

GraphPad InPlot

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GraphPad InPlot (version 4.0)¹ is a DOS scientific graphing and curve fitting program that may be installed in Windows² (PIF and ICO files are supplied) or on a network. Released in the spring of 1992, this program will run acceptably on 286 machines (math coprocessor strongly recommended). The program features several types of data input, predefined or user-defined data transformations and equations for curve fitting, statistical analyses, scientific graphing, and a choice of graphical file formats. The user interface is primarily an early DOS menuing system. There is some mouse support that is unnerving initially in this era of Windows standards: there are no scroll bars on help screens; click and drag mousing is unevenly implemented in the graphing environment; sometimes only mouse movement is required to move an element. Despite interface deficiencies, use of the program is straightforward and it is easy to learn.

InPlot utilizes two working environments, a spreadsheet and a graphics page. Data may be entered into the spreadsheet from the keyboard, comma or space delimited ASCII files, and previously saved InPlot files. Selection of any input option initiates a chain of queries. Often these appear one at a time on the monitor so that the first time or the infrequent user is unaware of the type of suboptions from which he/she will be asked to choose. Initial attempts to read in a space delimited ASCII file, generated from a GW-BASIC² program, were unsuccessful. The same file was read successfully by LOTUS 1-2-3³ and SigmaPlot.⁴ The immediate problem was solved by using LOTUS to rewrite the ASCII file. Comparison of the original ASCII file with the file obtained from LOTUS indicated that the problem is alignment of the data columns. InPlot reads correctly space delimited columnar data that is aligned flush right. Once the data have been placed into the spreadsheet it may be transformed with any of the 18 predefined functions, subjected to any of 6 averaging routines, fitted to 12 predefined equations, or used to do standard curve calculations. The results of these manipulations are displayed and may be printed or save in a file. A startling result of the transform functions is that the original data are overwritten in the spreadsheet. It would be helpful to warn the user about this and to offer a "save data to file" prompt in the program prior to the transformation.

Graphs of data may be produced by drawing cubic splines, point-to-point, step-wise, or LOWESS curves; fitting the data to any of 12 predefined equations; or fitting the data to a user defined equation. The creation of titles, labels, axes, etc., is driven by a sequential series of queries. Positioning the graph on the page is greatly facilitated by two tools: a grid displayed

on the graphics page, and an alignment aid which establishes a "cross hair" that reports the coordinates of an object.

Other analyses and data manipulations that can be performed by InPlot include determining the area under a curve (peak), computing *x* or *y* coordinates given one of the set, converting curves to data, and converting curves to their integrals or derivatives.

InPlot now supports dot matrix and laser printers in addition to plotters. Graphs created in the review process were printed on both a HP Laser IIP (low resolution) and an Epson LQ-510. The output was generally of good quality; however, the filled diamond symbols did appear somewhat ragged on the laser output.

Data may be saved to disk as a GraphPad (.GP) or ASCII file. The graphics page may be saved as GraphPad (.IPG), encapsulated postscript (.EPS), HP graphics language (.PLT), and/or bit mapped (.PCX, .IMG, .TIF) files. A .PCX file created by this reviewer was easily read by Paintbrush² and also imported into a Microsoft Word for Windows² document.

The documentation was clear, concise, and for the most part error free. An expanded tutorial with at least one complicated example would be instructive. The data analysis discussion is slanted toward the life sciences and offers important advice and warnings about the use of any computational method. This section also includes literature references for several of the algorithms used to achieve results in the program. In addition the authors displayed an appropriate sense of humor.

There is much to recommend InPlot for both the student and professional scientist. It is a flexible, easy to use tool for graphical data analysis that can produce good quality output. Furthermore, the many file formats supported make embedding graphics into documents nearly effortless. As noted a major drawback is the antiquated user interface. GraphPad plans to release a totally revised InPlot, to be called Prism, in March 1994. It will be a Windows program, with many additional features according to GraphPad.

REFERENCES AND NOTES

- (1) GraphPad InPlot, version 4.04, is available from GraphPad Software, 10855 Sorrento Valley Rd # 204B, San Diego, CA 92121 (telephone: 800-388-4723). The price is \$395 (10% educational discount).
- (2) Windows, GW-BASIC, Paintbrush, and Microsoft Word for Windows are products of Microsoft Corp., 1 Microsoft Way, Redmond, WA 98052-6399.
- (3) Lotus Development Corp., 55 Cambridge Parkway, Cambridge, MA 02142.
- (4) Jandel Scientific, 2591 Kerner Boulevard, San Rafael, CA 94901.