CS 1173: MATLAB min function

The min function returns the minimum value of the elements along an array dimension.

Example 1: Different ways to apply min to array A

\[ A = \begin{bmatrix} 1, 2, 6; 4, -7, 0 \end{bmatrix} \]

\[ B = \min(A, [], 1); \]
\[ C = \min(A, [], 2); \]

\[ B = \min(A, [], 1) = \begin{bmatrix} 1 & -7 & 0 \end{bmatrix} \]
\[ C = \min(A, [], 2) = \begin{bmatrix} 1 \\ -7 \end{bmatrix} \]
CS 1173: MATLAB min function (1 argument)

When you call min with only one argument, min finds the minimum element(s) along the first non-singleton dimension. For a single row or column, the result is just one number.

\[ B = \min(A) \]

minimum elements array to find the minimum elements of

Example 1: A has both rows and columns

\[
A = \begin{bmatrix} 1, & 2, & 6; & 4, & -7, & 0 \end{bmatrix};
B = \min(A);
C = \min(A(:));
\]

The first non-singleton dimension is 1

\[
B = \minx(A) =
\begin{bmatrix} 1 & -7 & 0 \end{bmatrix}
\]

Example 2: A has just one row

\[
A = \begin{bmatrix} 1, & 2, & 6 \end{bmatrix};
B = \min(A);
\]

The first non-singleton dimension is 2

\[
B = \minx(A) = 1
\]

Example 3: A has just one column

\[
A = \begin{bmatrix} 1; & 4 \end{bmatrix};
B = \min(A);
\]

The first non-singleton dimension is 1

\[
B = \min(A) = 1
\]