

IMPLEMENTATION DETAILS

```
"C:\Users\Anukriti Chauhan\..." ***CALCULATOR***
Menu:
1. Arithmetic Calculator
2. Scientific Calculator
3. Number System Converter
4. Quadratic Roots Calculator
5. Pythagoras Theorem
6. History Management
7. Exit
Enter your choice:
```

Menu options:

1. Arithmetic calculator (Function name: arithmeticCalculator())

```
"C:\Users\Anukriti Chauhan\..." ***CALCULATOR***
Menu:
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7. Exit
Enter your choice: 1

Arithmetic Calculator
Enter two numbers: 4 5
Enter the operator (+, -, *, /): +
Result: 9.00

Do you want to perform another operation? (1 for Yes / 0 for No): 1
```

2. Scientific Calculator (Function Name: scientificCalculator())

```
"C:\Users\Anukriti Chauhan\..." ***CALCULATOR***
Menu:
1. Arithmetic Calculator
2. Scientific Calculator
3. Number System Converter
4. Quadratic Roots Calculator
5. Pythagoras Theorem
6. History Management
7. Exit
Enter your choice: 2

Scientific Calculator
0. Go Back
1. Square root
2. Trigonometric functions
3. Inverse Trigonometric functions
4. Logarithmic functions
5. Exponentiation
Enter your choice: 2
Enter angle (in degree): 30
Sin: 0.50
Cos: 0.87
Tan: 0.58
```

3. Number System Converter (Function Name: numberSystemConverter())

```
"C:\Users\Anukriti Chauhan\..." + - x
***CALCULATOR***

Menu:
1. Arithmetic Calculator
2. Scientific Calculator
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6. History Management
7. Exit
Enter your choice: 3

Number System Converter
0. Go Back
1. Decimal to Binary
2. Decimal to Hexadecimal
3. Decimal to Octal
4. Binary to Decimal
5. Binary to Hexadecimal
6. Binary to Octal
7. Hexadecimal to Decimal
8. Hexadecimal to Binary
9. Hexadecimal to Octal
10. Octal to Decimal
11. Octal to Binary
12. Octal to Hexadecimal
Enter your choice: 1
Enter a decimal number: 26
Decimal 26 in binary is: 11010
```

4. Quadratic Roots Calculator (Function Name: quadraticRootsCalculator())

```
***CALCULATOR***

Menu:
1. Arithmetic Calculator
2. Scientific Calculator
3. Number System Converter
4. Quadratic Roots Calculator
5. Pythagoras Theorem
6. History Management
7. Exit
Enter your choice: 4

Quadratic Roots Converter
Enter the coefficients of the quadratic equation (a, b, c): 1 2 3
The quadratic equation is:  $1.00x^2 + 2.00x + 3.00 = 0$ 
Roots are complex:  $-1.00 + 1.41i$  and  $-1.00 - 1.41i$ 

Do you want to calculate roots for another equation? (1 for Yes / 0 for No):
```

5. Pythagoras Theorem (Function Name: pythagorasTheorem())

```
***CALCULATOR***

Menu:
1. Arithmetic Calculator
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3. Number System Converter
4. Quadratic Roots Calculator
5. Pythagoras Theorem
6. History Management
7. Exit
Enter your choice: 5

Pythagoras Theorem Converter
Enter length of side 1: 4
Enter length of side 2: 3
Hypotenuse = 5.00
Do you want to calculate for another set of sides? (1 for Yes / 0 for No):
```

6. History Management (Function Name: historyManagement())

```
***CALCULATOR***
Menu:
1. Arithmetic Calculator
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3. Number System Converter
4. Quadratic Roots Calculator
5. Pythagoras Theorem
6. History Management
7. Exit
Enter your choice: 6

History Management Menu:
0. Go Back
1. View entire history
2. Clear entire history
Enter your choice: 1

Viewing entire history:
Pythagoras theorem calculation for sides: 1.00, 3.00 -> Hypotenuse: 3.16
Arithmetic operation: 4.00 + 5.00 = 9.00
Scientific operation: Sin: 0.50
Cos: 0.87
Tan: 0.58

Number System Conversion: Choice 1
Quadratic roots calculation for equation: 1.00x^2 + 2.00x + 3.00 = 0 -> Roots are complex: -1.00 + 1.41i and -1.00 - 1.41i
Quadratic roots calculation for equation: 1.00x^2 + 2.00x + 3.00 = 0 -> Roots are complex: -1.00 + 1.41i and -1.00 - 1.41i
Pythagoras theorem calculation for sides: 3.00, 5.00 -> Hypotenuse: 5.83
Quadratic roots calculation for equation: 1.00x^2 + 2.00x + 3.00 = 0 -> Roots are complex: -1.00 + 1.41i and -1.00 - 1.41i
Pythagoras theorem calculation for sides: 4.00, 3.00 -> Hypotenuse: 5.00

History Management Menu:
0. Go Back
1. View entire history
2. Clear entire history
Enter your choice: 2
History cleared successfully.

History Management Menu:
0. Go Back
1. View entire history
2. Clear entire history
Enter your choice: 1

Viewing entire history:
No history found.
```

7. Exit

```
***CALCULATOR***
Menu:
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6. History Management
7. Exit
Enter your choice: 7
Exiting the program. Goodbye!

Process returned 0 (0x0)   execution time : 722.803 s
Press any key to continue.
```

Additional:***(0) Go back feature:**

```
Viewing entire history:
No history found.

History Management Menu:
0. Go Back
1. View entire history
2. Clear entire history
Enter your choice: 0

***CALCULATOR***

Menu:
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4. Quadratic Roots Calculator
5. Pythagoras Theorem
6. History Management
7. Exit
Enter your choice: 7
Exiting the program. Goodbye!
```

*** Error handling**

```
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Menu:
1. Arithmetic Calculator
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6. History Management
7. Exit
Enter your choice: 8
Invalid choice. Please enter a valid option.

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Menu:
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7. Exit
Enter your choice:
```