pady = 1)

# fourth row

one = Button(btns_frame, text = "1", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(1)).grid(row = 3, column = 0, padx = 1, pady = 1)

two = Button(btns_frame, text = "2", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(2)).grid(row = 3, column = 1, padx = 1, pady = 1)

three = Button(btns_frame, text = "3", fg = "black", width = 10, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(3)).grid(row = 3, column = 2, padx = 1, pady = 1)

plus = Button(btns_frame, text = "+", fg = "black", width = 10, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: btn_click("+")).grid(row = 3, column = 3, padx = 1, pady = 1)

# fourth row

zero = Button(btns_frame, text = "0", fg = "black", width = 21, height = 3, bd = 0, bg = "#fff", cursor = "hand2", command = lambda: btn_click(0)).grid(row = 4, column = 0, columnspan = 2, padx = 1, pady = 1)

point = Button(btns_frame, text = ".", fg = "black", width = 10, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: btn_click(".")).grid(row = 4, column = 2, padx = 1, pady = 1)

equals = Button(btns_frame, text = "=", fg = "black", width = 10, height = 3, bd = 0, bg = "#eee", cursor = "hand2", command = lambda: bt_equal()).grid(row = 4, column = 3, padx = 1, pady = 1)

win.mainloop()
```