n Sums

DiPS CodeJam 22

Prompt

Given an integer n and an array of terms that are $\leq n$, find the minimum number of numbers from the array that sum up to exactly n. Print `none` if an exact sum cannot be obtained.

Input Format

- The first line of input contains the integer n.
- The next line of input contains an array of terms that are $\leq n$.

Output Format

The first and only line of your output must contain the minimum number of numbers from the array that sum up to exactly n.

Constraints

- $2 \leq n \leq 100$

Sample Input/Output

Input	Output
82 37 46 22 40 8 37 44 43 50 45	2

Solution

To find the minimum number of numbers from the array that sum up to exactly n, take the following steps:

- First, find all the permutations of numbers from the list that sum up to n.
- Second, Find the smallest number of numbers that can bee added to produce n. This can be achieved by sorting the list of permutations by the number of numbers in each permutation.

Sample Program

```
from itertools import *

n = int(input())
a = list(int(e) for e in input().split())
```

```
result = []

for i in range(len(a)):
     for j in permutations(a,i+1):
          if sum(j)==n:
               result.append(i+1)

print(result[0]) if len(result) else print("none")
```