# Advance coding

Assignment-2

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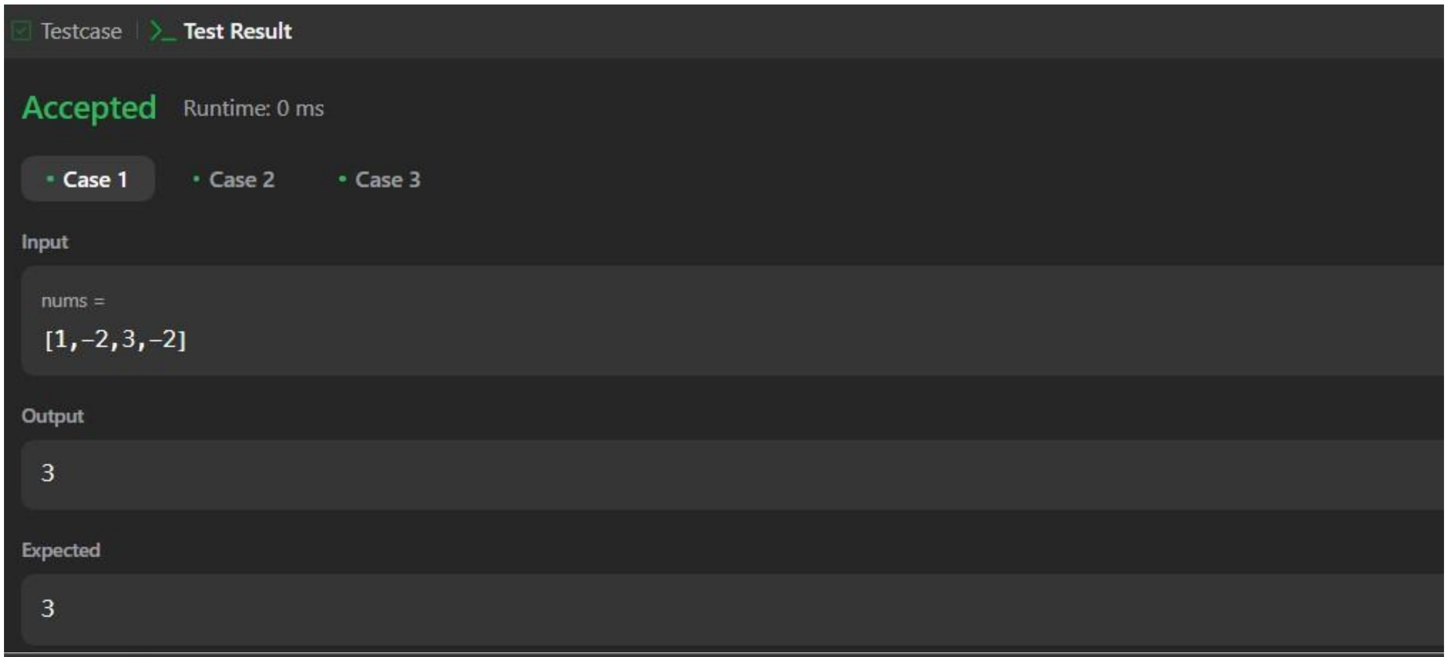
## 1. Maximum Sum Circular Subarray

```
class Solution {
   public int maxSubarraySumCircular(int[] nums) {
      int n = nums.length;
      int maxSum = nums[0], minSum = nums[0], curMax=0, curMin=0;
int totalSum = 0;        for(int num : nums){            curMax =
Math.max(curMax + num, num);            maxSum = Math.max(maxSum,
curMax);            curMin = Math.min(curMin + num, num);
minSum = Math.min(minSum, curMin);
         totalSum+=num;
      }
      return maxSum>0? Math.max(maxSum, totalSum-minSum) : maxSum;
   }
}
```

OUTPUT:



Accepted Runtime: 0 ms

Input

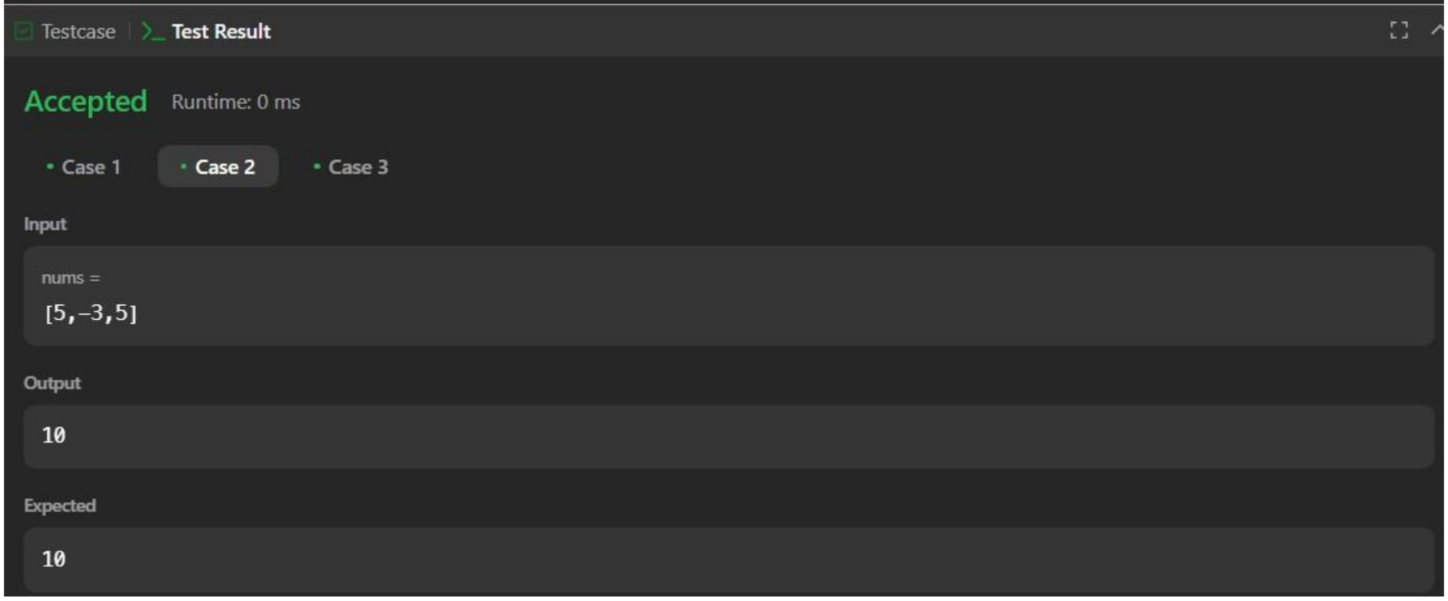
```
nums =
[1,-2,3,-2]
```

Output

```
3
```

Expected

```
3
```



Accepted Runtime: 0 ms

Input

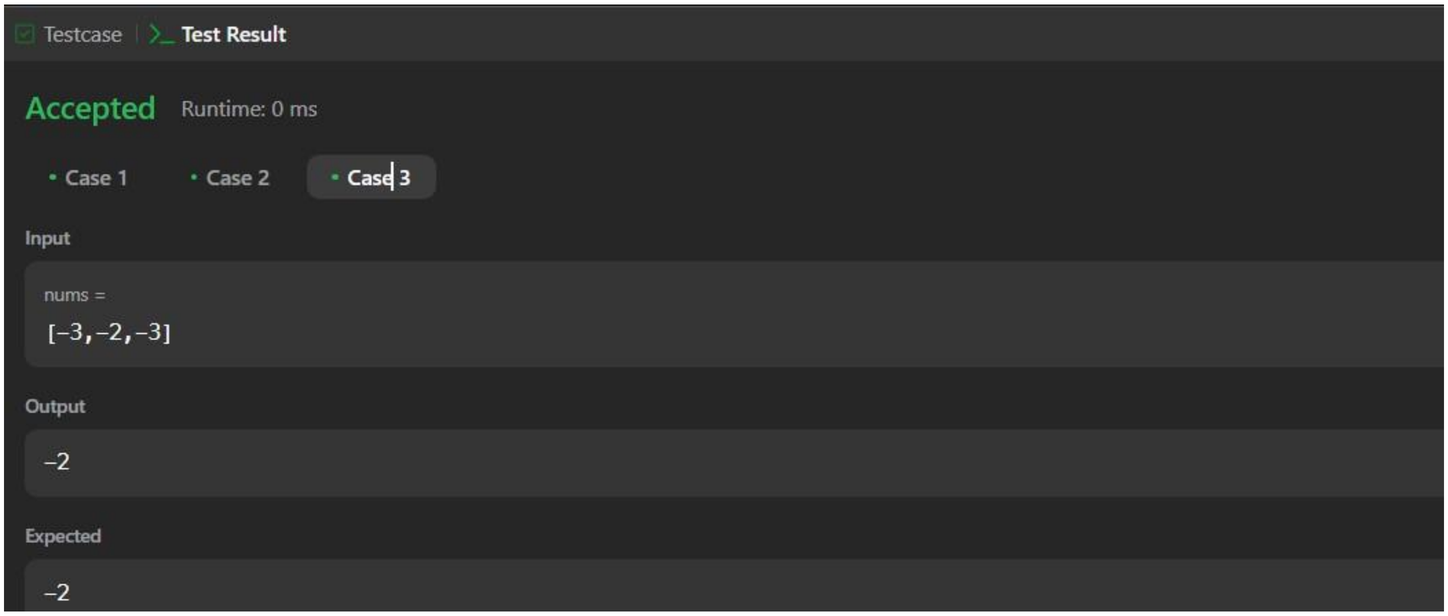
```
nums =
[5,-3,5]
```

Output

```
10
```

Expected

```
10
```

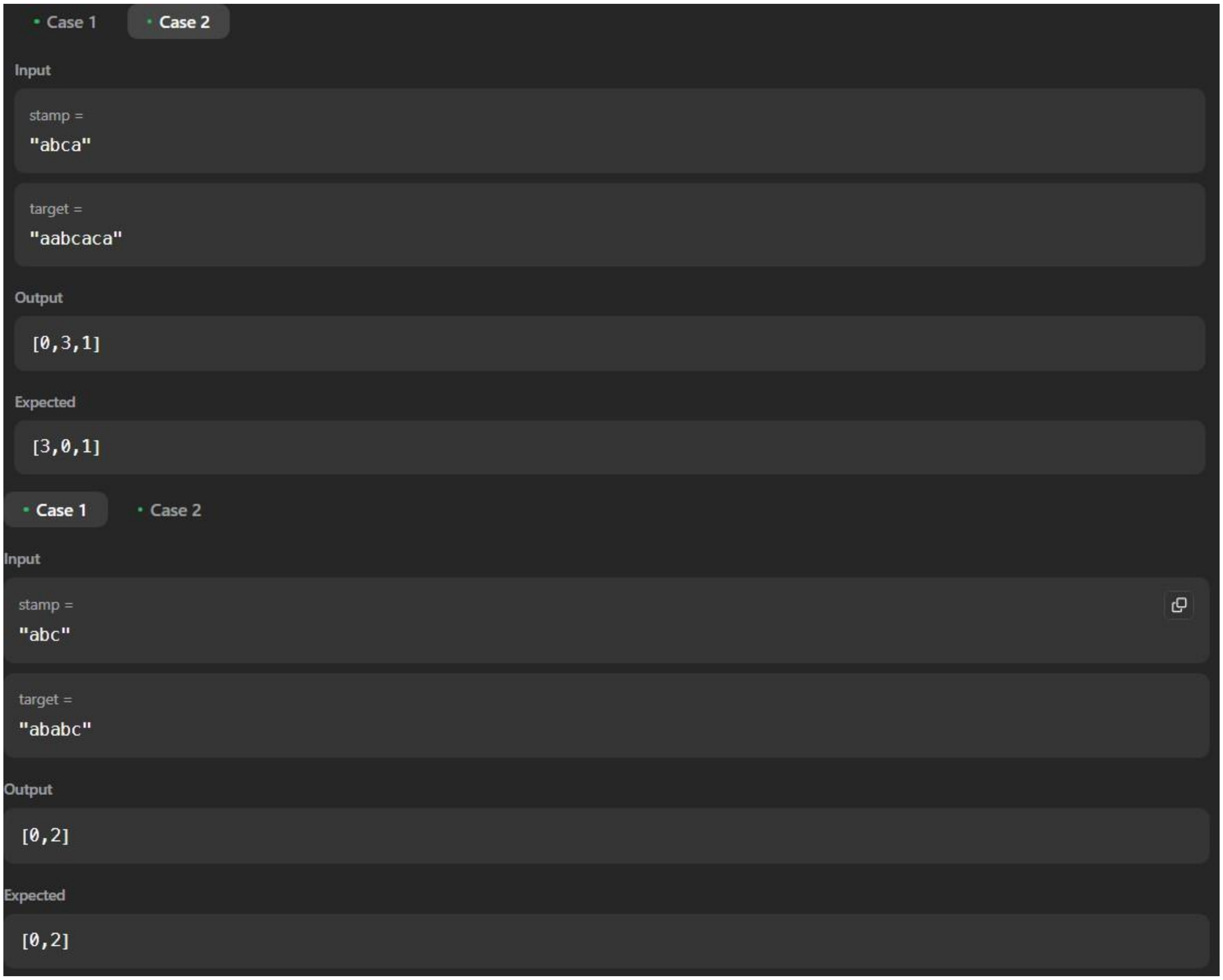


```
Accepted   Runtime: 0 ms

Case 1   Case 2   Case 3

Input
nums =
[-3,-2,-3]

Output
-2

Expected
-2
```

## 2. Stamping The Sequence

```
class Solution {
   public int[] movesToStamp(String S, String T) {
      if (S == T) return new int[]{0};       char[] SC =
S.toCharArray(), TC = T.toCharArray();       int slen =
SC.length, tlen = TC.length - slen + 1, i, j;
      List<Integer> lans = new ArrayList<>();
      Boolean tdiff = true, sdiff;
      while (tdiff)          for (i = 0, tdiff =
false; i < tlen; i++) {            for (j = 0, sdiff
= false; j < slen; j++)              if (TC[i+j]
== '*') continue;              else if (TC[i+j]
!= SC[j]) break;
               else sdiff = true;
if (j == slen && sdiff) {
               for (j = i, tdiff = true; j < slen + i; j++)
TC[j] = '*';
               lans.add(0, i);
            }
         }
      for (i = 0; i < TC.length; i++) if (TC[i] != '*') return new int[]{};
int[] ans = new int[lans.size()];
      for (i = 0; i < lans.size(); i++) ans[i] = lans.get(i);
return ans;
   }
}
```

OUTPUT



```
Input
stamp =
"abca"
target =
"aabcaca"
Output
[0,3,1]
Expected
[3,0,1]
```

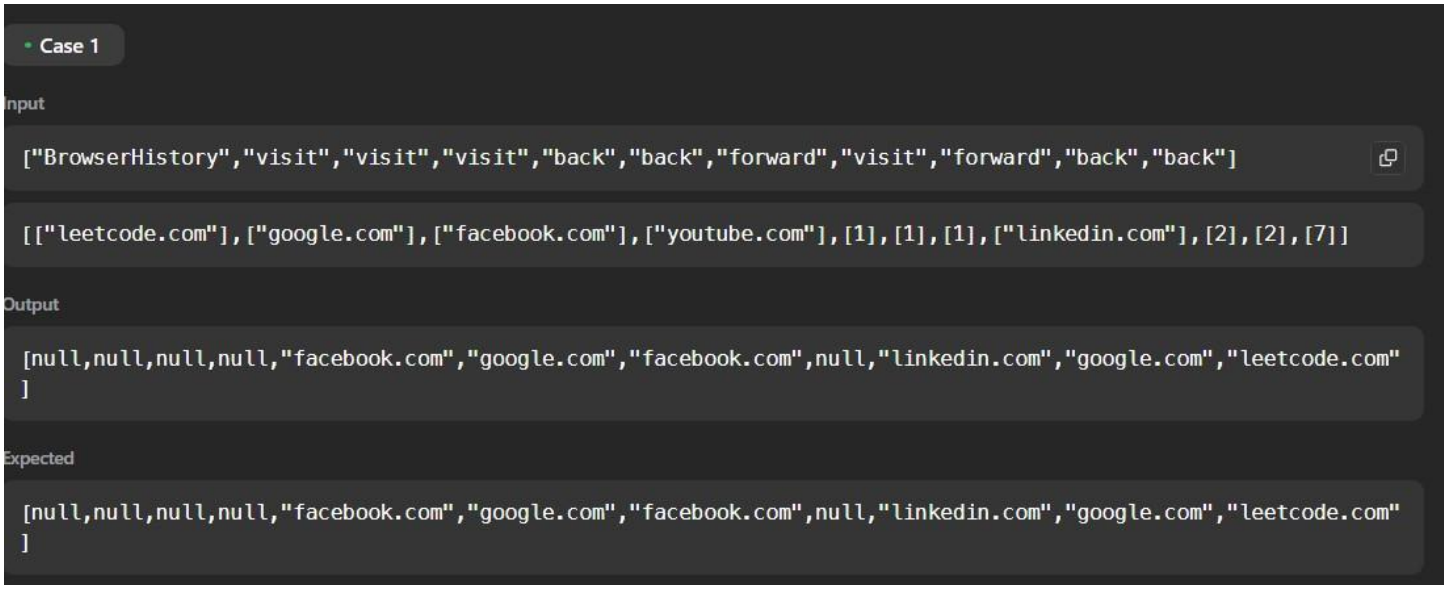
```
Input
stamp =
"abc"
target =
"ababc"
Output
[0,2]
Expected
[0,2]
```

## 3. Design Browser History

```
class BrowserHistory {

   public class Node{
      String url;        Node
next, prev;        public
Node(String url) {
         this.url = url;
next = null;
```

```
            prev = null;
        }
    }

    Node curr;
    public BrowserHistory(String homepage) {
        curr = new Node(homepage);
    }

    public void visit(String url) {
Node node = new Node(url);
        curr.next = node;
node.prev = curr;
        curr = node;
    }

    public String back(int steps) {
        while (curr.prev != null && steps-- > 0) {
curr = curr.prev;
        }
        return curr.url;
    }

    public String forward(int steps) {
while (curr.next != null && steps-- > 0) {
curr = curr.next;
        }
        return curr.url;
    }
}
```

OUTPUT


Case 1

Input

```
["BrowserHistory","visit","visit","visit","back","back","forward","visit","forward","back","back"]
```

```
[["leetcode.com"],["google.com"],["facebook.com"],["youtube.com"],[1],[1],[1],["linkedin.com"],[2],[2],[7]]
```

Output

```
[null,null,null,null,"facebook.com","google.com","facebook.com",null,"linkedin.com","google.com","leetcode.com"
]
```

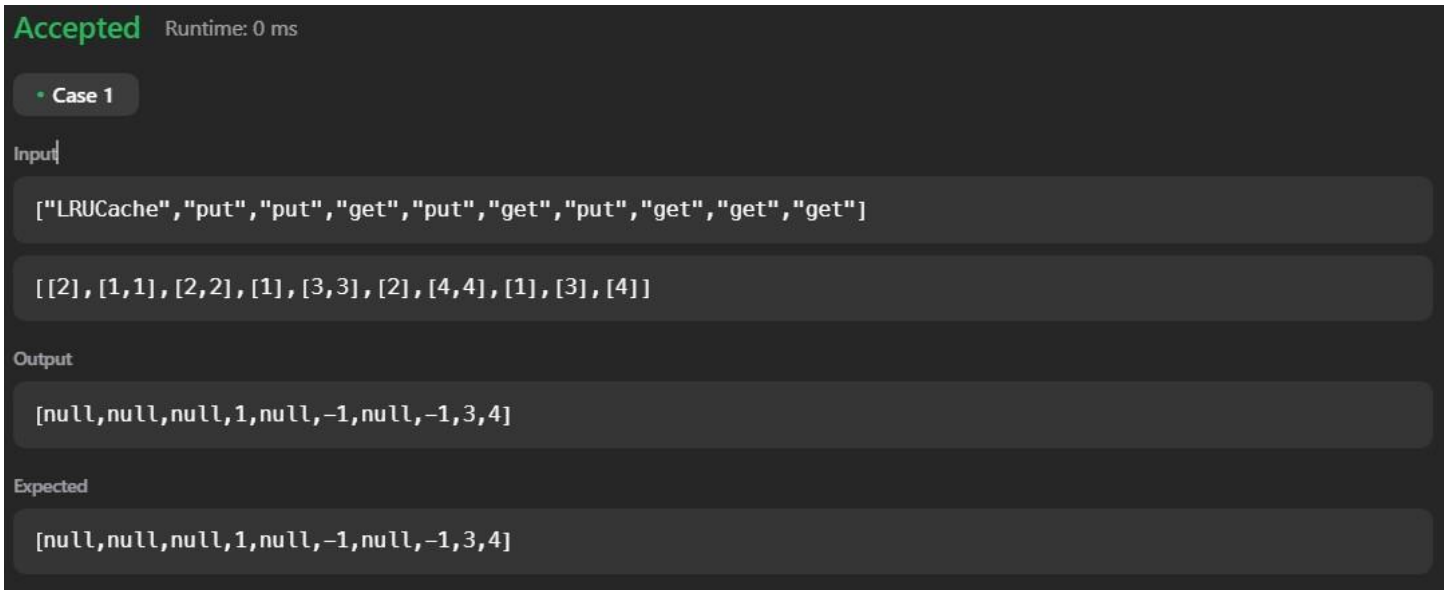
Expected

```
[null,null,null,null,"facebook.com","google.com","facebook.com",null,"linkedin.com","google.com","leetcode.com"
]
```

## 4. LRU Cache

```
import java.util.HashMap;

class LRUCache {
class Node {        int
key, value;        Node
prev, next;

      Node(int key, int value) {
this.key = key;            this.value
= value;
      }
   }

   private final int capacity;     private final
HashMap<Integer, Node> map;     private final
Node head, tail;

   public LRUCache(int capacity) {
this.capacity = capacity;        map
= new HashMap<>();       head =
new Node(-1, -1);        tail = new
Node(-1, -1);        head.next = tail;
tail.prev = head;
   }

   private void addNode(Node newNode) {
newNode.next = head.next;
newNode.prev = head;
head.next.prev = newNode;        head.next
= newNode;
   }

   private void removeNode(Node node) {
node.prev.next = node.next;        node.next.prev
= node.prev;
   }

   public int get(int key) {        if
(map.containsKey(key)) {
Node node = map.get(key);
removeNode(node);
addNode(node);            return
node.value;
       }
       return -1;
   }

   public void put(int key, int value) {
if (map.containsKey(key)) {
Node node = map.get(key);
removeNode(node);
           map.remove(key);
       }
       if (map.size() == capacity) {
Node lruNode = tail.prev;
removeNode(lruNode);
map.remove(lruNode.key);
       }
       Node newNode = new Node(key, value);
addNode(newNode);
       map.put(key, newNode);
   }
}
```

OUTPUT


Accepted Runtime: 0 ms

• Case 1

Input

```
["LRUCache","put","put","get","put","get","put","get","get","get"]
```

```
[[2],[1,1],[2,2],[1],[3,3],[2],[4,4],[1],[3],[4]]
```

Output

```
[null,null,null,1,null,-1,null,-1,3,4]
```

Expected

```
[null,null,null,1,null,-1,null,-1,3,4]
```