Transposition of a two-dimensional matrix is an important term for matrix calculations in particular and linear algebra in general.

A matrix B transposed from a matrix A that satisfied the following formula b[i][j] = a[j][i].

Implement the function int\*\* transposeMatrix(int\*\* matrix, int r, int c) that perform the transposition of the matrix mentioned above.

Input:

* The pointer that points to a two-dimensional matrix each of whose elements is in the range (-1000; 1000).
* The size of the matrix consists of the number of row r and the number of column n.

Output: The pointer that points to transposed two-dimensional matrix. If the input matrix is empty, return the null pointer.

**For example:**

| **Test** | **Input** | **Result** |
| --- | --- | --- |
| 1 | 2 2  1 2  3 4 | 1 3  2 4 |