

PromptScratchpadOur Solution(s)Video Explanation

Run Code

Solution 1Solution 2

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 #include <vector>
4 using namespace std;
5
6 int shiftedBinarySearch(vector<int> array, int target);
7 int shiftedBinarySearchHelper(vector<int> array, int target, int left,
8                               int right);
9
10 // O(log(n)) time | O(1) space
11 int shiftedBinarySearch(vector<int> array, int target) {
12     return shiftedBinarySearchHelper(array, target, 0, array.size() - 1);
13 }
14
15 int shiftedBinarySearchHelper(vector<int> array, int target, int left,
16                               int right) {
17     if (left > right) {
18         return -1;
19     }
20     int middle = (left + right) / 2;
21     int potentialMatch = array[middle];
22     int leftNum = array[left];
23     int rightNum = array[right];
24     if (target == potentialMatch) {
25         return middle;
26     } else if (leftNum <= potentialMatch) {
27         if (target < potentialMatch && target >= leftNum) {
28             return shiftedBinarySearchHelper(array, target, left, middle - 1);
29         } else {
30             return shiftedBinarySearchHelper(array, target, middle + 1, right);
31         }
32     } else {
33         if (target > potentialMatch && target <= rightNum) {
34             return shiftedBinarySearchHelper(array, target, middle + 1, right);
35         } else {
36             return shiftedBinarySearchHelper(array, target, left, middle - 1);
37         }
38     }
39 }
40
```