makesymmetric() — Make square matrix symmetric (Hermitian)

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

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