diagonal() — Extract diagonal into column vector

Syntax

\[ \text{numeric colvector} \quad \text{diagonal}\left(\text{numeric matrix } A\right) \]

Description

diagonal\((A)\) extracts the diagonal of \(A\) and returns it in a column vector.

Remarks and examples

diagonal() may be used with nonsquare matrices.

Do not confuse diagonal() with its functional inverse, \(\text{diag}\); see \([M-5]\) \text{diag}. diagonal() extracts the diagonal of a matrix into a vector; \(\text{diag}\) creates a diagonal matrix from a vector.

Conformability

diagonal\((A)\):
\[ A: \quad r \times c \]
\[ \text{result}: \quad \min(r, c) \times 1 \]

Diagnostics

None.

Also see

\[[M-5]\) \text{diag} — Create diagonal matrix
\[[M-5]\) \text{isdiagonal} — Whether matrix is diagonal
\[[M-5]\) \text{blockdiag} — Block-diagonal matrix
\[[M-4]\) \text{manipulation} — Matrix manipulation