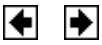
MATLAB Function Reference



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textread

Read data from text file; write to multiple outputs

> **Note** The `textscan` function is intended as a replacement for both `textread` and `strread`.

Graphical Interface

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

Syntax

```
[A,B,C,...] = textread('filename','format')
[A,B,C,...] = textread('filename','format',N)
[...] = textread(...,'param','value',...)
```

Description

`[A,B,C,...] = textread('filename','format')` reads data from the file `'filename'` into the variables `A,B,C,` and so on, using the specified `format`, until the entire file is read. The `filename` and `format` inputs are strings, each enclosed in single quotes. `textread` is useful for reading text files with a known format. `textread` handles both fixed and free format files.

> **Note** When reading large text files, reading from a specific point in a file, or reading file data into a cell array rather than multiple outputs, you might prefer to use the `textscan` function.

`textread` matches and converts groups of characters from the input. Each input field is defined as a string of non-white-space characters that extends to the next white-space or delimiter character, or to the maximum field width. Repeated delimiter characters are significant, while repeated white-space characters are treated as one.

The `format` string determines the number and types of return arguments. The number of return arguments is the number of items in the `format` string. The `format` string supports a subset of the conversion specifiers and conventions of the C language `fscanf` routine. Values for the `format` string are listed in the table below. White-space characters in the `format` string are ignored.

format	Action	Output
Literals (ordinary	Ignore the matching characters. For example, in a file that has `Dept` followed by a number (for department number), to skip the `Dept` and read only the number, use	None

format	Action	Output
characters)	`'Dept'` in the `format` string.	
`%d`	Read a signed integer value.	Double array
`%u`	Read an integer value.	Double array
`%f`	Read a floating-point value.	Double array
`%s`	Read a white-space or delimiter-separated string.	Cell array of strings
`%q`	Read a double quoted string, ignoring the quotes.	Cell array of strings
`%c`	Read characters, including white space.	Character array
`%[...]`	Read the longest string containing characters specified in the brackets.	Cell array of strings
`%[^...]`	Read the longest nonempty string containing characters that are not specified in the brackets.	Cell array of strings
`%*...` instead of `%`	Ignore the matching characters specified by `*`.	No output
`%w...` instead of `%`	Read field width specified by `w`. The `%f` format supports `%w.pf`, where `w` is the field width and `p` is the precision.	

`[A,B,C,...] = textread('filename','format',N)` reads the data, reusing the `format` string `N` times, where `N` is an integer greater than zero. If `N` is smaller than zero, `textread` reads the entire file.

`[...] = textread(...,'param','value',...)` customizes `textread` using `param/value` pairs, as listed in the table below.

param	value	Action

	`' '`
	`\b`
	`\n`
		Space
		Backspace
		Newline

param	value	Action
	`\r` `\t`	Carriage return Horizontal tab
`bufsize`	Positive integer	Specifies the maximum string length, in bytes. Default is `4095`.
`commentstyle`	`matlab`	Ignores characters after `%`.
`commentstyle`	`shell`	Ignores characters after `#`.
`commentstyle`	`c`	Ignores characters between `/*` and `*/`.
`commentstyle`	`c++`	Ignores characters after `//`.
`delimiter`	One or more characters	Act as delimiters between elements. Default is none.
`emptyvalue`	Scalar double	Value given to empty cells when reading delimited files. Default is 0.
`endofline`	Single character or `'\r\n'`	Character that denotes the end of a line. Default is determined from file
`expchars`	Exponent characters	Default is `eEdD`.
`headerlines`	Positive integer	Ignores the specified number of lines at the beginning of the file.
`whitespace`	Any from the list below:	Treats vector of characters as white space. Default is `' \b\t'`.

Note When `textread` reads a consecutive series of `whitespace` values, it treats them as one white space. When it reads a consecutive series of `delimiter` values, it treats each as a separate delimiter.

Remarks

If you want to preserve leading and trailing spaces in a string, use the `whitespace` parameter as shown here:

```
textread('myfile.txt', '%s', 'whitespace', '')
ans =
    '   An  example      of preserving    spaces      '
```

Examples

Example 1 — Read All Fields in Free Format File Using %

The first line of `mydata.dat` is

```
Sally    Level1 12.34 45 Yes
```

Read the first line of the file as a free format file using the % format.

```
[names, types, x, y, answer] = textread('mydata.dat', ...
'%s %s %f %d %s', 1)
```

returns

```
names =
    'Sally'
types =
    'Level1'
x =
  12.34000000000000
y =
    45
answer =
    'Yes'
```

Example 2 — Read as Fixed Format File, Ignoring the Floating Point Value

The first line of `mydata.dat` is

```
Sally    Level1 12.34 45 Yes
```

Read the first line of the file as a fixed format file, ignoring the floating-point value.

```
[names, types, y, answer] = textread('mydata.dat', ...
'%9c %5s %*f %2d %3s', 1)
```

returns

```
names =
Sally
types =
    'Level1'
y =
    45
answer =
    'Yes'
```

`%*f` in the `format` string causes `textread` to ignore the floating point value, in this case, `12.34`.

Example 3 — Read Using Literal to Ignore Matching Characters

The first line of `mydata.dat` is

```
Sally    Type1 12.34 45 Yes
```

Read the first line of the file, ignoring the characters `Type` in the second field.

```
[names, typenum, x, y, answer] = textread('mydata.dat', ...
'%s Type%d %f %d %s', 1)
```

returns

```
names =
    'Sally'
typenum =
    1
x =
  12.34000000000000
y =
    45
answer =
    'Yes'
```

`Type%d` in the `format` string causes the characters `Type` in the second field to be ignored, while the rest of the second field is read as a signed integer, in this case, `1`.

Example 4 — Specify Value to Fill Empty Cells

For files with empty cells, use the `emptyvalue` parameter. Suppose the file `data.csv` contains:

```
1,2,3,4,,6
7,8,9,,11,12
```

Read the file using `NaN` to fill any empty cells:

```
data = textread('data.csv', '', 'delimiter', ',', ...
                'emptyvalue', NaN);
```

Example 5 — Read M-File into a Cell Array of Strings

Read the file `fft.m` into cell array of strings.

```
file = textread('fft.m', '%s', 'delimiter', '\n', ...
                'whitespace', '');
```

See Also

`textscan`, `dlmread`, `csvread`, `strread`, `fscanf`

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Text Properties textscan