78. Subsets

Created	@April 4, 2021 10:34 PM
Difficulty	Medium
LC Url	https://leetcode.com/problems/subsets/
Importance	
Tag	Backtrack DFS NEET
Video	https://www.youtube.com/watch?v=rtFHxiQAICA&list=PLH8TFsY0qnE2R9kf_9vahNY6pG9601z_4&index=59

Given an integer array `nums` of **unique** elements, return *all possible subsets (the power set)*.

The solution set **must not** contain duplicate subsets. Return the solution in **any order**.

Example 1:

```
Input: nums = [1,2,3]
Output: [[],[1],[2],[1,2],[3],[1,3],[2,3],[1,2,3]]
```

Example 2:

```
Input: nums = [0]
Output: [[],[0]]
```

Constraints:

- `1 <= nums.length <= 10`
- `-10 <= nums[i] <= 10`
- All the numbers of `nums` are **unique**.

Solution 1

Backtrack

Ref: 16 九章算法班2020版 subsets-version-1_1.mp4

```
# 九章算法
class Solution:
    def subsets(self, nums: List[int]) -> List[List[int]]:
        results = []
        if not nums:
            return results

        # 本题有没有sort都可以
        # 如果要求subset必须是non-descending，那就必须先排序
        nums.sort()
        self.dfs(nums, 0, [], results)
        return results

    def dfs(self, nums, index, subset, results):
        if index == len(nums):
            results.append(list(subset))
            return

        subset.append(nums[index])
        self.dfs(nums, index + 1, subset, results)

        subset.pop()
        self.dfs(nums, index + 1, subset, results)
```