

Using PSPad for Programming in SAS

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May 20, 2009

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PSPad

Features

Note: This document was originally written for a particular configuration of PSPad. Some shortcut keys will not be the default ones.

PSPad is a freeware text editor available at <http://www.pspad.com/en/>. It can be used to edit SAS program files (or other text documents), launch programs in SAS or run them in batch mode. Useful features of PSPad are:

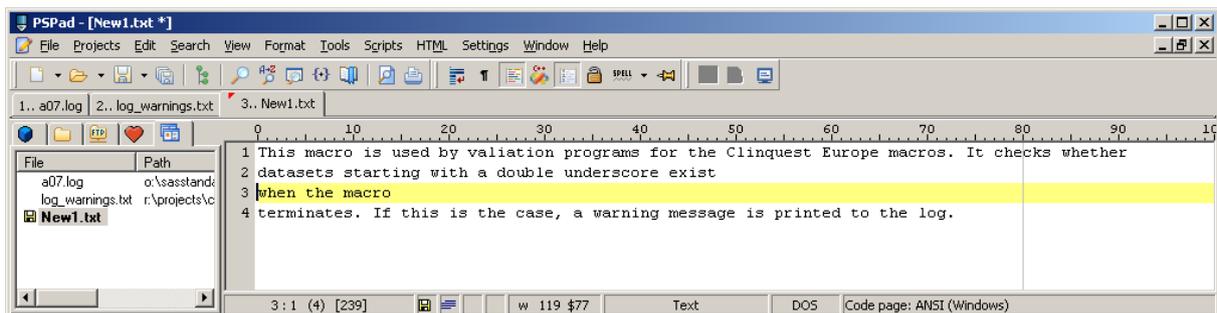
- Join selected lines into a single line
- Reformat selected lines into segments at column 80 (adjustable)
- Search and replace using regular expressions
The SAS editor can search using regular expressions but cannot do replacement using backreferences (discussed below)
- Search and replace in files
- List all occurrences of a search string
- Matching parentheses, braces, brackets are highlighted
- Bookmarks are very easy to set and to navigate
- Compare files

Join lines

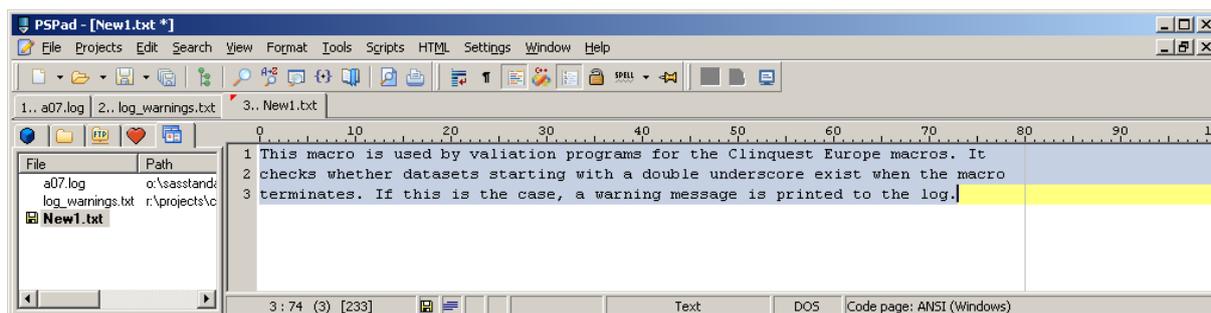
Press the shortcut key Ctrl+J or use the menus “**F**ormat”, “**B**lock Format”, “**J**oin Lines” to join a selection of text into one long line. This can be useful prior to including the text in Word. Otherwise, each line would become a separate paragraph in Word.

Reformat text

Press the shortcut key Ctrl+Shift+J or use the menus “**F**ormat”, “**B**lock Format”, “**R**eformat (paragraph is blank line)” to reformat the selection into line segments at column 80. This can be useful to make text appear similar to a left-justified paragraph. For example, the text prior to reformatting:



And after formatting:



The light grey line at column 80 shows where the right margin will be when reformatting the text. Click on the margin to move this right margin.

Search and replace using regular expressions

Regular expressions can be used to search for (and replace) text patterns in the text. Special symbols (metacharacters) can be used to match text starting at the beginning or the end of the line or containing certain characters.

For example, suppose the text contained X1, X2, X3 ... and you wish to replace this by X¹, X², etc. The search string in this case would be:

X(d+)

The “X” represents the letter X. The parentheses create a subexpression that will be referred to in the replacement text. “\d” matches any numeric character. A “+” following “\d” indicates one or more matches.

The replacement string would be:

X^{super \$1}

“\$1” is a backreference that contains whatever text was matched. So “X1” will be replaced by “X¹”, “X2” by “X²”, “X12345” by “X¹²³⁴⁵”.

Note that the editor in SAS can search for regular expressions but that a backreference such as “\$1” cannot be used.

A second example: suppose you want to search the SAS log file for all errors or warnings. The search string would be:

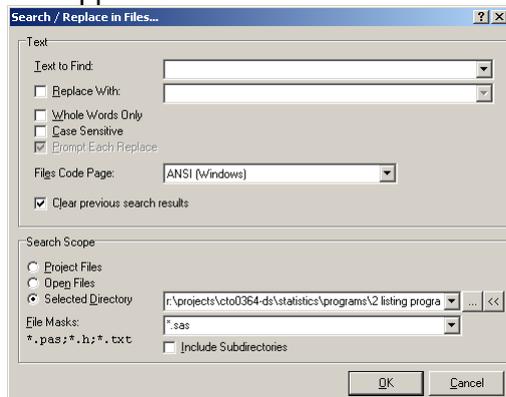
^(error|warning)

The “^” means the start of the line. This way, any occurrence of “error” or “warning” in the body of the text, e.g. in a comment or a label, will be ignored. The “|” bar means “or”. So the expression will match either “error” or “warning” if they occur at the beginning of a line. The search will not be case sensitive (unless the “**Case Sensitive**” box is checked in the “**Find**” dialog box).

For further information on regular expressions, see <http://gogogadgetscoot.info/pspad/regexpr.htm>.

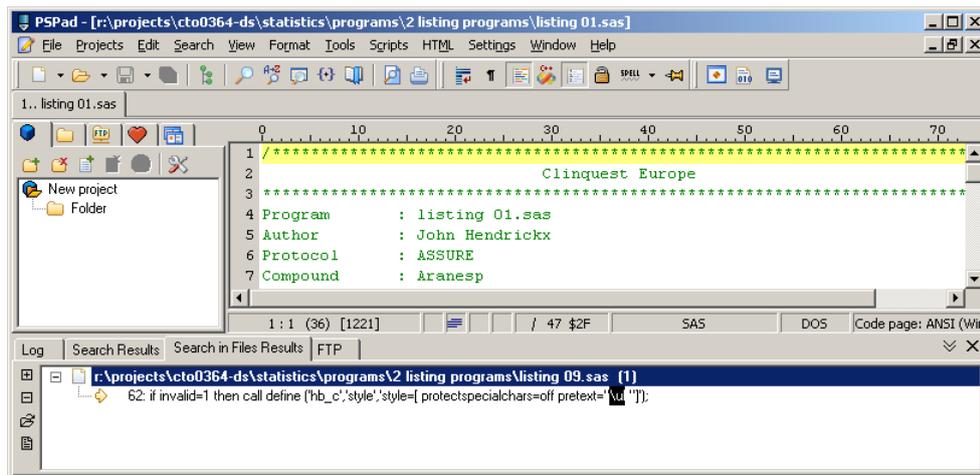
Search and replace in files

Press Shift-F5 or use the menus “**S**earch”, “**S**earch / Replace in files”. The following dialog box appears:



Click the “<<” button to use the director of the file currently being edited as the “Selected Directory”. Click the “...” button to browse to the directory to be used.

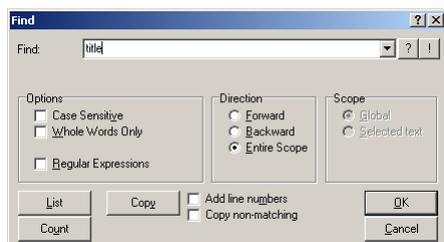
After the search, the screen will be split horizontally, with the search results in the lower section of the screen:



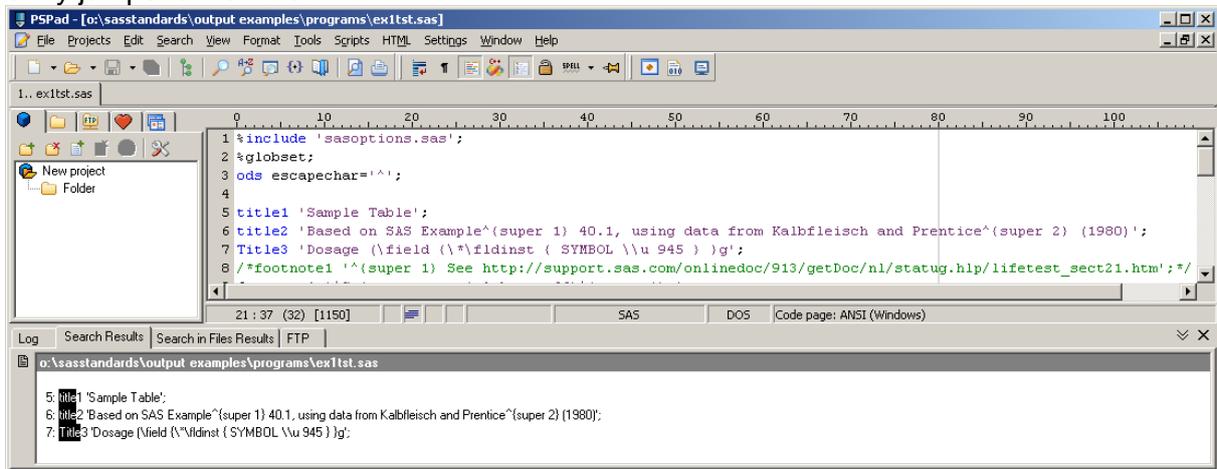
Double-clicking an entry opens the file on the line specified.

List all occurrences

The “Search” command in PSPad will allow you to obtain a list of all occurrences of the search string in the current file. For example, to find all titles in the current file, press Ctrl+F to open the “Find” dialog box. Enter the search text, then click the “**L**ist” button.

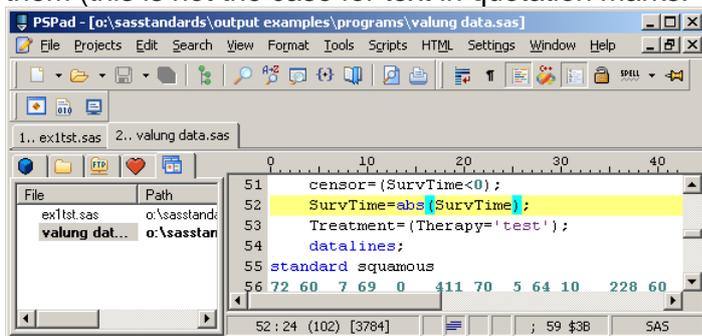


This will split the screen horizontally, with the search results in the bottom half. Clicking an entry jumps to that line.



Matching parenthesis

Matching parenthesis, brackets, braces, are highlighted in blue if the cursor is placed next to them (this is not the case for text in quotation marks).

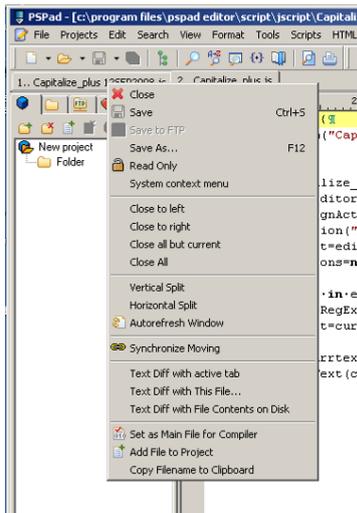


Bookmarks

Press Alt+Left to insert a bookmark. A small yellow square will appear in front of the line. Use Alt+Down to jump to the next bookmark and Alt+Up to jump to a previous bookmark. Use Alt+Right to remove a bookmark.

Compare files

Open both versions of the file in separate tabs. Make one version the active file, then right-click on the tab of the reference file. Choose "Text Diff with active tab" (sixth from below).



A new tab will be inserted with the screen split vertically. Lines that are different will be highlighted in green. Sections that are in the left-hand file but not in the other will be highlighted in pink. Sections that are in the right-hand file but not in the other will be highlighted in blue. Press Ctrl+Shift+Down to go to the next difference between files or Ctrl+Shift+Up to go the previous difference.

Enhancements based on scripts

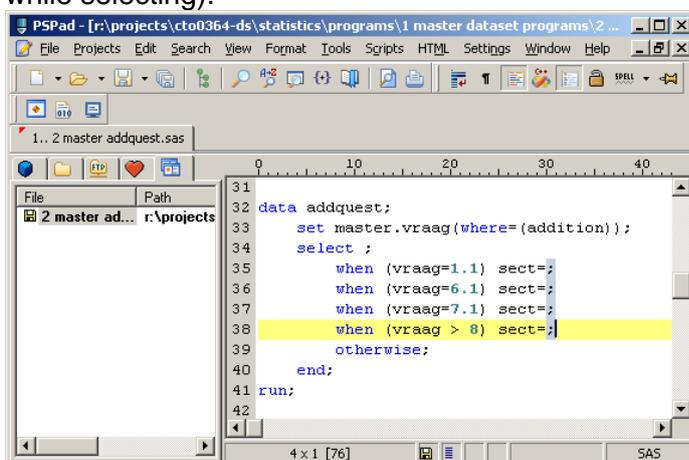
In addition to these features, PSPad can be enhanced by creating scripts to add new capabilities. The “fillcols” and “SAS Utils” scripts were written by the present author and are described below. These and other scripts are available at <http://www.pspad.com/en/pspad-extensions.php>.

- Fill columns
- Run SAS
- Check a SAS log file for errors and warnings
- Check all SAS log files for errors and warnings

Fill columns

Insert text or a number sequence for the selected columns.

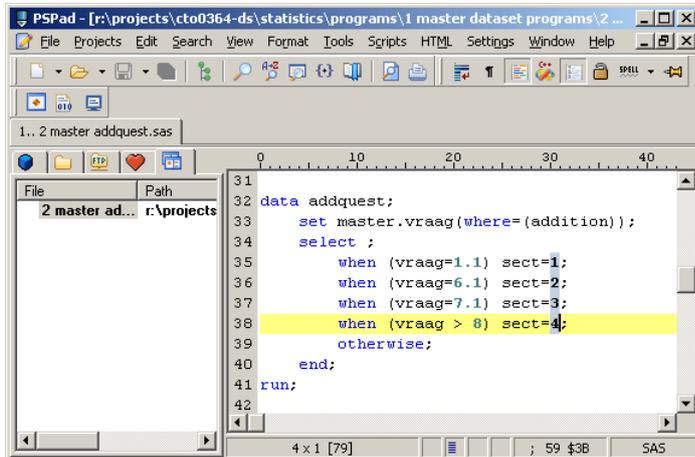
Before using the fill columns script, select a rectangular block of text (hold down the Alt key while selecting).



Use Ctrl+Alt+F to run the Fill Columns script. A dialog box will appear:



Enter “1++” to insert the numbers 1 to 4:



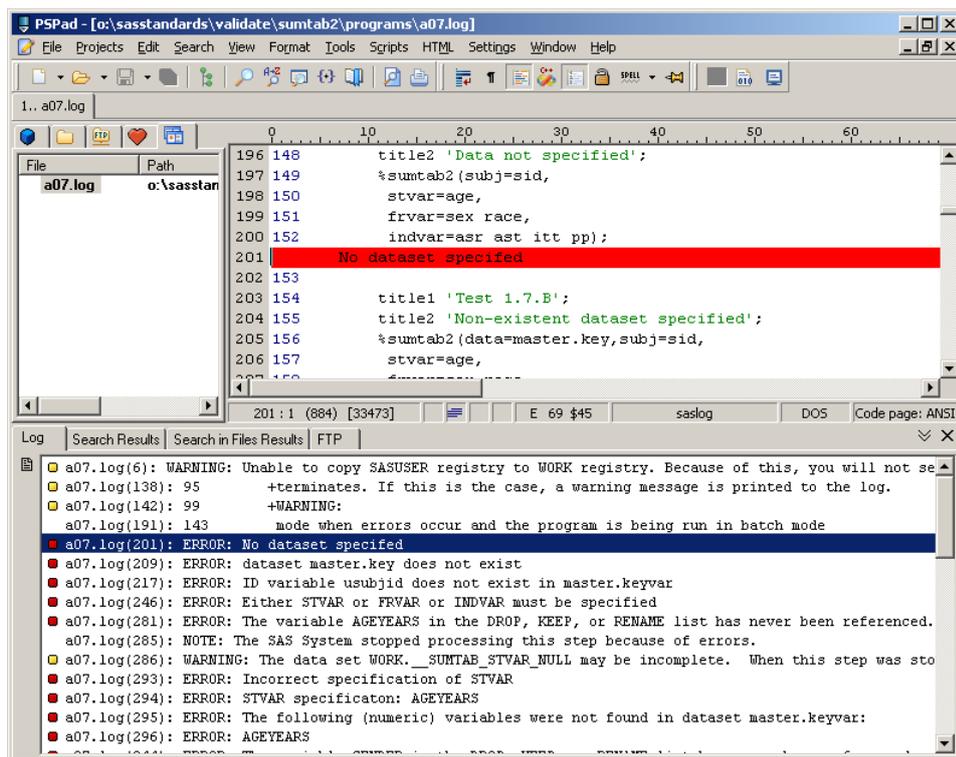
If “10++2” had been entered in the dialog box, the number sequence inserted would have been 10, 12, 14, 16. Use Ctrl+ALT+F to insert the number sequence or text before the selected columns. Use Ctrl+Shift+F to replace the selection.

Run SAS

Press Ctrl+Shift+R to run the current SAS file in batch mode. After the file has run, the log file and listing (if generated) will be opened or updated.

Checking the SAS log file

Press Ctrl+Alt+L to check a SAS log file for errors, warnings, or relevant notes. The screen will be split horizontally, with a list of errors/warnings/notes in the lower half:



Check all SAS logs

To check all SAS logs, press Shift+Ctrl+Alt+L or use the menus “**Script**”, **SAS**, “**SASlogCheckAll**”. The script will check all SAS log files in the current directory and will create and open the following three files:

- log_errors.txt
- log_warnings.txt
- log_notes.txt

The file will be empty if no log messages occurred of the type specified.

Miscellaneous scripts

- Press ^{*} Ctrl+Shift+C to insert comments /* */ in the selected lines
- Press Ctrl+Alt+C to remove comments /* */ from the selected lines
- Press Ctrl+Shift+D to insert the current date (as e.g. 01JAN2009)
- Press Ctrl+Shift+N to insert the filename of the current file
- Use the menus “**Script**”, “**Insert Info**”, “**Report Macros**” for a list of SAS macros in the current document. Here too, the screen is split and the results are copied to the clipboard so they can be pasted elsewhere.

Configuring Windows Explorer to open SAS files with PSPad

Normally, if you double-click a SAS file in the Windows Explorer, it will be opened in SAS. To change this behavior, use the menus “**Tools**”, “**Folder Options...**” in Windows Explorer, then

^{*} The shortcut key Ctrl+/ is not available for script commands in the current version of PSPad

select the **“File Types”** tab. Scroll down to the SAS extension (file type **“SAS Program”**), then click on the **“Advanced”** button. Select **“Open”**, then click the **“Edit...”** button. Use the **“Browse...”** button to select "C:\Program Files\PSPad editor\PSPad.exe" followed by "%1" (the quotation marks are to be included).

There are easier way to change the association of the .SAS extension with a Windows program but this method will leave the context menus and other settings intact.