2505. Bitwise OR of All Subsequence Sums Premium

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Given an integer array `nums`, return *the value of the bitwise* **OR** *of the sum of all possible* ***subsequences*** *in the array.*

A **subsequence** is a sequence that can be derived from another sequence by removing zero or more elements without changing the order of the remaining elements.

Example 1:

```
Input: nums = [2,1,0,3]
Output: 7
Explanation: All possible subsequence sums that we can have are: 0, 1, 2, 3, 4, 5, 6.
And we have 0 OR 1 OR 2 OR 3 OR 4 OR 5 OR 6 = 7, so we return 7.
```

Example 2:

```
Input: nums = [0,0,0]
Output: 0
Explanation: 0 is the only possible subsequence sum we can have, so we return 0.
```

Constraints:

- `1 <= nums.length <= 10^5`
- `0 <= nums[i] <= 10^9`

Seen this question in a real interview before? 1/5

Yes No

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Hint 1

Think of each bit separately, i.e. try to figure out if `i^th` bit is set in the answer.

Hint 2

`i^th` bit is set in the answer if it's set in one of the array elements or it can be made using some of them.

Hint 3

Try to sum up lower bits and make higher bits.

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