

Menu Functions

File menu

This group of menus handles all of the functions associated with files or programs: opening, closing, printing, etc. Many windows can be opened for writing and editing program files, allowing you to work on multiple programs simultaneously without closing them.

new

Use this to create a new edit window for writing a program. (An edit window, also called a program window, is a window where you can write or edit RESAMPLING STATS programs.) Selecting “new” multiple times will create multiple empty windows.

open

Use this option to open an existing RESAMPLING STATS program for editing. A dialog box will appear — you can then scroll through available files. You can also move to a different folder and/or drive. Double clicking on the file you want (or clicking on the open button) will open the selected file in an edit window.

close

Use this option to close the current active window — remove the window and its contents from the screen. If you have made changes since you have last opened the file or since you last saved the document, RESAMPLING STATS will automatically prompt you to save the document.

save

This option will save the contents of the active window permanently to disk, retaining its existing name and updating its contents with the changes you have made. It will not prompt you for confirmation unless the document is new and does not have a current name. In that case, it will ask you for a new name.

save as...

Use this option to save the contents of the active window, but with a different name. This will allow you to make a copy in order to make changes without destroying the original file.

revert to saved

Use this option when you've made changes in a program file and decide that you'd like to abandon the changes and go back to the way the file was the last time you saved it.

print...

Selecting this option will cause the contents of the current window to be printed. If the current window is the "graph" window then the current graph will be printed on the printer. Be sure that your printer is turned on.

Do not confuse the "print" option in the "File" menu with the **PRINT** command used in a program. The **PRINT** command in a program just tells your computer which vectors to display in the results window. It does not cause any output to go to the printer.

print setup...

Use this option to send various instructions to the printer. For example, you can specify the orientation of the printed page: landscape or portrait.

exit

Select this option to close the RESAMPLING STATS program.

Edit menu

This menu provides all of the commands or options available for editing a program. The editor is a full screen editor where the mouse is used for positioning the cursor and selecting or highlighting text. The commands that are essential for editing are described below:

copy

Use this to copy a block of text. First, use the cursor to select the block of text you want to copy. Then select **Copy**. This duplicates the current highlighted selection and places the

duplicate on the clipboard. (The “clipboard” is a hidden “parking place” where sections of text are temporarily placed when they are in transit.) The original selection is not affected.

Then move the cursor to the position where you want to copy the material and use the “paste” option.

Keyboard shortcut: Hold the **control** key while pressing **C**; this copies a selected block of text to the clipboard.

cut

Use this to either remove or move a block of text. First, use the cursor to select the block of text you want to remove or move. Then select “cut.” This removes the current highlighted selection from the “edit” window and places it onto the (unseen) clipboard.

If you are moving (as opposed to removing) a block of text, move the cursor to the position where you want to move the material and use the “paste” option.

Keyboard shortcut: Hold the **control** key while pressing **X**; this removes a selected block of text and places it on the clipboard.

paste

Use this to insert the text that you want to copy or move. First, move the cursor where you want to place the text. Selecting “paste” duplicates the current clipboard information and inserts it at the current cursor position. If you have a block of text selected and highlighted when you use “paste,” that block will be replaced with the clipboard selection being pasted.

Keyboard shortcut: Hold the **control** key while pressing **V**; this “pastes” the clipboard contents to the current file wherever the cursor is.

clear

This removes the current selection but moves nothing to the clipboard. The current selection is lost.

select all

This option will select all of the text in the current active window.

preferences

This option allows you to change several default settings:

explanations

In addition to the “hints” at the bottom of the screen, various help messages appear at different points in the operation of RESAMPLING STATS. You can elect to have either long or short explanations.

color

Use this to set your desired foreground and background colors.

list source...

Use this option to have RESAMPLING STATS include your command statements (your “source code”) in the results window.

create backup

Use this option to have RESAMPLING STATS automatically create a backup file for each program file that you save.

max histogram...

Use this option to change the maximum number of “bins” that the **HISTOGRAM** uses. (A “bin” is a range of values included in a single histogram bar. For example, a histogram bar centered around the value 5 might include values from 3 to 7. This bin’s center is 5 and its width is 4.) When the **HISTOGRAM** command draws a histogram, it first calculates the number of bins required to draw a reasonably-sized graph. It will not exceed the number specified in this option (set by default at 20). You can increase or decrease the number of bars in the histogram by altering this value.

check for escape

RESAMPLING STATS allows you to halt program execution with the escape key, which requires the program to constantly check to see if the escape key has been pressed. To speed execution, you can tell RESAMPLING STATS to skip this step, in which case pressing escape while a program is running will have no effect.

Run menu

This menu provides all of the commands or functions for running a RESAMPLING STATS program. You are ready to run your program after you have finished typing in your RESAMPLING STATS commands. If the execute or step options are not selectable, then an edit window needs to be opened or made active first.

NOTE

There must be a set of RESAMPLING STATS commands in an active edit window before RESAMPLING STATS can execute anything. If you have multiple "edit" windows open, the current active window's program will be the one executed. So make sure the "edit" window you want to run is the front-most window. This will be the active window.

check

Use this option to check your program for errors. Keep two things in mind:

- 1 Some errors might not emerge until you actually run the program.
- 2 An error-free program is one that will execute properly without producing error messages. It does not necessarily produce a statistically correct answer.

clear output

This option closes the "results" and "graph" windows, erasing those results.

execute

Use this option to execute or run the program in the active "edit" window. If your program is error-free, the results will appear in the "results" window. If your program has errors, RESAMPLING STATS will describe the problem and give a descriptive error message that will appear in the "error" window.

You do not have to save your program before you run it, but it is recommended that you do so to ensure that your updates will have been saved in case of some unforeseen problem.

If a **PAUSE** instruction is encountered, the program will stop executing. Selecting the **Execute** option again will

cause the program to continue with the next statement after the **PAUSE**.

NOTE

To print your program, make sure the “edit” window is the active window and choose **Print** from the “File” menu. To include your program commands in the “results” window, select **Preferences** from the “Edit” menu and make sure the “List source in results” option is selected.

step

This option will execute one command at a time starting at the current command. In this way you can “step” through your program one command at a time and see the results as your program executes. You must click on the desired vector to see what’s inside it. A maximum of 100 values will show in the Step dialog box.

HINT

Use the Step option to “debug” your program — i.e. to make sure it is doing what you think it is, one step at a time.

Wizards menu

Use RESAMPLING STATS Wizards to simplify the task of writing programs. Write one iteration of the procedure in the RESAMPLING STATS language, then use the Wizards to repeat it and analyze the results.

Here’s how:

Let’s say you want to find out how probable it is that you will get 14 or more heads in 20 tosses of a fair coin. There are 3 basic steps:

- 1 Write a “core procedure” (in this case, flipping a coin 20 times and counting heads)
- 2 Repeat this core procedure lots of times and record the outcomes (the number of heads each time)
- 3 Analyze the results to see how often you get 20 or more heads

Using the RESAMPLING STATS “Wizards” menu:

- 1 From the “Wizards” menu, select “Write Core Procedure.” A blank window (called a “program window”) will open up.
- 2 Click on this blank program window to make it active, then type the following:

GENERATE 20 1,2 flips

COUNT flips =1 heads

This will generate, at random, twenty “1’s” or “2’s” and put them in a vector called “flips.” (A vector is just a list of numbers.) We’ll let “1” = “heads.” Then it will count how many “1’s” there are in “flips,” and put the result of that count into “heads.”

- 3 From the “Wizard” menu, select “Check Core Procedure” to make sure your commands are typed correctly.
- 4 From the “Wizards” menu, select “Repeat Wizard,” and answer the questions. You can leave the “number of repeats” at 1000. The vector you want to keep track of is, of course, “heads.” You can name the scorekeeping vector anything with 8 characters or less; we suggest “scrboard.” Then click “proceed” — RESAMPLING STATS will then repeat your commands 1000 times and record the results of each trial in the vector “scrboard.” “Scrboard” now contains 1000 numbers, each number representing the number of heads in a particular set of 20 tosses. Note how RESAMPLING STATS adds the necessary commands to your program to accomplish this.
- 5 If it is not already open, from the “Wizards” menu, select “Results Wizard,” and answer the questions. We are interested in analyzing the results in “scrboard,” so leave that as is in the first line. Our original question was about the probability of getting 14 or more heads, so, in the second line select \geq (“greater than or equal”), type in 14, and select “get results.” The answer will appear in the panel on the right. This is the estimated probability of getting 14 or more heads in 20 coin tosses.

Note how the Repeat Wizard adds the **REPEAT/END** and **SCORE** commands to your program (as well as the **HISTOGRAM** command if you had that box checked). As you get more proficient with RESAMPLING STATS, you may choose either to continue using the Wizards, or to write your programs entirely from scratch.

Windows menu

Use this menu to “bring to the front” RESAMPLING STATS’ windows. Selecting any window from this menu will automatically make it the active window, covering up other windows behind it. This is very useful if there is a window hidden by other windows.

You can also make a window active by clicking on it, if it is visible. A window must be active before you can enter data or text in it, run the program in it, or print its contents.

“edit” windows

These are windows where you edit (write) your program(s). In the “Windows” menu, these windows are listed by name, above the dotted line.

The open “edit” windows are listed by title above the line in the “Windows” menu.

“error” window

This window is where any error messages will be displayed. If the “error” window is not currently visible and the program encounters an error, the “error” window will automatically be displayed. A checkmark to the left of the “error” window name in the menu indicates that the “error” window is open on the screen. (It is considered open even if other windows totally hide the window.)

“results” window

This window is used for showing output from the programs. This includes output from any **PRINT** command(s), frequency tables from **HISTOGRAM** commands and any other message except for error messages.

To print the output from your program (the results, for example), make sure the “results” window is the active window and choose **print** from the “File” menu. To include command statements in the printout, choose **list source** in the **preferences** option (under the **edit** menu) before you run your program.

Do not confuse the **Print** option in the “File” menu with the **PRINT** command used in a program. The **PRINT** command in a program just tells your computer which vectors to display in the “results” window. It does not cause any output to go to the printer.

“graph” window

This window is where histograms and other graphs are drawn. This window is normally invisible; if the program encounters one of the graphing commands the window will be made visible automatically. The scroll bars and size box of the window allow you to see the entire graph.

If you have specified more than one vector to be graphed in a single command (**HISTOGRAM y z**), use the horizontal scroll bar to see all of the graphs.

Scaling: graphs will be scaled automatically according to the maximum and minimum values of the variables.

In histograms, the left side of the graph — the y-axis — indicates the frequency count of the vector elements, while the bottom of the graph — the x-axis — displays the variable values.

You can control the number (and hence the width) of the histogram bars through the “preferences” option in the “Edit” menu — see above.

To print the “graph” window, simply make sure it is the active window and choose “print” from the “File” menu. Or, to have better control over the size and appearance of the graph, copy it to your word processor and print it from there (while the graph window is active, select “copy” from the “Edit” menu).

“hints” window

This window contains general explanations pertaining to the situation you are in.

Help menu

RESAMPLING STATS offers you lots of help. Through the “Help” menu, you can get:

- “Help topics” — A list of subjects on which further help is available.
- Introduction and examples in the “getting started” and “examples” sections.
- Help with commands

Other help includes:

- A “command syntax checker” at the top of each “edit” window that tells you whether you’ve typed a valid command, what additional information the command needs, and whether you have entered all the information properly.
- **Control-F1** gives you help with the command on the current line.
- **Shift F1** gives you additional context sensitive help.