JAVA PABL PRACTICE SHEET – 3

1. Given a sorted array of distinct integers and a target value, return the index if the target is found. If not, return the index where it would be if it were inserted in order.

You must write an algorithm with O(log n) runtime complexity.

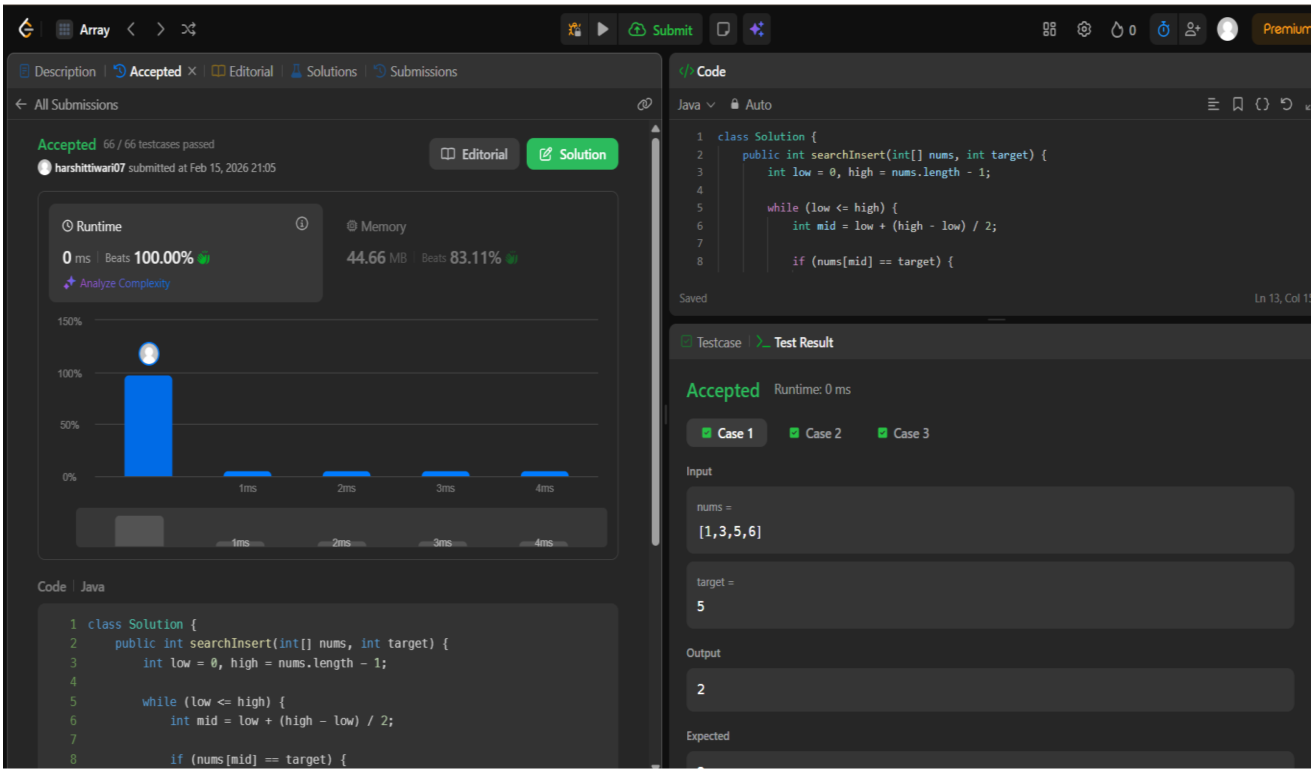
Example 1:

Input: nums = [1,3,5,6], target = 5
Output: 2
Example 2:

Input: nums = [1,3,5,6], target = 2
Output: 1
Example 3:

Input: nums = [1,3,5,6], target = 7
Output: 4

SOLUTION-



Accepted 66 / 66 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:05

Runtime
0 ms | Beats 100.00%

Memory
44.66 MB | Beats 83.11%

Code | Java

```java
class Solution {
    public int searchInsert(int[] nums, int target) {
        int low = 0, high = nums.length - 1;

        while (low <= high) {
            int mid = low + (high - low) / 2;

            if (nums[mid] == target) {
```

Code
Java Auto

```java
class Solution {
    public int searchInsert(int[] nums, int target) {
        int low = 0, high = nums.length - 1;

        while (low <= high) {
            int mid = low + (high - low) / 2;

            if (nums[mid] == target) {
```

Saved
Ln 13, Col 1

Testcase | Test Result

Accepted Runtime: 0 ms

☑ Case 1 ☑ Case 2 ☑ Case 3

Input

nums =
[1,3,5,6]

target =
5

Output

2

Expected

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.

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

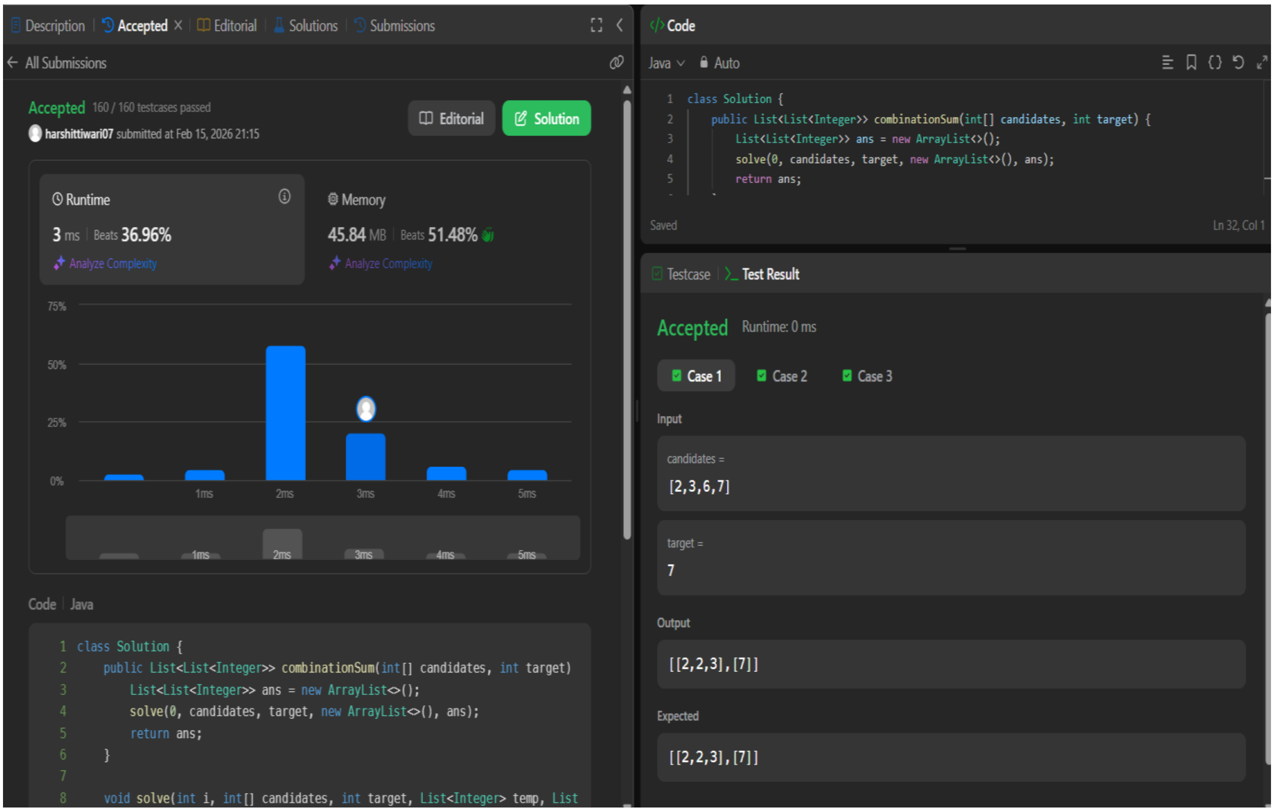
Output: [[2,2,2,2],[2,3,3],[3,5]]

Example 3:

Input: candidates = [2], target = 1

2. **Output:** []

Solution -



Accepted 160 / 160 testcases passed

harshittiwari07 submitted at Feb 15, 2026 21:15

Runtime

3 ms | Beats 36.96%

Memory

45.84 MB | Beats 51.48%

Code | Java

```
class Solution {
    public List<List<Integer>> combinationSum(int[] candidates, int target)
        List<List<Integer>> ans = new ArrayList<>();
        solve(0, candidates, target, new ArrayList<>(), ans);
        return ans;
    }

    void solve(int i, int[] candidates, int target, List<Integer> temp, List
```

```
class Solution {
    public List<List<Integer>> combinationSum(int[] candidates, int target) {
        List<List<Integer>> ans = new ArrayList<>();
        solve(0, candidates, target, new ArrayList<>(), ans);
        return ans;
```

Saved

Ln 32, Col 1

Accepted Runtime: 0 ms

☑ Case 1 ☑ Case 2 ☑ Case 3

Input

candidates =

[2,3,6,7]

target =

7

Output

[[2,2,3],[7]]

Expected

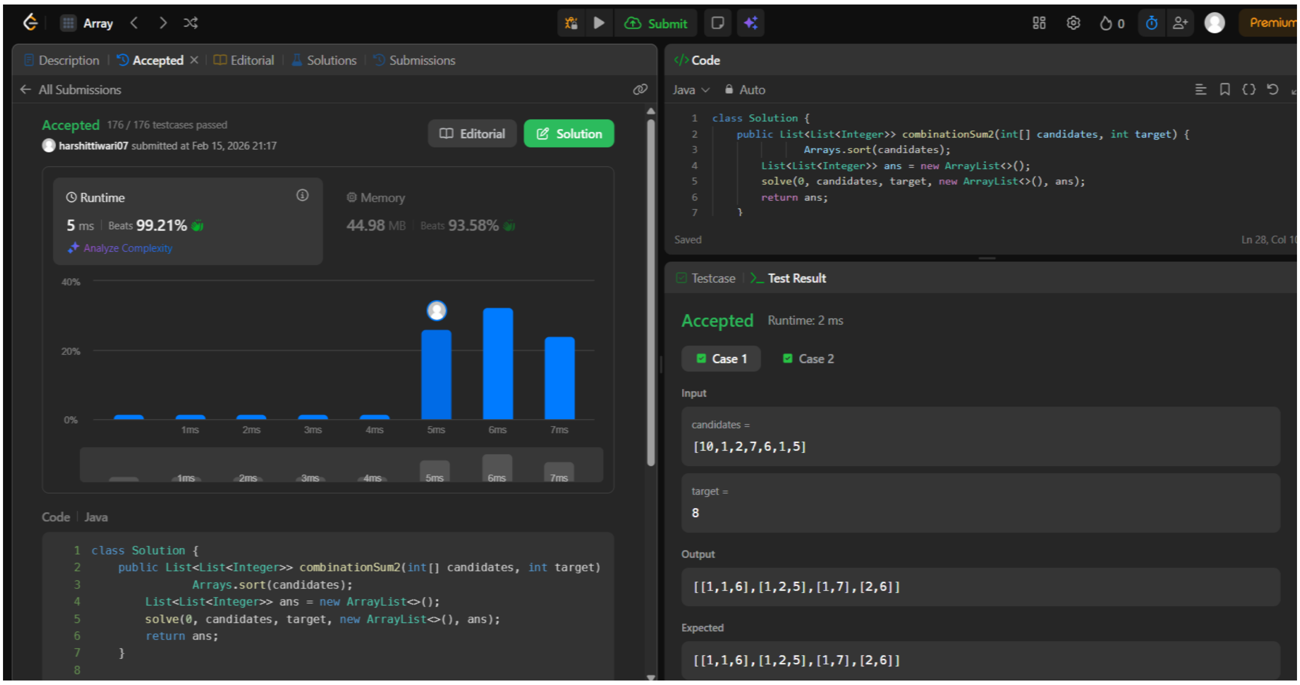
[[2,2,3],[7]]

3.

Given a collection of candidate numbers (candidates) and a target number (target), find all unique combinations in candidates where the candidate numbers sum to target.
Each number in candidates may only be used **once** in the combination.
Note: The solution set must not contain duplicate combinations.

Example 1:
Input: candidates = [10,1,2,7,6,1,5], target = 8
Output:
[
[1,1,6],
[1,2,5],
[1,7],
[2,6]
]
Example 2:
Input: candidates = [2,5,2,1,2], target = 5
Output:
[
[1,2,2],
[5]
]

Solution –



Accepted 176 / 176 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:17

Runtime
5 ms | Beats 99.21%

Memory
44.98 MB | Beats 93.58%

Code | Java

```java
class Solution {
    public List<List<Integer>> combinationSum2(int[] candidates, int target)
            Arrays.sort(candidates);
        List<List<Integer>> ans = new ArrayList<>();
        solve(0, candidates, target, new ArrayList<>(), ans);
        return ans;
    }

```

```java
class Solution {
    public List<List<Integer>> combinationSum2(int[] candidates, int target) {
            Arrays.sort(candidates);
        List<List<Integer>> ans = new ArrayList<>();
        solve(0, candidates, target, new ArrayList<>(), ans);
        return ans;
    }
```

Accepted Runtime: 2 ms

Input

candidates =
[10,1,2,7,6,1,5]

target =
8

Output

[[1,1,6],[1,2,5],[1,7],[2,6]]

Expected

[[1,1,6],[1,2,5],[1,7],[2,6]]

4.

You are given a **0-indexed** array of integers nums of length n. You are initially positioned at index 0.

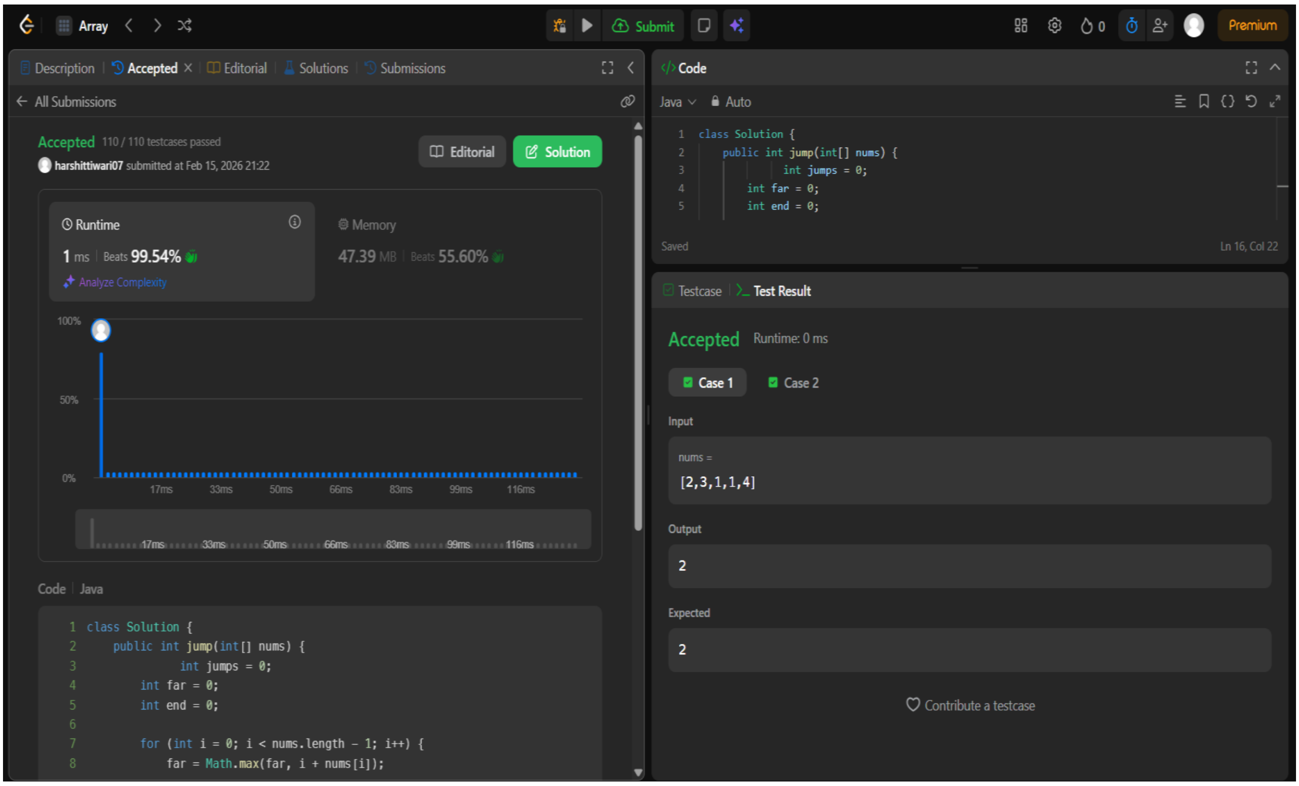
Each element nums[i] represents the maximum length of a forward jump from index i. In other words, if you are at index i, you can jump to any index (i + j) where:

- 0 <= j <= nums[i] and
- i + j < n

Return *the minimum number of jumps to reach index* n - 1. The test cases are generated such that you can reach index n - 1.

Example 1:
Input: nums = [2,3,1,1,4]
Output: 2
Explanation: The minimum number of jumps to reach the last index is 2. Jump 1 step from index 0 to 1, then 3 steps to the last index.
Example 2:
Input: nums = [2,3,0,1,4]
Output: 2

Solution-



Accepted 110 / 110 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:22

Runtime: 1 ms | Beats 99.54%
Memory: 47.39 MB | Beats 55.60%

Code | Java

```java
class Solution {
    public int jump(int[] nums) {
            int jumps = 0;
        int far = 0;
        int end = 0;

        for (int i = 0; i < nums.length - 1; i++) {
            far = Math.max(far, i + nums[i]);
```

Code — Java — Auto

```java
class Solution {
    public int jump(int[] nums) {
            int jumps = 0;
        int far = 0;
        int end = 0;
```

Saved   Ln 16, Col 22

Accepted   Runtime: 0 ms

Case 1   Case 2

Input
nums =
[2,3,1,1,4]

Output
2

Expected
2

Given an array of strings strs, group the anagrams together. You can return the answer in **any order**.

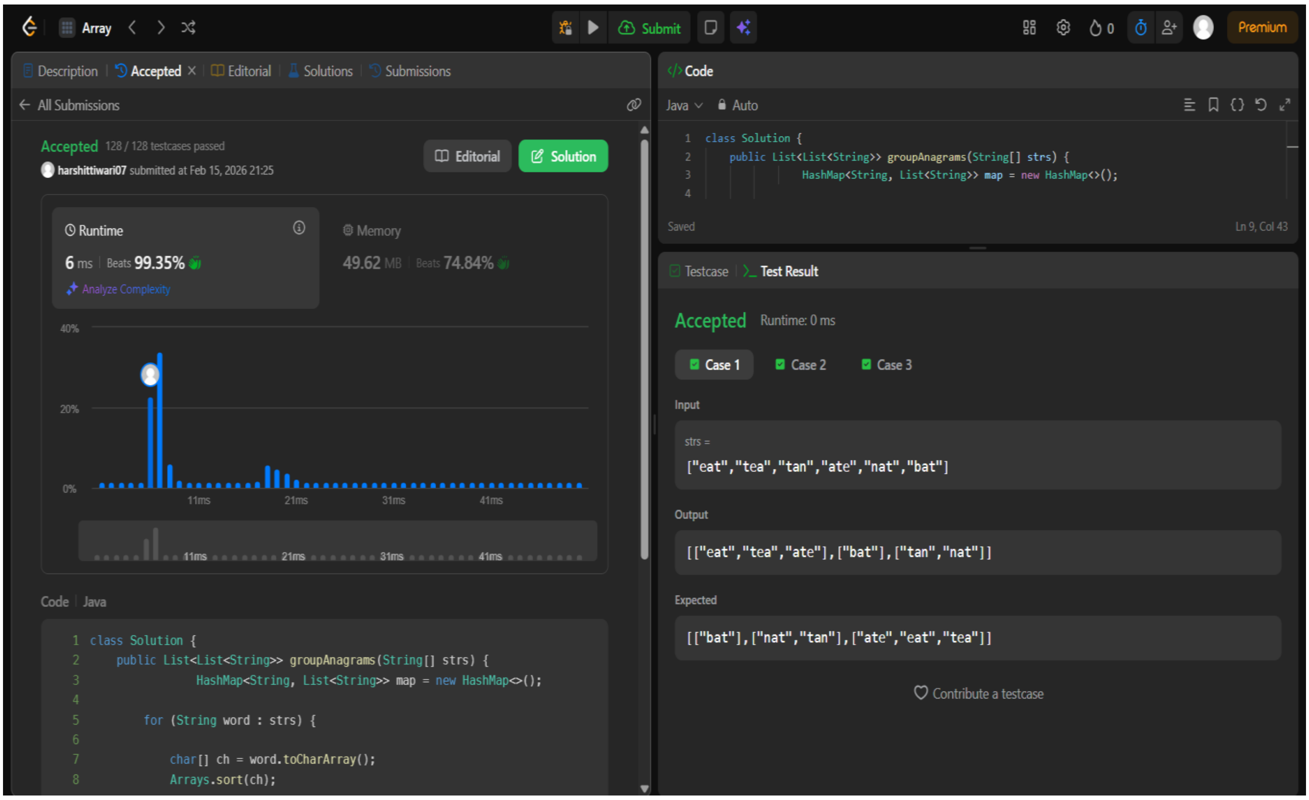
Example 1:
Input: strs = ["eat","tea","tan","ate","nat","bat"]
Output: [["bat"],["nat","tan"],["ate","eat","tea"]]
Explanation:

- There is no string in strs that can be rearranged to form "bat".
- The strings "nat" and "tan" are anagrams as they can be rearranged to form each other.
- The strings "ate", "eat", and "tea" are anagrams as they can be rearranged to form each other.

Example 2:
Input: strs = [""]
Output: [[""]]
Example 3:
Input: strs = ["a"]
Output: [["a"]]

5. Link: https://leetcode.com/problems/group-anagrams/description/?envType=problem-list-v2&envId=array

Solution-



Accepted 128 / 128 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:25

Runtime
6 ms | Beats 99.35%

Memory
49.62 MB | Beats 74.84%

Code | Java

```
class Solution {
    public List<List<String>> groupAnagrams(String[] strs) {
                HashMap<String, List<String>> map = new HashMap<>();

        for (String word : strs) {

            char[] ch = word.toCharArray();
            Arrays.sort(ch);
```

```
class Solution {
    public List<List<String>> groupAnagrams(String[] strs) {
                HashMap<String, List<String>> map = new HashMap<>();

```

Saved
Ln 9, Col 43

Accepted Runtime: 0 ms

☑ Case 1 ☑ Case 2 ☑ Case 3

Input

strs =
["eat","tea","tan","ate","nat","bat"]

Output

[["eat","tea","ate"],["bat"],["tan","nat"]]

Expected

[["bat"],["nat","tan"],["ate","eat","tea"]]

6.

You are given a **large integer** represented as an integer array digits, where each digits[i] is the i^{th} digit of the integer. The digits are ordered from most significant to least significant in left-to-right order. The large integer does not contain any leading 0's.

Increment the large integer by one and return *the resulting array of digits*.

Example 1:

Input: digits = [1,2,3]

Output: [1,2,4]

Explanation: The array represents the integer 123.

Incrementing by one gives 123 + 1 = 124.

Thus, the result should be [1,2,4].

Example 2:

Input: digits = [4,3,2,1]

Output: [4,3,2,2]

Explanation: The array represents the integer 4321.

Incrementing by one gives 4321 + 1 = 4322.

Thus, the result should be [4,3,2,2].

Example 3:

Input: digits = [9]

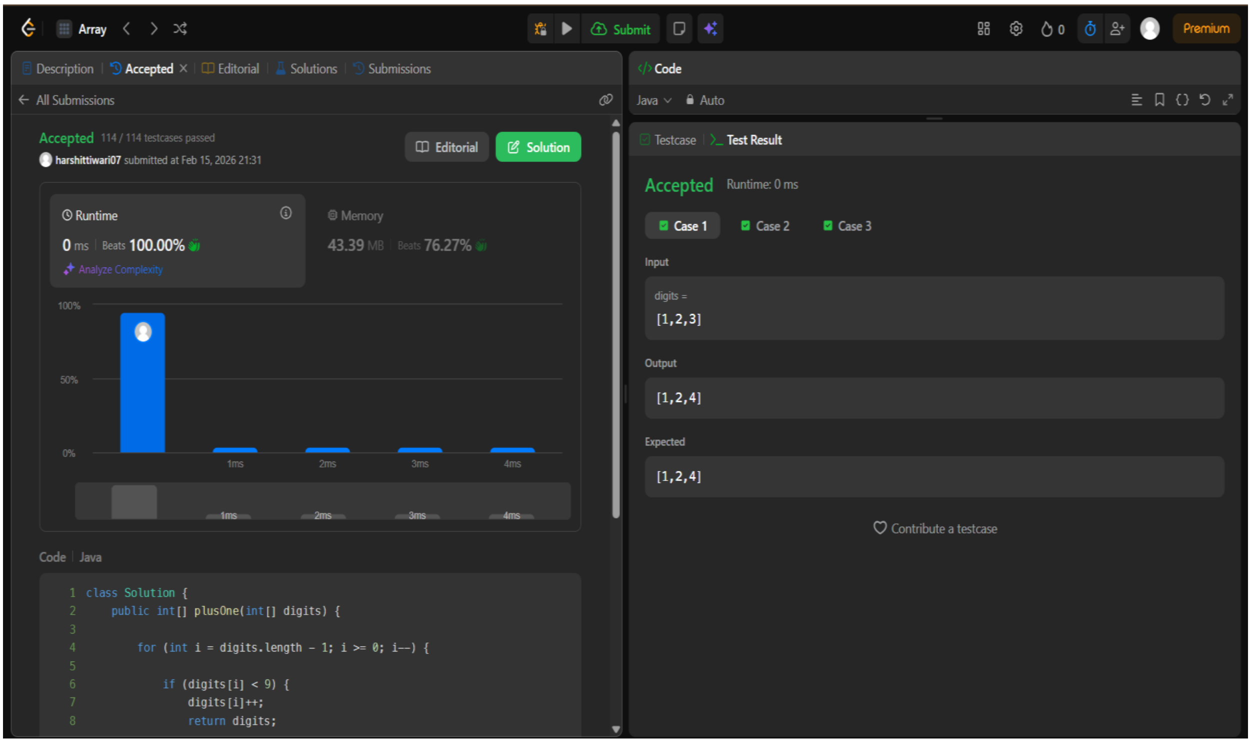
Output: [1,0]

Explanation: The array represents the integer 9.

Incrementing by one gives 9 + 1 = 10.

Thus, the result should be [1,0].

Solution-



Accepted 114 / 114 testcases passed

harshittiwari07 submitted at Feb 15, 2026 21:31

Runtime: 0 ms | Beats 100.00%

Memory: 43.39 MB | Beats 76.27%

Code | Java

```java
class Solution {
    public int[] plusOne(int[] digits) {

        for (int i = digits.length - 1; i >= 0; i--) {

            if (digits[i] < 9) {
                digits[i]++;
                return digits;
```

Accepted Runtime: 0 ms

☑ Case 1 ☑ Case 2 ☑ Case 3

Input

digits =

[1,2,3]

Output

[1,2,4]

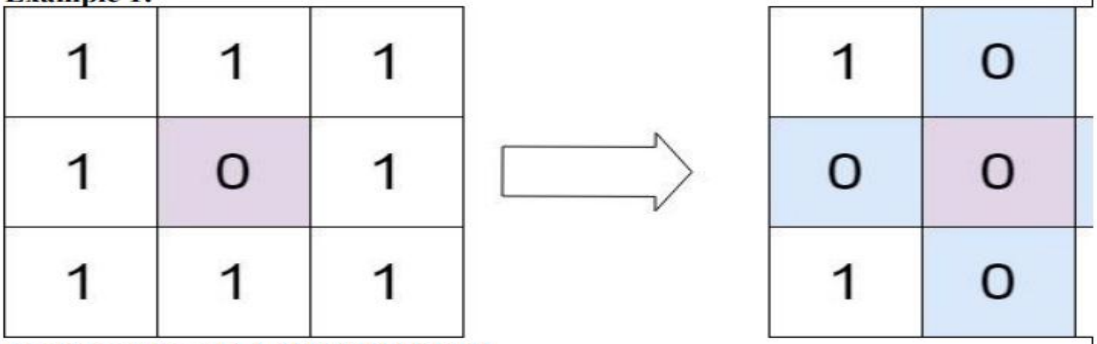
Expected

[1,2,4]

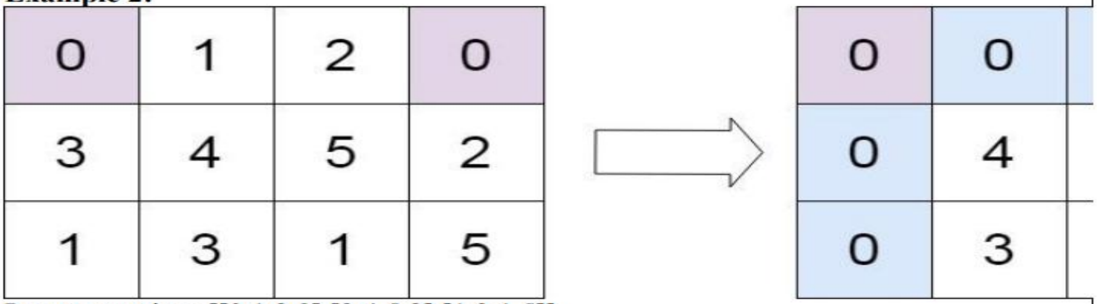
7.

Given an m x n integer matrix matrix, if an element is 0, set its entire row and column to 0's.
You must do it in place.

Example 1:



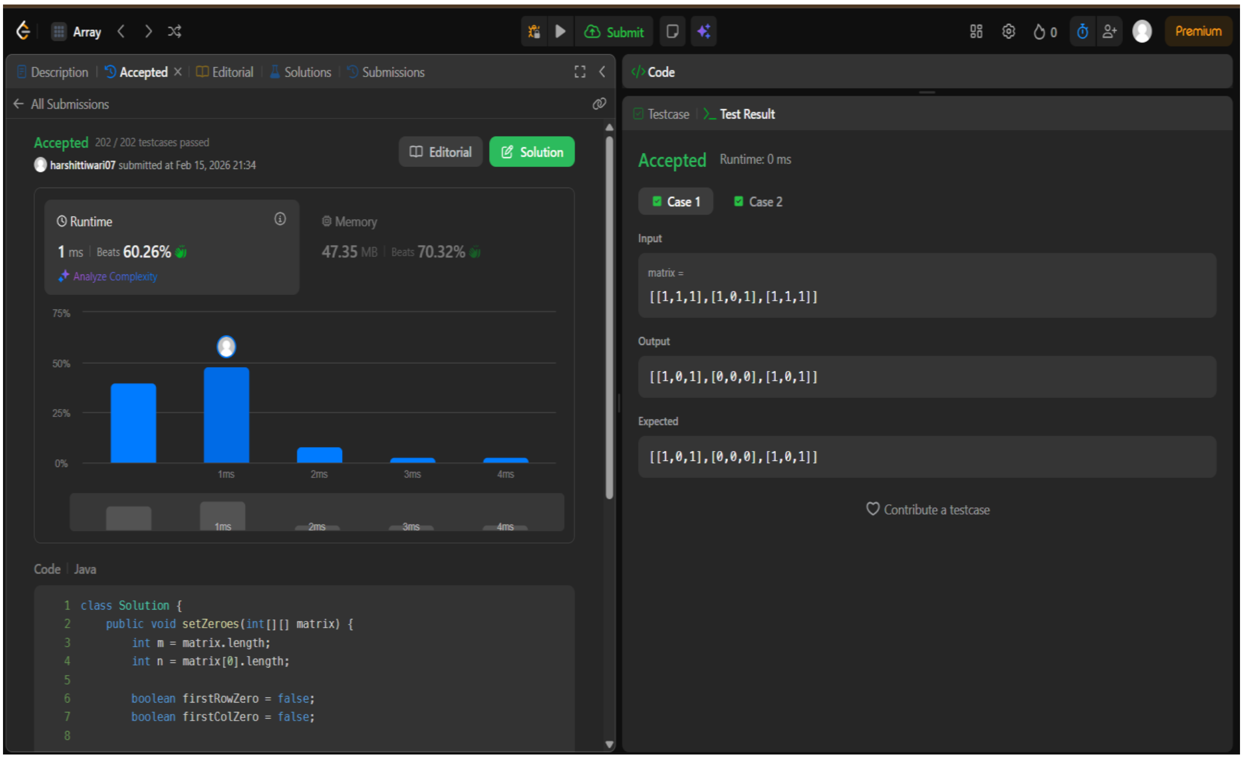
Input: matrix = [[1,1,1],[1,0,1],[1,1,1]]
Output: [[1,0,1],[0,0,0],[1,0,1]]
Example 2:



Input: matrix = [[0,1,2,0],[3,4,5,2],[1,3,1,5]]
Output: [[0,0,0,0],[0,4,5,0],[0,3,1,0]]

Take Hom e

Solution-



Accepted 202 / 202 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:34

Runtime
1 ms | Beats 60.26%

Memory
47.35 MB | Beats 70.32%

Code | Java

```
class Solution {
    public void setZeroes(int[][] matrix) {
        int m = matrix.length;
        int n = matrix[0].length;

        boolean firstRowZero = false;
        boolean firstColZero = false;

```

Accepted Runtime: 0 ms

Case 1 Case 2

Input

matrix =
[[1,1,1],[1,0,1],[1,1,1]]

Output

[[1,0,1],[0,0,0],[1,0,1]]

Expected

[[1,0,1],[0,0,0],[1,0,1]]

8.

You are given an m x n integer matrix matrix with the following two properties:

- Each row is sorted in non-decreasing order.
- The first integer of each row is greater than the last integer of the previous row.

Given an integer target, return true *if* target *is in* matrix *or* false *otherwise*.
You must write a solution in O(log(m * n)) time complexity.

Example 1:

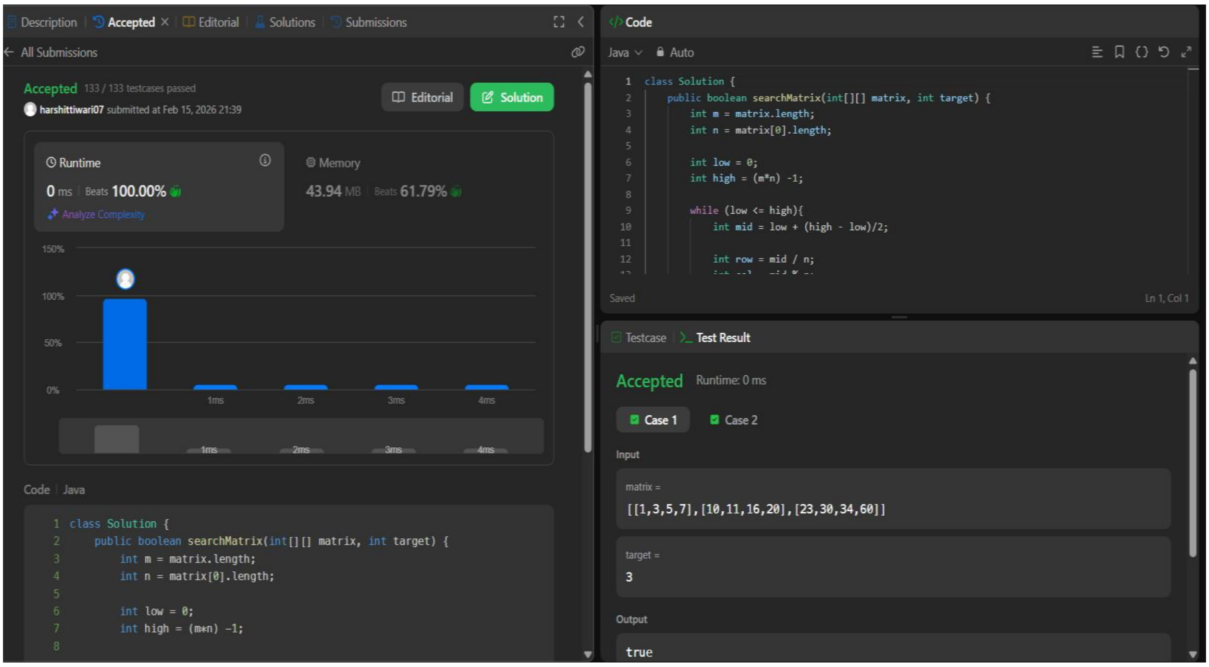
1	3	5	7
10	11	16	20
23	30	34	60

Input: matrix = [[1,3,5,7],[10,11,16,20],[23,30,34,60]], target = 3
Output: true

Example 2:

1	3	5	7
10	11	16	20
23	30	34	60

Input: matrix = [[1,3,5,7],[10,11,16,20],[23,30,34,60]], target = 13
Output: false



Accepted 133 / 133 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:39

Runtime
0 ms | Beats 100.00%
Analyze Complexity

Memory
43.94 MB | Beats 61.79%

Code | Java

```
class Solution {
    public boolean searchMatrix(int[][] matrix, int target) {
        int m = matrix.length;
        int n = matrix[0].length;

        int low = 0;
        int high = (m*n) -1;

```

Code

```
class Solution {
    public boolean searchMatrix(int[][] matrix, int target) {
        int m = matrix.length;
        int n = matrix[0].length;

        int low = 0;
        int high = (m*n) -1;

        while (low <= high){
            int mid = low + (high - low)/2;

            int row = mid / n;
```

Saved
Ln 1, Col 1

Accepted Runtime: 0 ms

Input

matrix =
[[1,3,5,7],[10,11,16,20],[23,30,34,60]]

target =
3

Output

true

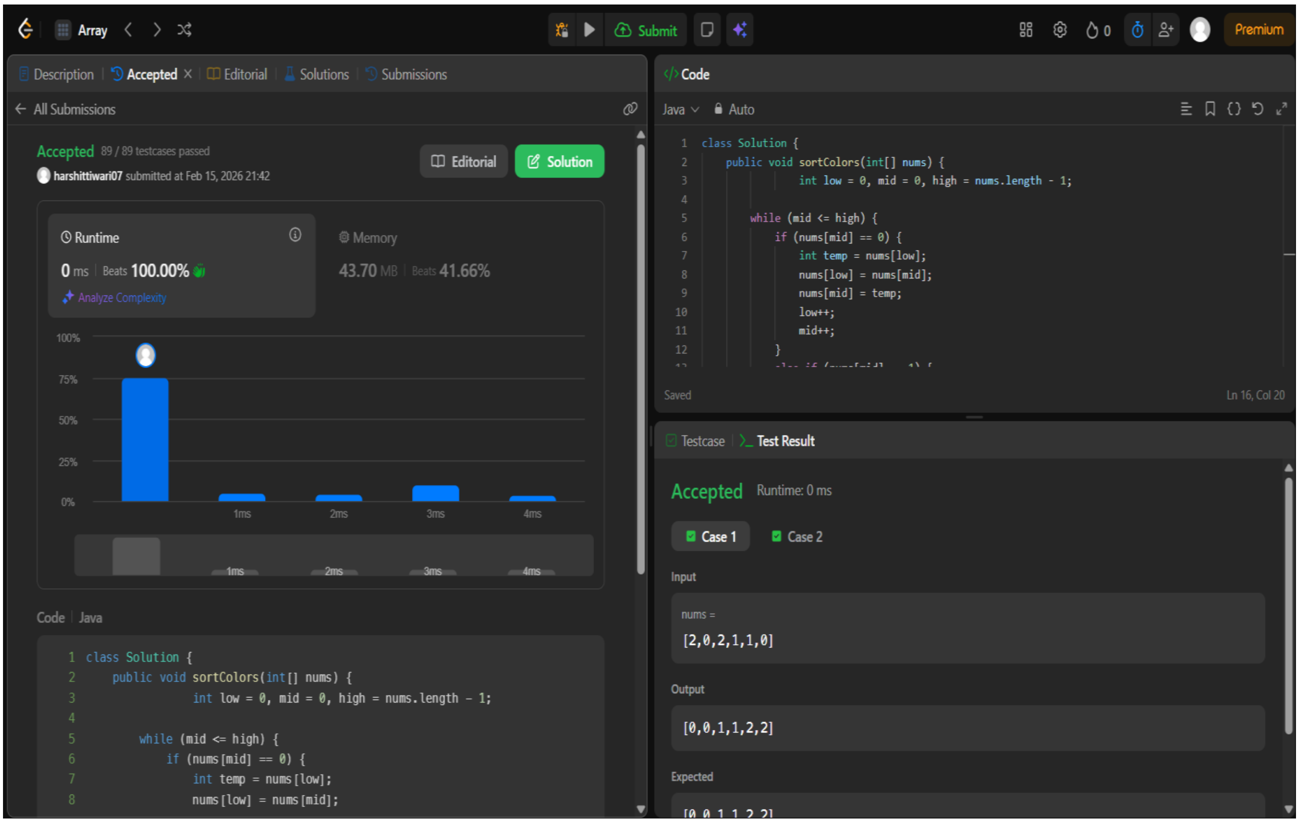
9. Given an array nums with n objects colored red, white, or blue, sort them [in-place](https://en.wikipedia.org/wiki/In-place_algorithm) so that objects of the same color are adjacent, with the colors in the order red, white, and blue.

We will use the integers 0, 1, and 2 to represent the color red, white, and blue, respectively.

You must solve this problem without using the library's sort function.

Example 1:
Input: nums = [2,0,2,1,1,0]
Output: [0,0,1,1,2,2]

Example 2:
Input: nums = [2,0,1]
Output: [0,1,2]



Accepted 89 / 89 testcases passed

harshittiwari07 submitted at Feb 15, 2026 21:42

Runtime
0 ms | Beats 100.00%

Memory
43.70 MB | Beats 41.66%

Code | Java

```
class Solution {
    public void sortColors(int[] nums) {
                int low = 0, mid = 0, high = nums.length - 1;

        while (mid <= high) {
            if (nums[mid] == 0) {
                int temp = nums[low];
                nums[low] = nums[mid];
```

```
class Solution {
    public void sortColors(int[] nums) {
                int low = 0, mid = 0, high = nums.length - 1;

        while (mid <= high) {
            if (nums[mid] == 0) {
                int temp = nums[low];
                nums[low] = nums[mid];
                nums[mid] = temp;
                low++;
                mid++;
            }
```

Accepted Runtime: 0 ms

Input

nums =
```
[2,0,2,1,1,0]
```

Output
```
[0,0,1,1,2,2]
```

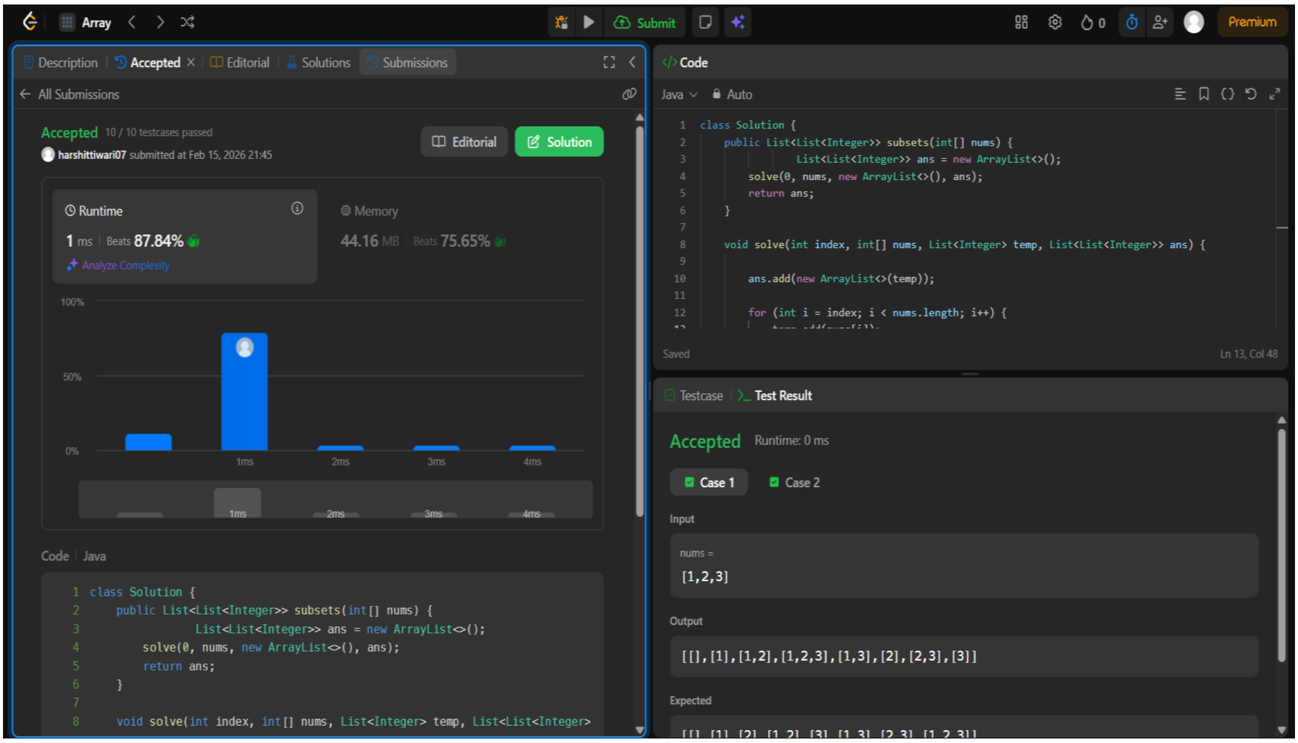
Expected
```
[0,0,1,1,2,2]
```

10.

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]]

Solution-



Accepted 10 / 10 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:45

Runtime 1 ms | Beats 87.84%

Memory 44.16 MB | Beats 75.65%

Code | Java

```java
class Solution {
    public List<List<Integer>> subsets(int[] nums) {
                List<List<Integer>> ans = new ArrayList<>();
        solve(0, nums, new ArrayList<>(), ans);
        return ans;
    }

    void solve(int index, int[] nums, List<Integer> temp, List<List<Integer>
```

```java
class Solution {
    public List<List<Integer>> subsets(int[] nums) {
                List<List<Integer>> ans = new ArrayList<>();
        solve(0, nums, new ArrayList<>(), ans);
        return ans;
    }

    void solve(int index, int[] nums, List<Integer> temp, List<List<Integer>> ans) {

        ans.add(new ArrayList<>(temp));

        for (int i = index; i < nums.length; i++) {
            temp.add(nums[i]);
```

Saved   Ln 13, Col 48

Accepted Runtime: 0 ms

Input

```
nums =
[1,2,3]
```

Output

```
[[],[1],[1,2],[1,2,3],[1,3],[2],[2,3],[3]]
```

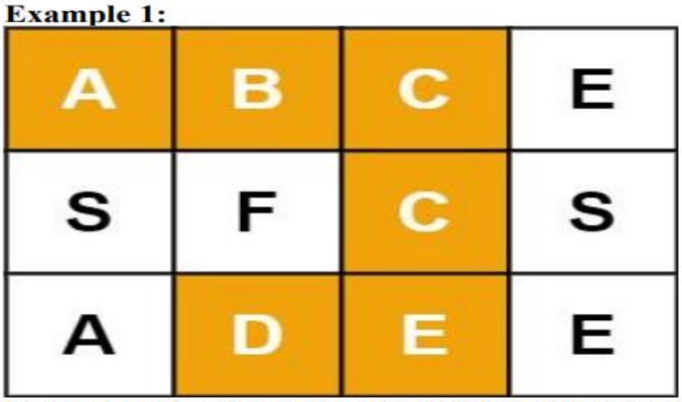
Expected

```
[[],[1],[2],[1,2],[3],[1,3],[2,3],[1,2,3]]
```

11.

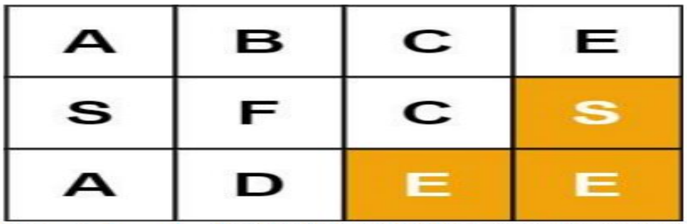
Given an m x n grid of characters board and a string word, return true *if* word *exists in the grid*.
The word can be constructed from letters of sequentially adjacent cells, where adjacent cells are horizontally or vertically neighboring. The same letter cell may not be used more than once.

Example 1:



A	B	C	E
S	F	C	S
A	D	E	E

Input: board = [["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]], word = "ABCCED"
Output: true
Example 2:

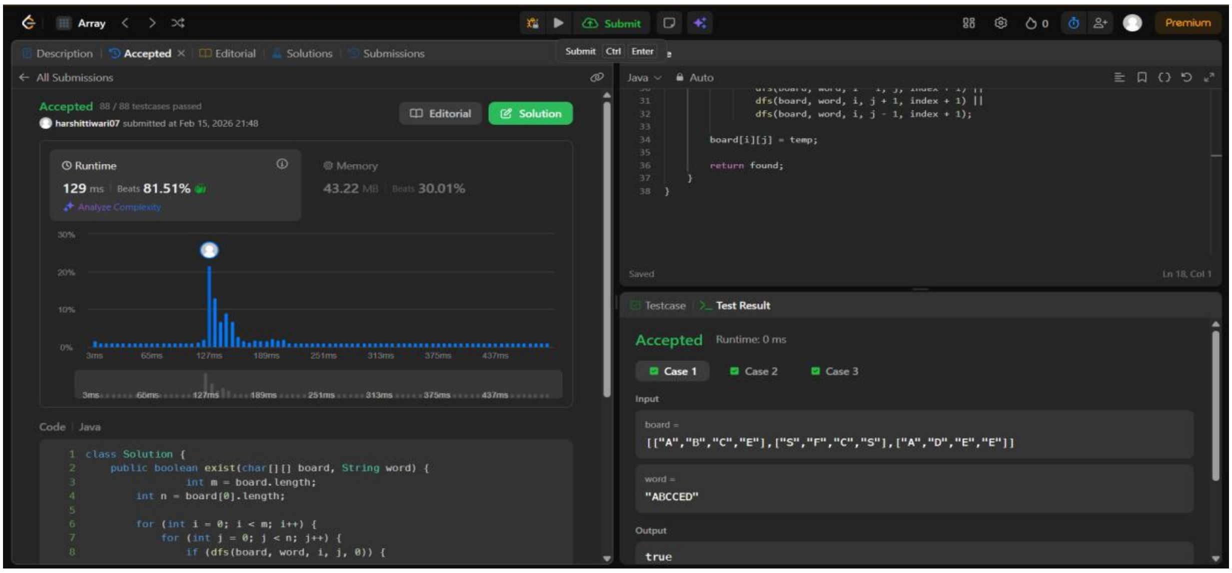


A	B	C	E
S	F	C	S
A	D	E	E

Input: board = [["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]], word = "SEE"
Output: true
Example 3:

A	B	C	E
S	F	C	S
A	D	E	E

Input: board = [["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]], word = "ABCB"
Output: false



Accepted 88 / 88 testcases passed
harshittiwari07 submitted at Feb 15, 2026 21:48

Runtime
129 ms | Beats 81.51%

Memory
43.22 MB | Beats 30.01%

```
class Solution {
    public boolean exist(char[][] board, String word) {
                int m = board.length;
        int n = board[0].length;

        for (int i = 0; i < m; i++) {
            for (int j = 0; j < n; j++) {
                if (dfs(board, word, i, j, 0)) {
```

```
                dfs(board, word, i - 1, j, index + 1) ||
                dfs(board, word, i, j + 1, index + 1) ||
                dfs(board, word, i, j - 1, index + 1);

        board[i][j] = temp;

        return found;
    }
}
```

Accepted Runtime: 0 ms

☑ Case 1 ☑ Case 2 ☑ Case 3

Input

board =
[["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]]

word =
"ABCCED"

Output

true

12.

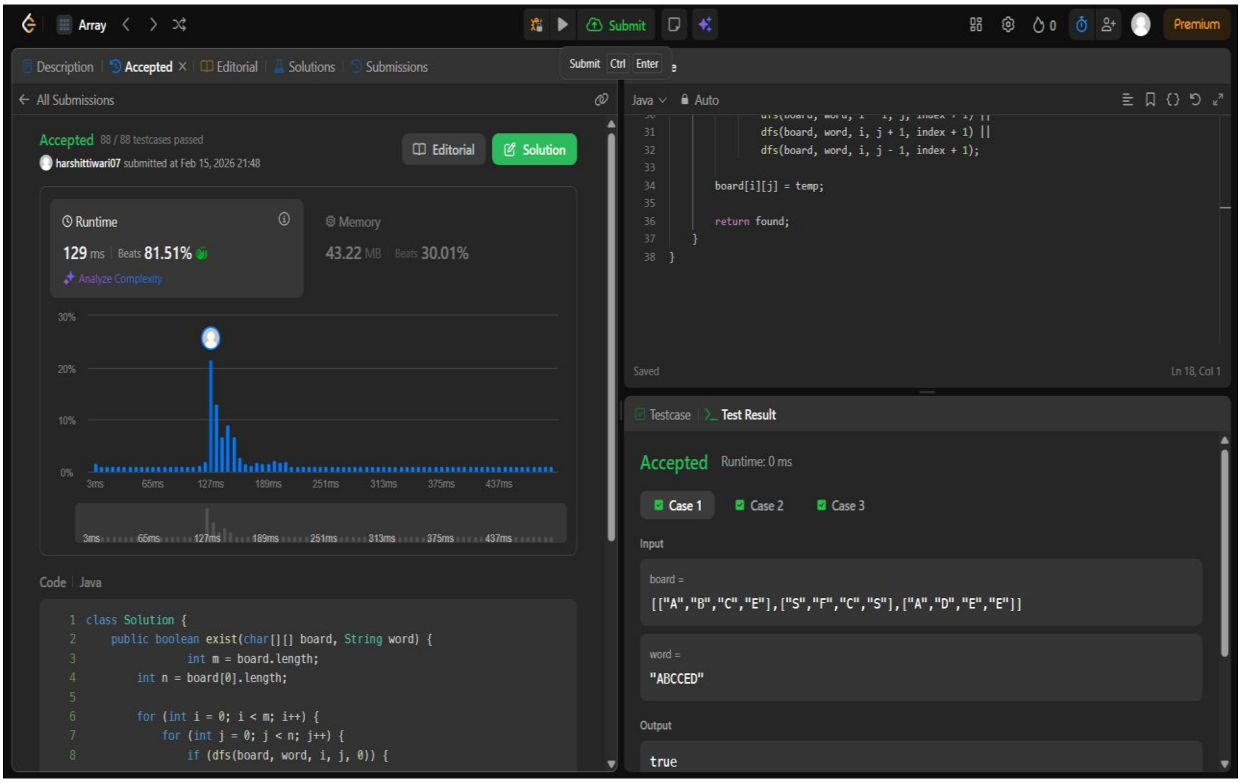
Given an array nums of n integers, return *an array of all the **unique** quadruplets* [nums[a], nums[b], nums[c], nums[d]] such that:

- 0 <= a, b, c, d < n
- a, b, c, and d are **distinct**.
- nums[a] + nums[b] + nums[c] + nums[d] == target

You may return the answer in **any order**.

Example 1:
Input: nums = [1,0,-1,0,-2,2], target = 0
Output: [[-2,-1,1,2],[-2,0,0,2],[-1,0,0,1]]
Example 2:
Input: nums = [2,2,2,2,2], target = 8
Output: [[2,2,2,2]]

Solution-



Accepted 88 / 88 testcases passed

harshittiwari07 submitted at Feb 15, 2026 21:48

Runtime: 129 ms | Beats 81.51%

Memory: 43.22 MB | Beats 30.01%

Code | Java

```
class Solution {
    public boolean exist(char[][] board, String word) {
                int m = board.length;
        int n = board[0].length;

        for (int i = 0; i < m; i++) {
            for (int j = 0; j < n; j++) {
                if (dfs(board, word, i, j, 0)) {
```

```
                dfs(board, word, i - 1, j, index + 1) ||
                dfs(board, word, i, j + 1, index + 1) ||
                dfs(board, word, i, j - 1, index + 1);

        board[i][j] = temp;

        return found;
    }
}
```

Accepted Runtime: 0 ms

Input

board =
[["A","B","C","E"],["S","F","C","S"],["A","D","E","E"]]

word =
"ABCCED"

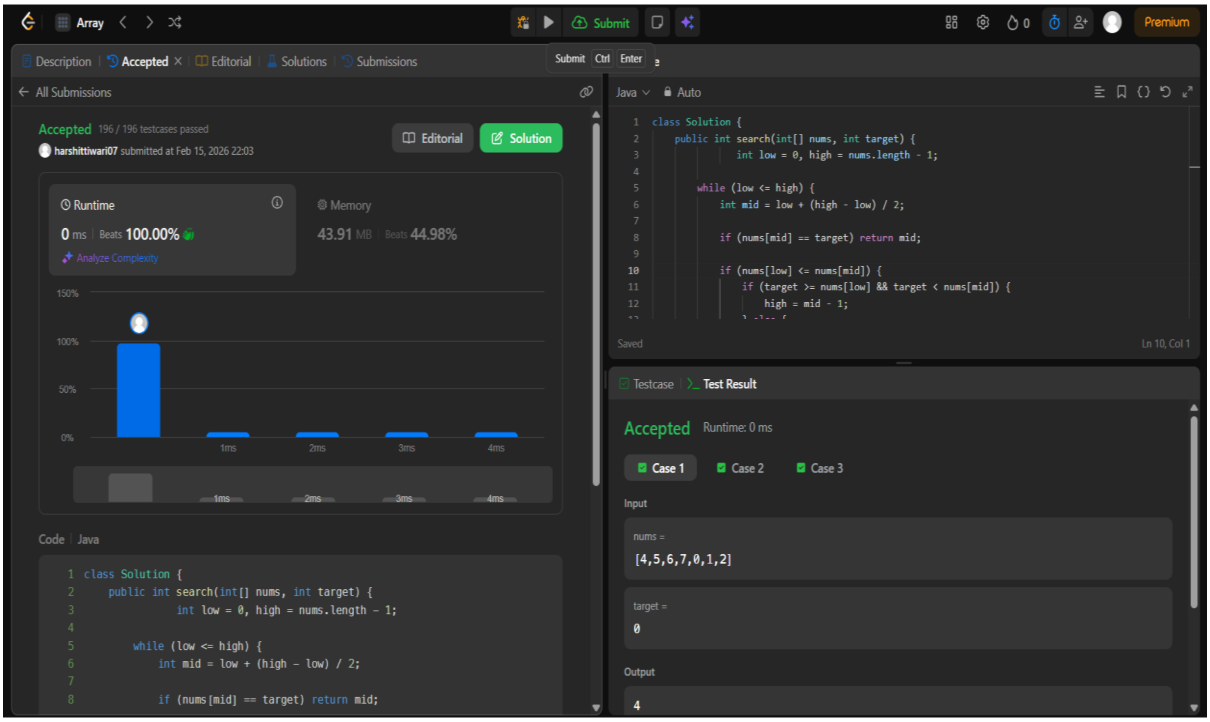
Output

true

There is an integer array nums sorted in ascending order (with **distinct** values).
Prior to being passed to your function, nums is **possibly left rotated** at an unknown index k (1 <= k < nums.length) such that the resulting array is [nums[k], nums[k+1], ..., nums[n-1], nums[0], nums[1], ..., nums[k-1]] (**0-indexed**). For example, [0,1,2,4,5,6,7] might be left rotated by 3 indices and become [4,5,6,7,0,1,2].
Given the array nums **after** the possible rotation and an integer target, return *the index of* target *if it is in* nums, *or* -1 *if it is not in* nums.
You must write an algorithm with O(log n) runtime complexity.

Example 1:
Input: nums = [4,5,6,7,0,1,2], target = 0
Output: 4
Example 2:
Input: nums = [4,5,6,7,0,1,2], target = 3
Output: -1
Example 3:
Input: nums = [1], target = 0
Output: -1

13.



Accepted 196 / 196 testcases passed
harshittiwari07 submitted at Feb 15, 2026 22:03

Runtime: 0 ms | Beats 100.00%

Memory: 43.91 MB | Beats 44.98%

```java
class Solution {
    public int search(int[] nums, int target) {
            int low = 0, high = nums.length - 1;

        while (low <= high) {
            int mid = low + (high - low) / 2;

            if (nums[mid] == target) return mid;

            if (nums[low] <= nums[mid]) {
                if (target >= nums[low] && target < nums[mid]) {
                    high = mid - 1;
                } else {
```

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Ln 10, Col 1

Accepted Runtime: 0 ms

Input

nums =
[4,5,6,7,0,1,2]

target =
0

Output

4

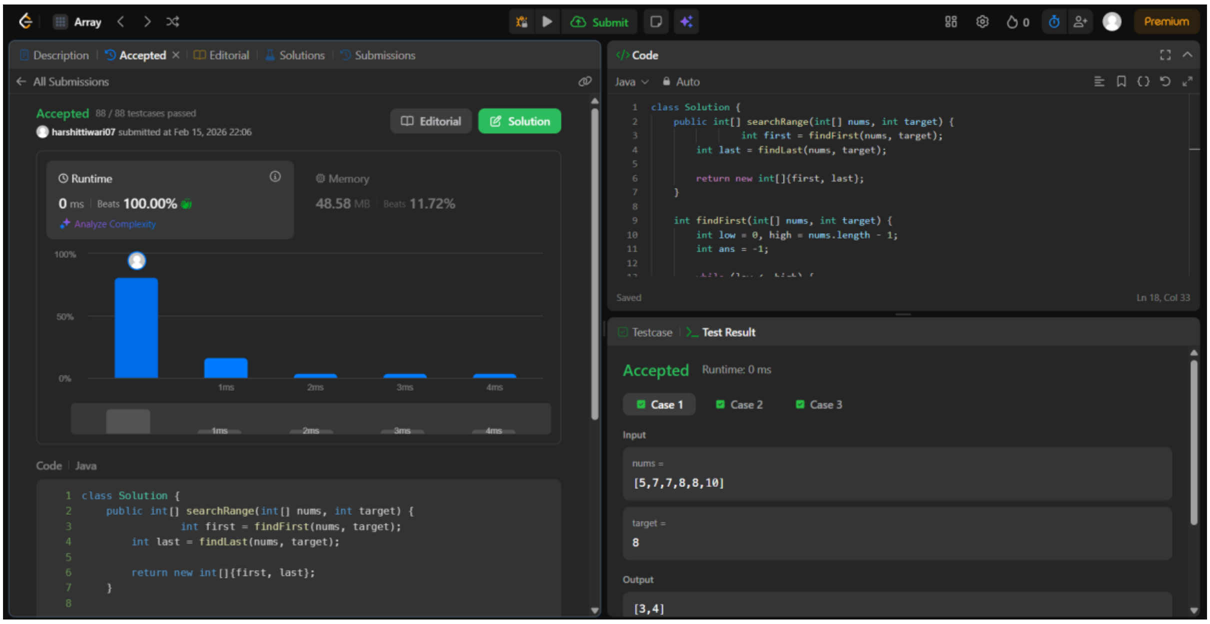
Code | Java

```java
class Solution {
    public int search(int[] nums, int target) {
            int low = 0, high = nums.length - 1;

        while (low <= high) {
            int mid = low + (high - low) / 2;

            if (nums[mid] == target) return mid;
```

14.

Given an array of integers nums sorted in non-decreasing order, find the starting and ending position of a given target value.
If target is not found in the array, return [-1, -1].
You must write an algorithm with O(log n) runtime complexity.

Example 1:
Input: nums = [5,7,7,8,8,10], target = 8
Output: [3,4]
Example 2:
Input: nums = [5,7,7,8,8,10], target = 6
Output: [-1,-1]
Example 3:
Input: nums = [], target = 0
Output: [-1,-1]



Accepted 88 / 88 testcases passed
harshittiwari07 submitted at Feb 15, 2026 22:06

Runtime: 0 ms | Beats 100.00%

Memory: 48.58 MB | Beats 11.72%

Code | Java

```java
class Solution {
    public int[] searchRange(int[] nums, int target) {
                int first = findFirst(nums, target);
        int last = findLast(nums, target);

        return new int[]{first, last};
    }

    int findFirst(int[] nums, int target) {
        int low = 0, high = nums.length - 1;
        int ans = -1;

```

Accepted Runtime: 0 ms

☑ Case 1 ☑ Case 2 ☑ Case 3

Input

nums =
```
[5,7,7,8,8,10]
```

target =
```
8
```

Output
```
[3,4]
```