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Marc's Cakewalk

by satyaki3794

Problem Submissions Leaderboard Discussions Editorial

Marc loves cupcakes, but he also likes to stay fit. He eats n cupcakes in one sitting, and each cupcake i has a calorie count, c_i. After eating a cupcake with c calories, he must walk *at least* $2^j \times c$ (where j is the number cupcakes he has already eaten) miles to maintain his weight.

Given the individual calorie counts for each of the n cupcakes, find and print a *long integer* denoting the minimum number of miles Marc must walk to maintain his weight. Note that he can eat the cupcakes *in any order*.

Input Format

The first line contains an integer, n, denoting the number of cupcakes.
The second line contains n space-separated integers describing the respective calorie counts of each cupcake, $c_0, c_1, \ldots, c_{n-1}$.

Constraints

- $1 \le n \le 40$
- $1 \le c_i \le 1000$

Output Format

Print a long integer denoting the minimum number of miles Marc must walk to maintain his weight.

Sample Input 0

```
3
1 3 2
```

Sample Output 0

```
11
```

Explanation 0

Let's say the number of miles Marc must walk to maintain his weight is $miles$. He can minimize $miles$ by eating the $n = 3$ cupcakes in the following order:

1. Eat the cupcake with $c_1 = 3$ calories, so $miles = 0 + (3 \cdot 2^0) = 3$.
2. Eat the cupcake with $c_2 = 2$ calories, so $miles = 3 + (2 \cdot 2^1) = 7$.
3. Eat the cupcake with $c_0 = 1$ calories, so $miles = 7 + (1 \cdot 2^2) = 11$.

We then print the final value of $miles$, which is 11, as our answer.

Submissions:15074

Max Score:15

Difficulty: Easy

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More

Current Buffer (saved locally, editable)

C++14

```
#include <cmath>
#include <limits>
#include <set>
#include <iostream>
#include <algorithm>
#include <iterator>
using namespace std;

#define ull unsigned long long int
int main()
{
    ios_base::sync_with_stdio(0);
    cin.tie(0);
    cout.tie(0);

    ull n, miles=0, idx=0;
    cin>>n;
    multiset<ull> mySet;
    for(auto i=0; i<n;++i)
    {
       ull temp=0;
       cin>>temp;
       mySet.insert(temp);
    }

    for(auto itr=mySet.rbegin(); itr!=mySet.rend(); ++itr)
       {
          miles+=( (*itr) * pow(2,idx));
          ++idx;
       }

    cout<<miles<<endl;
    return 0;
}

```

Line: 35 Col: 1

Upload Code as File

□ Test against custom input

Run Code

Submit Code

Congrats, you solved this challenge!

Challenge your friends: f 🐦 in

✓ Test Case #0

✓ Test Case #1

✓ Test Case #2

✓ Test Case #3

✓ Test Case #4

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