LinktoolÐDisplaying a link

    Linktool can display links and tangles from three sources: the Edit Window, from files in matrix notation (usually ending in ".mat" but this is not necessary), and from user-entered names of links or tangles in Conway notation.   Depending on where the link or tangle is coming from, you can invoke the Display Window from one of the choices under the "Display" menu.

    Choosing either of the first three options causes new links and tangles to be added to the *display buffer*, which is an internal list of all the links and tangles *Linktool* is supposed to display.   "Reset Display Buffer" erases this list, so you can display different links and tangles.

Load Files

    After selecting "Load Files," you are given an Open panel, and the opportunity to select multiple files to open.   They can be either of two types: matrix files, or inlist files.

    Matrix file format describes a type of file which can be sent to *readlink* as input.   As an example, consider the following:

```
%L 3_1 L%
%Nx 3 Nx%
%M
r 2 d 2 u
r 3 d 3 u
r 1 d 1 u
```

M%

The different fields of information are delimited by "%" and key characters.   "L" or "C" denotes the label, or title of the figure.   (The underscore in the name tells *Linktool* to make the following characters be subscripts.)   "Nx" denotes the number of crossings in the link or tangle.   And, "M" denotes the actual matrix of the link or tangle.   Conveniently enough, if you choose the "Save" option from the "File" menu, and choose "Matrix" as the File Format, a file in matrix file format is created.   Though "Save" forces a .mat extension on the end of a file, when loading files, there is no restriction on the extension.
        An inlist file contains names of matrix files, separated by carriage returns.   There must be nothing else in this file.   If you select an inlist file in "Load Files," *Linktool* will read off the names it contains in order, and will expect that they are matrix format files.   If the full pathnames are not included, the directory the inlist file lives in will be considered the current directory.
        Note that you may select any combination of inlist files and matrix files at once, though they must all be chosen from the same directory.

Conway Notation

        After selecting "Conway Notation," you are graciously provided with a panel to enter the names of links or tangles.   To enter the name of a link, click inside the text area under "Links" and enter the names, separated by carriage returns.   The names of tangles are similarly entered under "Tangles." When you're finished, click "OK."   *Linktool* accepts any name for algebraic tangles involving multiplication (juxtaposition) of integers, and commas.   Links are formed by taking the tangle and connecting its top two strands together and connecting its bottom two strands together

The parser is extremely strict in what it considers to be a "correct" Conway name.   It follows these rules:

1) Integers meant to be "multiplied" or juxtaposed must be separated by exactly one space.

2) Any occurrence of a comma must appear immediately after the preceding integer, and must be follwed by exactly one space.

For example, the following are good names: "3 5" or "3, 2 6" or "2, 3, 4"; while the following wouldn't cut the mustard: "3,4" or "3   5 4" or "2,   4".

Redraw

Choosing this immediately causes *Linktool* to take the link which is currently in the Edit Window and add it to the display buffer.

Display Control Panel

After you've selected links to display using "Load Files," "Conway Notation," or "Redraw," the Display Control Panel pops up.   The panel tells you how many links (including tangles) are in the display buffer.   After this panel is up, you may still select options from the Display menu to add more links to the buffer, and the panel will be updated accordingly.

Pressing "OK" at this point will display the contents of the buffer in the Display Window.   If, with the present dimensions of links per row and column, the window fills up before the entire buffer has been displayed, a dialog box is brought up, asking you if you want to print the present window or immediately begin displaying the next.   If you wish to send the drawn links and tangles to a PostScript file, then print the page.   A print panel is brought up, giving you the option of, instead of printing, saving

the window to a PostScript file.   After all drawing in the Display Window is complete, you may also print the last page of output by choosing "Print..." from the main menu.

If you click "Output to 3D files," then after you hit "OK," in addition to the buffer being displayed on the screen, each link will be saved to disk in 3D format (useful for feeding through a tuber program, or *linkmover*, a link-evolving program).   Before the drawing begins, you will be prompted for a filename for the 3D link, or, if more than one link is being displayed, an extension to add to the end of the names of all the links.

Clicking "Display Parameters" brings up the Display Parameters Panel, which lets you adjust many aspects of the display.   This panel is discussed in "Display Parameters."