

**swap()** — Interchange contents of variables

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## Syntax

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

## 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.

## 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  $900 \times 900$  matrix. After  $A=B$  is executed, but before *B* is reassigned, two copies of the  $900 \times 900$  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