# Problem 2505: Bitwise OR of All Subsequence Sums

## Problem Information

**Difficulty:** Medium
**Acceptance Rate:** 64.29%
**Paid Only:** Yes
**Tags:** Array, Math, Bit Manipulation, Brainteaser, Prefix Sum

## Problem Description

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 <= 105` * `0 <= nums[i] <= 109`

## Code Snippets

**C++:**

```
class Solution {
public:
long long subsequenceSumOr(vector<int>& nums) {

}
};
```

**Java:**

```
class Solution {
public long subsequenceSumOr(int[] nums) {

}
}
```

**Python3:**

```
class Solution:
def subsequenceSumOr(self, nums: List[int]) -> int:
```