#### **Calculator Features:**

- 1. **Basic Arithmetic Operations:** The calculator supports basic arithmetic operations such as addition, subtraction, multiplication, and division. You can input mathematical expressions using the buttons provided or by typing directly into the input field. Press the '=' button to calculate the result.
- 2. **Advanced Scientific Functions:** The calculator includes trigonometric functions (sine, cosine, tangent), logarithm, and exponentiation. To use these functions, first, enter the numeric value you want to operate on, then press the corresponding function button (e.g., 'sin', 'cos', 'tan', 'log', 'exp'), and finally press '=' to see the result.
- 3. **Graphing Capabilities:** You can visualize mathematical functions by plotting their graphs. Press the 'graph' button, enter a mathematical expression involving 'x' (e.g., 'x\*\*2 + 2\*x + 1'), and press '='. A new window will open displaying the graph of the function using the Matplotlib library.
- 4. **Unit Conversion:** The calculator provides unit conversion between different measurement systems. Press the 'unit conv' button, select the 'From' and 'To' units from the dropdown menus (e.g., 'meters' to 'feet'), input a value, and press 'Convert' to see the converted result.
- 5. **Statistical Calculations:** You can perform basic statistical calculations such as calculating the mean, median, and standard deviation of a set of data. Press the 'stats' button, enter a comma-separated list of numeric values (e.g., '1, 2, 3, 4, 5'), and press 'Calculate' to see the statistical results.

#### How to Use:

# 1. Basic Arithmetic Operations:

- Click the number buttons (0-9) to input numbers.
- Click the arithmetic operation buttons (+, -, \*, /) to input operators.
- Press the '=' button to calculate the result.

#### 2. Advanced Scientific Functions:

• Enter a number.

- Click the corresponding function button ('sin', 'cos', 'tan', 'log', 'exp').
- Press the '=' button to calculate the result.

## 3. Graphing Capabilities:

- Click the 'graph' button.
- Enter a mathematical expression involving 'x'.
- Press the '=' button to open a graph window displaying the function.

### 4. Unit Conversion:

- Click the 'unit conv' button.
- Select the 'From' and 'To' units from the dropdown menus.
- Enter a numeric value in the 'Value' field.
- Press the 'Convert' button to see the converted result.

#### 5. Statistical Calculations:

- Click the 'stats' button.
- Enter a comma-separated list of numeric values in the 'Data' field
- Press the 'Calculate' button to see the statistical results.

Make sure you have the required libraries (numpy and matplotlib) installed to use the graphing and statistical features.