2 Questions Total score: 60.0

2 Programming Questions

1. The Kth maximum + 30.0

2. The subarray count + 30.0

Question 2 Max. score 30.00

The subarray count

You are given an array A of size N and an integer X. Find the minimum value K such that the number of subarrays of A having the XOR value of at most K is at least X.

Note

- A subarray is a part of the array that is contiguous (that is, occupy consecutive positions) and inherently maintains the order of elements.
- The XOR value of a subarray $[L, R]$ means $A_L \oplus A_{L+1} \oplus A_{L+2} \oplus \ldots \oplus A_R$ where $1 \leq L \leq R \leq N$.

Input format

- The first line contains two space-separated integers N and X.
- The next line contains N space-separated integers representing array A.

Output format

Print an integer denoting the minimum integer value K such that the number of subarrays of A having the XOR value of at most K is at least X.

Constraints

$1 \leq N \leq 10^5$
$1 \leq X \leq (N * (N+1))/2$
$1 \leq A[i] \leq 10^6$

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2 Programming Questions

1. The Kth maximum + 30.0

2. The subarray count + 30.0

Sample input 1 Copy

```
4 7
1 2 3 4
```

Sample output 1 Copy

```
4
```

Explanation

Given number of subarrays to be atleast 7 i.e. $X = 7$.

So, if we select the value for K to be 3, the number of subarrays of A having Xor value atmost 3 is 6.

If we select the value for K to be 4, the number of subarrays of A having Xor value atmost 4 is 8.

So the minimum value of K for which the number of subarrays of A is atleast 7, each of which have a Xor value of atmost K is 4.

The following test cases are the actual test cases of this question that may be used to evaluate your submission.

Sample input 2 Copy

```
40 500
97 54 57 15 89 19 88 89 16 68 89 94 80 83 67 16 20 85 65 29
56 41 20 58 42 73 77 29 69 71 80 85 75 85 36 76 99 40 46 90
```

Sample output 2 Copy

```
71
```

Sample input 3 Copy

```
43 215
```

Sample output 3 Copy

```
30
```

1. The Kth maximum + 30.0

2. The subarray count + 30.0

Sample input 3 Copy

```
43 215
34 85 88 29 16 95 38 46 50 21 16 78 60 32 32 59 30 33 14 32
56 41 63 14 49 78 60 30 59 88 88 43 52 35 90 17 37 51 36 97
79 80 55
```

Sample output 3

```
30
```

Sample input 4 Copy

```
177 5629
16232 39052 11558 36150 22947 39926 21981 32371 14078 38629
14665 12229 34699 37370 13081 28012 34965 12064 36890 31054
15225 21777 39853 12956 32439 13341 41337 24755 15689 34855
14173 42304 10292 15344 25512 22952 11868 20888 29581 23463
42652 13409 38353 36151 24598 22455 36295 35763 36040 18285
37502 25148 14945 36170 11833 15196 19794 36804 12831 21993
12839 19979 37428 16684 14616 40265 15752 42051 20443 19240
18095 38084 36285 18838 28784 16547 17905 18373 29377 28502
37928 23669 35828 40502 38754 42357 12843 15401 20227 32871
```

Sample output 4

```
23504
```

Sample input 5 Copy

```
181 16377
34096 30348 21872 40076 26059 36999 38493 26223 13930 38673
```

Sample output 5

```
65186
```

Type here to search

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