

Problem 311: Sparse Matrix Multiplication

Problem Information

Difficulty: Medium

Acceptance Rate: 69.12%

Paid Only: Yes

Tags: Array, Hash Table, Matrix

Problem Description

Given two [sparse matrices](https://en.wikipedia.org/wiki/Sparse_matrix) `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`

Code Snippets

C++:

```
class Solution {  
public:
```

```
vector<vector<int>> multiply(vector<vector<int>>& mat1, vector<vector<int>>& mat2) {
    }
};
```

Java:

```
class Solution {
public int[][] multiply(int[][] mat1, int[][] mat2) {
    }
}
```

Python3:

```
class Solution:
def multiply(self, mat1: List[List[int]], mat2: List[List[int]]) ->
List[List[int]]:
```