**Calculator**

**import tkinter as tk**

**import math**

**# Function to evaluate expressions**

**def click(button\_text):**

**current = entry.get()**

**if button\_text == "=":**

**try:**

**result = str(eval(current))**

**entry.delete(0, tk.END)**

**entry.insert(tk.END, result)**

**except:**

**entry.delete(0, tk.END)**

**entry.insert(tk.END, "Error")**

**elif button\_text == "C":**

**entry.delete(0, tk.END)**

**elif button\_text in ["sin", "cos", "tan", "log", "sqrt"]:**

**try:**

**num = float(current) if current else 0**

**if button\_text == "sin":**

**result = str(round(math.sin(math.radians(num)), 5))**

**elif button\_text == "cos":**

**result = str(round(math.cos(math.radians(num)), 5))**

**elif button\_text == "tan":**

**result = str(round(math.tan(math.radians(num)), 5))**

**elif button\_text == "log":**

**result = str(round(math.log10(num), 5))**

**elif button\_text == "sqrt":**

**result = str(round(math.sqrt(num), 5))**

**entry.delete(0, tk.END)**

**entry.insert(tk.END, result)**

**except:**

**entry.delete(0, tk.END)**

**entry.insert(tk.END, "Error")**

**else:**

**entry.insert(tk.END, button\_text)**

**# Main window**

**root = tk.Tk()**

**root.title("Scientific Calculator")**

**root.configure(bg="#222")**

**# Entry field**

**entry = tk.Entry(root, width=25, font=("Arial", 20, "bold"),**

**borderwidth=8, relief="ridge", justify="right", bg="#333", fg="white")**

**entry.grid(row=0, column=0, columnspan=5, pady=15, padx=10)**

**# Buttons layout**

**buttons = [**

**("7", 1, 0), ("8", 1, 1), ("9", 1, 2), ("/", 1, 3), ("sin", 1, 4),**

**("4", 2, 0), ("5", 2, 1), ("6", 2, 2), ("\*", 2, 3), ("cos", 2, 4),**

**("1", 3, 0), ("2", 3, 1), ("3", 3, 2), ("-", 3, 3), ("tan", 3, 4),**

**("0", 4, 0), (".", 4, 1), ("=", 4, 2), ("+", 4, 3), ("log", 4, 4),**

**("C", 5, 0), ("(", 5, 1), (")", 5, 2), ("\*\*", 5, 3), ("sqrt", 5, 4),**

**]**

**# Colors**

**button\_colors = {**

**"C": "#e74c3c", # red**

**"=": "#27ae60", # green**

**"+": "#3498db", "-": "#3498db", "\*": "#3498db", "/": "#3498db", "\*\*": "#9b59b6", # purple**

**"sin": "#f39c12", "cos": "#f39c12", "tan": "#f39c12", "log": "#f39c12", "sqrt": "#f39c12"**

**}**

**# Create buttons dynamically**

**for (text, row, col) in buttons:**

**color = button\_colors.get(text, "#444") # default dark gray**

**button = tk.Button(root, text=text, width=6, height=2, font=("Arial", 14, "bold"),**

**bg=color, fg="white", activebackground="#666",**

**command=lambda t=text: click(t))**

**button.grid(row=row, column=col, padx=6, pady=6)**

**root.mainloop()**