

swap() — Interchange contents of variables

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Description

`swap(A, B)` interchanges the contents of *A* and *B*. *A* and *B* are not required to be of the same type or dimension.

Syntax

```
void swap(transmorphic matrix A, transmorphic matrix B)
```

Remarks and examples

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There is no faster way than `swap(A, B)` to assign $A=B$ when you do not care about the contents of *B* after the assignment. For instance, you have the code

```
A = B
B = ... (matrix expression) ...
```

Faster is

```
swap(A, B)
B = ... (matrix expression) ...
```

The execution time of `swap()` is independent of the size of *A* and *B*, and `swap()` conserves memory to boot. Pretend that *B* is a 900×900 matrix. After $A=B$ is executed, but before *B* is reassigned, two copies of the 900×900 matrix exist. That does not happen with `swap()`.

Conformability

`swap(A, B)`:

input:

```
A:   r1 × c1
B:   r2 × c2
```

output:

```
A:   r2 × c2
B:   r1 × c1
```

Diagnostics

`swap(A, B)` works only with variables. Do not code, for instance, `swap(A[i, j], A[j, i])`. It is not an error, but it will have no effect.

Also see

[M-4] [Programming](#) — Programming functions