# 2300. Successful Pairs of Spells and Potions

You are given two positive integer arrays spells and potions, of length n and m respectively, where spells[i] represents the strength of the ith spell and potions[j] represents the strength of the jth potion.

You are also given an integer success. A spell and potion pair is considered successful if the product of their strengths is at least success.

Return an integer array pairs of length n where pairs[i] is the number of potions that will form a successful pair with the ith spell.

## SOLUTION IN C++

class Solution {

public:

vector<int> successfulPairs(vector<int>& spells, vector<int>& potions,

long long success) {

vector<int> ans;

ranges::sort(potions);

for (const int spell : spells)

ans.push\_back(potions.size() -

firstIndexSuccess(spell, potions, success));

return ans;

}

private:

// Returns the first index i s.t. spell \* potions[i] >= success.

int firstIndexSuccess(int spell, const vector<int>& potions, long success) {

int l = 0;

int r = potions.size();

while (l < r) {

const int m = (l + r) / 2;

if (1L \* spell \* potions[m] >= success)

r = m;

else

l = m + 1;

}

return l;

}

};