import tkinter as tk

from tkinter import messagebox

from sympy import sympify, solve, Symbol

class CanvasWidget(tk.Frame):

def \_\_init\_\_(self, master=None):

super().\_\_init\_\_(master)

self.master = master

self.create\_widgets()

def create\_widgets(self):

# Entry for equation

self.label = tk.Label(self, text="Enter Equation (e.g., x+2=5):")

self.label.pack(pady=5)

self.equation\_entry = tk.Entry(self, width=40)

self.equation\_entry.pack(pady=5)

# Solve button

self.solve\_btn = tk.Button(self, text="Solve", command=self.solve\_equation)

self.solve\_btn.pack(pady=5)

# Output label

self.output\_label = tk.Label(self, text="", fg="blue", wraplength=300)

self.output\_label.pack(pady=10)

def solve\_equation(self):

equation\_text = self.equation\_entry.get().strip()

if not equation\_text:

messagebox.showerror("Error", "Please enter an equation.")

return

try:

if "=" in equation\_text:

left, right = equation\_text.split("=")

x = Symbol('x')

solution = solve(sympify(left) - sympify(right), x)

else:

solution = sympify(equation\_text)

self.output\_label.config(text=f"Solution: {solution}")

except Exception as e:

messagebox.showerror("Error", f"Invalid equation.\n{e}")