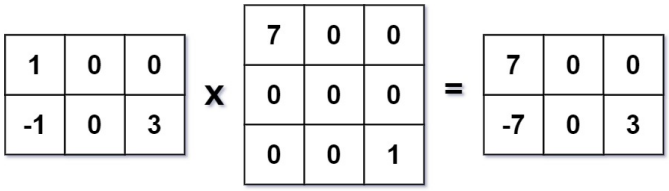
311. Sparse Matrix Multiplication

Medium 934 328 Add to List Share

Given two sparse matrices `mat1` of size `m x k` and `mat2` of size `k x n`, return the result of `mat1 x mat2`. You may assume that multiplication is always possible.

Example 1:




```
Input: mat1 = [[1,0,0],[-1,0,3]], mat2 = [[7,0,0],[0,0,0],[0,0,1]]
Output: [[7,0,0],[-7,0,3]]
```

Example 2:

```
Input: mat1 = [[0]], mat2 = [[0]]
Output: [[0]]
```

Constraints:

- `m == mat1.length`
- `k == mat1[i].length == mat2.length`
- `n == mat2[i].length`
- `1 <= m, n, k <= 100`
- `-100 <= mat1[i][j], mat2[i][j] <= 100`

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```cpp
class Solution {
public:
    vector<vector<int>> multiply(vector<vector<int>>& mat1, vector<vector<int>>& mat2) {

        int n1 = mat1.size();
        int m2 = mat2[0].size();

        int m1 = mat1[0].size();


 vector<vector<int>>res(n1,vector<int>(m2,0));

        for(int i = 0;i<n1;i++)
        {
            for(int j=0;j<m2;j++)
            {
                for(int k=0;k<m1;k++)
                {

 res[i][j] += (mat1[i][k]*mat2[k][j]);
                }
            }
        }
        return res;
    }
};

/*
m-2  compress the matrix into sparse matrix
class Solution {
public:

 vector<vector<pair<int, int>>> compressMatrix(vector<vector<int>>& matrix) {
        int rows = matrix.size();
        int cols = matrix[0].size();

 vector<vector<pair<int, int>>> compressedMatrix(ro
        for (int ro
0; row < rows; ++row) {
```

Testca... Run Code Res... Debug...

Accepted Runtime: 0 ms

Your input [[1,0,0], [-1,0,3]]

Output [[7,0,0 [-7,0,3

Diff

Expected [[7,0,0], [-7,0,3]]

Problems Pick One Prev 311/2509 Next Run Code Submit