Maximum Possible XOR

Given a sorted array A of N integers, you are supposed to answer M queries.

For each query, you are given two integers: L and R.

You are supposed to have an integer index such that A[index] ^ A[index +1] is the maximum possible and L <= index <= R.

(^ is XOR operation)

Print the index for M queries which gives the maximum XOR.

Example

Given an array of 5 elements: 1 2 4 6 8.

And 2 queries:

1 5

1 3

For query 1:

We have to find the consecutive pair of integers in the subarray from index 1 to index 5 which is the complete array.

The valid pairs to check are:

A[1] ^ A[2] = 1 ^ 2 = 3

A[2] ^ A[3] = 2 ^ 4 = 6

A[3] ^ A[4] = 4 ^ 6 = 2

A[4] ^ A[5] = 6 ^ 8 = 14

So, the answer for the first query is 4 as A[4] ^ A[4+1] gives the maximum XOR.

For the 2nd query, only the first 3 pairs listed above are valid. So for the second query, the answer will be 2 as A[2] ^ A[2+1] gives the maximum XOR within the given range of L to R.

Function Description

In the provided code snippet, implement the provided maxXorPair(...) method using the variables to print an array containing answers to all queries. You can write your code in the space below the phrase “WRITE YOUR LOGIC HERE”.

There will be multiple test cases running so the Input and Output should match exactly as provided.