

Editorial:

We can construct two arrays lbest and rbest for the left hand side of the expression and for the right hand side of the expression.

To calculate lbest[i] we will iterate m from i to i such that $(arr[m] \wedge arr[m+1] \wedge arr[m+2] \dots arr[i])$ is maximised. Then $lbest[i] = \text{Max}(lbest[i-1], \text{val})$. Similar can be done for rbest. Now we will calculate val. Let $C[i] = (arr[1] \wedge arr[2] \wedge arr[3] \dots arr[i])$. For some $j \leq i$, $C[j-1] \wedge C[i] = (arr[j] \wedge arr[j+1] \wedge arr[j+2] \dots arr[i])$. We can now say that $lbest[i] = \text{max}(lbest[i-1], \text{val})$ where $\text{val} = \text{maximum of } (C[j-1]C[i])$ for $j = 1$ to i . Now using Tries we can easily calculate 'val' in $(\log arr(\text{max}))$. We can store the bits of each number in the nodes of trie and iterate through the trie such that we can get the maximum xor possible.