class Solution:

def convert(self, s: str, numRows: int) -> str:

if len(s) <= numRows: return s

if numRows == 1: return s

temp = [[] for x in range(numRows)]

k = 0

idx = 0

factor = 1

while idx < len(s):

if k == numRows:

k = k - 2

factor = -1

elif k == -1:

k = k + 2

factor = 1

temp[k].append(s[idx])

idx += 1

k += factor

return ''.join(letter for row in temp for letter in row)