416. Partition Equal Subset Sum

Medium

Given an integer array nums, return true if you can partition the array into two subsets such that the sum of the elements in both subsets is equal or false otherwise.

```
from typing import List

class Solution:
    def canPartition(self, nums: List[int]) -> bool:
        if sum(nums) % 2 != 0:
            return False

        target = sum(nums) // 2
        check = set()
        check.add(0)

        for i in range(len(nums) - 1, -1, -1):
            next_check = set()
            for t in check:
                if (t + nums[i]) == target:
                    return True
                next_check.add(t + nums[i])
                next_check.add(t)
            check = next_check
        return False
```

Example 1:

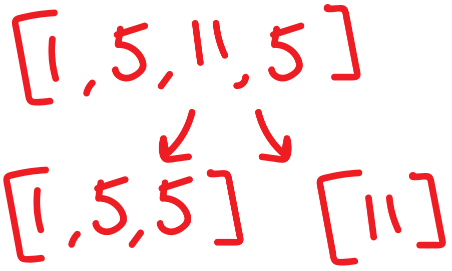
Input: nums = [1,5,11,5]
Output: true
Explanation: The array can be partitioned as [1, 5, 5] and [11].

Example 2:

Input: nums = [1,2,3,5]
Output: false
Explanation: The array cannot be partitioned into equal sum subsets.

Constraints:

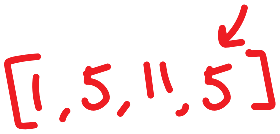
```
1 <= nums.length <= 200
1 <= nums[i] <= 100
```



target = 11

check = set()

check → set(0)



```
for i in range(len(nums) - 1, -1, -1):
    next_check = set()
    for t in check:
        if t + nums(i) == target
            return True
        next_check.add(t + nums[i])
        next_check.add(t)
    check = next_check
```