SigmaStat for Windows

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Received January 24, 1995

SigmaStat for Windows,[1,2] version 1.00, is the latest release of Jandel Scientific's statistical software. It is available as a stand alone program or as part of Jandel's SigmaSuite[1] of scientific programs. Minimum computer system requirements are Windows 3.1 running on at least a 80386SX or 80386 processor, 4 MB of RAM, and 7 MB of hard disk space (more if the optional data samples, examples, and tutorials and installed). A math coprocessor is recommended. Installation of the software was straight forward. Importantly Jandel has included a "deinstallation" routine. Some Jandel program files are placed into the Windows System subdirectory if the user accepts the default offered during installation. The deinstallation routine will erase these files. Two computers were used to review this software: a Gateway 2000[3] 486DX2/50 with 8 MB of RAM and a Dell 333D/33,[4] 80386, with 8 MB of RAM. The software executed all test calculations acceptably on both machines, but one nonlinear curve fit took noticeably longer on the Dell.

SigmaStat is a fully implemented Windows application, that is advertised as Microsoft Office[2] compatible. The program has a complete complement of drop down menu options, a tool bar, on-line help, etc. Several windows may be open at any time. As with most current Windows programs, tasks may be accomplished in a variety of ways. For example, after a calculation has been defined, it may be executed from the appropriate menu dialog or from the tool bar Run Button. Jandel has implemented several cute icons that become active when long processes are occurring.

Data to be analyzed are entered into the SigmaStat worksheet manually or imported from other applications. In addition to ASCII files, SigmaStat can accept most spreadsheet, dBASE, SigmaPlot and SigmaStat 5.0, and SigmaPlot 4.0 and 4.1 files. The data then may be formatted, transformed, and/or analyzed using any of the 18 statistical tests available within the program. During the analysis, certain assumptions about the data are checked: normality, equal variance, homoscedasticity, multicollineartiy, and outlying and influential points. Results are not displayed on the data spreadsheet. A report page for each execution of a test is generated. A graph of the results may be obtained from the reports page by immediately selecting the View Graph Button. If the report page is closed or left prior to creating the graph, that facility is lost. The graph generated in SigmaStat may be edited using SigmaPlot for Windows.[1] From SigmaStat, SigmaPlot may be invoked by clicking on the Jandel Application Manager (JAM) icon for SigmaPlot. In addition to sharing graphs from SigmaStat to SigmaPlot, data from either SigmaPlot or SigmaStat spreadsheets may be shared between these applications using the JAM.

The manual is well-written and illustrated with many reproductions of screens and dialog boxes. For novice Windows users there are several pages on basic Windows terminology and techniques. The authors of the manual maintained an appropriate focus; they included brief descriptions of the options and parameters that can be generated by each test so that someone with knowledge of statistics can select the most valid test or procedure and understand the results. For those requiring more help there is an on-line Advisor as well as an appendix that lists 20 statistical references. There are many examples included in the text and as part of the software tutorials. These are easy to follow. Within the first 30 min of experimenting with this program, we were able to carry out successfully a nonlinear regression fit to a user defined equation by simply following the example in the manual.

Users familiar with Windows and other Jandel (even DOS[2]) applications will have no trouble learning to use this program. Others will find the learning curve to be relatively steep.

Areas of dissatisfaction with SigmaStat were mostly concerned with aspects of the user interface and the lack of user controllable default settings. The default font cannot be "permanently" changed in the software. Thus, even though there is a wide selection of fonts available for both the reports page and the printer output, they must be selected **every time** a new report is generated. Likewise, a default log on data directory cannot be set. This has been a long standing deficit in all Jandel software. In the Open File dialog, the drop down list of file types surprisingly lacks a *.* option. As stated above both SigmaStat and SigmaPlot are advertised as being Microsoft Office compatible. This means that the software complies with the "look and feel" of Microsoft Office, in that the programs produce a work area similar to that generated by programs found in the Microsoft Office Suite such as Excel.[2] One important feature of this environment is the utilization of a tool bar for certain well recognized functions, and that buttons so implemented conform to published Microsoft standards. Such software does not have to support, and indeed Jandel does not support, dynamic data exchange (DDE) or object linking and embedding (OLE) to other Windows applications. Between SigmaStat and SigmaPlot, dynamic data exchange links are supported. However, by using "cut and paste" data and graphs from Jandel applications may be placed into other Windows applications' documents. Finally, even after graceful exits of SigmaStat, at least one file, statwin.rtf, will remain in the Windows temp directory.

The versions of SigmaStat and SigmaPlot tested were subject to random crashes. A Jandel technician (Jandel has

discontinued its 800 number technical support line) blamed all of the problems on the Gateway 2000 computer system. Running the programs on the Dell system resulted in similar crashes. If the user is inclined to help Jandel produce better versions of the software, he can run DrWatson (found in the Windows directory). DrWatson will monitor Windows and applications running under it, creating a log file that can be copied and sent to Jandel to decode. At any rate, if the programs should crash the user is well advised to clean up his Windows temp directory. At one time there were over 500 directories and/or files left over from crashes on the test computers.

Those needing only routine statistical data analysis might be served equally well by one of the newer spreadsheet programs. For example, the current version of a popular Windows' spreadsheet has over 60 statistical functions which can be accessed by drop down menu, and graphing of the data is relatively easily accomplished within that program.

ACKNOWLEDGMENT

Mary L. Swift thanks Jandel Scientific for supplying a copy of SigmaPlot for Windows.

REFERENCES AND NOTES

(1) Jandel Scientific Software, 2591 Kerner Blvd., San Rafael, CA 94901. SigmaStat and SigmaPlot are available for $495 each; upgrades are priced at $149. SigmaSuite is priced at $995 and includes SigmaScan/Image for Windows as well as SigmaPlot and SigmaStat.
(2) Windows, Excel, DOS, and Microsoft Office are registered trademarks of Microsoft Corporation, One Microsoft Way, Redmond; WA 98052-6399.
(3) Gateway 2000, 610 Gateway Drive, N. Sioux City, SD 57049-2000.
(4) Dell Computer Corporation, 9505 Arboretum Blvd., Austin, TX 78759.

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