**PYTHON PROGRAM**

def parse\_input(input\_str, index, non\_terminal): if index == len(input\_str):

return True

for production in grammar[non\_terminal]: tokens = production.split()

if tokens[0] == input\_str[index]: new\_index = index + 1

for token in tokens[1:]:

if token == input\_str[new\_index]: new\_index += 1

else:

return False

if parse\_input(input\_str, new\_index, non\_terminal): return True

return False

def validate\_input(input\_str):

return parse\_input(input\_str, 0, 'E') input\_str = "id + id \* id"

if validate\_input(input\_str):

print("Input string is valid according to the grammar.") else:

print("Input string is not valid according to the grammar.")

INPUT

grammar = {

'E': ['E + T', 'T'],

'T': ['T \* F', 'F'],

'F': ['( E )', 'id']

}

OUTPUT

Input string is valid according to the grammar