2D Array Multiplication in C

Problem	Submissions	Leaderboard	Discussions

Write a C Program to display the **product** of two 2D arrays. Given values for both the 2D Arrays.

Input Format

- First line contains the **order** of the **first** 2D Array.

- Second line contains the **elements** of the **first** 2D Array.

- Third line contains the **order** of the **second** 2D Array.

- Fourth line contains the **elements** of the **second** 2D Array.

Constraints

Make sure to check that both matrices can be multiplied.

(Two matrices can be multiplied only if no: of columns of first matrix is equal to no: of rows of the second matrix)

Output Format

- If the given matrices can be multiplied then, print the 2D array of proper order.

- If the given matrices cannot be multiplied then, print the message "*ERROR*".

Sample Input 0

```
2 3
4 1 3 2 6 2
3 2
7 2 3 6 1 3
```

Sample Output 0

```
34 23
34 46
```

Explanation 0

The first matrix of order (2,3) is,

```
4 1 3
2 6 2
```

The second matrix of order (3,2) is,

```
7 2
3 6
1 3
```

Hence the product will give a matrix of order (2,2),

```
34 23
34 46
```

Sample Input 1

```
2 3
1 6 3 8 2 3
2 3
6 2 3 8 2 1
```

Sample Output 1

```
ERROR
```

Explanation 1

Both the matrices do not satisfy the condition, hence cannot be multiplied together.

Current Buffer (saved locally, editable)

C

```c
#include <stdio.h>

int main()
{
  int m, n, p, q, i, j, k, sum = 0;
  int a[10][10], b[10][10], multi[10][10];
  scanf("%d%d", &m, &n);
  for (  i = 0 ; i < m ; i++ )
  {
    for ( j = 0 ; j < n ; j++ )
    {
      scanf("%d", &a[i][j]);
    }
  }
  scanf("%d%d", &p, &q);

  if ( n != p )
  {
    printf("ERROR");
  }
  else
  {
      for ( i = 0 ; i < p ; i++ )
      {
        for ( j = 0 ; j < q ; j++ )
        {
          scanf("%d", &b[i][j]);
        }
      }
      for ( i= 0 ; i < m ; i++ )
      {
        for ( j= 0 ; j < q ; j++ )
        {
          for ( k = 0 ; k < p ; k++ )
          {
            sum = sum + a[i][k]*b[k][j];
          }

          multi[i][j] = sum;
          sum = 0;
        }
      }

      for ( i = 0 ; i < m ; i++ )
      {
        for ( j = 0 ; j < q ; j++ )
        {
          printf("%d ", multi[i][j]);
        }
```

```
50            printf("\n");
51        }
52
53
54    }
55
56    return 0;
57 }
58
```

Line: 1 Col: 1

⬆ Upload Code as File   ☐ Test against custom input

Run Code   Submit Code

Testcase 0 ✔   Testcase 1 ✔

Congratulations, you passed the sample test case.

Click the **Submit Code** button to run your code against all the test cases.

Input (stdin)

```
2 3
4 1 3 2 6 2
3 2
7 2 3 6 1 3
```

Your Output (stdout)

```
34 23
34 46
```

Expected Output

```
34 23
34 46
```