

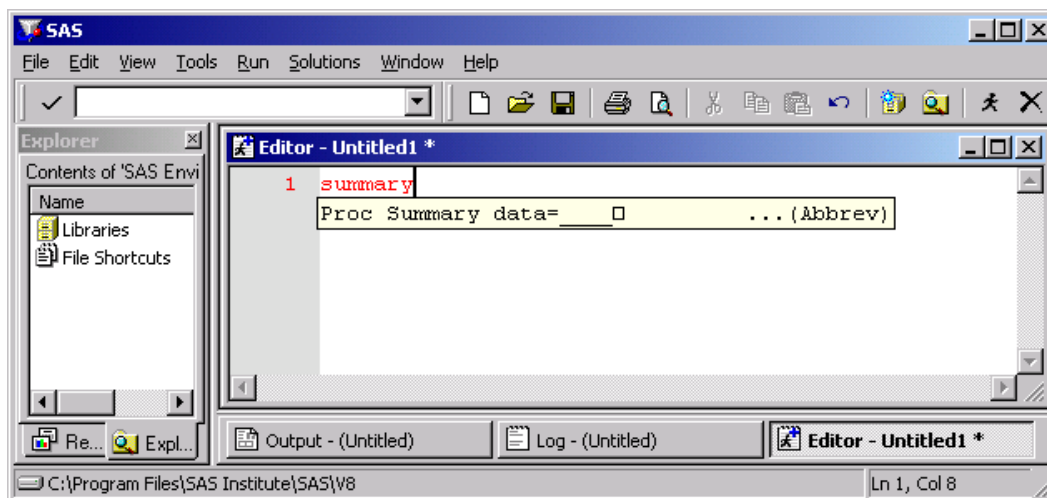
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## Creating Code Templates in the SAS® Enhanced Editor using Abbreviations and User Defined Keywords

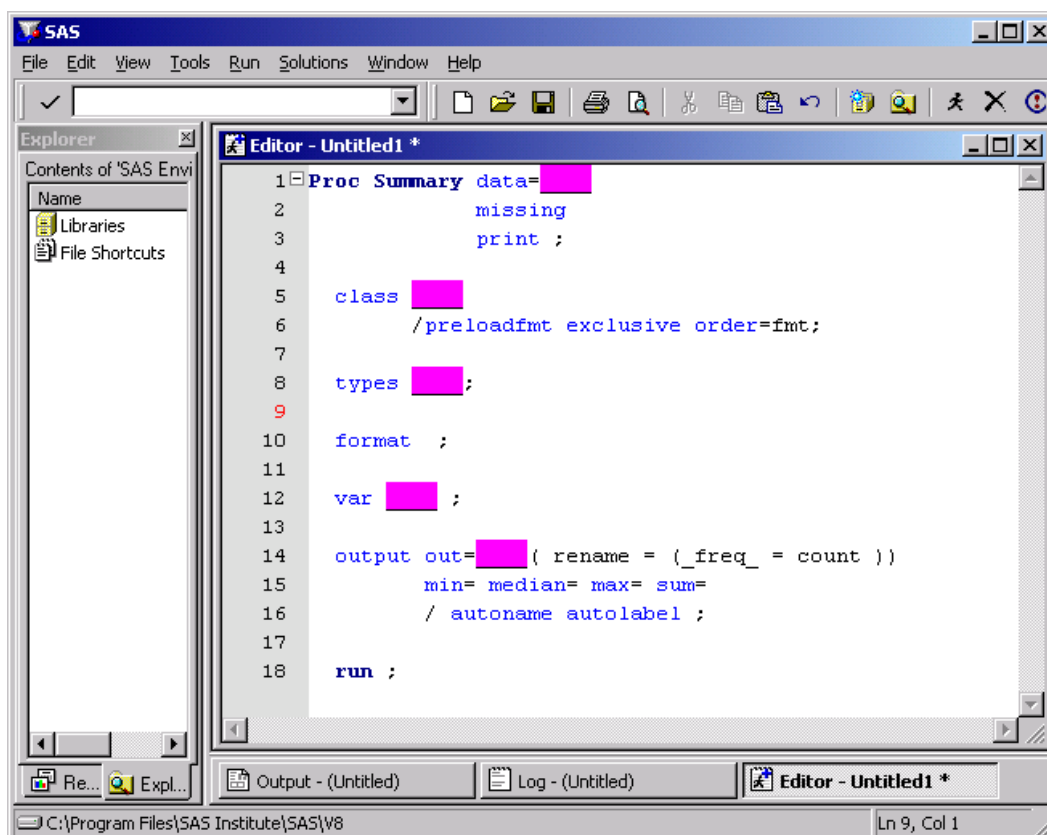
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### Introduction

Imagine you're at your computer working on a program. You need to write code for a PROC but you don't remember the syntax. Instead of searching the SAS manuals or the SAS Help system to look up the syntax, wouldn't it be nice if you could just type the name of the PROC and have a prompt like the following appear?



The prompt would give you the option of inserting a code template for the PROC (like the one below) into your SAS Enhanced Editor window. The code template would have all the statements and options YOU use most frequently. And the places where you need to provide parameters would have a bright background so they stand out.



The code template would have all the statements and options YOU use most frequently because YOU created it! And this presentation will show you how.

### Step 1: Defining the code template as an abbreviation

First, you need to create the text of code template. Let's use the following Proc Summary code in our example:

```
Proc Summary data=_____
    missing
    print ;

class _____
    /preloadfmt exclusive order=fmt;

types _____;

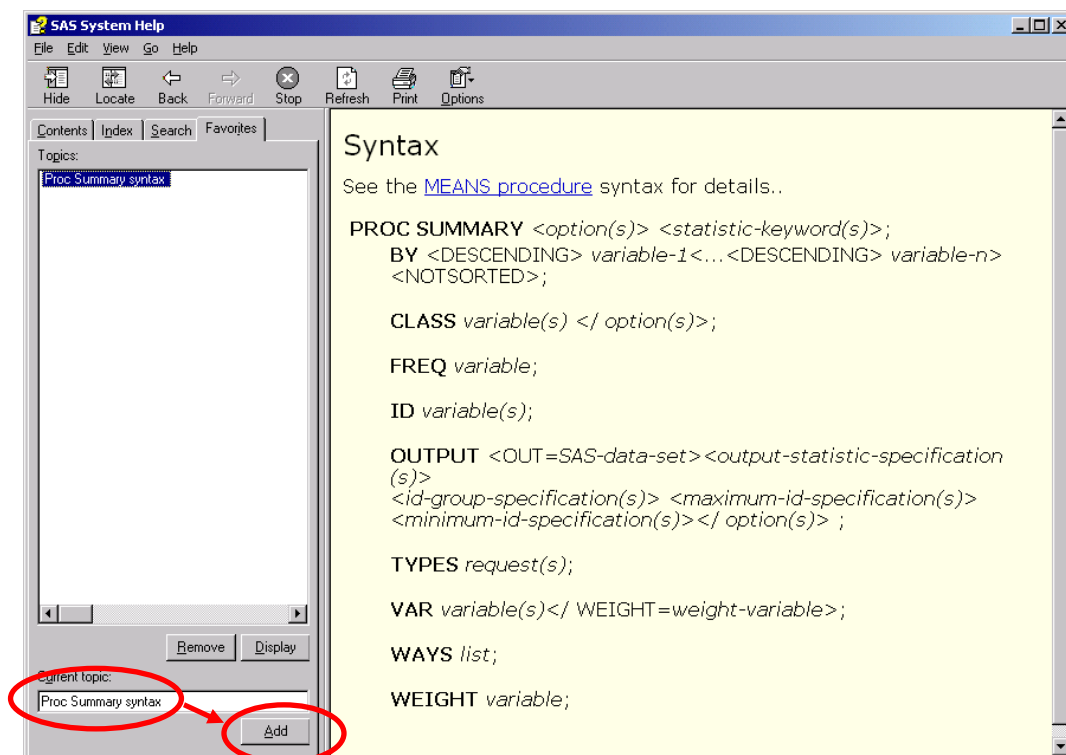
format _____;

var _____;

output out=_____ ( rename = ( _freq_ = count )
    min= median= max= sum=
    / autaname autolabel ;

run ;
```

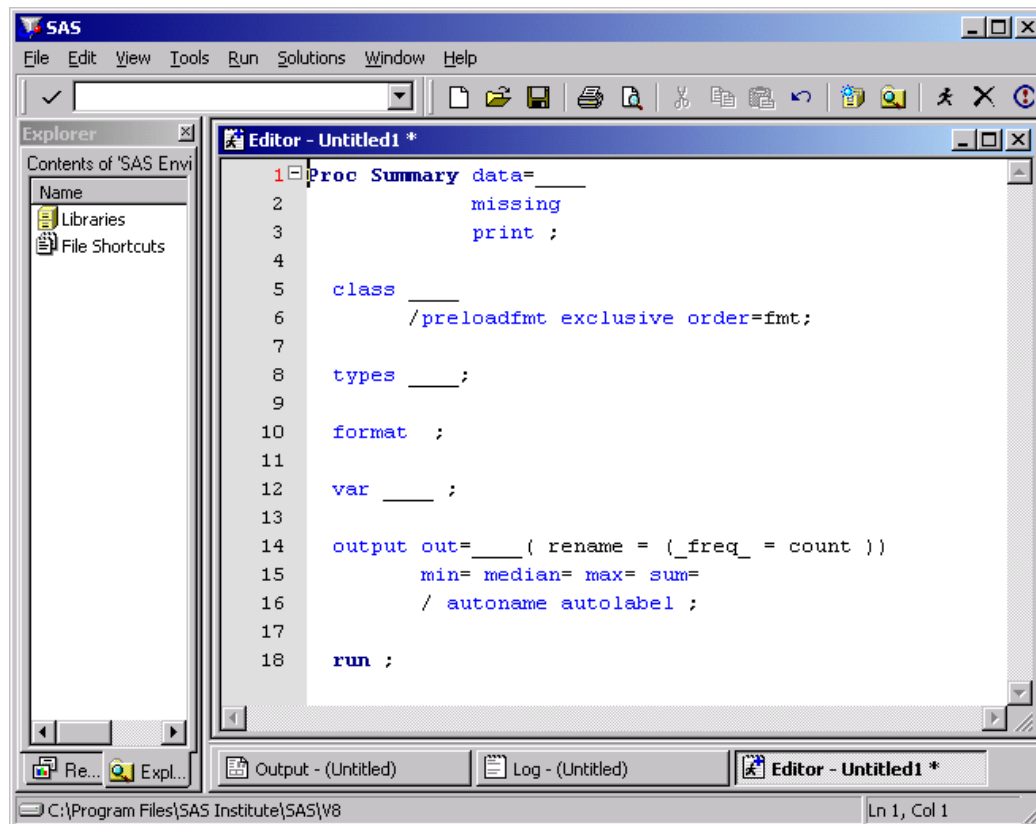
You could type in this code yourself. But I find that it's easier – and more accurate – to copy the code from the syntax portion of the SAS Help system.



After you display the page, select the complete syntax, copy it to the clipboard, then paste it into an Enhanced Editor window. While you have the syntax page displayed, you might also want to “bookmark” it so you can return to it quickly whenever you need it. To do so, edit the current topic box to create a more descriptive title and click the “Add” button. This is a really handy feature of the SAS Help system.

Back in the SAS Enhanced Editor, edit the text you copied from the syntax page so it contains the statements and options that you use most. Also, use the spacing, indentation, and comments that reflect your personal coding style

and/or your organization's SAS coding standards. Finally, mark the places where the programmer must provide any required information or parameters with four underscores (“\_\_\_\_\_”). This done, the code in your editor should look something like this:

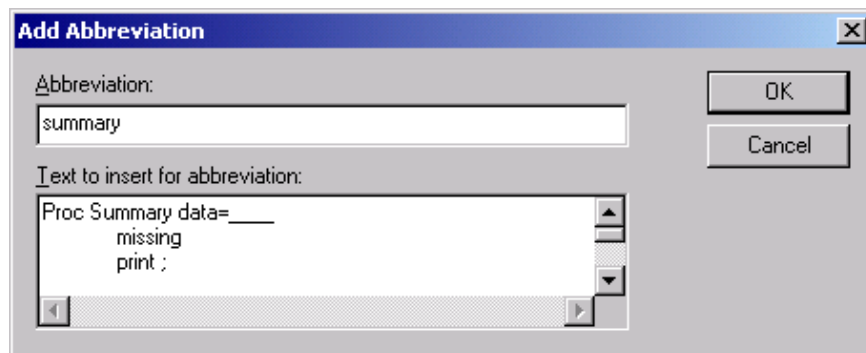


```

1 Proc Summary data=_____
2           missing
3           print ;
4
5 class _____
6           /preloadfmt exclusive order=fmt;
7
8 types _____;
9
10 format _____;
11
12 var _____;
13
14 output out=_____ ( rename = ( _freq_ = count ) )
15           min= median= max= sum=
16           / autoname autolabel ;
17
18 run ;

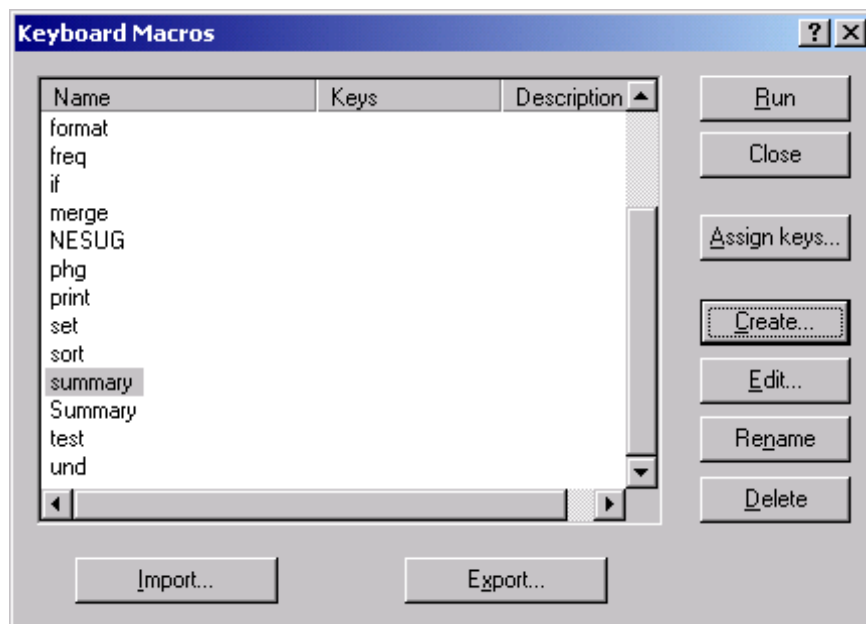
```

To make this code available to you whenever you need it, you need to use a feature introduced with the Enhanced Editor: **abbreviations**. First, select all the code in the code template you just created. Then, from the menu bar, select “**Tools**” > “**Add Abbreviation...**”. Enter a name for the abbreviation in the “**Abbreviation:**” box and copy the code template into the “**Text to insert for abbreviation**” box. Abbreviation names are case sensitive. “summary” is not the same as “Summary.” Since I always code in lower case, all the names of my abbreviations are also in lower case.

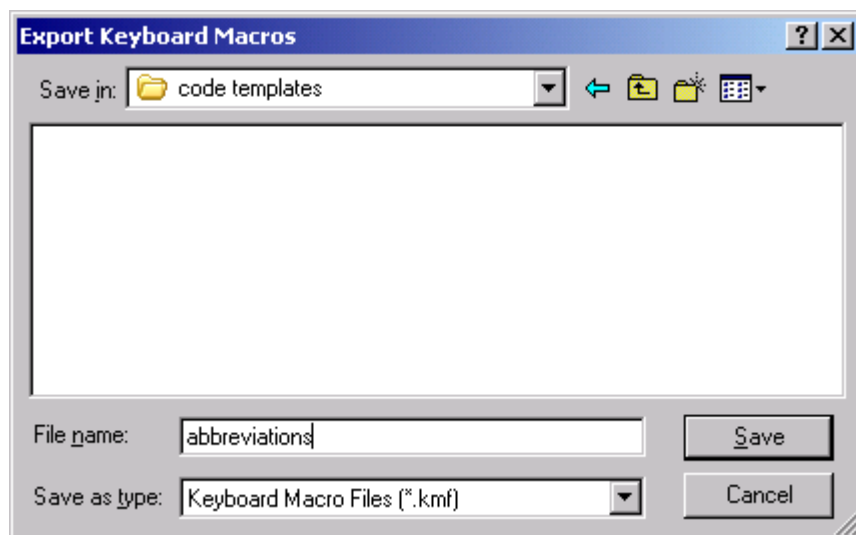


Scroll up in this box to see that your code was copied correctly. Then, click “**OK**” to create the abbreviation. Now, whenever you type the word “summary” in the enhanced editor, a message box will appear prompting you to insert the text into the editor window. If you press the “**Tab**” key, the text will be inserted; if you type anything else, it will not be inserted and the prompt will go away.

You can edit, rename, delete or assign a keyboard shortcut to an abbreviation using the “**Keyboard Macros**” window, which you can bring up by selecting “**Tools**” > “**Keyboard Macros**” > “**Macros...**” on the menu bar.



You can also share the code templates you create with others by clicking the “**Export...**” button on the bottom of this window. Selecting the “**Export...**” button brings up the following window.

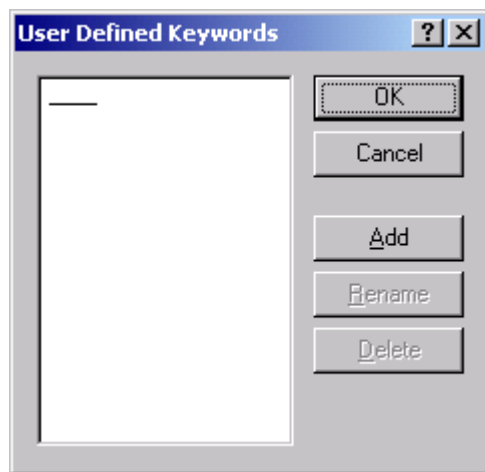


When you use this window, the code templates you created are copied from their storage location in the SAS Registry to a **.kmf** file which you name. You can then send this file to others. They can save your code templates in their SAS system using the “**Import...**” button.

## Step2: Highlighting required parameters using User Defined Keywords

With the code template saved and available as an abbreviation, you need to highlight those places in the code template where the programmer must supply some information or parameter specific to the program they are writing so they really stand out. This is done by using another feature of the SAS Enhanced Editor: **color-coded, user defined keywords**.

You’ll remember that we used four underscores to designate those places in the code template where information had to be provided by the programmer. To define these four underscores as a user defined keyword, select “**Tools**” > “**Options**” > “**Enhanced Editor...**” from the menu bar. Select the “**General**” tab and click the “**User Defined Keywords**” button near the bottom of the “**Enhanced Editor Options**” window. This opens the “**User Defined Keywords**” window (shown below).

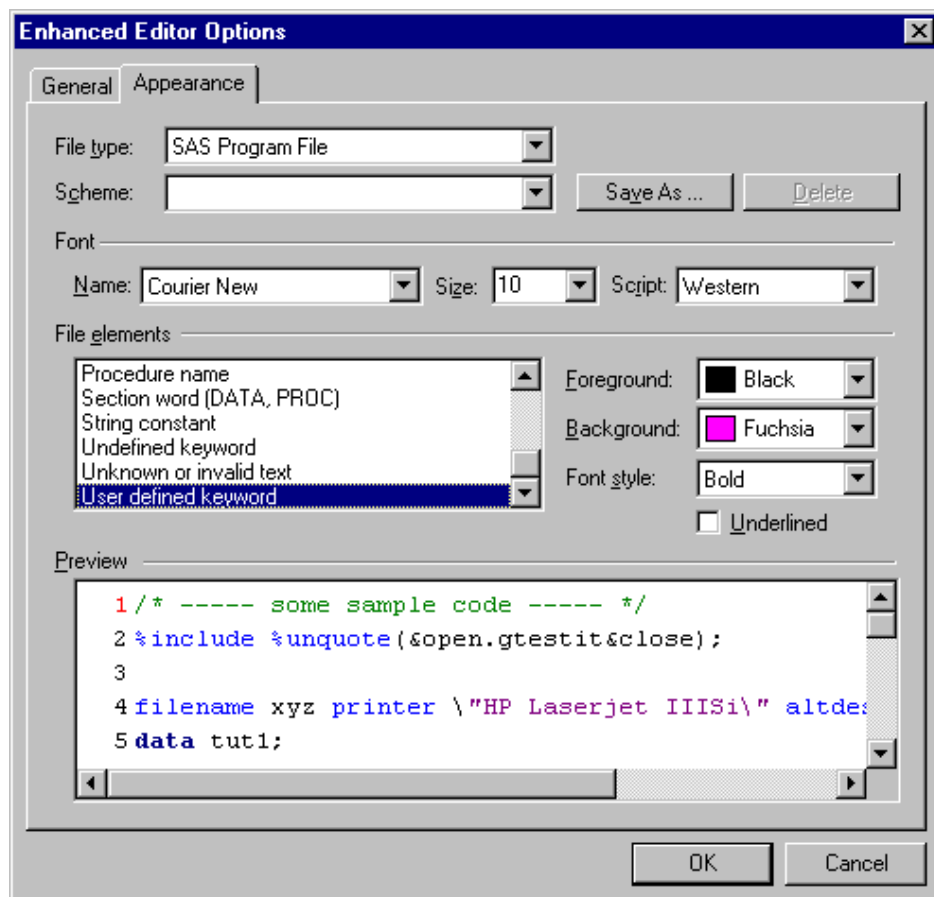


Click the **“Add”** button, type four underscores in the **“New Keyword”** prompt box, then click **“OK”** to save the definition and return to the **“Enhanced Editor Options”** window. You can also delete keywords in the **“User Defined Keywords”** window. To change a keyword, click the **“Rename”** button.

User defined keywords must be legitimate SAS names: they must be 32 characters or less in length, begin with a letter or an underscore. They can contain letters and numbers but no special characters except an underscore.

SAS has defined many of its own keywords (like “data,” “%macro,” comments, and quoted text) and given them display properties (like font style and color) to make it easier to read and understand SAS programs. We want to use this same feature to highlight our user defined keyword so it stands out in the code template.

Select the **“Appearances”** tab of the **“Enhanced Editor Options”** window. Scroll to the last item in the **“File elements”** drop down list and select **“User defined keyword”**. To the right, select the formatting options you prefer. I chose black text against a fuchsia background and bold font style. Select **“OK”** to save the definition and return to the Enhanced Editor.



Now, whenever you type “summary” in the SAS Enhanced Editor and hit the <Tab> key, the following code template will appear in your editor window. You can complete your code quickly and accurately by commenting out ( using the <Cntl> + </> keyboard shortcut ) or deleting any lines you don't need and by providing any required parameters.

Try it!

```

1 Proc Summary data=
2     missing
3     print ;
4
5 class
6     /preloadfmt exclusive order=fmt;
7
8 types ;
9
10 format ;
11
12 var ;
13
14 output out= ( rename = ( _freq_ = count )
15     min= median= max= sum=
16     / autoname autolabel ;
17
18 run ;

```

### Applicability

This technique works only in the SAS Enhanced Editor, which is only available on Microsoft Windows® systems. It is not available in the SAS Program Editor on any operating system. Since both SAS Display Manager and SAS Enterprise Guide share use of the SAS Enhanced Editor, your code templates and other abbreviations are available in both environments.

### Acknowledgements

This paper documents a technique presented at a number of SUGI, regional and local user group meetings beginning at SUGI 25. My thanks to the many people who urged me to turn it into a paper. I also want to thank Mike Sabourin and Lisa Horwitz for reviewing this paper.

### Contact Information

Please let me know if you found this technique helpful or if you have any questions or comments about it:

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