Sum of XOR of all pairs

Given an array of **N** integers, find the **sum of xor** of all pairs of numbers in the array **arr**. In other words, select all possible pairs of **i** and **j** from **0** to **N-1 (i<j)** and determine **sum** of all **(arr_i xor arr_j)**.

Example 1:

Input : arr[ ] = {7, 3, 5}

Output : 12

Explanation:

All possible pairs and there Xor

Value: (3 ^ 5 = 6) + (7 ^ 3 = 4)

+ (7 ^ 5 = 2) = 6 + 4 + 2 = 12

Example 2:

Input : arr[ ] = {5, 9, 7, 6}

Output : 47
Explanation:
All possible pairs and there Xor
Value: (5 ^ 9 = 12) + (5 ^ 7 = 2)
+ (5 ^ 6 = 3) + (9 ^ 7 = 14)
+ (9 ^ 6 = 15) + (7 ^ 6 = 1)
= 12 + 2 + 3 + 14 + 15 + 1 = 47

Your Task:
You do not have to take input or print output. You only need to complete the function **sumXOR()** that takes an array **(arr)**, sizeOfArray **(n)**, and **return** the **sum of xor of all pairs** of numbers in the array.

Expected Time Complexity: O(n).
Expected Auxiliary Space: O(1).

Constraints
$2 \le n \le 10^5$
$1 \le arr[i] \le 10^5$