

makesymmetric() — Make square matrix symmetric (Hermitian)

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Description

`makesymmetric(A)` returns A made into a symmetric (Hermitian) matrix by reflecting elements below the diagonal.

`_makesymmetric(A)` does the same thing but stores the result back in A .

Syntax

numeric matrix `makesymmetric(numeric matrix A)`

void `_makesymmetric(numeric matrix A)`

Remarks and examples

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If A is real, elements below the diagonal are copied into their corresponding above-the-diagonal position.

If A is complex, the conjugate of the elements below the diagonal are copied into their corresponding above-the-diagonal positions, and the imaginary part of the diagonal is set to zero.

Whether A is real or complex, roundoff error can make matrix calculations that are supposed to produce symmetric matrices produce matrices that vary a little from symmetry, and `makesymmetric()` can be used to correct the situation.

Conformability

`makesymmetric(A)`:

A: $n \times n$
result: $n \times n$

`_makesymmetric(A)`:

A: $n \times n$

Diagnostics

`makesymmetric(A)` and `_makesymmetric(A)` abort with error if A is not square. Also, `_makesymmetric()` aborts with error if A is a view.

Also see

[M-5] [issymmetric\(\)](#) — Whether matrix is symmetric (Hermitian)

[M-4] [manipulation](#) — Matrix manipulation