

CHAPTER

11**Setting Up SAS Files**

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Chapter Overview

This chapter describes SAS file conventions and structures and explains how to set up SAS files for use with the SAS System.

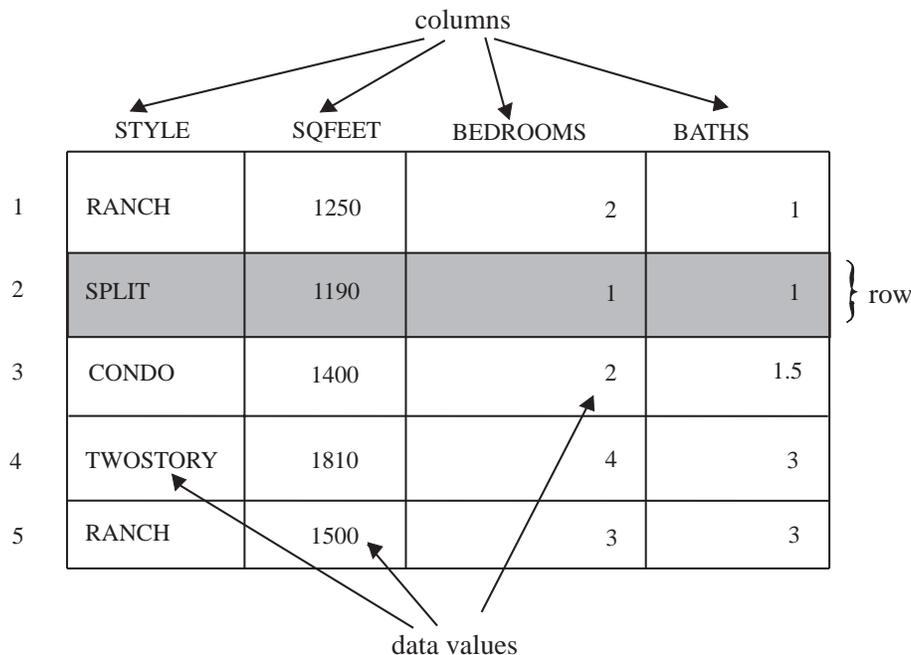
Additional Information

For additional information about SAS files, refer to *SAS Language Reference: Concepts*.

SAS Files**SAS Tables**

A *table* is a collection of information, as shown in the sample table in the following figure. A *SAS table* stores data in a form that the SAS System can use.

Figure 11.1 Parts of a SAS Table



This diagram shows part of the HOUSES sample table that contains information on houses for sale including the house style, square footage, number of bedrooms, and number of bathrooms. The HOUSES table is one of the SAS/ASSIST sample tables; see “Creating the Sample Tables” on page 21 for details on creating the sample tables.

A table name can be one to 32 characters in length. It must start with an uppercase or lowercase letter (A through Z, a through z) or an underscore (_), but it can otherwise contain any combination of uppercase and lowercase letters, numbers, and underscores. Note, however, that the mixed-case capability of table names is for display purposes only; SAS software does not distinguish between, for example, the names “Dog,” “DOG,” and “dog.” Also, due to window space considerations, some table name entry fields in SAS/ASSIST software do not allow you to enter more than eight characters.

A table consists of the following components:

data values

A *data value* is a single unit of information, such as the square footage for one house.

columns

A *column* is a set of data values that represents a particular type of data, for example, the price of all the houses.

A column can be character or numeric. A *character column* contains data values that can consist of any combination of letters, numbers, and special characters. A *numeric column* contains values that consist only of numbers and related symbols such as decimal points, plus signs, and minus signs. If you are going to perform arithmetic calculations on a column, the column must be numeric.

A column name can be one to 32 characters in length. It must start with an uppercase or lowercase letter (A through Z, a through z) or an underscore (_), but it can otherwise contain any combination of uppercase and lowercase letters, numbers, and underscores. Note, however, that the mixed-case capability of column names is for display purposes only; SAS software does not distinguish between, for example, the names “Dog,” “DOG,” and “dog.” Also, due to window

space considerations, some column name entry fields in SAS/ASSIST software do not allow you to enter more than eight characters.

rows

A *row* is a set of data values for the same item, for example, all the information about one house, such as price, style, square footage, and so on.

Older versions of SAS/ASSIST software use the terms *data set*, *observation*, and *variable* for table, row, and column, respectively. You may encounter these terms in other SAS Institute products and documentation.

SAS Data Libraries

A *SAS data library* is used to store and manage data in SAS files. It is a collection of one or more SAS files, such as a SAS table, that is recognized by the SAS System. Each file is a member in a library.

A *libref* is the name you associate with the SAS data library. You assign a libref to each SAS data library that you need to access. Then you reference files in the library by using the corresponding libref in your SAS task. A libref can be one to eight characters in length. It must start with a letter (A through Z) or an underscore (_), but it can otherwise contain any combination of letters, numbers, and underscores.

After you establish a libref for a SAS data library, you use the libref throughout your SAS session so that the SAS System knows where to look for SAS files that already exist or where to store new SAS files that you create.

Data Files and Data Views

A SAS table can be one of two member types: DATA or VIEW. A SAS table of type DATA contains descriptor information and data values and is called a *SAS data file*. A SAS table of type VIEW contains descriptor information that points to the data values, but it does not contain the actual data values. It is called a *SAS data view*. A SAS data view differs from a SAS data file in that it only contains a description of data that is stored elsewhere. The data itself is stored in other SAS data files, in another software vendor's database management system (DBMS), or in external files. For more information on creating and using SAS data views, see *SAS Language Reference: Concepts* and *SAS/ACCESS Software for Relational Databases: Reference*.

Both data files and data views can be used in the same way, and in most cases it does not matter whether the data comes from a data file or from a data view.

All examples in this book use SAS data files.

Temporary and Permanent Tables

The SAS System creates two types of tables: temporary tables and permanent tables. A *temporary SAS table* exists only for the duration of the current SAS session. A *permanent SAS table* exists after the end of the current SAS session and until you delete it.

Temporary SAS tables are automatically assigned to a library called WORK, which is deleted when you exit SAS software. Permanent SAS tables are members of a previously defined SAS data library.

Both types of SAS tables have two-level names in the form of *libref.table-name*. When you create or refer to a permanent SAS table, you must specify both the libref and the table name. When you create or refer to a temporary SAS table, you may either specify the WORK libref or specify the table name only; if you specify the table name only, SAS software uses the WORK libref.

SAS Catalogs

A *SAS catalog* is a SAS file that stores many different kinds of information in smaller units called catalog entries. Catalog entries are identified by name and type. For example, a saved SAS/ASSIST task is a catalog entry of type ASSIST, and has a name that is one to eight characters long. Like a SAS table, a SAS catalog must be associated with a SAS library, and is identified with a two-level name in the form of *libref.catalog-name*.

Operating Environment Specific Information

The following sections discuss some of the operating environment specifics for SAS data libraries. For more information about SAS libraries, refer to the SAS companion documentation for your operating environment.

Directory-based Operating Environments (Microsoft Windows, OS/2, UNIX, OpenVMS)

In a directory-based operating environment like Microsoft Windows, OS/2, UNIX, or OpenVMS, a SAS data library is a group of SAS files in one or more directories. Any directory can become a SAS data library when SAS files are stored in that directory. However, since the SAS data library is a logical grouping of tables, and not an actual physical grouping, external files stored in the same directory are unaffected by the SAS data library.

The form of the SAS table name under a directory-based operating environment is *libref.filename*.

You use the Assign a New Libref action in SAS/ASSIST software to associate a libref with a SAS data library. You will find instructions for assigning a libref later in this chapter.

OS/390 Operating Environment

Under the OS/390 (formerly known as MVS) operating environment, a SAS data library is implemented both logically and physically as a specially formatted operating environment table that contains only SAS files. Each SAS file is a *member* of the library, and each member has a *member type* that identifies the type of SAS file it represents, such as data, catalog, or access.

The form of the SAS table name under OS/390 is *libref.member*.

You use the Assign a New Libref action in SAS/ASSIST software to associate a libref with a SAS data library. You will find instructions for assigning a libref later in this chapter.

If you are referencing or creating an *OE-data-set-name* that has not been allocated by the OS/390 operating environment, the SAS System prompts you about whether you want to allocate the file and then allocates it for you.

CMS Operating Environment

Under the CMS operating environment, CMS identifies a SAS file the same way it identifies any other file: with a three-part name that consists of the file name, file type, and file mode, for example, TEST MYLIB A. The SAS System identifies a SAS file by a two-level name, for example, MYLIB.TEST. The first part of the name is the libref, and the second part of the name is the filename. With SAS naming conventions, the SAS libref usually corresponds to the CMS file type. The second-level SAS name corresponds

to the CMS file name. For example, if the SAS data file MYLIB.TEST is on your A disk, the corresponding CMS file id would be TEST MYLIB A.

The form of the SAS table name under CMS is *libref.filename* (where *libref* is the file type).

You use the Assign a New Libref action in SAS/ASSIST software to associate a libref with a SAS data library. You will find instructions for assigning a libref in the following section.

Setting Up SAS Files

Using SAS/ASSIST Software to Assign a New Libref

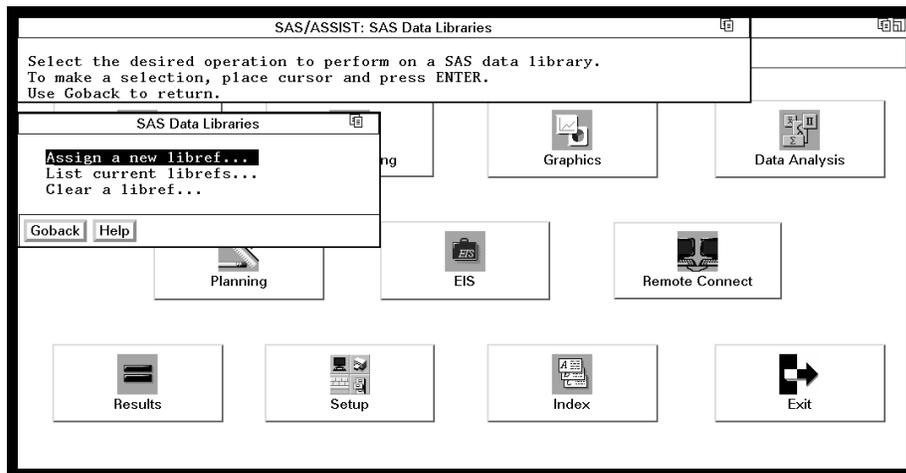
The SAS System automatically assigns the libref SASUSER to a SAS data library under your operating environment so that you can permanently store your work without assigning another libref.

- 1 To assign a new libref, follow this selection path:

Tasks ► Setup ► File Management ► SAS data libraries

The SAS Data Libraries window appears.

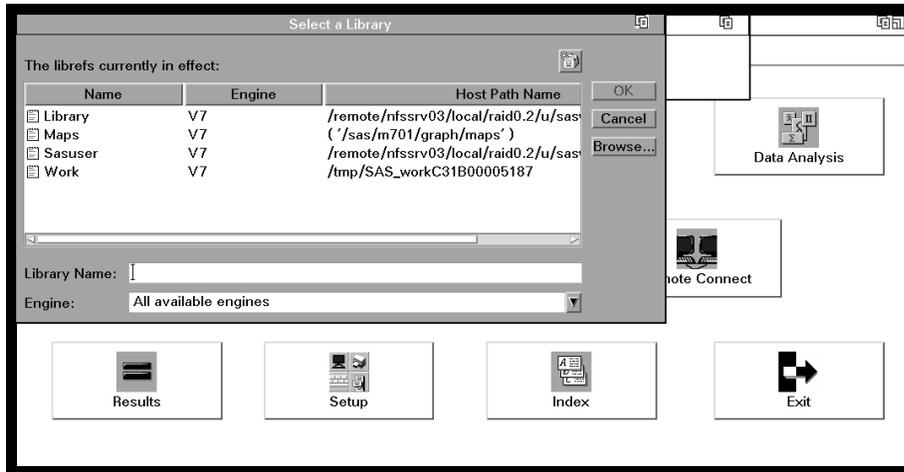
Display 11.1 SAS Data Libraries Window



Note that under OS/390, there is an additional option for **Table information...**. This option provides information about the operating environment and a list of allocated DDNames.

- 2 Select **List current librefs...**. The Select a Library window appears with a list of the currently assigned librefs. The purpose of this step is just to view the current list of librefs.

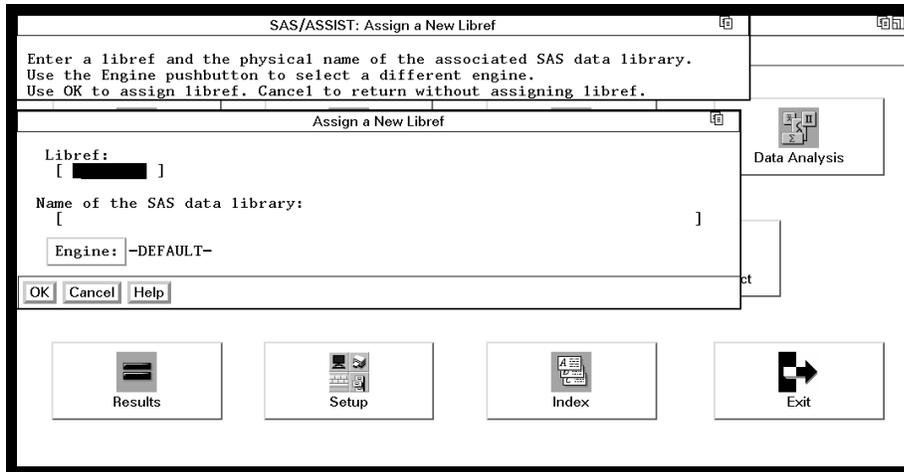
Display 11.2 Library Selector Window



Note: The preceding display shows the Select a Library window for the UNIX operating environment. Other operating environments may have different formats for the Host Path Name. Δ

- 3 Select **Cancel** to return to the SAS Data Libraries window.
- 4 Select **Assign a new libref** from the SAS Data Libraries window. The Assign a New Libref window appears.

Display 11.3 Assign a New Libref Window

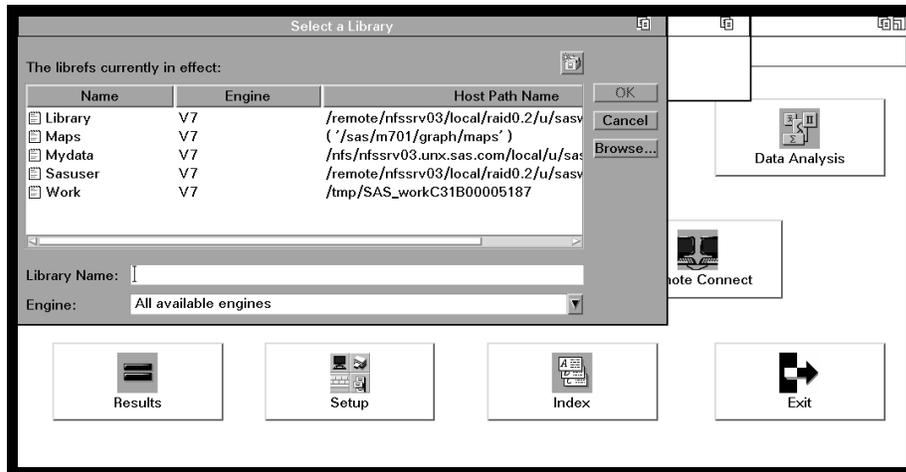


Note: Under OS/390, the **Host Options** button in the Assign a New Libref window is used to specify operating environment-specific parameters such as disposition and space. Δ

- 5 In the **Libref** field, type the libref you want to use. Follow the naming conventions described previously. For this example, type **MYDATA**.
 In the **Name of the SAS data library** field, type the name you want to use according to the naming conventions described below.
 - Under OS/390, type a fully qualified operating environment table name, for example, *USERID.SAS.DATA*.

- Under CMS, type the file mode, for example, A.
 - Under UNIX, type the name of an existing directory or subdirectory, for example, MYDATA.
 - Under Windows or OS/2, type the name of an existing directory or subdirectory, for example, C:\ SASDATA.
 - Under OpenVMS, type the name of an existing directory or subdirectory, for example, [MYDATA].
- 6 Select **OK**. A message is displayed that indicates that the libref was successfully assigned. Select **Goback**.
 - 7 Under OS/390 only, if the file is not allocated, the software will prompt you to allocate the file and then allocate it for you. The SAS Data Libraries window reappears.
 - 8 Select **List current librefs** again. This time the libref you just assigned is listed.

Display 11.4 Library Selector Window with New Libref



- 9 Follow this selection path to return to the WorkPlace menu:

Cancel ► **Goback**

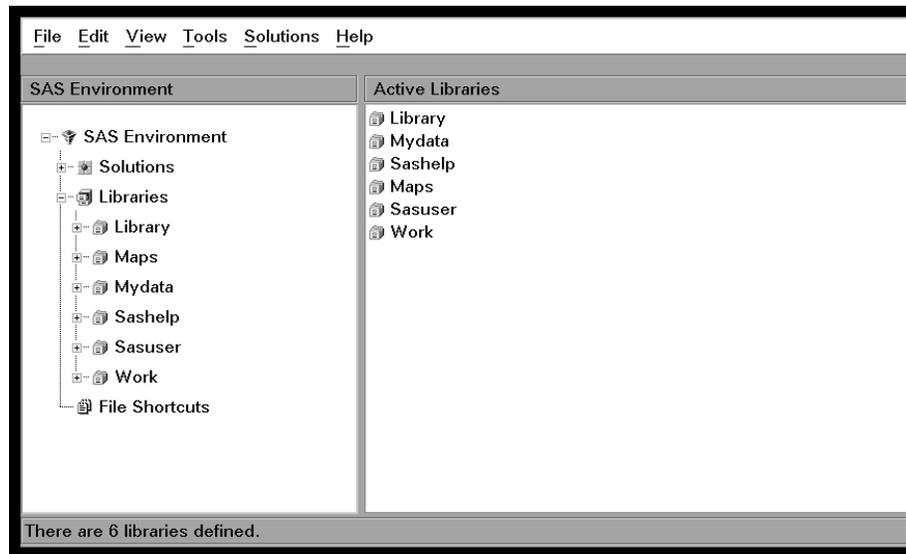
Deleting a SAS Table

- 1 To delete a SAS table, follow this selection path:

Tasks ► **Data Management** ► **Dbms Access**

A SAS Explorer window appears with a list of all the SAS files allocated to your SAS session. If you already have a SAS Explorer window open, this SAS Explorer window is designated with a (2) on the window's title bar.

Display 11.5 SAS Explorer Window



- 2 In the left pane of the SAS Explorer window, select the data library containing the table you want to delete.
- 3 In the right pane of the SAS Explorer window, select the table you want to delete. (If you have a mouse, single-click the table name.)
- 4 Follow this selection path:

►

A prompt appears to ask you if you are sure you want to delete the table. Select **OK** to delete the table or **Cancel** to cancel the delete.

Note: If the table you select for deletion is an active table in one or more SAS/ASSIST tasks, you cannot delete it. If you wish to delete an active table, remove the table from active status by following the directions in “De-Selecting an Active Table” on page 25. \triangle

- 5 To exit the SAS Explorer window, follow this selection path:

►

- 6 When you are ready to return to the Workplace menu or move on to another task, follow the directions in “Exiting a Task” on page 26.

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