

SAS® Abbreviations Are Your Friends; Use a Template Method to Code!

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ABSTRACT

Often, coders find themselves using the same procedures or sequence of procedures over and over again. It would be very useful to create a "shell" of a procedure or program that can be used to cut down on repetitive typing. (For example, to submit the generic code "proc print; run;"). This quick demonstration will show how to create/edit/use SAS® abbreviations to quickly interject code into the Enhanced Editor window in SAS® for Windows or in the code node in SAS® Enterprise Guide®. This technique can be easily used by any level of SAS user from beginning to expert!

INTRODUCTION

Is there a procedure or function that usually causes you to look up its syntax? Is there a block of code that you use quite frequently? Do you have to add a large comment block at the top of your programs, and want to insert the template?

If you answered yes to any of these questions and you use the Enhanced Editor on the Windows platform or SAS Enterprise Guide, you can take advantage of SAS abbreviations. Using them can help reduce the amount of time you spend programming redundant tasks.

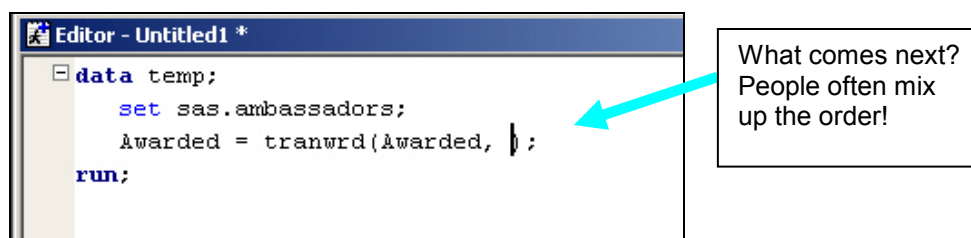
WHAT ARE SAS ABBREVIATIONS?

A SAS abbreviation is simply a character string you define so that when you type the string in the Enhanced Editor window, the string is substituted with a longer text string. This longer text string becomes very useful when it is SAS code!

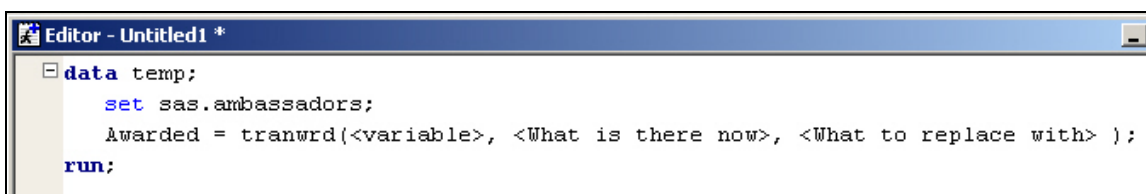
There are two parts of the abbreviation. The first part is the code you want to be able to quickly automate. The second part is a nickname. When you type the nickname into the Enhanced Editor window, SAS will prompt you to use the abbreviation.

AN EXAMPLE SCENARIO

One of the common difficulties that some SAS programmers have is remembering the syntax for infrequently used procedures or functions. This is why many SAS programmers continue to use SAS reference manuals and SAS OnlineDoc for simple syntax questions. An example of this is the syntax of the TRANWRD function. The TRANWRD function requires three parameters. Any mistake in the order of the parameters can ultimately alter or invalidate the results.



After you look up the function, you see that it really should be written as:



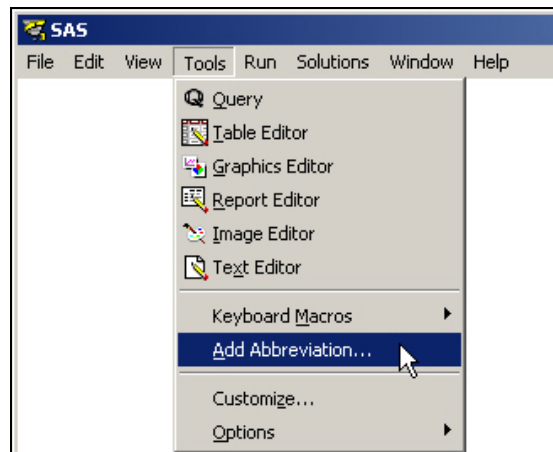
Looking up the syntax each time can be time consuming. You might choose to write it down, but it could get lost under all those papers on your desk. It would be nice if you had a way to remind yourself of the syntax electronically with little effort. Here is where a SAS Abbreviation is your friend.

CREATING AN ABBREVIATION

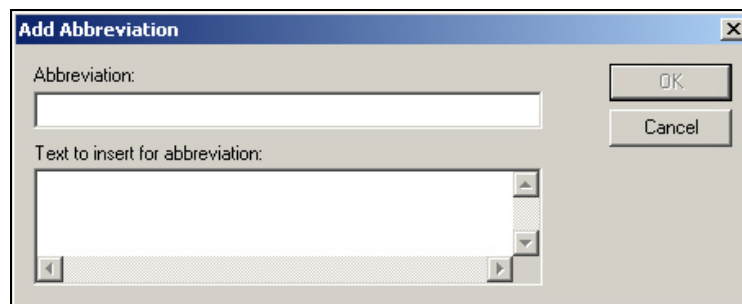
Copy the code from your editor window. (You will be able to type it, but it is easier to paste code that is verified from the editor window.)

Place the cursor in the Enhanced Editor window.

Select the **Tools** menu and then select **Add Abbreviation**.



A window opens where you will specify how you want to create the abbreviation. You need to supply the name for the abbreviation, as well as the text that SAS should insert into the editor when you use the abbreviation.

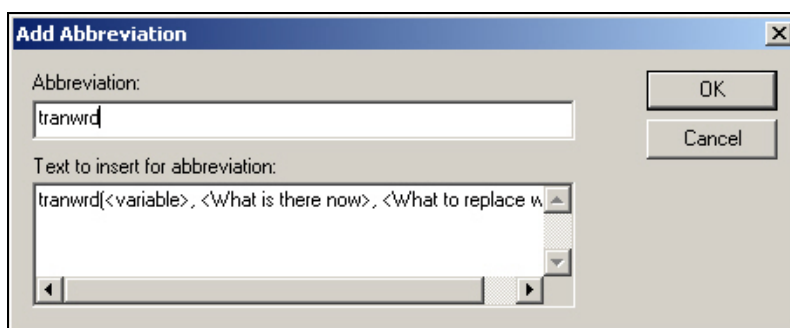


Paste the code into the bottom area labeled *"Text to insert for abbreviation"*.

Specify an abbreviation that will be easy to remember in the area under the label *"Abbreviation"*.

In this example, it is extremely easy to accidentally switch the order of the last two parameters in the TRANWRD function. The SAS abbreviation can be used to remind the user of the exact syntax. The next time the abbreviation is typed in the editor window, the user will be given a visual reminder that can be inserted into the code.

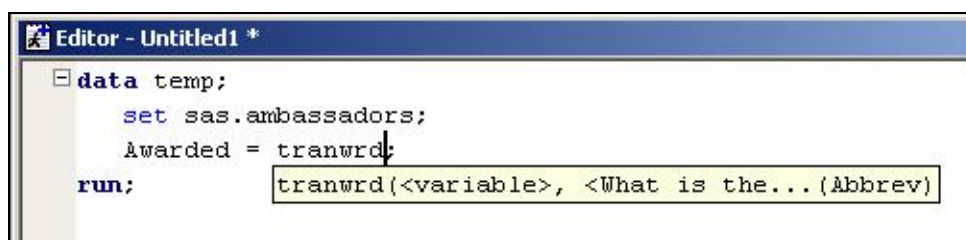
Any character string can be used for the name of the abbreviation, including blanks. However, care should be taken when selecting the abbreviation name. It is a good idea to choose a name that you do not use often. You would not want to use the letter "T" alone as the abbreviation name, since the letter "T" usually appears throughout programs. A best practice is to use the name of the SAS function as the name of the abbreviation.



Click **OK**. Your abbreviation has been created!

USING YOUR ABBREVIATION

In your Enhanced Editor window, place the cursor where you want to insert your code. Type the name you assigned when creating the abbreviation.



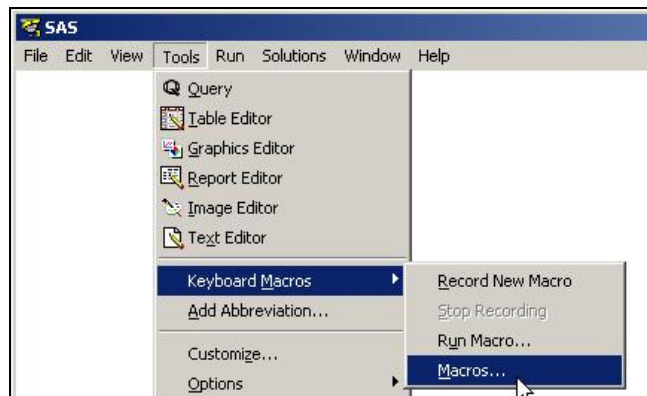
A small box will appear with some of the code from the abbreviation. You have two choices:

- You want to use the abbreviation. Simply hit the **ENTER** key or the **TAB** key. SAS will insert the code for the abbreviation into the editor window where the cursor is and will remove the abbreviation name. Replace the reminder code with the actual values or variable names.
- You do not want to use the abbreviation. Simply keep typing, and the box will go away.

CHANGING OR DELETING YOUR ABBREVIATION

Place the cursor in the Enhanced Editor window.

Select the **Tools** menu and then **Keyboard Macros**, followed by **Macros**.



A window opens. Click on the abbreviation you want to change or delete so it is highlighted.

- If you want to delete the abbreviation, click **DELETE**.
- If you want to change the abbreviation, click **EDIT**.

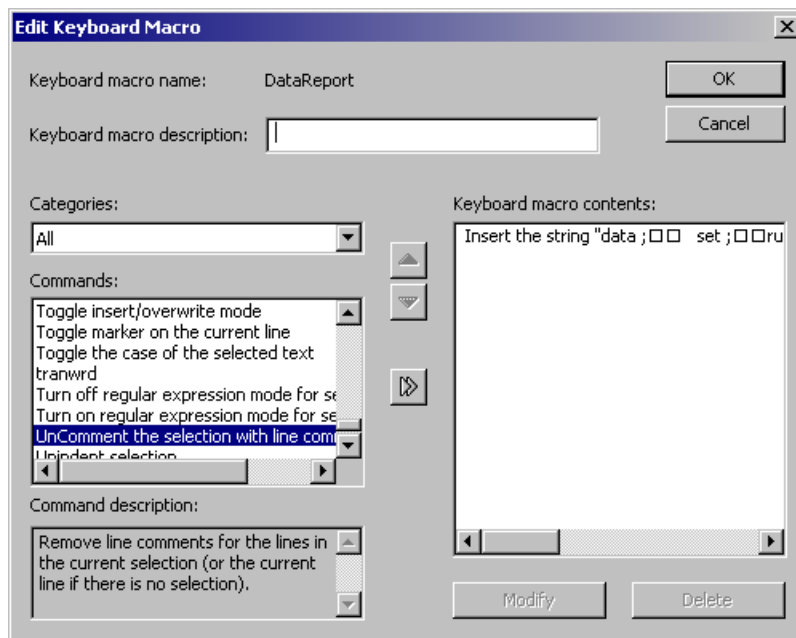
When you choose to edit the abbreviation, a new window opens and your code will appear on the bottom right side. Click on the code to select it.

AN EXAMPLE SCENARIO

The abbreviation *DataReport* contains a template for a basic DATA step and PROC REPORT step, as shown below. The PROC REPORT step contains only a single COLUMN statement. It might be desirable to add a DEFINE statement to the step, to be reminded of its syntax.

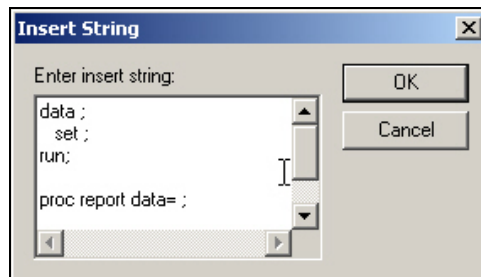
```
data ;  
    set ;  
run;  
  
proc report data= ;  
    column ;  
run;
```

In this example, the abbreviation called *DataReport* needs to be edited to add the DEFINE statement.



Notice that the two buttons at the bottom of the window labeled **MODIFY** and **DELETE** are no longer grayed out. Click **MODIFY**.

A second window will open where the code can be modified, either by typing directly or by pasting text. In this example, a DEFINE statement is added to the PROC REPORT step.



When you are finished, click **OK** to close the Insert String window.

Click **OK** to close the Edit Keyboard Macro window.

Click **CLOSE** to return to the editor window.

When you type the abbreviation name *DataReport* into the editor and hit the **ENTER** key, the newly updated code is added.

```
Editor - Untitled1 *  
data ;  
    set ;  
run;  
  
proc report data= ;  
    column ;  
    define / format=;  
run;|
```

ASSIGNING KEYSTROKES TO YOUR ABBREVIATION

While abbreviations are great solutions for infrequently used or hard to remember syntax for functions, they can also greatly simplify the life of a coder who performs repetitive tasks. Similar to SAS keys functionality, abbreviations can be assigned a keystroke(s) that can be used instead of the abbreviation name. Once the keystrokes are triggered, SAS will insert the abbreviation code into the editor window.

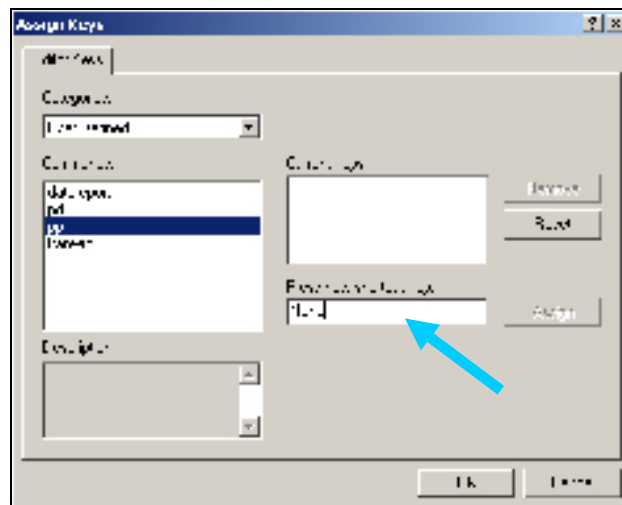
First, decide what keystroke or keystroke combination you want to assign to the abbreviation.

Select the **Tools** menu and then **Keyboard Macros**, followed by **Macros**.

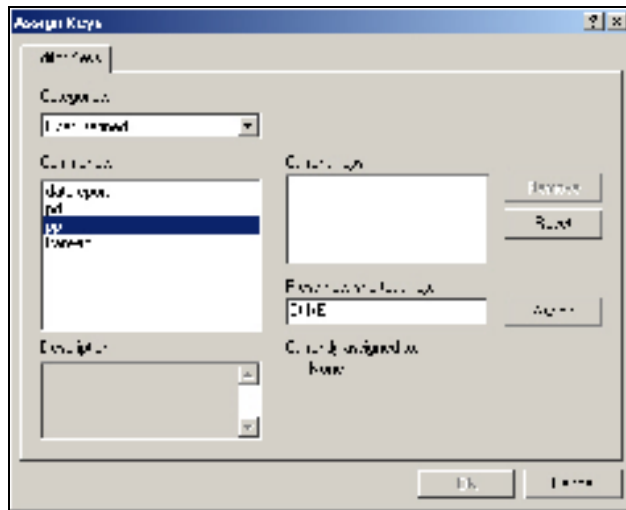
A window opens. Click on the abbreviation you want to add a keystroke for so it is highlighted.

Click on the button **Assign Keys**.

Place your cursor in the area labeled “Press new shortcut key”.



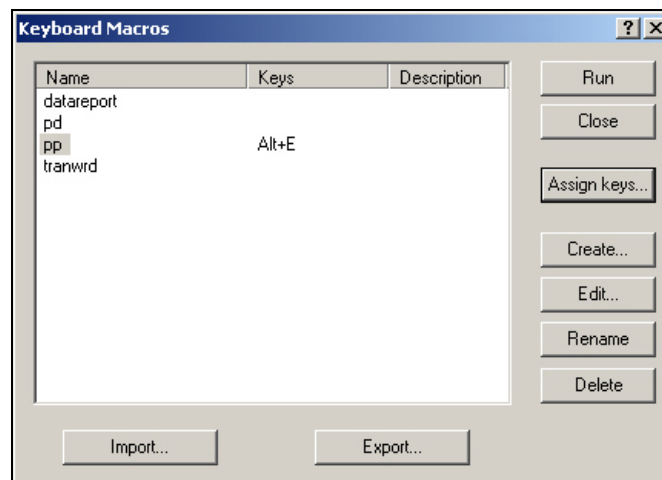
Enter the keystroke(s) you have decided upon for the abbreviation. For example, hold down the ALT key and the E key at the same time to assign ALT-E as your keystroke. Note that if you hit the Backspace button, the shortcut key box will contain the word “Backspace” to indicate the abbreviation will be associated with the Backspace key.



When you are happy with your selection, click **Assign**.
The shortcut will be added to the area labeled “Current keys”.

Note: You can assign keys for other abbreviations you created by selecting them one at a time. You do not need to exit each time.

Click **OK**.
The newly entered keystroke(s) for your abbreviation is now in the Keys column.



Close the window. Test the key by applying the designated keystrokes. The assigned code should appear in the editor window. *Please note that the abbreviation keystrokes will supersede any SAS keys you have set when they are used in the Enhanced Editor window.*

SHARING YOUR ABBREVIATIONS

You might want to share your abbreviations with others, or perhaps you will need to put your abbreviations on a different computer. This is very easy to do!

EXPORTING ABBREVIATIONS

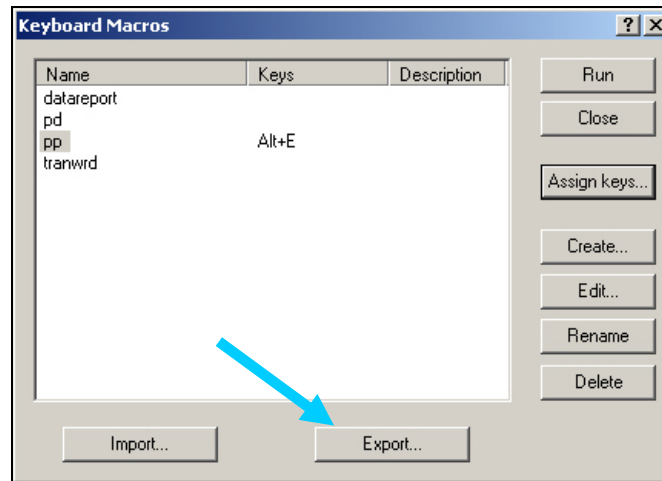
Place the cursor in the Enhanced Editor window.
Select the **Tools** menu and then **Keyboard Macros**, followed by **Macros**.

A window opens where you select the abbreviations to export.

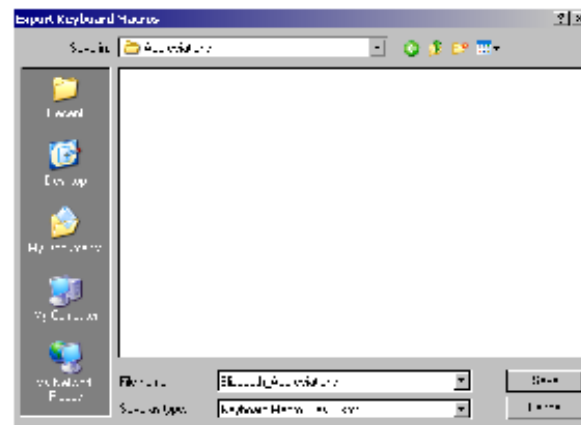
- If you want to select more than one, hold down the CTRL key on your keyboard as you click on each abbreviation.

- If you would like all of them, click on the first abbreviation in the list, hold down the Shift key, and click on the last abbreviation. They should all be highlighted.

Click the **Export** button.



A window will open similar to when you save a SAS program. Navigate to the folder where you want to save the abbreviations file. SAS will automatically select the necessary file type Keyboard Macro Files (*.kmf). Name the file anything you want. SAS will then create the export file for you.



IMPORTING ABBREVIATIONS

When you get your new machine, save the abbreviation file on the new computer and note the location. To import the abbreviations, you will follow a similar process that you did for exporting your abbreviations. Here, you will select the **Import** button instead of the **Export** button. As you will recall, you should select the **Tools** menu and then **Keyboard Macros**, followed by **Macros**. In the window that opens, click the **Import** button and navigate to where you put the file and select the abbreviation file. SAS will read it in for you automatically.

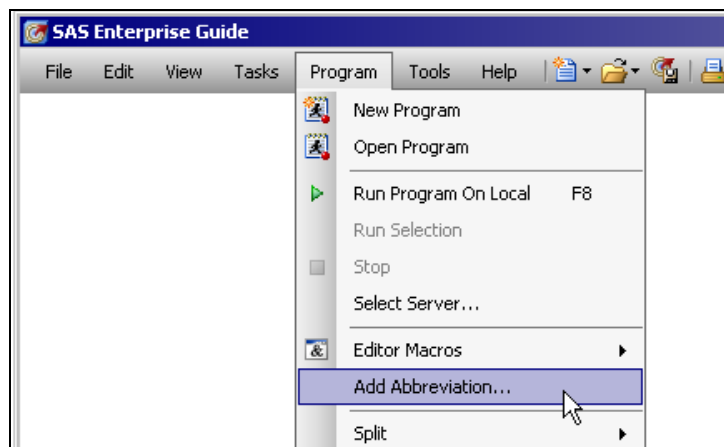
SAS® ENTERPRISE GUIDE® USERS

SAS Enterprise Guide users can also take advantage of SAS abbreviations. Abbreviations can be created, modified, imported, and exported as we have seen above. In addition, if you have created an abbreviation in the traditional SAS interface and then open the code node in SAS Enterprise Guide, you can type the abbreviation name and see the hint appear as it did in the traditional SAS interface. In this section, we will look at both SAS SAS Enterprise Guide 4.2 and 4.1.

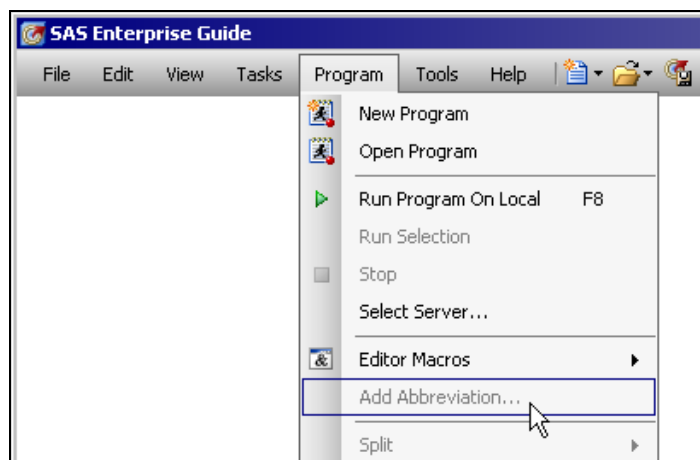
INSTRUCTIONS FOR SAS ENTERPRISE GUIDE 4.2

Open a new SAS Program window or a SAS program. Be sure to click in the Program window so the cursor becomes active.

To create an abbreviation, select the **Program** menu and then **Add Abbreviation**.



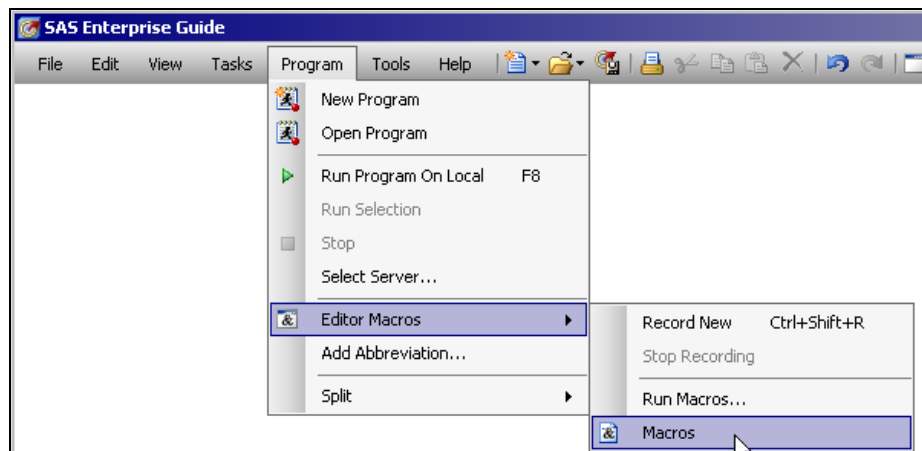
Note that if you do not make the Program window active, the **Add Abbreviation** menu will be grayed out, and you will not be able to select it.



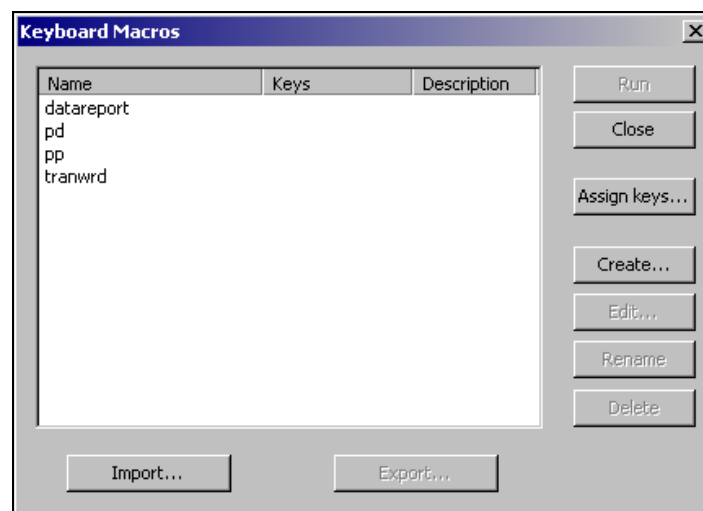
To solve this, simply click in the Program window and try again.

Follow the directions in the section “CREATING AN ABBREVIATION”.

To make changes to the abbreviation, select the **Program** menu and then **Editor Macros**, followed by **Macros**.



A window opens that looks exactly like the window shown in the earlier sections.

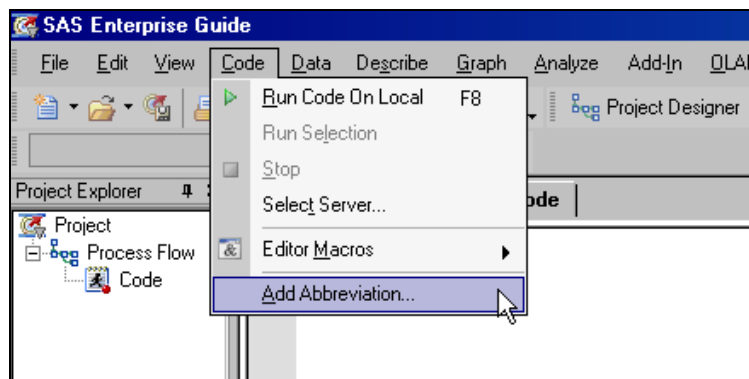


Follow the instructions described in the earlier sections to complete your task.

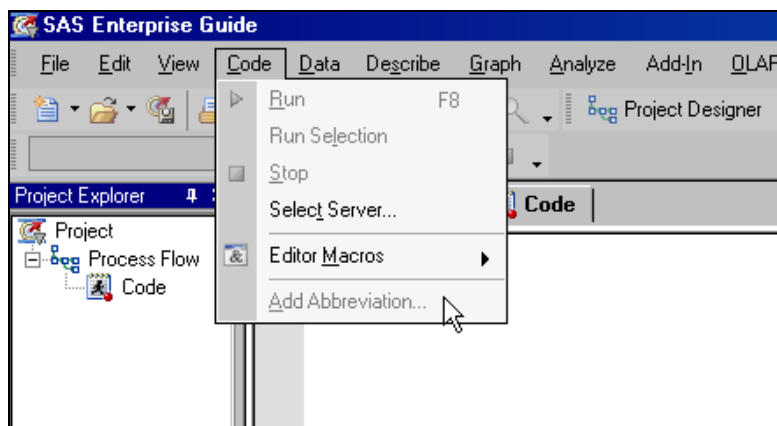
INSTRUCTIONS FOR SAS ENTERPRISE GUIDE 4.1

Open a new SAS Code window or a SAS program. Be sure to click in the Code window so the cursor becomes active.

To create an abbreviation, select the **Code** menu and then **Add Abbreviation**.



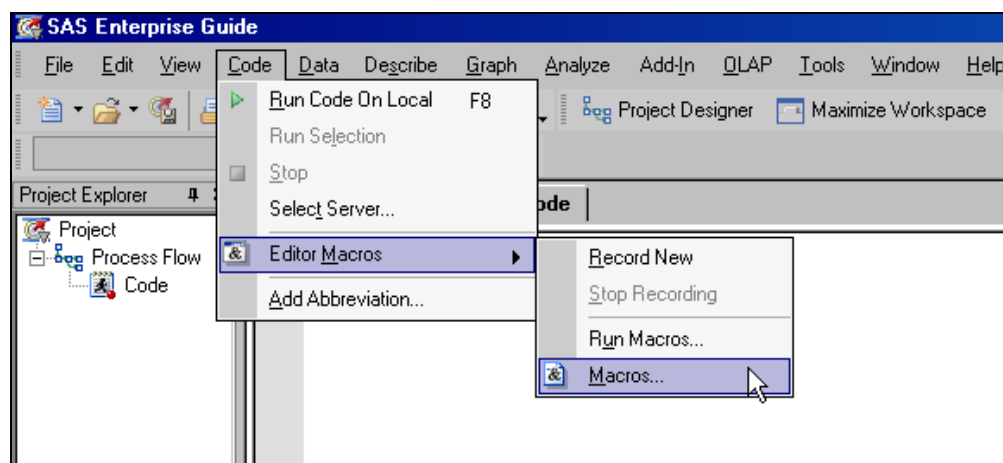
Note that if you do not make the Code window active, the **Add Abbreviation** menu will be grayed out, and you will not be able to select it.



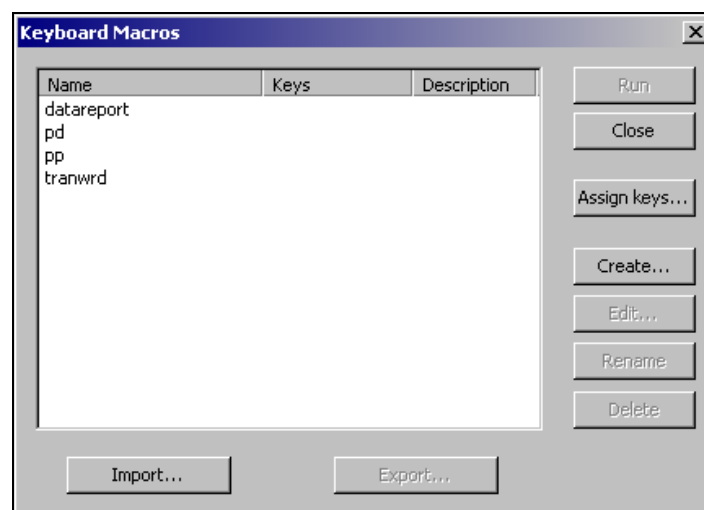
To solve this, simply click in the Code window and try again.

Follow the directions in the section “CREATING AN ABBREVIATION”.

To make changes to the abbreviation, select the **Code** menu and then **Editor Macros**, followed by **Macros**.



A window opens that looks exactly like the window shown in the earlier sections.



Follow the instructions described in the earlier sections to complete your task.

CONCLUSION

Using SAS abbreviations can help reduce coding time. They can also reduce effort in looking up syntax for functions, statements, or procedures you might forget. Further, many people are required to add a comment header block to their programs to document what they do. Not shown in this paper is how you can also use SAS abbreviations to add code comment blocks. This is useful in helping you to create readable code without typing in a template each time or pasting from another program.

REFERENCES

For more information on SAS abbreviations and keyboard macros for the Enhanced Editor, please refer to the “SAS Companion for Windows”.

The direct link for SAS 9.1.3 is:

http://support.sas.com/onlinedoc/913/getDoc/en/hostwin.hlp/editor_enhanced.htm .

The direct link for SAS 9.2 is:

http://support.sas.com/documentation/cdl/en/hostwin/59544/HTML/default/editor_enhanced.htm .

Users looking for SAS abbreviations for SAS functions and procedures can find some created by SAS users Ed Heaton, M. Chris Moser, and Russ Lavery. There are two abbreviations files available: one with more verbose code hints for relatively new users, and one with less hint text for more experienced SAS users. (Please note that only one should be loaded.) Both files are available for download from the Base SAS Focus Area on SAS' support site at <http://support.sas.com/rnd/base/topics/abbreviations/> .

ACKNOWLEDGMENTS

Richard Bell, a SAS Instructor based in Cary, first introduced me to the concepts of SAS abbreviations several years ago. Thank you, Rick!

Ed Heaton first created an abbreviation file for the Base SAS functions after this paper was presented at SESUG 2006. Since then, Ed, M. Chris Moser, and Russ Lavery have extended this effort by creating more abbreviations with code hints. Many thanks!

The SAS Enterprise Guide section was added in the revision of this paper, after several users at PharmaSUG 2008 inquired if this could be used in SAS Enterprise Guide. Thanks to Chris Hemedinger for the help in providing the answer and assistance!

CONTACT INFORMATION

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