MINAHI IQBAL

BSDS-3A

056

Mini Project: Dynamic Calculator

**FEATURES:**

 Handles +, -, ×, ÷.

 Follows **BODMAS**: multiplication/division before addition/subtraction.

 Works with floating-point numbers.

**CODE:**

def calc(expr):

expr = expr.replace("×","\*").replace("÷","/")

stack = []

num = ""

for ch in expr:

if ch.isdigit() or ch==".":

num += ch

else:

if num:

stack.append(float(num))

num = ""

stack.append(ch)

if num:

stack.append(float(num))

i=0

while i<len(stack):

if stack[i]=="\*" or stack[i]=="/":

if stack[i]=="\*":

val = stack[i-1]\*stack[i+1]

else:

val = stack[i-1]/stack[i+1]

stack[i-1:i+2] = [val]

i -= 1

else:

i+=1

i=0

while i<len(stack):

if stack[i]=="+" or stack[i]=="-":

if stack[i]=="+":

val = stack[i-1]+stack[i+1]

else:

val = stack[i-1]-stack[i+1]

stack[i-1:i+2] = [val]

i -= 1

else:

i+=1

return stack[0]

expr = "1+2×3-4÷2"

print(calc(expr))

**Code Explanation:**

1.expr.replace("×","\*").replace("÷","/")

|  |
| --- |
|  |

|  |
| --- |
| Converts user-friendly symbols into Python operators. |

2. stack = []

List to store numbers and operators separately.

3. Parsing Loop

Reads characters, builds multi-digit numbers, and adds them to the stack.

4. First while loop

Handles \* and / first, applying multiplication and division.

5. Second while loop

Handles + and - next, applying addition and subtraction.

6. return stack[0]

Returns the final calculated value.

**Output:**

