dlmread

Read ASCII-delimited file of numeric data into matrix

Graphical Interface

As an alternative to `dlmread`, use the Import Wizard. To activate the Import Wizard, select **Import data** from the **File** menu.

Syntax

```
M = dlmread(filename)
M = dlmread(filename, delimiter)
M = dlmread(filename, delimiter, R, C)
M = dlmread(filename, delimiter, range)
```

Description

`M = dlmread(filename)` reads from the ASCII-delimited numeric data file `filename` to output matrix `M`. The `filename` input is a string enclosed in single quotes. The delimiter separating data elements is inferred from the formatting of the file. Comma (,) is the default delimiter.

`M = dlmread(filename, delimiter)` reads numeric data from the ASCII-delimited file `filename`, using the specified `delimiter`. Use `\t` to specify a tab delimiter.

> **Note** When a delimiter is inferred from the formatting of the file, consecutive whitespaces are treated as a single delimiter. By contrast, if a delimiter is specified by the `delimiter` input, any repeated delimiter character is treated as a separate delimiter.

`M = dlmread(filename, delimiter, R, C)` reads numeric data from the ASCII-delimited file `filename`, using the specified `delimiter`. The values `R` and `C` specify the row and column where the upper left corner of the data lies in the file. `R` and `C` are zero based, so that `R=0, C=0` specifies the first value in the file, which is the upper left corner.

> **Note** `dlmread` reads numeric data only. The file being read may contain nonnumeric data, but this nonnumeric data cannot be within the range being imported.

`M = dlmread(filename, delimiter, range)` reads the range specified by `range = [R1 C1 R2 C2]` where `(R1,C1)` is the upper left corner of the data to be read and `(R2,C2)` is the lower right corner. You can also specify the range using spreadsheet notation, as in `range = ’A1..B7’`.

Remarks

If you want to specify an `R`, `C`, or `range` input, but not a `delimiter`, set the `delimiter` argument to the empty string, (two consecutive single quotes with no spaces in between, `’’`). For example,

```
M = dlmread(’myfile.dat’, ’’, 5, 2)
```

Using this syntax enables you to specify the starting row and column or range to read while having `dlmread` treat repeated whitespaces as a single delimiter.

`dlmread` fills empty delimited fields with zero. Data files having lines that end with a nonspace delimiter, such as a semicolon, produce a result that has an additional last column of zeros.

`dlmread` imports any complex number as a whole into a complex numeric field, converting the real and imaginary parts to the specified numeric type. Valid forms for a complex number are

Form	Example
`±<real>±<imag>i|j`	`5.7-3.1i`
`±<imag>i|j`	`-7j`

Embedded white-space in a complex number is invalid and is regarded as a field delimiter.

Examples

Example 1

Export the 5-by-8 matrix `M` to a file, and read it with `dlmread`, first with no arguments other than the filename:

```
rand(’state’, 0);   M = rand(5,8);   M = floor(M * 100);
dlmwrite(’myfile.txt’, M, ’delimiter’, ’\t’)

dlmread(’myfile.txt’)
ans =
    95    76    61    40     5    20     1    41
    23    45    79    93    35    19    74    84
    60     1    92    91    81    60    44    52
    48    82    73    41     0    27    93    20
    89    44    17    89    13    19    46    67
```

Now read a portion of the matrix by specifying the row and column of the upper left corner:

```
dlmread(’myfile.txt’, ’\t’, 2, 3)
ans =
    91    81    60    44    52
    41     0    27    93    20
    89    13    19    46    67
```

This time, read a different part of the matrix using a range specifier:

```
dlmread(’myfile.txt’, ’\t’, ’C1..G4’)
ans =
    61    40     5    20     1
    79    93    35    19    74
    92    91    81    60    44
    73    41     0    27    93
```

Example 2

Export matrix `M` to a file, and then append an additional matrix to the file that is offset one row below the first:

```
M = magic(3);
dlmwrite(’myfile.txt’, [M*5 M/5], ’ ’)
dlmwrite('myfile.txt', rand(3), '-append', ...
   'roffset', 1, 'delimiter', ' ')

type myfile.txt

80 10 15 65 3.2 0.4 0.6 2.6
25 55 50 40 1 2.2 2 1.6
45 35 30 60 1.8 1.4 1.2 2.4
20 70 75 5 0.8 2.8 3 0.2

0.99008 0.49831 0.32004
0.78886 0.21396 0.9601
0.43866 0.64349 0.72663
```

When `dlmread` imports these two matrices from the file, it pads the smaller matrix with zeros:

```
dlmread('myfile.txt')
   40.0000    5.0000   30.0000    1.6000    0.2000    1.2000
   15.0000   25.0000   35.0000    0.6000    1.0000    1.4000
   20.0000   45.0000   10.0000    0.8000    1.8000    0.4000
    0.6038    0.0153    0.9318         0         0         0
    0.2722    0.7468    0.4660         0         0         0
    0.1988    0.4451    0.4187         0         0         0
```

See Also

`dlmwrite`, `textscan`, `csvread`, `csvwrite`, `wk1read`, `wk1write`

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