**Name : IMRAN MAJEED**

**ROLL NO : SU92-F24-212**

**SECTION : BSAI-3B**

**QUESTION NO : 01**

**Create a dynamic calculator :**

**( solving : 1+2×3(4-5÷4)-(3÷5) )**

**Solution :**

This Python program is a **dynamic calculator** that can solve complex mathematical expressions entered by the user. It starts by importing the re library, which is used for regular expressions to detect and fix patterns in the input. The calculator function first converts special math symbols like × and ÷ into Python’s standard operators \* and / because Python only understands these. Next, it handles implicit multiplication, which happens when a number is written directly before or after brackets without a \*. For example, an expression like 2(3+4) is automatically converted into 2\*(3+4), and (3+4)2 becomes (3+4)\*2, so Python can evaluate it correctly. After cleaning up the input, the program uses Python’s built-in eval() function to compute the result of the expression.

The calculator runs inside a continuous loop, allowing the user to enter expressions one after another. Each time, the expression is processed and solved, and the result is displayed. The loop only stops when the user types "exit", at which point the program ends with a goodbye message. This makes the calculator interactive and flexible—it can solve basic arithmetic, nested brackets, and hidden multiplications dynamically. For example, if the user inputs 1+2×3(4-5÷4)-(3÷5), the program correctly evaluates it and gives the result 16.9. In short, the program is designed to accept human-friendly math input, convert it into Python-compatible format, and return accurate answers dynamically.

**OUTPUT:**

