

Welcome to SchoolStat™ 2!

This is a shareware program containing interactive statistical software. Thanks to all the users of earlier versions who have faithfully tested and suggested, leading to this new and improved version containing ANOVA and other goodies for the first time! This version (2.0.4) corrects many initial version 2.0 bugs and hopefully is stable on all Macs running system 6.0.5 and 7. Please try it, and tell me if it doesn't work!

SchoolStat is designed primarily for schools (hence the name!), especially teachers who wish to show how probability distributions can be brought alive with Macintosh graphics. It goes much further though, and has a spreadsheet, sorting, arithmetic and mathematical transformations (including N scores), statistical tests including descriptive statistics, confidence intervals, paired and independent comparisons and introductory ANOVA (parametric and non-parametric), correlations, linear regression, contingency tables, and more. It has a graphing facility for scatterplots, histograms, boxplots, stem and leaf diagrams, and pie charts. A log window keeps tally of your analyses. It accepts 30 columns by 1000 data points in each and will perform any of the functions on your own data. It includes both static probability tables (eg normal, inverse normal, t- and F-distribution, chi-square distribution, and others) and active tables which will plot the distributions and fill in the specified (by the user) probabilities as visible areas under the actual curve. These are in real time and have to be seen to be believed! In addition, you can create simulated distributions (saves typing in data for examples!), and perform odds ratio relative risk and sensitivity/specificity computations. A fully interactive help system is available (modeless windows) at all times accessed from the Apple menu (Command-/).

I have failed in my attempts to get this published formally (but I still don't know why, since everyone has "liked" it so far!), and so offer it for shareware in the hope that it will be useful to schools, first and second year colleges in statistical instruction. Please feel free to offer me suggestions, via my email, and if you like and use it, please send me the shareware fee of \$25 (plus shipping and handling). If there is continuing interest, my next plans were for multiple regression, further ANOVAs and include a more flexible spreadsheet (allowing categorical and ordinal data), but I will hone it into any shape suggested.

SchoolStat™ should be considered a competitor for MiniTab or StatView Student but with the friendly Mac interface and without the price tag.

Compatibility:

It is compatible with Macintoshes with system 6.05 and above, including system 7, and will run on any screen depth, though to get flicker free drawing in the Active Tables, you must have Color QuickDraw installed in your system folder. It runs on Mac Pluses & SEs to PowerBooks, LC IIs and Quadras. But note! It is large in disc space (approx 987K) and needs 860K of RAM at present. This makes it suitable for machines with 2MB RAM at minimum, though it will run in 1MB RAM with a modified system lacking bells and whistles. It should also run on a network (but I have not yet had one on which to test it).

If you like this and use it, then I ask you to be honest, and to send suggestions and the shareware fee (\$25) and a self-addressed disc mailer and one disc to:

David Darby, WhiteAnt Occasional Publishing

80 Roden St, West Melbourne, 3003, Victoria, Australia, phone (613) 329-9981 (email can be through ddarby@bih.harvard.edu till at least 1996).

Of course I give no warranty, or guarantees that this software will do what it is intended to do, and it may not be distributed commercially or packaged with any product placed for sale or profit without the explicit permission of the author. If you find any bugs or incompatibilities I will be most surprised and disappointed, but in any case please inform me. Note that multi-user licenses are available on request (prices per unit drop dramatically for bulk orders).

Please enjoy!

David Darby Mar 1994

Evolution Log

v1.01

#Calculator: attempts to obtain logarithms of zero was associated with a fatal error which has now been corrected (NAN error returned).

#Linear regression difficulties with equipotential data in one sample now correctly returns a correct equation or error message.

#Correlations for similar data sets now are returned as 1.0

v1.0.2

#Smooth active tables now implemented using an offscreen GWorld only if Color QuickDraw is installed in system folder (otherwise SchoolStat™ defaults back to the flickering method). This makes for visually aesthetic probability graph updates.

#Initial window size has been reduced to fit on compact Macintosh screens.

#Axis labels on Scatter and Linear plots are now correct. Thanks go to Joe Strout (and others) for pointing this error out.

v1.0.3

#Pairwise deletion of missing data instituted for all paired statistical procedures. Missing data in the form of empty cells for single sample tests is ignored in analyses.

#Calculator: errors occurred when simple arithmetic was done using 0, have now been fixed (previously used logarithms to check for numeric overflow).

#Transforms: similar errors to above fixed and now return the correct result.

#Simulations: randomization function used sin of random real between 0 and 1.0 was giving skewed distribution of values (noted by Paul Dickman, NSW, Australia). The random generator has been fixed to be more uniform in output.

#Simulations: the reciprocal of the requested exponential simulation mean was inadvertently begin used. This has been corrected.

#Help file updated to include these changes.

v1.0.4

#Active Tables: F- and chi-square distributions did not handle zero degrees of freedom correctly when the Show Graph check box was immediately clicked. This caused a system crash with divide by zero error. The application now correctly handles this. Other errors of maximum degrees of freedom were also fixed (ie if very large df were used in the F-distribution tables!).

#Watch cursor added to long descriptive statistics calculations.

#Mac+ crashes: many users reported stack/heap collisions with simple functions when using Macintosh Pluses. This was due to the smaller stack of 8K allocated at startup as the default by

the Memory Manager. The default size is now enlarged to 32K (as in other environments) so all temporary allocations should have sufficient space.

v1.0.5

#Skewness: the algorithm for the 3rd moment was incorrect, giving the wrong value. This has been corrected (thanks to all those users who reported this).

#Table output: an option has been added to allow all text based results to be outputted to the Results window in rows. If more than one similar test is performed, this allows them to be rapidly compared. Triple clicking can quickly select whole rows in the Results window and the unnecessary lines (eg extra column headers) can be deleted creating a neat table rapidly.

#Transformations: non-consecutive (or consecutive) columns can be added, subtracted, multiplied or divided sequentially (ie left to right order) by selecting a new radio button in the transformations dialog box. This was requested to allow more rapid simple arithmetic on more than one column simultaneously.

#Histogram & Stem and Leaf dialogs: an annoying disappearance of either of these windows was fixed (related to a hit from a hidden editable dialog box).

v1.0.6

#Transformations: z scores were corrected to put the correct z score in the right row. Crashes due to segment loading aberrations were also fixed.

#Updating of the list of columns available in many dialogs after simple spreadsheet operations was fixed, so all available columns will now appear.

#The t distribution probability algorithm was fixed. This was giving errors when using the Normal distribution approximation ($df > 30$) since it was not subtracting 0.5 for negative t values. An error in some nested if statements was corrected.

#Active tables: once the user has clicked in the slider bar, the cursor can be dragged above the sliding bar onto the graph to continue adjustment. This allows a more intuitive point-and-click/drag feel to the active tables updating.

v1.0.7

#Low stack space limitations: continuing crashes on Mac+ and SEs due to inadequate (8K) stack space, has been fixed. Stack/heap collisions should not now occur (they were due to unpredictable returns from the "StackSpace" call).

#Uninitialized variables caused startup crashes on some systems intermittently. These are now correctly initialized.

#Stem & Leaf: intermittent array termination errors have been fixed (caused SANE overflows).

#Active tables: dialog sizes for the F-, Poisson, Hypergeometric and Geometric distributions have been altered to fit on Mac+ screens.

#Flicker free tables alert: on machines without Color QuickDraw, this alert will only sound once for each session.

#Mann-Whitney static table: default formatting has been fixed.

#Store Graph: Active Tables did not correctly store the current graph when the Graph window was hidden. This has been fixed. (This also caused a crash on Mac+ etc machines).

v1.0.8

#Column headers were not displayed when opening a saved data file. Now corrected.

#Ability to save preferences settings enabled (including the menu customization).

#Kruskal-Wallis static probability table added in preparation for addition of ANOVA

#Obscure kurtosis bug fixed.

#Scatterplot option to plot the numbers beside overlaid points added to plotting symbol pop up

palette.

v1.0.9

- #Error alert bug fix: unusual behavior of segment loader occasionally when an error occurred (causing system error and application failure)
- #Error strings moved to a resource list.
- #Modeless windows for calculator, help, static tables and clipboard now created when requested, and disposed completely freeing up to 200kB more RAM during run-time.
- #Architecture change to allow ANOVA with large data sets.

v2.0 (never released)

- #New color windows and 3D buttons/controls added to windows.
- #Kolmogorov-Smirnov added to unpaired 2 sample tests
- #Simple one-way ANOVA added
- #Kruskal-Wallis added (this uses a temporary disc file for large spreadsheet and was a major headache).
- #Odds ratio added
- #Sensitivity/Specificity added

v2.0.1

- #Bug fixes to most of the new routines repaired
- #Stability appeared good, so this version released...

v2.0.2

- #Buttons on several graphing dialogs were reversed, but now fixed.
- #Preferences version added to allow automatic preferences checking and updating for older versions.

v2.0.3

- #Default buttons were corrected (were not responding to default return or enter keys).
- #v2.0.1 & 2.0.2 should never have been released!

v2.0.4

- #Multiple bugs fixed: New Sheet item, Open item & resetting of Stats menu if data sheet no longer empty, do loop now passes more frequent null events, all dialog buttons checked and defaults correctly numbered, analysis pop up menu corrected for last 4 items.
- #Contingency tables now checks for negative and non-integer numbers.
- #Active tables bar now dark blue again (I still don't have a regular color mac on which to work!).
- #Simulations: sloppy code in binomial distribution simulation tightened (?has anybody tested this on a PowerBook 170 or 180 for me?).
- #Major bug in Wilcoxon MP SR test now corrected! Results are now correct.
- #Faster array handling implemented in non-parametric tests (requires less memory also).