**EXPERIMENT 4**

Write the python program for Cript-Arithmetic problem

**AIM:**

The aim is to solve the cript arithmetic problem using python program.

**PROGRAM:**

def is\_valid\_assignment(assignment, letters):

values = list(assignment.values())

return len(values) == len(set(values))

def evaluate\_expression(expression, assignment):

value = 0

for char in expression:

value = value \* 10 + assignment[char]

return value

def solve\_cryptarithmetic(equation):

words = equation.replace("+", " ").replace("=", " ").split()

unique\_letters = set("".join(words))

leading\_letters = set(word[0] for word in words)

letters = list(unique\_letters)

from itertools import permutations

for perm in permutations(range(10), len(letters)):

assignment = dict(zip(letters, perm))

if all(assignment[letter] != 0 for letter in leading\_letters):

left\_value = evaluate\_expression(words[0], assignment)

right\_value = evaluate\_expression(words[1], assignment)

result\_value = evaluate\_expression(words[2], assignment)

if left\_value + right\_value == result\_value:

return assignment

return None

equation = "SEND + MORE = MONEY"

solution = solve\_cryptarithmetic(equation)

if solution:

print("Solution found:")

for letter, digit in solution.items():

print(f"{letter}: {digit}")

else:

print("No solution found.")

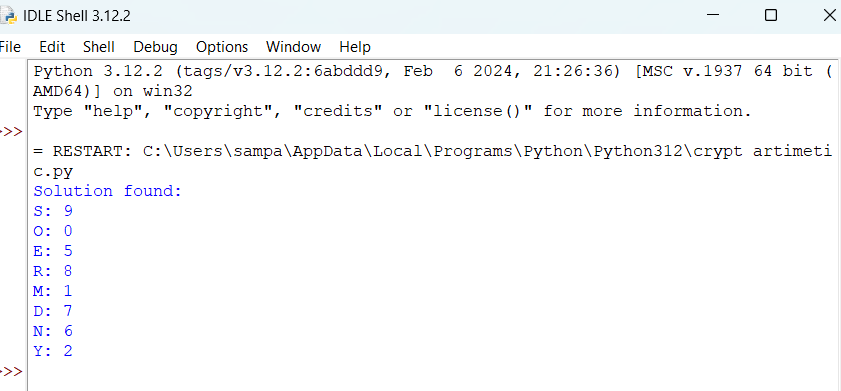
**INPUT:**

Send

More

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**OUTPUT:**



ggg