SAS® Visual Analytics 7.3

Getting Started with Data Preparation

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Contents

Using This Book

Audience

This book covers the basics of how to prepare data in SAS Visual Analytics. The emphasis is on introductory instructions, how-to hints, and quick reference information.

Requirements

Prerequisites

If you choose to perform the tasks in this book, you need the following software, information, and privileges:

- access to SAS Visual Analytics 7.3
- a supported web browser (see the SAS support site for supported browsers and versions)
- a supported version of the Adobe Flash Player (see the SAS support site for supported versions)
- an account that can log on to SAS Visual Analytics
- access to the data source that you want to use (for example, a SAS data set, a Microsoft Excel file, an Oracle database, and so on)
- Write permission to at least one library (without the necessary permission, you cannot save tables, data queries, and so on)

- data preparation capabilities (without the necessary capabilities, you cannot see certain user interface elements)

System Requirements

Detailed system requirements and additional web browsers that are supported are documented on the SAS support site.

Key Terms

This book makes specialized use of the following terms:

delimited file	a text file that contains data that is separated by commas, tabs, or custom delimiters.
LASR	the SAS in-memory analytic and data functionality that SAS Visual Analytics uses. LASR is an adjective, not an acronym.
SAS data set	a table that is in the SAS7BDAT file format.
spreadsheet	Microsoft Excel workbook (XLSX, XLSM, and XLSB) file or Microsoft Excel 97 to 2003 workbook (XLS) file.
data query	the primary method for preparing data in SAS Visual Analytics.
LASR star schema	similar to a typical star schema in a relational database. Usually includes a fact table that is surrounded by dimension tables.

Accessibility

For information about the accessibility of this product, see Accessibility Features of SAS Visual Analytics 7.3 at support.sas.com.

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Introduction

About Data Preparation

Data preparation involves getting data ready for use in reports and explorations. In SAS Visual Analytics, you can prepare data using the SAS Visual Data Builder (the data builder).

Here are some of the tasks that you can perform using the data builder:

- join data from multiple tables
- append tables (data union)
- create aggregations
- sort data
- filter data
- create calculated columns
- pivot data

Data preparation is needed only if the data that you want to use is not ready as is. If the data is ready as is, you can start working with it immediately in the designer or the explorer.

Accessing Data

If the data that you want to prepare is not already loaded in SAS Visual Analytics, then you can import it into the SAS Visual Analytics environment. Here are the types of data that you can import:

- a file from your local machine (for example, a Microsoft Excel spreadsheet, a delimited text file (CSV), or a SAS data set)
- a SAS data set on a server
- a table from a database (for example, a server database or a Hadoop database)
- data from social media and other sources (for example, Facebook, Google Analytics, or Twitter)

To import data, click **File** ▶ **Import Data**. In the Import Data window, click the type of data that you want to import.

For more information about accessing data, see SAS Visual Analytics: Getting Started with Data on Windows.

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Basic Tasks

Introduction

This chapter provides step-by-step instructions to guide you through basic data preparation tasks in the data builder. The purpose of this chapter is to provide a brief, hands-on orientation to some of the workflows for preparing data.

Before you begin, access the data builder by clicking **Data Preparation** from SAS Home.

Create a Data Query

To create a data query:

1 On the menu bar, click **File** ▶ **New Data Query**.

2 Drag and drop tables from the SAS Folders tree onto the workspace.

3 Select the columns that you want to include in the data query by clicking on the column names in the original tables in the workspace.

4 Make other optional changes. For more information about optional changes, see "Cheat Sheet for Data Queries" on page 8.

5 Click the **Outputs** tab, and specify the following:

- In the **Table** field, specify a unique name for the output table or choose an existing output table to overwrite. This is the name of the file that you will use to create reports and explorations.
- In the **Location** field, specify a folder where you want the data query to appear. The **My Folder** folder is private. Only you can use the data that you save to **My Folder**. If you want the data query to be accessible to others, save it to the **Shared Data** folder.
- In the **Library** field, specify the library where the data query will be loaded. Be sure to choose a LASR library if you want to use the data query in reports or explorations. For more information about libraries, see SAS Visual Analytics 7.3: User's Guide.

6 Click 🖫 to save. The Save As dialog box appears.

7 Specify a name and location for the data query, and then click **Save**.

8 Click ▶, and select **Run** to run the data query.

Create a LASR Star Schema

To create a LASR star schema:

1 On the menu bar, click **LASR** ▶ **Create a Star Schema**.

2 Drag and drop tables from the SAS Folders tree onto the workspace.

Note: You must drag and drop the fact table first and then the dimension tables.

3 Make other optional changes. For more information about optional changes, see "Cheat Sheet for LASR Star Schemas" on page 9.

4 Click the **Output** tab, and specify the following:

- In the **Table** field, specify a unique name for the output table or choose an existing output table to overwrite. This is the name of the file that you will use to create reports and explorations.
- In the **Location** field, specify a folder where you want the LASR star schema to appear. The **My Folder** folder is private. Only you can use the data that you save to **My Folder**. If you want the LASR star schema to be accessible to others, save it to the **Shared Data** folder.
- In the **Library** field, specify the library where the LASR star schema will be loaded. Be sure to choose a LASR library if you want to use the LASR star schema in reports or explorations. For more information about libraries, see SAS Visual Analytics 7.3: User's Guide.

5 Click to save. The Save As dialog box appears.

6 Specify a name and location for the LASR star schema, and then click **Save**.

7 Click ▶ to run the LASR star schema.

Append Data to a Table

To append data to a table:

1 On the menu bar, click **LASR** ▶ **Append Tables**.

2 Select the table to which you want to append data from the **Available tables** list, and click to move it to the **Base table** field.

If the table that you want to use is not listed, click to view a different source library. If a table is added to the source library *after* you click , then the **Available tables** list does not automatically refresh to show the new table. Select the same source library again to refresh its contents.

3 Select the tables to append to the base table from the **Available tables** list, and click to move them to the **Source tables** list.

4 (Optional) If you select the **Unload source tables after appending them to the base table** check box, then the source tables are removed from memory after the append completes.

Select this option only if you do not want to access the source tables individually.

5 Click to save. The Save As dialog box appears.

6 Specify a name and location, and then click **Save**.

7 Click to run.

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Specific Tasks

Introduction

This chapter highlights core functionality in the data builder. For most tasks, there are multiple ways to begin. In this book, one way to begin each task is documented. If you ever get stuck or have questions, some of the Help text in the interface might help. For comprehensive information, access the SAS Visual Analytics: User's Guide from the Help menu or visit the SAS support site.

Complete the following tasks using the data builder. To access the data builder, click **Data Preparation** from SAS Home.

Cheat Sheet for Data Queries

Task	How to Begin in the Data Builder
Add another data source.	Drag and drop the table or data query from the SAS Folders tree onto the workspace.
Add an aggregation to an existing column.	On the **Column Editor** tab, click to highlight the **Aggregations** cell for the column to which you want to add an aggregation, and click the ellipsis button.
Create a calculated column.	On the **Column Editor** tab, click the plus sign (+) to the left of the last entry in the **Column Name** list. A new line appears. Click to highlight the **Expression** cell of the new line, and click  .
Filter data.	Click the **Where** or **Having** tab, depending on how you want to filter the data.
Change or add a join condition.	On the **Joins** tab, click the plus sign (+).
Delete a column.	On the **Column Editor** tab, right-click the name of the column, and select **Remove Column**.
Pivot data.	On the **Column Editor** tab, click to highlight the **Pivot By** cell for the column that you want to pivot values, and then click the ellipsis button.
Sort data.	On the **Column Editor** tab, click to highlight the **Sort** cell for the column by which you want to sort the data. Select the sort preference from the drop-down list.
Validate a data query.	On the toolbar, click  .
Preview the results of a data query.	On the toolbar, click  , and select **Preview** to preview the results.
Save a data query.	On the toolbar, click  .

Task	How to Begin in the Data Builder
Run a data query.	After saving the data query, on the toolbar, click ▶, and select **Run** to run the data query.
Schedule the data query to run.	After saving the data query, on the toolbar, click 🕒. In the Schedule dialog box, specify information.
View the results of a data query.	After you preview or run the data query, click the **Results** tab.

Cheat Sheet for LASR Star Schemas

Task	How to Begin in the Data Builder
Add a data source.	Drag and drop the tables from the SAS Folders tree onto the workspace. You must drag and drop the fact table first and then the dimension tables.
Change the join condition of a dimension column.	On the **Joins** tab, double-click the **Dimension Column** cell.
Change the join condition of the fact column.	On the **Joins** tab, double-click the **Fact Column** cell.
Specify a different column prefix.	On the **Inputs** tab on the right pane, choose a different table name from the drop-down menu.
Delete a column from a dimension table.	Right-click on the column in the table in the workspace, and select **Remove Column**.
Save a LASR star schema.	On the toolbar, click 💾.
Run a LASR star schema.	After saving the LASR star schema, on the toolbar, click ▶, and select **Run** to run the LASR star schema.

Task	How to Begin in the Data Builder
Schedule the LASR star schema to run.	After saving the LASR star schema, on the toolbar, click  . In the Schedule dialog box, specify information.
View the results of a LASR star schema.	After you preview or run the LASR star schema, click the **Results** tab.

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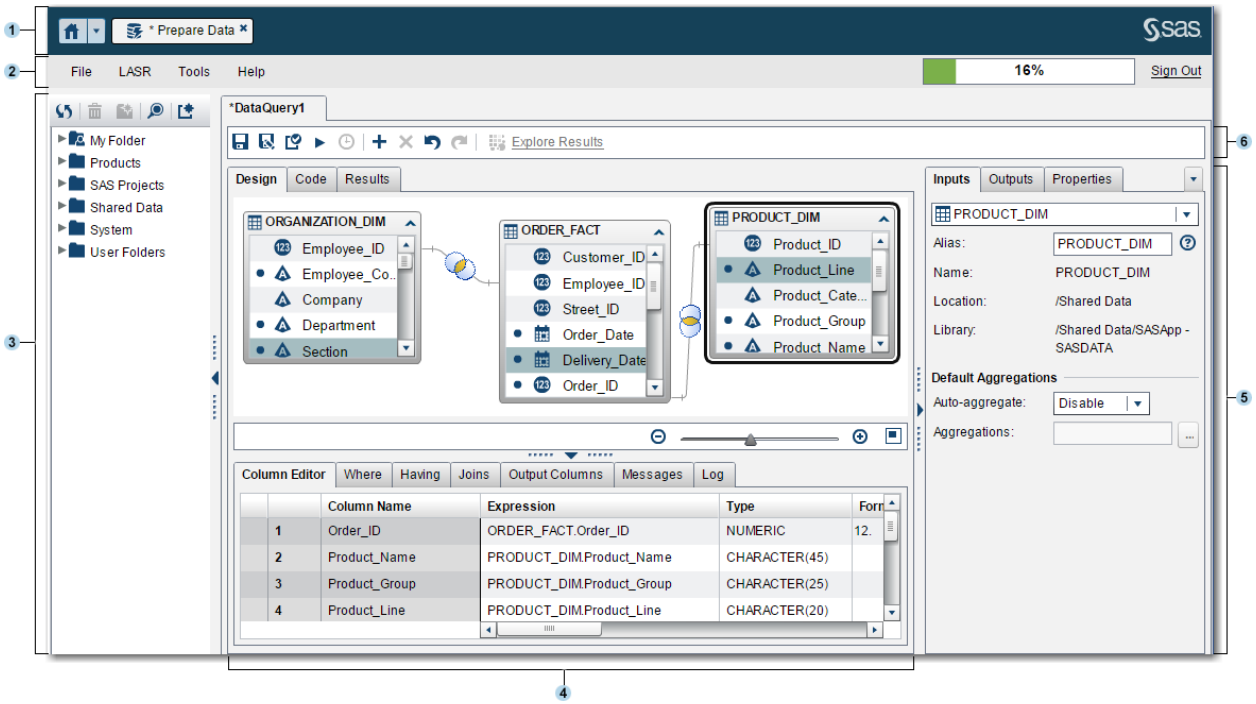
Quick Reference

The Data Builder



1. The application bar enables you to return to the home page and to access other parts of SAS Visual Analytics and other SAS applications that integrate with the home page.
2. The menu bar contains menus that enable you to perform tasks such as creating new data queries and LASR star schemas. The right side of the menu bar has a memory gauge that displays the memory utilization for a distributed SAS LASR Analytic Server. You can also sign out of SAS Visual Analytics.
3. The navigation pane displays a tree (the SAS Folders tree) of tables and data queries.
4. The center of the screen contains the workspace. When you create a new object, such as a data query, it is represented as a tab on the top of the workspace.

   The bottom of the workspace contains a series of tabs that enable you to create column expressions, joins, and filter data.
5. The right pane enables you to manage the properties of the item that is selected in the workspace.
6. The toolbar contains icons that enable you to manage, run, and schedule data queries.

Where to Find Additional Resources

The most current technical resources for SAS Visual Analytics are available on the SAS Visual Analytics page on the SAS support site. You can view SAS Tutorials from the SAS Visual Analytics: Video Library

Your experience with SAS software should be as smooth as possible. Please submit your feedback.