# gui\_calculator.py

import tkinter as tk

from tkinter import messagebox

import math

def click(event):

text = event.widget.cget("text")

if text == "=":

try:

result = eval(screen.get())

screen.delete(0, tk.END)

screen.insert(tk.END, str(result))

except Exception as e:

messagebox.showerror("Error", "Invalid input")

screen.delete(0, tk.END)

elif text == "C":

screen.delete(0, tk.END)

else:

screen.insert(tk.END, text)

def square\_root():

try:

number = float(screen.get())

result = math.sqrt(number)

screen.delete(0, tk.END)

screen.insert(tk.END, str(result))

except Exception as e:

messagebox.showerror("Error", "Invalid input")

screen.delete(0, tk.END)

def exponentiate():

try:

number = float(screen.get())

screen.delete(0, tk.END)

screen.insert(tk.END, str(number) + "\*\*")

except Exception as e:

messagebox.showerror("Error", "Invalid input")

screen.delete(0, tk.END)

root = tk.Tk()

root.title("Simple Calculator")

screen = tk.Entry(root, font="Arial 20", borderwidth=2, relief="solid")

screen.pack(fill=tk.BOTH, ipadx=8, pady=10, padx=10)

button\_frame = tk.Frame(root)

button\_frame.pack()

buttons = [

'7', '8', '9', '/',

'4', '5', '6', '\*',

'1', '2', '3', '-',

'0', '.', '=', '+',

'C', 'sqrt', 'exp'

]

row = 0

col = 0

for button in buttons:

btn = tk.Button(button\_frame, text=button, font="Arial 18", relief="solid", borderwidth=1)

btn.grid(row=row, column=col, padx=5, pady=5, ipadx=10, ipady=10)

btn.bind("<Button-1>", click)

col += 1

if col > 3:

col = 0

row += 1

sqrt\_btn = tk.Button(root, text="√", font="Arial 18", relief="solid", borderwidth=1, command=square\_root)

sqrt\_btn.pack(side=tk.LEFT, expand=True, fill=tk.BOTH, padx=5, pady=5)

exp\_btn = tk.Button(root, text="x^y", font="Arial 18", relief="solid", borderwidth=1, command=exponentiate)

exp\_btn.pack(side=tk.LEFT, expand=True, fill=tk.BOTH, padx=5, pady=5)

root.mainloop()