

Algorithm for the Arithmetic Calculator

1. **Start**

2. Display the menu with options:

1. Addition
2. Subtraction
3. Multiplication
4. Division

3. Ask the user to enter their choice (1, 2, 3, 4) or 'q' to quit.

4. If the user enters 'q':

Print "Exiting calculator. Goodbye!"

Stop

5. If the user enters a valid choice (1, 2, 3, or 4):

- Ask the user to input the first number.
- Ask the user to input the second number.
- Perform the selected operation:
 - If the choice is 1, add the two numbers.
 - If the choice is 2, subtract the second number from the first.
 - If the choice is 3, multiply the two numbers.
 - If the choice is 4, divide the first number by the second (check for division by zero).
- Display the result.

2. If the user enters an invalid choice:

- Print "Invalid choice! Please select a valid option."

3. If the user enters non-numeric input for numbers:

- Print "Invalid input! Please enter numbers only."

4. Repeat from step 2 until the user chooses to quit.

