6203. Paths in Matrix Whose Sum Is Divisible by K

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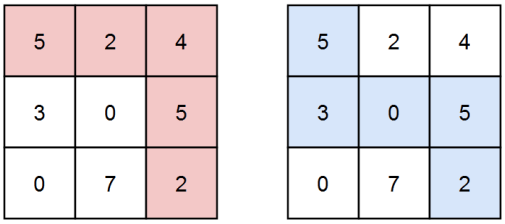
You are given a **0-indexed** `m x n` integer matrix `grid` and an integer `k`. You are currently at position `(0, 0)` and you want to reach position `(m - 1, n - 1)` moving only **down** or **right**.

Return *the number of paths where the sum of the elements on the path is divisible by* `k`. Since the answer may be very large, return it **modulo** $10^9 + 7$.

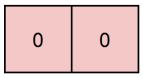
User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Hard

Example 1:



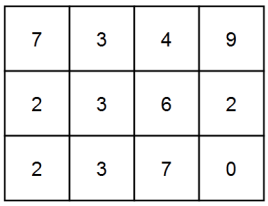

```
Input: grid = [[5,2,4],[3,0,5],[0,7,2]], k = 3
Output: 2
Explanation: There are two paths where the sum of the elements on the path is divisible by k.
The first path highlighted in red has a sum of 5 + 2 + 4 + 5 + 2 = 18 which is divisible by 3.
The second path highlighted in blue has a sum of 5 + 3 + 0 + 5 + 2 = 15 which is divisible by 3.
```

Example 2:




```
Input: grid = [[0,0]], k = 5
Output: 1
Explanation: The path highlighted in red has a sum of 0 + 0 = 0 which is divisible by 5.
```

Example 3:




```
Input: grid = [[7,3,4,9],[2,3,6,2],[2,3,7,0]], k = 1
Output: 10
Explanation: Every integer is divisible by 1 so the sum of the elements on every possible path is divisible by k.
```

Constraints:

- `m == grid.length`
- `n == grid[i].length`
- `1 <= m, n <= 5 * 10^4`
- `1 <= m * n <= 5 * 10^4`
- `0 <= grid[i][j] <= 100`
- `1 <= k <= 50`

JavaScript

```
const initialize3DArray = (n, m, p) => { let r = []; for (let i = 0; i < n; i++) { let d = []; for (let j = 0; j < m;
j++) { let t = Array(p).fill(0); d.push(t); } r.push(d); } return r; };

const mod = 1e9 + 7;
const numberOfPaths = (g, K) => {
    let n = g.length, m = g[0].length, dp = initialize3DArray(n + 1, m + 1, K);
    dp[0][1][0] = 1;
    for (let i = 0; i < n; i++) {
        for (let j = 0; j < m; j++) {
            for (let k = 0; k < K; k++) {
                dp[i + 1][j + 1][(k + g[i][j]) % K] += dp[i][j + 1][k];
                dp[i + 1][j + 1][(k + g[i][j]) % K] %= mod;
                dp[i + 1][j + 1][(k + g[i][j]) % K] += dp[i + 1][j][k];
                dp[i + 1][j + 1][(k + g[i][j]) % K] %= mod;
            }
        }
    }
    return dp[n][m][0];
};
```

Custom Testcase | Use Example Testcases

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Submission Result: Accepted (/submissions/detail/818401752/) | More Details > (/submissions/detail/818401752/)

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