

This Python script creates a graphical calculator application using the Tkinter library. It allows users to perform basic arithmetic operations such as addition, subtraction, multiplication, division, and exponentiation.

Key Features:

- **Graphical User Interface (GUI):** A simple calculator interface with buttons for numbers (0-9), operations (+, -, *, /, ^), a decimal point, and functions like backspace, clear, and equals.
- **Basic Operations:** Supports arithmetic operations like addition, subtraction, multiplication, division, and exponentiation.
- **Error Handling:** Prevents division by zero errors and shows an alert if this happens.
- **Responsive:** The calculator layout adapts to user input.

How It Works:

1. Input Handling:

- The user can click on the number and operator buttons to input values into the display (an entry widget).
- The Entry widget is used to show the input and output.

2. Operations:

- The calculator supports the basic arithmetic operations (addition, subtraction, multiplication, division) and exponentiation (^).
- When the user clicks =, the eval() function is used to evaluate the expression entered in the display.

3. Error Handling:

- If the user tries to divide by zero, a popup message will alert them that division by zero is not allowed.

4. Other Buttons:

- The C button clears the current input in the display.
- The <- button deletes the last character from the input (backspace).
- The . button allows the user to add a decimal point to the number.

Functions:

- `get_input(entry, argu)`: Inserts the clicked number or operator into the Entry widget.
- `backspace(entry)`: Deletes the last character in the Entry widget.
- `clear(entry)`: Clears the entire Entry widget.
- `calc(entry)`: Evaluates the mathematical expression entered in the Entry widget and displays the result. Handles division by zero with a popup error.
- `popupmsg()`: Displays an error message when division by zero is attempted.
- `cal()`: Initializes the calculator window, sets up the layout, and defines the buttons and their functionalities.

GUI Components:

- **Buttons** for digits (0 to 9) and operators (+, -, *, /, ^, ., =, C, <-).
- **Label** to display the error message when division by zero occurs.
- **Entry** widget to show the current input and result.

How to Run:

- Ensure Python and Tkinter are installed.
- Copy and paste the code into a Python file (e.g., calculator.py).
- Run the file using a Python interpreter. A graphical calculator window will open.

Example:

1. Enter 2, then +, then 3, and click =.
2. The result 5 will be displayed in the entry box.

Error Handling Example:

- Enter 5, then /, then 0, and click =.
- An error popup will appear, indicating that division by zero is not allowed.