

Softviews by David Morganstein



First, an update on InBox, a message system for Appletalk networks. In a recent review, I mentioned a few problems, mostly for the Administrator Macintosh. The Administrator, usually equipped with a hard disk, is the repository for the messages and files that are sent between work stations. Version 2's major enhancement over the initial version was the ability to run the Administrator in the "background" thus permitting you to use this Mac for other things. (Version 1 had an expensive requirement of a dedicated Mac for use as the Administrator.) When I first tried this, I kept experiencing memory problems. Often, the InBox desk accessory could not be accessed when in Word 3. I added a couple of 1 Meg SIMMs to the Administrator, which cured the memory problems, but not other anomalies, reported on in the review. Among the new ones I have discovered are: a message saying "Can't Open Printer", and the Control Panel hanging after changing background patterns. The worst part of all is the poor performance I am now getting when running Word 3. With InBox running in the background, the Mac seems to "forget" I am typing at the keyboard. Keystrokes are lost and occasionally a letter is repeated four or five times. How about getting a message while running Excel with NO windows open that there is not enough memory to open the InBox Desk Accessory (remember, this is on a machine with 2.5Megs of memory!!!)

Well, being philosophical about this, Version 2 is a major new upgrade and in time, Think Technologies will release 2.1 which will smooth out some of these wrinkles. The only part that gripes me is that I have called about four times and written a letter describing the problems. I have yet to hear back that they are working on a fix for it—alas.

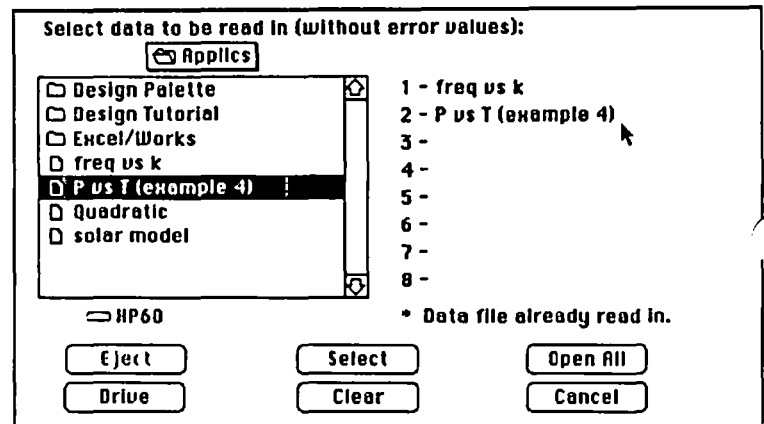
On to an interesting scientific graphing package—it doesn't do bar charts, but I bet there are many readers who can use it's features.

Passage. If you need graphing capability that requires smooth curves, flexible transformations and multi-plot overlays, read on. There are a number of "business graphics" packages available to you. Among the best known are Cricket Graph and Excel. These offer bar charts and pie charts. Passage does not. There are a number of statistical packages, such as Statview and Statworks, which offer scatter plots and histograms of your data. Passage is not a "business graphics" program and it does not do histograms. Rather, Passage provides scientific and mathematical function fitting, smoothing and graphing.

One thing that Passage can do that the better known business graphics programs can not, is to draw smooth curves on the LaserWriter. If you plot a series of points, asking Passage to plot them connected by a line with no plotting symbol, you get the kind of smooth curve that any mathematician will appreciate.

When plotting such a curve with Excel and Cricket Graph, I always end up with little line segments. For this alone, it is worth having!

What it does. Passage allows you to have eight data windows open at once (each window contains an X/Y variable pair with up to several hundred data points.). Any or all of these pairs can be overlaid in a single plot window. Two data windows have been requested in the following dialog box. Passage uses a somewhat non-standard version of an Open box. After the desired data windows have been selected, you must click on the button Open All. This may be a bit confusing, suggesting that a lot of files are about to be Opened, not just the ones appearing in any of the eight slots above.

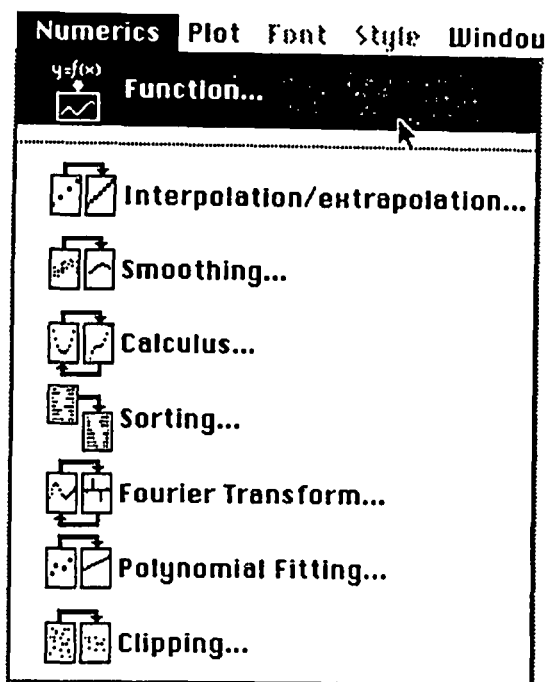


Passage allows great flexibility in plot setup. You can easily select from among a dozen plot symbols and line widths. You can position the plot scales on any two sides of the graph and you can locate the labelling in a variety of ways. Unfortunately the X/Y variables have no default name so Passage requires that you enter the title and X/Y labels for every plotting session involving those variables.

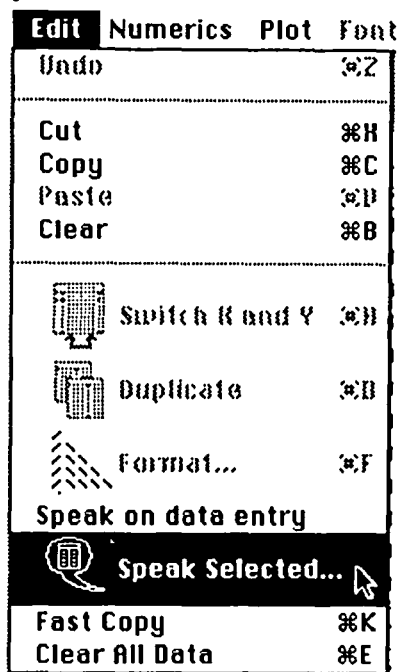
Looking at the following menu, you see that your original data can be transformed in many ways: interpolation and extrapolation; smoothing; calculus (integration or differentiation); fourier transforms; or polynomial fitting (up to 9th order). In addition, data can be sorted or clipped (that is, values outside of a specified range are removed). Passage allows you to specify a function for plotting. This function can be any mathematical combination from among a long list of functions, such as, absolute value, sine, cosine, bessel functions, logarithms and beta functions. Your choice is entered in a window as text and parsed (interpreted) by Passage.

One of Passage's novel features offers audible feedback during data entry or for review of a data file for accuracy. If you have the Apple resource MacInTalk in your system file you can request that Passage speak the numbers as you enter them or read

contd.



back to your specified lines within a data window.



The authors of Passage are scientists, familiar with the concept of standard errors. As such, data files can be read which contain not only the specified value, but the $\pm$ error as well. If requested, these error bars will appear in the plot as upper and lower limits.

How to Use It. To use Passage, you begin by opening an existing, or creating a new, data window. This scrollable window contains two columns, one for the X variable and one for the Y variable. For those familiar with Microsoft Chart, the Passage data window is very similar to it. As you can see in the following screen shot, the data entry window allows you to jump to a specific line or to obtain summary statistics (mean, min, max, standard deviation) for the two variables in the active window. The format of the display can vary the number of decimal places or call for scientific notation, displayed below.

2 - P vs T (example 4)		
N	X Axis	Y Axis
4	2.150E+10	1.060E+5
5	5.230E+10	1.440E+5
6	1.030E+11	1.850E+5
7	1.760E+11	2.270E+5
8	2.760E+11	2.710E+5
9	3.890E+11	3.110E+5
10	5.510E+11	3.570E+5
11	7.500E+11	4.030E+5
12	9.910E+11	4.500E+5
13	1.280E+12	4.980E+5
14	1.610E+12	5.470E+5
15	2.000E+12	5.960E+5

☐ Errors ☐ Insert

Passage provides several useful tools for embellishing your graph and for examining your data once it is plotted. In the following display, each of the tools is explained. First, the data window (or windows) to be plotted are selected. By clicking on one of the numbers 1-8, two sides of the box will appear in bold, indicating the location of the scales. Continuous clicking moves the selection through all four possibilities and then back to a "no plot" option with no scales appearing. Next, select the plotting symbol by clicking in the box to the left of the number. A window containing more than two dozen symbols and five line styles will appear.

PLT Click here when ready to plot

Use this for text
This zooms the display

Select the type of point or line width by clicking here

Use this to read the location of a point.
Use this to identify a point.

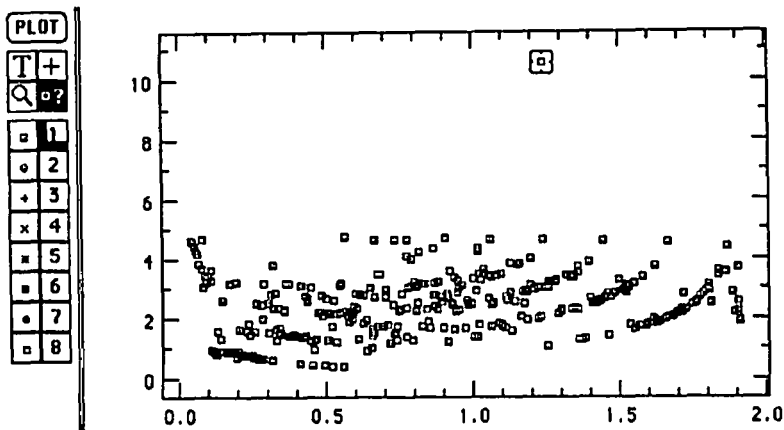
These select the data window and indicate on which side the scales are to be located. This says use data windows 3 and 4 and put the scales on the bottom and left sides.

Text can be added to the graph using the "T" selection. Interestingly, Passage will allow sub and super-scripts in text added to the graph. These must be entered in a unique way similar to old-style word processors, by prefacing the text with a special symbol. The magnifying glass will zoom in on a selected area of the graph. The "+" cross hairs will identify the location of the cursor in the graph (giving an X/Y coordinate) while the question mark can identify the point nearest the cursor (giving the point values).

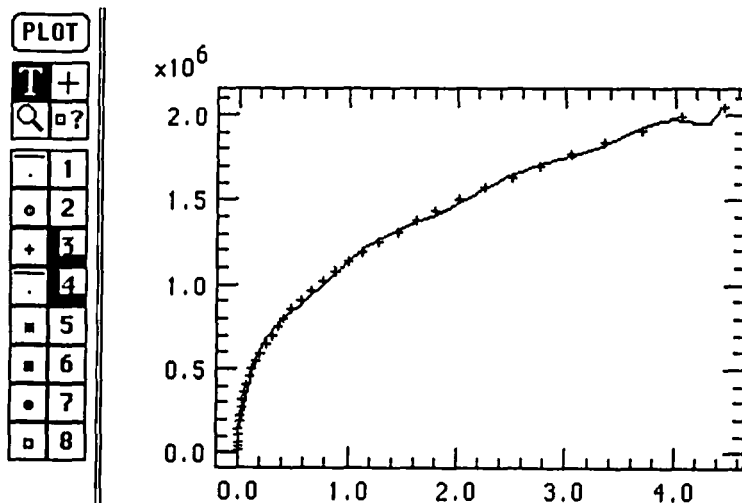
The result of selecting data window 1 for plotting, locating the scales on the bottom and left sides of the graph and selecting a small square as the plotting symbol, is the following scatterplot:

Overlaying two graphs. The procedure for overlaying two graphs could not be easier. Just select the two data windows which are to be overlaid, designate the location of the scales and

contd.



the plotting symbol for each plot, and Passage will do the rest. Below, we have plotted the raw data (in data window 3) and a smoothed version (in data window 4). Since these variables share the same scale, the scales are placed on the same sides, the bottom and left. If you were overlaying two pairs of variables with different scales, one pair might use the bottom and left sides for their scale while the second pair used the top and right sides. Notice that the data in window 4, the smoothed version, is plotted with a line connecting the points while the original data use the "+" plotting symbol. You see this in the display to the left of box 4. You see a small point for use as the symbol and a line at the top of the box indicating that the symbols are to be connected.



Printing. Several handy options can be used to enhance your hardcopy. Up to four plots can be positioned on a single page, ala Cricket Graph's method. An alignment ruler with either 72 or 80 dots per inch can be used to align the various plots and a snap to grid feature to insure multiple displays are properly lined up.

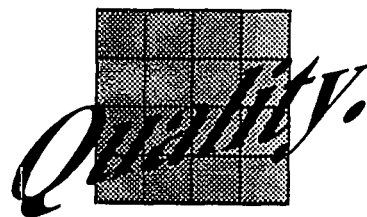
Other Items Worth Mentioning. Passage does not offer any on-line help. If you are a registered owner, with the manual, you will have no problem using the package. Unfortunately, variable names are not stored with the data files. Therefore, every time you use a variable in a plot, you must enter a label for it. Passage does offer one way around this. You can save the labels in a PStartup file (with a unique name) and re-load it whenever you want to work with that data set. This manual approach solves the problem but requires a bit more work on your part.

Access to foreign files is a bit awkward. But Passage does

allow you to enter data from a wide variety of formats. I say awkward because Passage will create a file with only two variables, X and Y, and most likely, your data will be in a file with more than two variables; thus, you will have to read the file and create several Passage files. You can access a standard Mac file or a fixed record length file with variables in specified columns. Passage's convert data routine will scan the file displaying a specified number of records and allow you to skip any header records that may appear at the beginning of the file.

Keep in mind that Passage requires 700K to operate. It will not work on a 512K machine.

Summary. Passage is one of the few packages I have seen which provides for versatile scientific plotting. As mentioned earlier, it is not a business graphics package and it is not a statistical analysis program. It allows for a wide range of data manipulation required by researchers in the scientific community. If you have these needs, Passage can help you. It is not marketed by a software house. To purchase it contact: David Guenther, 673 Orange Street, Apt #7, New Haven, CT. 06511. Price \$195.



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