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T1: [1,3,5]
O/P = 8

T2: [2,3]
O/P = 2

Brute force:
① Take XOR → A[i] ^ A[j] for all pair
② Count no. of set bits
③ Add to answer.

→ give complexity of $O(n^2)$

Optimal Approach:

```
int countDiffBits(int[] arr){
    long mod = 1000000007;
    long ans = 0;
    int n = A.length;
    for(int b=0; b<31; bit++){
        long count1 = 0;
        for(int i=0; i<n; i++){
            if((A[i] & (1<<b)) != 0){
                count1++;
            }
        }
```

```
            long count0 = n - count1;
            ans = (ans + (2 * count1 * count0) % mod) % mod;
        }
        return (int) ans;
    }
}
```