



Read and output numerical data from multi-column ascii files.

`datareader` is designed to be a general-purpose tool for the production of data sonifications and other applications in which reading multi-column spreadsheet data is necessary. Datareader allows users to read and output each column of a multi-column file (with up to 64 columns) through a separate outlet. Each line can be output sequentially, forward or backward, or by indicating a specific line number. In addition, datareader includes simple interpolation and smoothing between lines.

Data file requirements:

1. ASCII plain txt file containing numbers (float or int) only
2. One to 64 columns only (note: the number of columns must be set as datareader argument **before** the file is read)
3. Columns delineated by spaces or tabs only (no commas)
4. Object will ignore text that appears as a header to the file and any columns containing non-numeric data. Do NOT count non-numeric columns when determining the argument for the object.

Data file examples:

Example 1: Snapshot of normal file, 4 columns (default), all numeric data

22.20	17.20	200.00	15.54
20.42	15.94	210.00	33.02
19.80	15.50	210.00	33.02
17.86	14.59	210.00	34.97
15.24	13.37	220.00	38.85
13.60	12.60	225.00	44.68

Data file examples continued

Example 2: Snapshot of file with non-numeric header. Object will ignore headers and begin at first number line 1: 8920. Note that this file has more than the default of 4 columns, so before the file is read the argument must be set to the # of columns (9)

ARGOS ID	Date	Time	T(C)	P(MB)	SPD(MPS)	DIR	RH(%)	LAT/LON
8920	2004159	41502	-13.6	889.8	3.5	315		-71.4 68.9
8920	2004159	41502	-13.6	889.8	3.5	315		-71.4 68.9
8920	2004159	41502	-13.6	889.8	3.5	315		-71.4 68.9
8920	2004159	41502	-13.6	889.8	3.5	315		-71.4 68.9
8920	2004159	41502	-13.6	889.8	3.5	315		-71.4 68.9
8920	2004159	55643	-15.1	889.9	3.5	215		-71.4 68.9
8920	2004159	55643	-15.1	889.9	3.5	215		-71.4 68.9
8920	2004159	55643	-15.1	889.9	3.5	215		-71.4 68.9

Example 3: Snapshot of file with non-numeric columns. Object will ignore columns containing non-numeric data...but, when determining the number of columns, non-numeric columns should NOT be counted. (in this case, the # of columns set as an argument for this file is 2)

TROPICAL DEPRESSION ALEX				
	DD/HH	LAT	Lon	WIND
OBS	27/15(GMT)	11.5	-27.0	25K
OBS	27/21(GMT)	12.2	-27.9	25K
OBS	28/03(GMT)	12.5	-29.5	25K
OBS	28/09(GMT)	12.6	-30.9	25K
OBS	28/15(GMT)	12.9	-33.9	30K
OBS	28/21(GMT)	13.5	-36.7	30K
OBS	29/03(GMT)	13.8	-37.8	35K
OBS	29/09(GMT)	13.8	-39.5	35K

Input

read	select and load ascii file (argument: path and filename)
bang	reads the next line of data in the file
reset	resets back to the first line of the file
float	specifies line of data to be output (also interpolates between lines of data)
normalize	scale all output values to one range
normalize_range	sets data within a specified range (one argument: range is < 0., arg >, two arguments: range is < arg1, arg2 >
density	linear interpolation or skipping of values in each column 100% = no interpolation 200% = output one interpolated value between each 50% = skip every other value
smooth	amount of data averaging (using exponential moving average)
loop	loop output arguments: on = start looping off = stop looping palindrome = loop backwards and forwards reverse = loop backwards int = number of times to repeat looping

Arguments (optional)

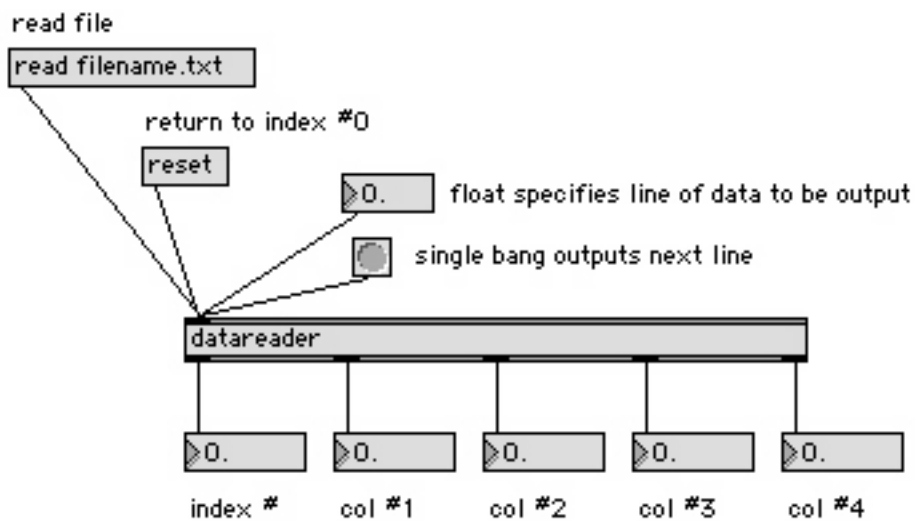
int specifies number of columns in data file, and sets number of outlets. default is 4 columns.
Important Note: the argument must match the number of columns in the data file that is loaded. This value cannot be set dynamically.

Output

outlet 1: float indicates the index number of the line output, a decimal value indicates that the output line is interpolated between lines of data in the file

outlet 2-#cols: float the numerical value in that column at that line

Example:



argument: int. specifies number of columns in data file, and sets number of outlets

note: argument must match # of columns in data file that is loaded. this value cannot be set dynamically, it must be typed on object.

see [datareader.help](#) for more details