

1820. Maximum Number of Accepted Invitations Premium

Medium Topics Companies Hint

There are `m` boys and `n` girls in a class attending an upcoming party.

You are given an `m x n` integer matrix `grid`, where `grid[i][j]` equals `0` or `1`. If `grid[i][j] == 1`, then that means the `ith` boy can invite the `jth` girl to the party. A boy can invite at most **one girl**, and a girl can accept at most **one invitation** from a boy.

Return *the **maximum** possible number of accepted invitations*.

Example 1:

Input: `grid = [[1,1,1], [1,0,1], [0,0,1]]`

Output: `3`

Explanation: The invitations are sent as follows:

- The 1st boy invites the 2nd girl.
- The 2nd boy invites the 1st girl.
- The 3rd boy invites the 3rd girl.

Example 2:

Input: `grid = [[1,0,1,0], [1,0,0,0], [0,0,1,0], [1,1,1,0]]`

Output: `3`

Explanation: The invitations are sent as follows:

- The 1st boy invites the 3rd girl.
- The 2nd boy invites the 1st girl.
- The 3rd boy invites no one.
- The 4th boy invites the 2nd girl.

Constraints:

- `grid.length == m`
- `grid[i].length == n`
- `1 <= m, n <= 200`
- `grid[i][j]` is either `0` or `1`.

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

Yes No

Accepted 9.2K | Submissions 18K | Acceptance Rate 51.1%

Topics

ArrayDepth-First SearchGraphMatrix

Companies

0 - 3 months

Google2

0 - 6 months

Bloomberg2

Hint 1

We can see that the problem can be represented as a directed graph with an edge from each boy to the girl he invited.

Hint 2

We need to choose a set of edges such that no to source points in the graph (i.e., boys) have an edge with the same endpoint (i.e., the same girl).

Hint 3

The problem is maximum bipartite matching in the graph.

Discussion (15)