Coding Game 4 מטלה

עדות כהן

```python
import sys
import math
from itertools import permutations

n = int(input())
strings= []
for i in range(n):
    subseq = input()
    strings.append(subseq)
ranges=""
for i in range(len(strings)):
    ranges=ranges+ str(i)
perms = [''.join(p) for p in permutations(ranges)]
minAns=100
for p in perms:
    permS=""
    for j in p:
        flag=False
        curStringToAdd=strings[int(j)]
        if curStringToAdd not in permS:
            for k in range(len(curStringToAdd)):
                curLen=len(curStringToAdd)-k
                if(curLen<=len(permS)):
                    if permS[-curLen:]==curStringToAdd[0:curLen]:
                        permS=permS+curStringToAdd[-k:]
                        flag=True
                        break
        else:
            flag=True
        if not flag:
            permS=permS+curStringToAdd
    minAns=min(minAns,len(permS))
print(minAns)
```

You are working as a computer scientist in a laboratory seeking to sequence the genome. A DNA sequence is represented by a character string (of A, C, T and G) such as GATTACA. The problem is that biologists are only able to extract sub-sequences of the complete sequence. Your role is to combine these partial sub-sequences to recover the original sequence.

In this exercise you are asked to calculate the length of the shortest sequence that contains all the sub-sequences of the input data.

 Rules

You are given N sub-sequences and you must return the length of the shortest sequence that contains all the sub-sequences. There may be several sequences of the same minimum length and which fit the requirement. We are not asking you to list these, but only to return their length.

Note that there is always a solution. One can indeed simply concatenate all the sub-sequences to obtain a valid sequence. But by nesting (even partially) the sub-sequences, it is generally possible to obtain a shorter sequence (see the example).

https://www.codingame.com/ide/puzzle/genome-sequencing