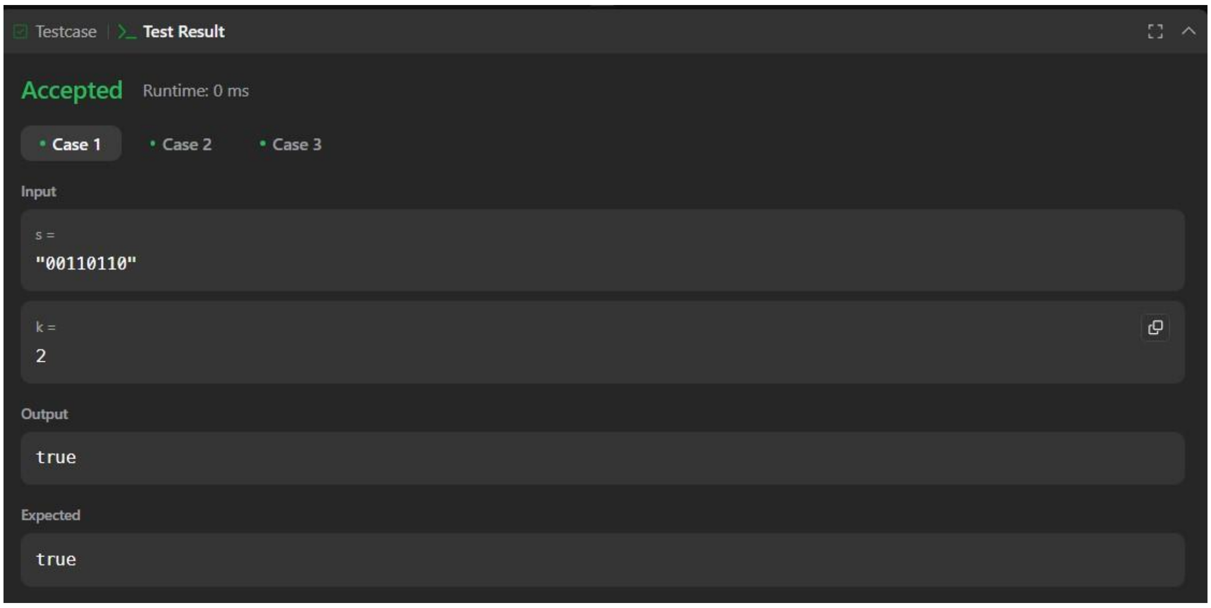
ADVANCED CODING-II

VU21CSEN0300011

Pranay Vuppu

1.Check If a String Contains All Binary Codes of Size K

```
class Solution {
    public boolean hasAllCodes(String s, int k) {
Set<String> codes = new HashSet<>();         int
total = 1 << k;
                 for (int i=0;
i+k<=s.length(); i++) {
codes.add(s.substring(i, i+k));
            if (codes.size() == total) return true;
        }
return false;
    }
}
```



Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

```
s =
"00110110"
```

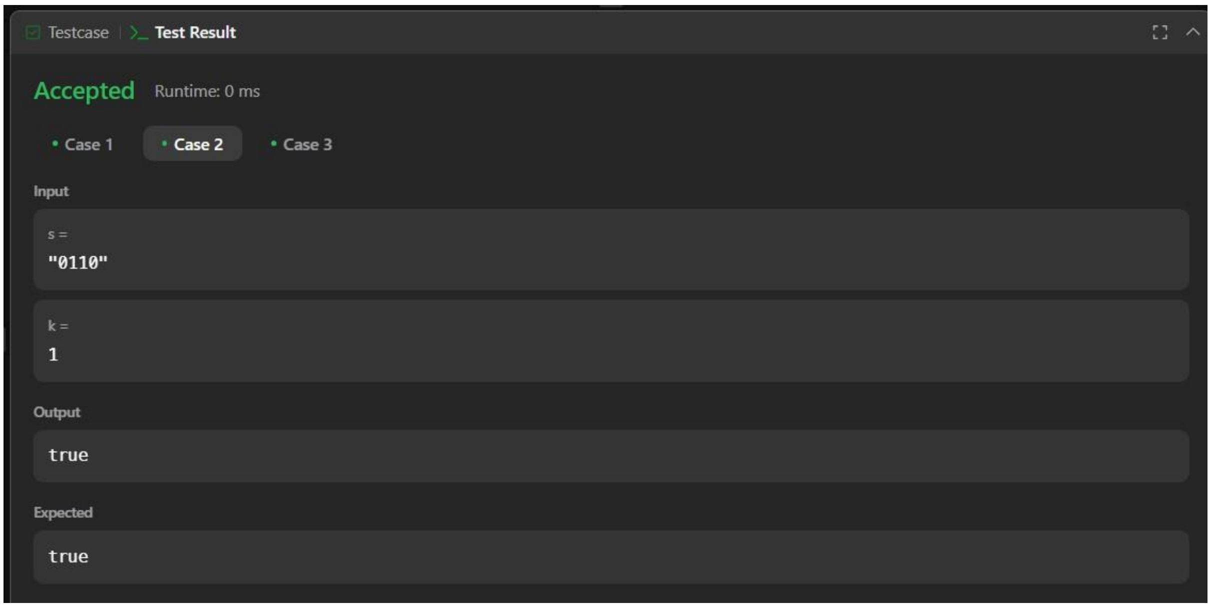
```
k =
2
```

Output

```
true
```

Expected

```
true
```



Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

```
s =
"0110"
```

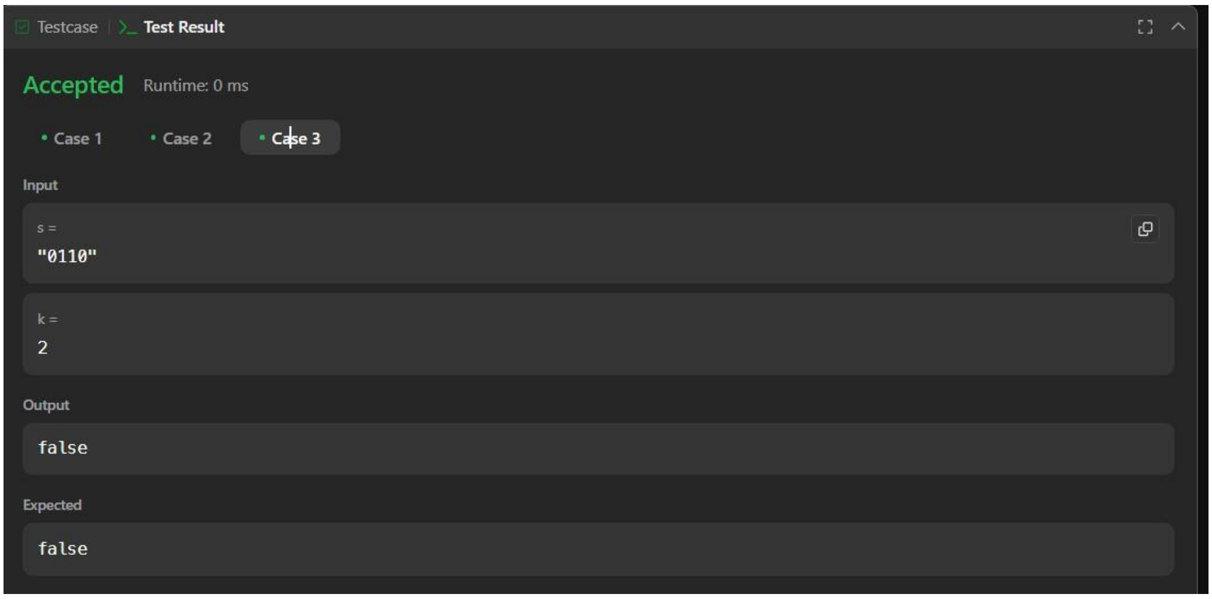
```
k =
1
```

Output

```
true
```

Expected

```
true
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

```
s =
"0110"
```

```
k =
2
```

Output

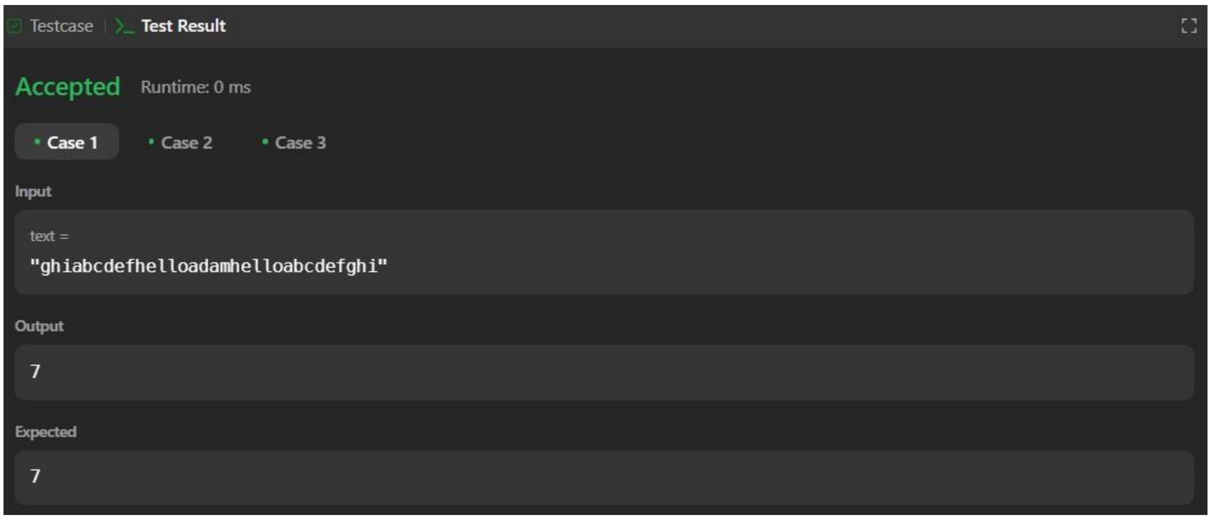
```
false
```

Expected

```
false
```

2.Longest Chunked Palindrome Decomposition

```
class Solution {     public int
longestDecomposition(String text) {          int n =
text.length();          int k = 0, totalLength = 0;
int str1Start = 0, str1End = 0;          int str2Start =
n-1, str2End = n;          while (str1End < str2Start) {
if (text.substring(str1Start, str1End +
1).equals(text.substring(str2Start, str2End))) {
totalLength += (str2End - str2Start) * 2;
k++;                    str1Start = str1End + 1;
str2End = str2Start;
            }
str1End++;
str2Start--;
        }
        if (totalLength < n) return (k * 2) + 1;
return k * 2;
    }
}
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

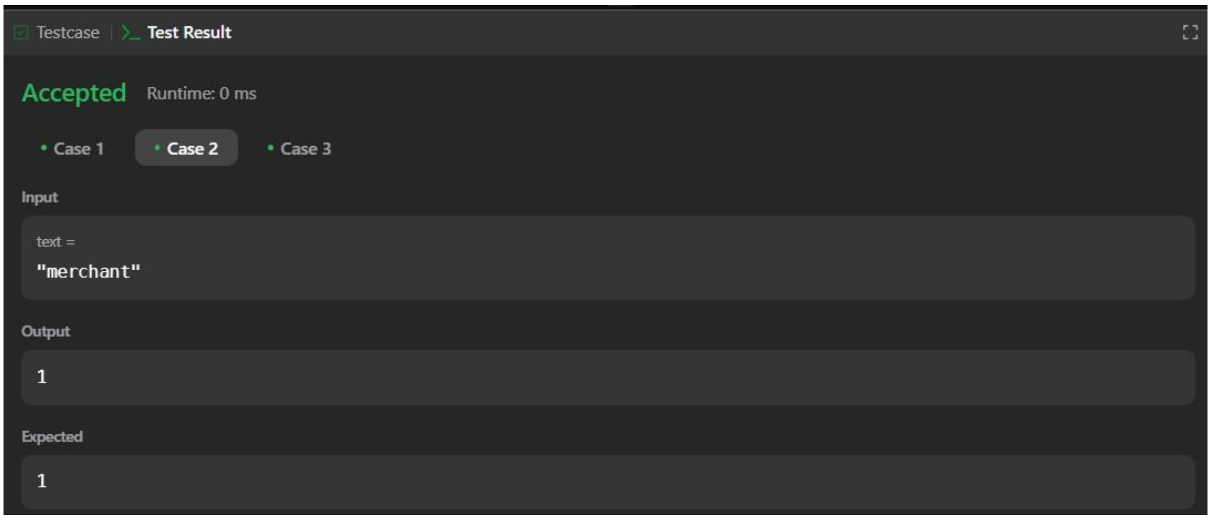
```
text =
"ghiabcdefhelloadamhelloabcdefghi"
```

Output

```
7
```

Expected

```
7
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

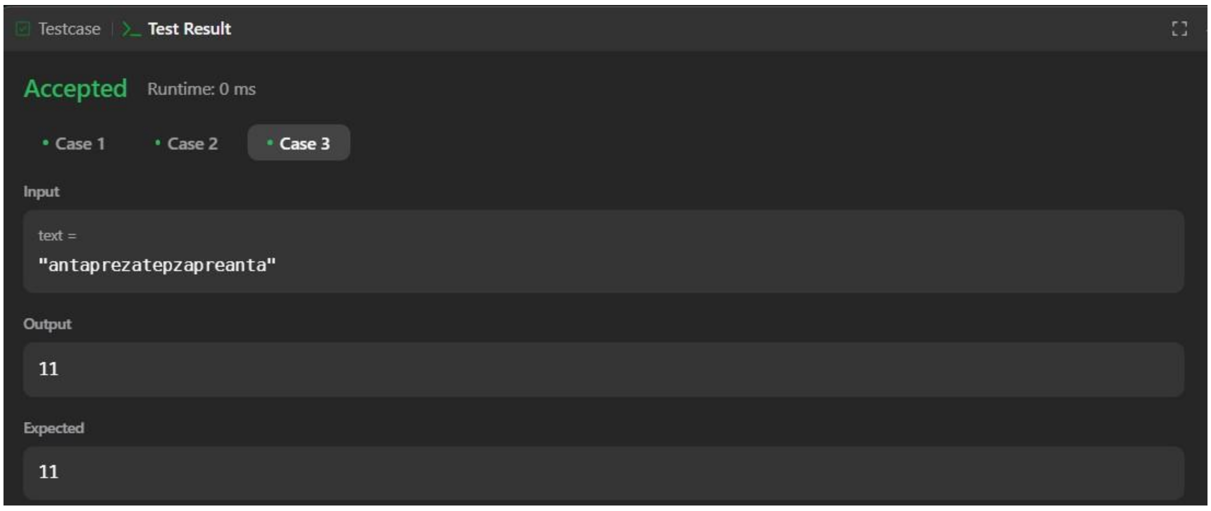
```
text =
"merchant"
```

Output

```
1
```

Expected

```
1
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

```
text =
"antaprezatepzapreanta"
```

Output

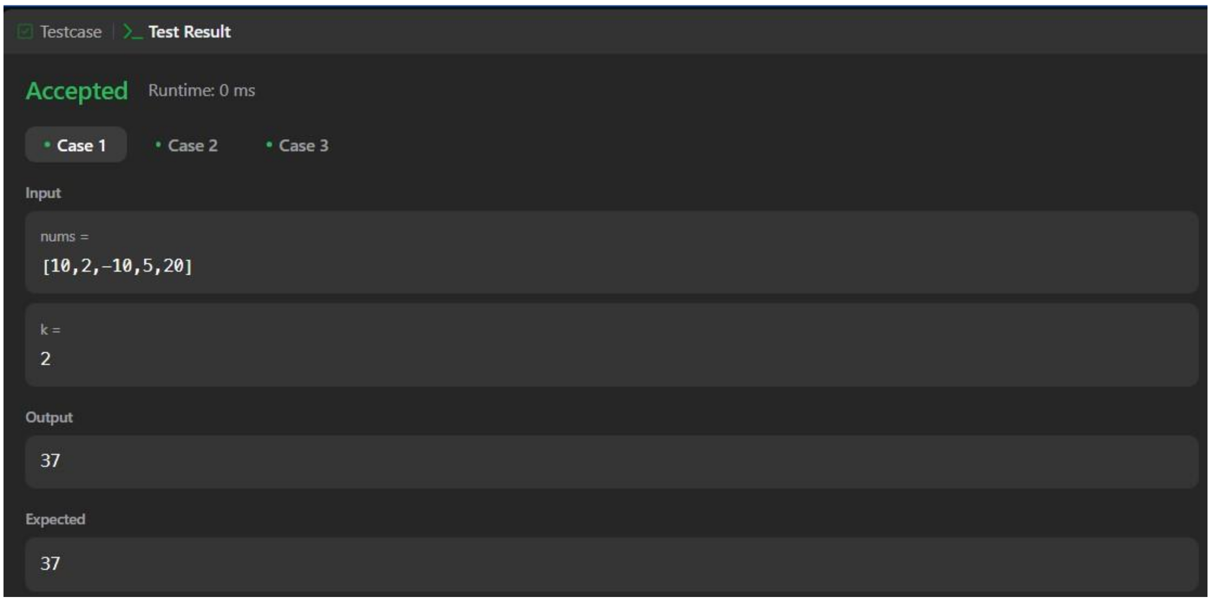
```
11
```

Expected

```
11
```

3.Constrained Subsequence Sum

```
class Solution {     public int
constrainedSubsetSum(int[] nums, int k) {         int
res = Integer.MIN_VALUE;
        Queue<int[]> maxHeap = new PriorityQueue<>((a,b) -> Integer.compare(b[1],
a[1]));
        for (int i = 0; i < nums.length; i++) {             while
(!maxHeap.isEmpty() && (i - maxHeap.peek()[0] > k)) {
maxHeap.poll();
            }             int temp = -10001;             if
(!maxHeap.isEmpty()) temp = maxHeap.peek()[1];
temp += nums[i];             temp = Math.max(temp, nums[i]);
res = Math.max(res, temp);             maxHeap.add(new
int[]{i, temp});
        }
        return res;
    }
}
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

```
nums =
[10,2,-10,5,20]
```

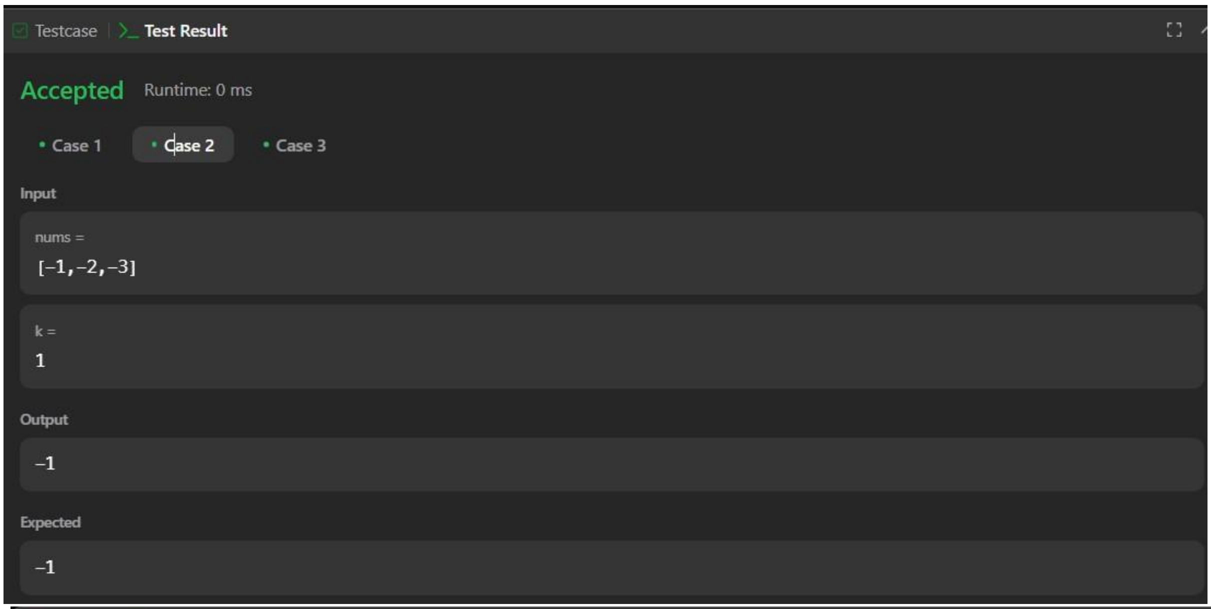
```
k =
2
```

Output

```
37
```

Expected

```
37
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

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

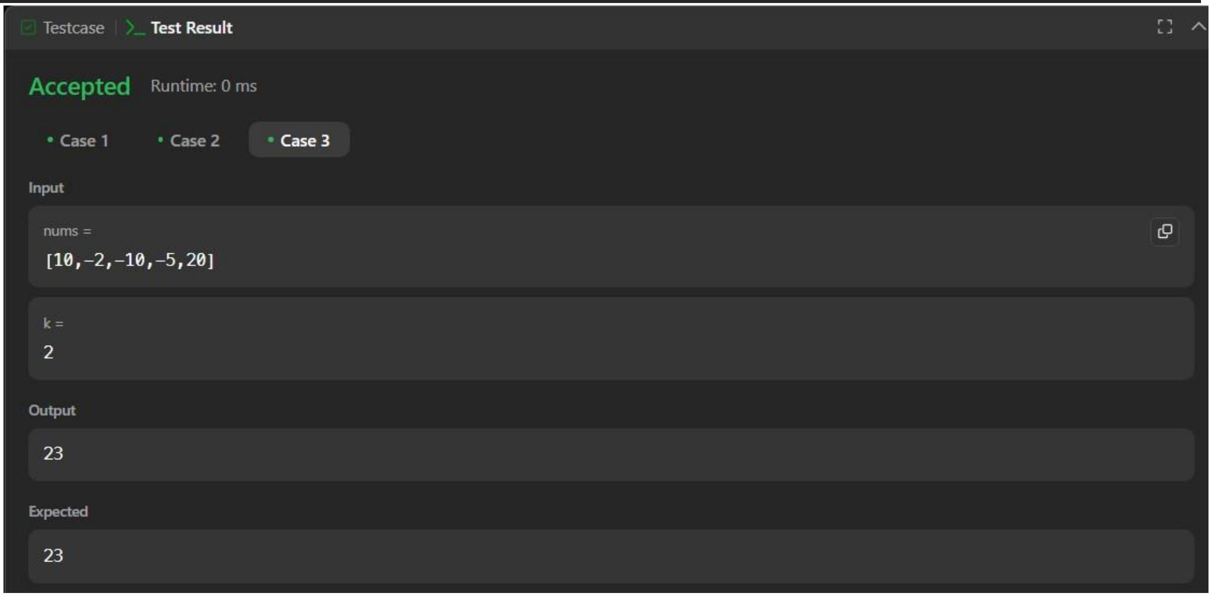
```
k =
1
```

Output

```
-1
```

Expected

```
-1
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

```
nums =
[10,-2,-10,-5,20]
```

```
k =
2
```

Output

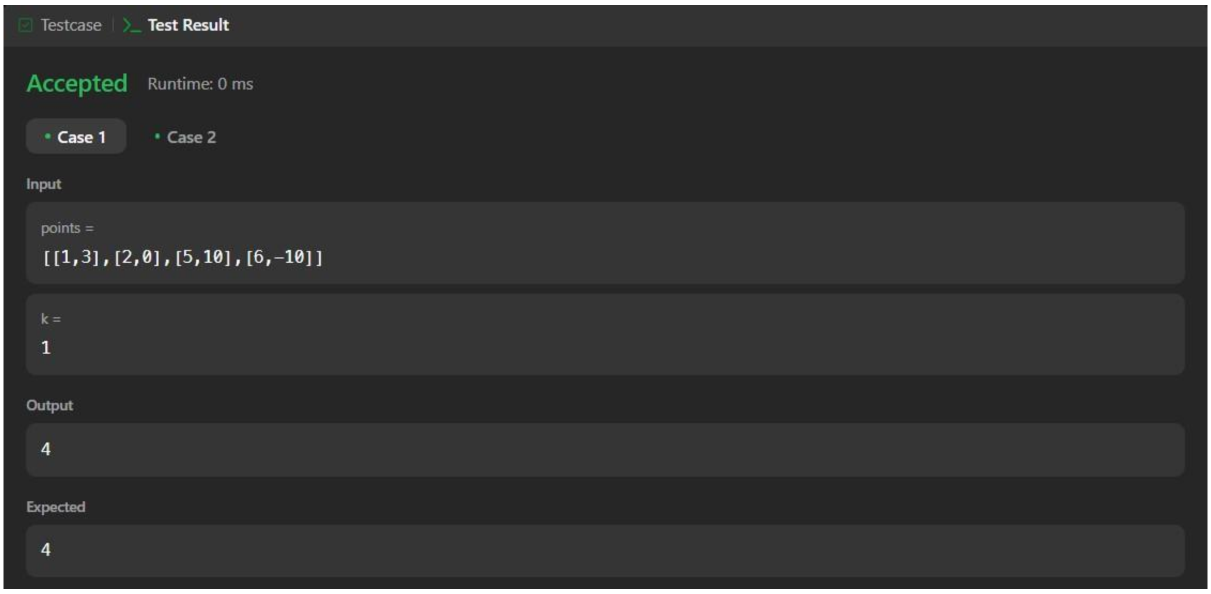
```
23
```

Expected

```
23
```

4.Max Value of Equation

```
class Solution {      public int findMaxValueOfEquation(int[][] points, int k)
{          int ans=Integer.MIN_VALUE;          int i=0;         int f=1;
while(i < points.length) {             if(f<i+1)                 f=i+1;
for (int j = f; j <= points.length-1; j++) {
if(points[j][0]>(points[i][0]+k))                         break;
if((points[i][1]+points[j][1]+points[j][0]-points[i][0])>ans){
ans=points[i][1]+points[j][1]+points[j][0]-points[i][0];
f=j-1;
                }
}
i++;         }
        return ans;
    }
}
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2

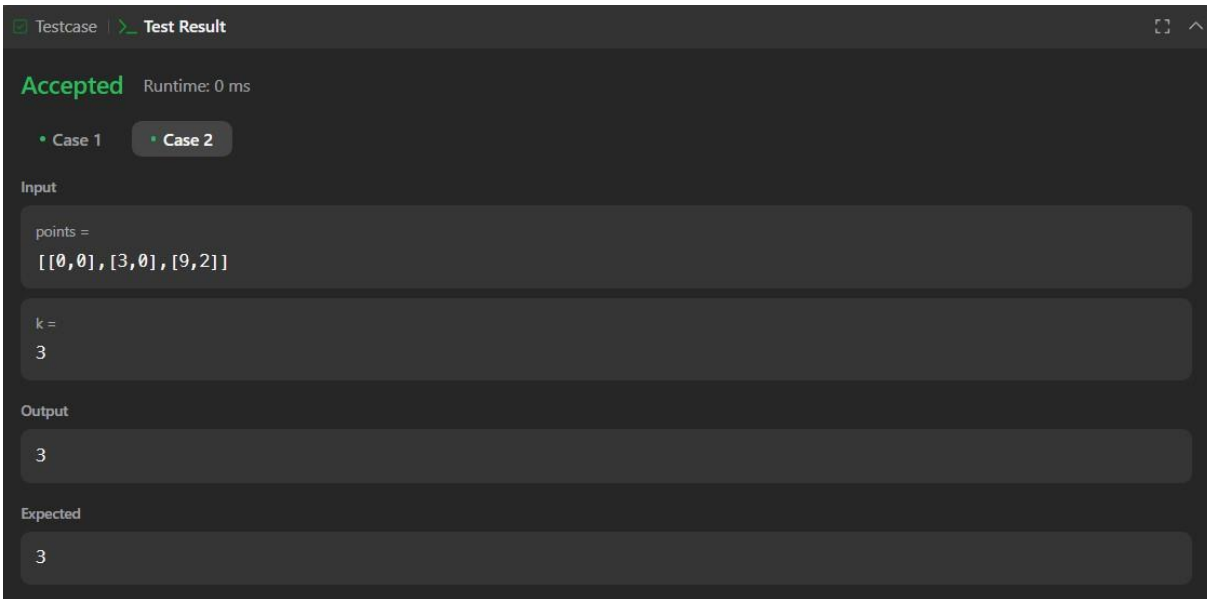
Input

points =
```
[[1,3],[2,0],[5,10],[6,-10]]
```

k =
```
1
```

Output
```
4
```

Expected
```
4
```


Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2

Input

points =
```
[[0,0],[3,0],[9,2]]
```

k =
```
3
```

Output
```
3
```

Expected
```
3
```