

Paper 252-25

SAS Interactive Handbook - a SAS® User's Lifebelt

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ABSTRACT

The **SAS Interactive Handbook**, an improved version of the Israeli SUGIS'99 winner, is an easy-to-use tool that integrates several SAS Help topics into a single functional package. The purpose of the **Interactive Handbook** is to enable the user to rapidly retrieve the most exact and detailed answers to questions that arise during work in SAS. The **Handbook** is organized in such a way that it allows the user to focus on a specific issue, and locate the answer instantly. Moreover, the **Handbook** includes a general overview of the SAS System, details on concepts and terminology, and an add-ons section offering a programming reference, exclusive sample programs and shortcuts to useful help screens.

INTRODUCTION

The average SAS user had usually been surrounded with a considerable number of books, particularly those published by the SAS Institute Press, and with various online help facilities provided within the SAS System. Despite this, or maybe as a result of this, the user still had nothing to help him/her cope with the infinite number of elements found in the SAS System. Consequently, the user experienced difficulties producing the desirable applications. Today, when many organizations have the SAS System installed on many personal computers within the organization, the problem is even worse, since it is not always possible to provide every user with all the required SAS manuals and books. Therefore, interactive help services are becoming a kind of lifebelt for users who encounter problems or those who need guidance and advice as they develop their applications. It would appear that existing interactive help systems are not sufficiently convenient and comprehensive, and they cannot yet be considered as a substitute for printed books.

As a result of the unsatisfactory experience we had using such interactive tools as the *Online Help*, *Online Documentation*, *Sample Programs*, etc, we chose to take full advantage of SAS/AF and write a comprehensive system that:

- provides guidance, help and explanations to the advanced and the sometimes complex techniques
- is simple, convenient and user-friendly
- is a powerful and a handy helper for any SAS user regardless of his or her level. We called it the **SAS Interactive Handbook**.



Figure 1: The IH main menu

The **Interactive Handbook** (also **IH**) owes its name to the two powerful features combined in it:

interaction – achieved both in utilizing the Microsoft® Windows® 95/98 GUI and the application development flexibility offered by SAS/AF®

efficiency – in contrast to the traditional help approach that requires navigation through a complex hierarchy of topics and subsequent help screens, the Handbook gives instant and direct access to information on any keyword within each of SAS System's main sections: language, procedures and commands. As the result of this, the usability of the existing Help System increases, making the Handbook a truly essential tool for any SAS user.

In addition to the user-friendly interface and the convenient integration of all online help windows, the Handbook features numerous innovative help screens created by our development team. These screens combine information that comes from different online help windows with the clarifications that were exclusively written by us, and make the search process both quick and effortless.

At the present time, the Handbook is installed at all the SAS platforms owned by the Israeli Central Bureau of Statistics. There is an on-going process of improvement and additions as the SAS System undergoes growth and development. The main features and the advantages of the **Interactive Handbook** are explained in the following sections:

HANDBOOK SECTIONS

SECTION I – SAS SOFTWARE OVERVIEW

This *System Help* screen is a brief overview of the SAS Information Delivery System and its components, such as Base SAS, SAS/AF and SAS/GRAPH.

SECTION II – CONCEPTS

This *Online Documentation* screen provides several introductory chapters regarding Base SAS software, and cover topics such as launching, running and customizing the system, the different language categories and data types.

SECTION III – TERMINOLOGY

This is a shortcut to the *System Terminology* screen that can be found in *SAS Companion for Windows*. It is a glossary of all OS-specific SAS terms.

SECTION IV – SAS LANGUAGE

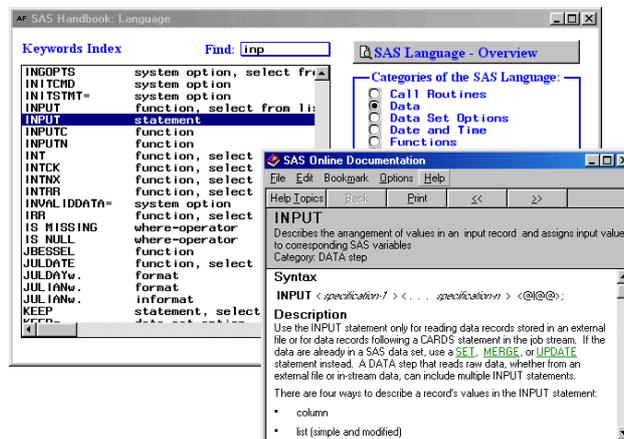


Figure 2: The SAS Language section

We were stimulated to create this section because users frequently search the System help in vain for specifics on advanced or even basic language concepts. To illustrate this, try to find items like `data _null_` or `first.variable-name`.

To solve this problem, we created an alphabetic list of all keywords that form the SAS language. Each keyword is identified by the language category to which it belongs, thus making the keyword unique. (For example, the INPUT function and the INPUT statement appear in the list as two different items). In addition, the user can choose whether to browse the entire list or view separate screens containing specific sub-lists (for example, statements or functions only). This screen also contains several shortcuts to language-related material, including the *General Index* of the SAS System, an exclusive chapter on using Hebrew, and help on Structured Query Language (which can be regarded an independent language in itself, in spite of its "procedural" form).

SECTION V – SAS PROCEDURES

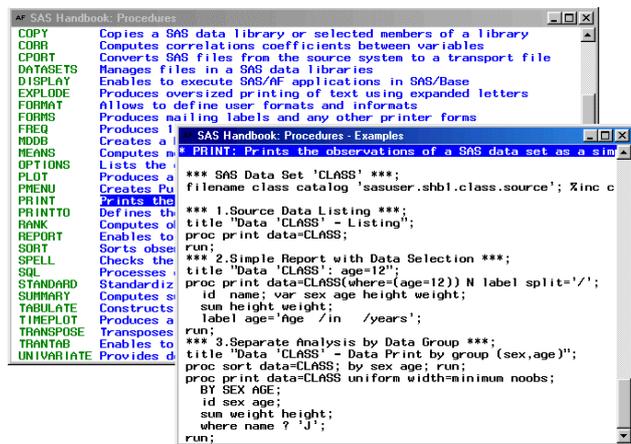


Figure 3: Procedures section with the PROC PRINT example on top

This section gives instant access to all the information regarding the different SAS procedures. This is in sharp contrast to the way in which information was dispersed in different locations in the standard help. This section includes an alphabetical list of the procedures categorized by the SAS product to which they apply. Each procedure is accompanied by a short description. Selecting the procedure's name (highlighted in green) redirects the user to its syntax. Clicking on the description (highlighted in blue) displays a concise example that we provided in order to introduce the user to the main features of the procedure.

SECTION VI – SAS COMMANDS

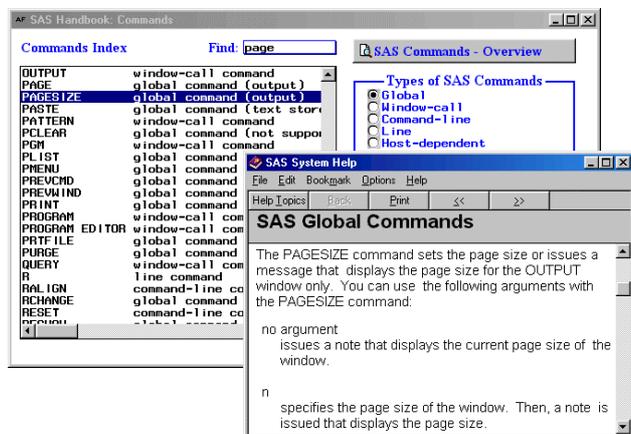


Figure 4: Commands screen

This section is similar to the SAS Language section mentioned above, and consists of an alphabetical keyword list of all SAS System commands: global, window-call, text editor and host dependent. Additional resources include information on function keys and the SAS windowing environment.

SECTION VII – ADD-ONS

This last *Handbook* section is a programming reference that covers general programming topics, and includes:

- A collection of easy-to-understand programs for novices (*SAS Programming Primer*)
- Re-usable blocks of code, including I/O, macro and optimization techniques
- Debugging essentials
- Several shortcuts that let the user jump to the sample programs library supplied by SAS, Frequently Asked Questions, sources for additional information, etc.

By supplying common coding techniques, this section becomes helpful in many ways. For example, using a re-usable block of code as a basis for a new application or even a whole project lets the programmer not only save time, but also avoid writing everything from scratch - a difficult task even for an expert.

In addition, this section aims to help the beginner overcome the typical situation, in which the user wastes time trying to understand how the different elements work together, and wastes even more time digging out bits of code from large programs that were written for different purposes by other people.

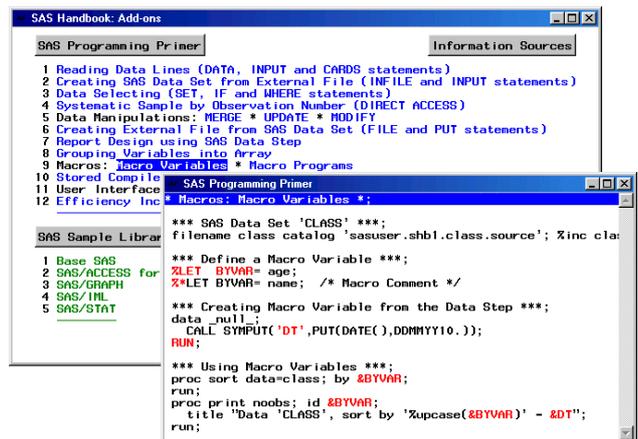


Figure 5: Add-ons screen

CONCLUSION

SAS Interactive Handbook was developed on SAS/AF. It can be installed on SAS System V6.12 running on a Microsoft Windows platform (3.1x and higher). For an instant and convenient access to the *Handbook*, an icon should be placed on the SAS System toolbar(s).

The success of the initial *Handbook* version, experienced in the Israeli Bureau of Statistics allows us to assume that the essential concept of an interactive user guide, where each unique keyword redirects to the appropriate piece of information, proves to be captivating not only for beginners, but even for advanced programmers. Most *Handbook* users said that using the *Handbook* has provided them with a broader perspective on SAS, and made them capable of utilizing many of the advanced programming techniques that they were not even aware of. However, those same users pointed out the narrow capabilities of a fixed keyword list, which unfortunately restricts most help systems to one preset view on the system.

In an attempt to overcome this constraint, we have adopted the idea of creating a *dynamic* keyword list, one that will let the user control its rendering, and thus offer multiple hierarchical views of the system elements on one screen. This new approach, first proposed by Benjamin Guralnik, is currently being implemented on a limited topic, namely the SAS Macro Language, and is developed using XML and HTML technologies.

Finally, we hope that the *Interactive Handbook* will make application development and programming in the SAS System easier, faster and much more efficient.

ACKNOWLEDGEMENTS

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