5825. Maximum Compatibility Score Sum

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User Accepted:	0
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Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

There is a survey that consists of `n` questions where each question's answer is either `0` (no) or `1` (yes).

The survey was given to `m` students numbered from `0` to `m - 1` and `m` mentors numbered from `0` to `m - 1`. The answers of the students are represented by a 2D integer array `students` where `students[i]` is an integer array that contains the answers of the i^{th} student (**0-indexed**). The answers of the mentors are represented by a 2D integer array `mentors` where `mentors[j]` is an integer array that contains the answers of the j^{th} mentor (**0-indexed**).

Each student will be assigned to **one** mentor, and each mentor will have **one** student assigned to them. The **compatibility score** of a student-mentor pair is the number of answers that are the same for both the student and the mentor.

- For example, if the student's answers were `[1, 0, 1]` and the mentor's answers were `[0, 0, 1]`, then their compatibility score is 2 because only the second and the third answers are the same.

You are tasked with finding the optimal student-mentor pairings to **maximize** the **sum of the compatibility scores**.

Given `students` and `mentors`, return *the* ***maximum compatibility score sum*** *that can be achieved.*

Example 1:

```
Input: students = [[1,1,0],[1,0,1],[0,0,1]], mentors = [[1,0,0],[0,0,1],[1,1,0]]
Output: 8
Explanation: We assign students to mentors in the following way:
- student 0 to mentor 2 with a compatibility score of 3.
- student 1 to mentor 0 with a compatibility score of 2.
- student 2 to mentor 1 with a compatibility score of 3.
The compatibility score sum is 3 + 2 + 3 = 8.
```

Example 2:

```
Input: students = [[0,0],[0,0],[0,0]], mentors = [[1,1],[1,1],[1,1]]
Output: 0
Explanation: The compatibility score of any student-mentor pair is 0.
```

Constraints:

- `m == students.length == mentors.length`
- `n == students[i].length == mentors[j].length`
- `1 <= m, n <= 8`
- `students[i][k]` is either `0` or `1`.

- `mentors[j][k]` is either `0` or `1`.

JavaScript

```javascript
const maxCompatibilitySum = (a, b) => {
    a.sort ((x, y) => {
        let n = x.length;
        for (let i = 0; i < n; i++) {
            if (x[i] != y[i]) return x[i] - y[i];
        }
    });
    let n = a.length, m = a[0].length;
    let res = 0;
    do {
        let score = 0;
        for (let i = 0; i < n; i++) {
            for (let j = 0; j < m; j++) {
                score += a[i][j] == b[i][j];
            }
        }
        res = Math.max(res, score);
    } while (next_permutation(a))
    return res;
};

const next_permutation = (a) => {
    let n = a.length;
    let i, j;
    for (i = n - 2; i >= 0 && a[i] >= a[i + 1]; i--);
    if (i === -1) return false;
    for (j = i + 1; j < n && a[i] < a[j]; j++);
    [a[i], a[j - 1]] = [a[j - 1], a[i]];
    for (let p = i + 1, q = n - 1; p < q; p++, q--) [a[p], a[q]] = [a[q], a[p]];
    return true;
};
```

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