2023-04-08 - Handout – Arrays

# Q1. Two Sum

Link: <https://leetcode.com/problems/two-sum/>

Given an array of integers nums and an integer target, return indices of the two numbers such that they add up to target.

You may assume that each input would have exactly one solution, and you may not use the same element twice.

You can return the answer in any order.

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| **Example 1: Input**: nums = [2,7,11,15], target = 9  **Output**: [0,1]  **Explanation**: Because nums[0] + nums[1] == 9, we return [0, 1]. | **Example 2: Input**: nums = [3,2,4], **target** = 6  **Output**: [1,2] |

# Q2. Combinations Sum

Link: <https://leetcode.com/problems/combination-sum/>

Given an array of distinct integers candidates and a target integer target, return a list of all unique combinations of candidates where the chosen numbers sum to target. You may return the combinations in any order.

The same number may be chosen from candidates an unlimited number of times. Two combinations are unique if the frequency of at least one of the chosen numbers is different.

The test cases are generated such that the number of unique combinations that sum up to target is less than 150 combinations for the given input.

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| **Example 1: Input:** candidates = [2,3,6,7], **target** = 7  **Output:** [[2,2,3],[7]]  **Explanation:**  2 and 3 are candidates, and 2 + 2 + 3 = 7. Note that 2 can be used multiple times.  7 is a candidate, and 7 = 7.  These are the only two combinations. | **Example 2: Input:** candidates = [2,3,5], **target** = 8  **Output**: [[2,2,2,2],[2,3,3],[3,5]] |

# Q3. Subsets

Link: <https://leetcode.com/problems/subsets/>

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.

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| **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]]** |

# Q4. Median of Two Sorted Arrays

Link: <https://leetcode.com/problems/median-of-two-sorted-arrays/description/>

Given two sorted arrays nums1 and nums2 of size m and n respectively, return the median of the two sorted arrays.

The overall run time complexity should be O(log (m+n)).

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| **Input: nums1 = [1,3], nums2 = [2]**  **Output: 2.00000**  **Explanation: merged array = [1,2,3] and median is 2.** | **Input: nums1 = [1,2], nums2 = [3,4]**  **Output: 2.50000**  **Explanation: merged array = [1,2,3,4] and median is (2 + 3) / 2 = 2.5.** |