

MATLAB - MATRIX MULTIPLICATION

http://www.tutorialspoint.com/matlab/matlab_matrix_multiplication.htm

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Consider two matrices A and B. If A is an $m \times n$ matrix and B is an $n \times p$ matrix, they could be multiplied together to produce an $m \times p$ matrix C. Matrix multiplication is possible only if the number of columns n in A is equal to the number of rows n in B.

In matrix multiplication, the elements of the rows in the first matrix are multiplied with corresponding columns in the second matrix.

Each element in the i, j^{th} position, in the resulting matrix C, is the summation of the products of elements in i^{th} row of first matrix with the corresponding element in the j^{th} column of the second matrix.

Matrix multiplication in MATLAB is performed by using the `*` operator.

Example

Create a script file with the following code –

```
a = [ 1 2 3; 2 3 4; 1 2 5]
b = [ 2 1 3 ; 5 0 -2; 2 3 -1]
prod = a * b
```

When you run the file, it displays the following result –

```
a =
     1     2     3
     2     3     4
     1     2     5
b =
     2     1     3
     5     0    -2
     2     3    -1
prod =
    18    10    -4
    27    14    -4
    22    16    -6
```

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