rowshape() — Reshape matrix

Description

rowshape(T, r) returns T transformed into a matrix with trunc(r) rows.

colshape(T, c) returns T having trunc(c) columns.

In both cases, elements are assigned sequentially with the column index varying more rapidly. See [M-5] vec() for a function that varies the row index more rapidly.

Syntax

transmorphic matrix rowshape(transmorphic matrix T, real scalar r)

transmorphic matrix colshape(transmorphic matrix T, real scalar c)

Remarks and examples

Remarks are presented under the following headings:

Example of rowshape()

Example of colshape()

Example of rowshape()

: A

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>2</td>
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<td>23</td>
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<td>3</td>
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<td>34</td>
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<tr>
<td>4</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
</tr>
</tbody>
</table>

: rowshape(A, 2)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>12</td>
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<td>14</td>
<td>21</td>
<td>22</td>
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<td>2</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
</tr>
</tbody>
</table>
Example of \texttt{colshape()}

\begin{verbatim}
  1  2
1 11 12
2 13 14
3 21 22
4 23 24
5 31 32
6 33 34
7 41 42
8 43 44
\end{verbatim}

Conformability

\texttt{rowshape}(T, r):
\begin{itemize}
  \item \(T\): \(r_0 \times c_0\)
  \item \(r\): \(1 \times 1\)
  \item result: \(r \times r_0c_0/r\)
\end{itemize}

\texttt{colshape}(T, c):
\begin{itemize}
  \item \(T\): \(r_0 \times c_0\)
  \item \(c\): \(1 \times 1\)
  \item result: \(r_0c_0/c \times c\)
\end{itemize}

Diagnostics

Let \(r_0\) and \(c_0\) be the number of rows and columns of \(T\).

\texttt{rowshape()} aborts with error if \(r_0 \times c_0\) is not evenly divisible by \texttt{trunc}(r).

\texttt{colshape()} aborts with error if \(r_0 \times c_0\) is not evenly divisible by \texttt{trunc}(c).

Also see

\cite{M-4} \textbf{Manipulation} — Matrix manipulation