swap( ) — Interchange contents of variables

Description Syntax Remarks and examples Conformability Diagnostics Also see

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

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:	$r_1 \times c_1$
B:	$r_2 \times c_2$

output:

A:	$r_2 \times c_2$
B:	$r_1 \times c_1$

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