A balanced delimiter starts with an opening character ((, [, {), ends with a matching closing character (), ], } respectively), and has only other matching delimiters in between. A balanced delimiter may contain any number of balanced delimiters.

Examples

The following are examples of balanced delimiter strings:

()[]{}

([{}])

([]{})

The following are examples of invalid strings:

([)]

([]

[])

([})

Input is provided as a single string. Your output should be True or False according to whether the string is balanced. For example:

Input:

([{}])

Output:

True

def is\_balanced(input\_str):

stack = []

opening\_chars = "([{"

closing\_chars = ")]}"

for char in input\_str:

if char in opening\_chars:

stack.append(char)

elif char in closing\_chars:

if not stack:

return False

if opening\_chars.index(stack.pop()) != closing\_chars.index(char):

return False

return not stack

input\_str = input("Enter a string of delimiters: ")

result = is\_balanced (input\_str)

print(result)

OUTPUT

Enter a string of delimiters: ()[]{}

True

Enter a string of delimiters: {([])}

True

Enter a string of delimiters: ({}[)}]

False

def is\_balanced(s):

pairs = {')': '(', ']': '[', '}': '{'}

stack = []

for char in s:

if char in pairs.values():

stack.append(char)

elif char in pairs.keys():

if not stack or pairs[char] != stack.pop():

return False

return not stack

print(is\_balanced("([{}])")) # Output: True