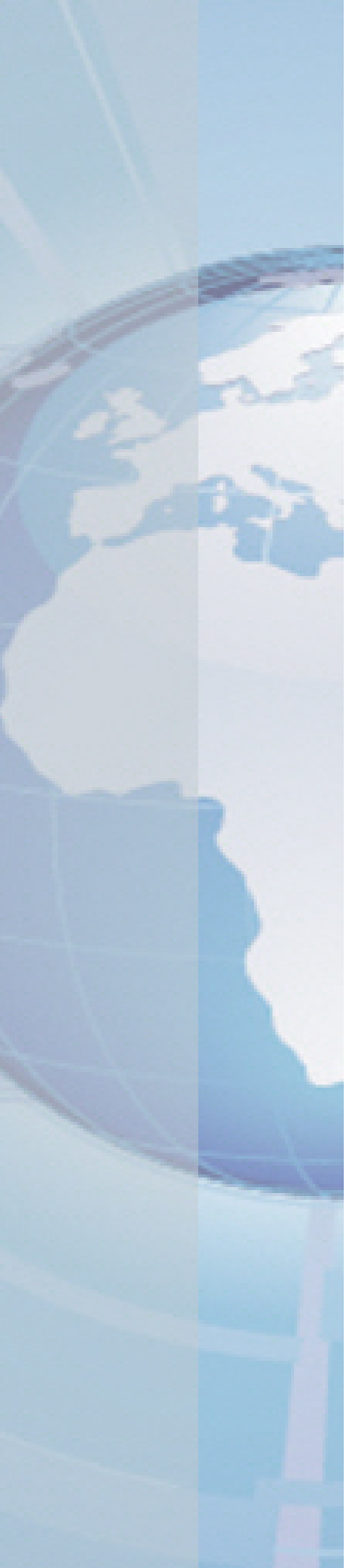

Whitepaper

# Importing Data from Microsoft® Excel into LISTSERV® Maestro

August 24, 2010

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# Introduction

The purpose of this white paper is to demonstrate how to use the ODBC (Open Database Connectivity) driver plugin with Microsoft Excel files. This gives LISTSERV Maestro access to Excel spreadsheets as if they were database tables, making it possible to have LISTSERV Maestro extract data directly from an Excel file [3].

The ODBC driver plugin is a special database plugin that allows recipient information or drop-in content to be pulled from any ODBC data source. The ODBC driver plugin can be used in the recipient wizard with the "*Select Recipients from a Database*" recipient type [1]. It can also be used in the target group wizard with the "*LISTSERV Maestro Retrieves Recipients from Database*" target group type [3] to retrieve recipient information from an ODBC data source. Additionally, it can be used to create drop-in content elements by retrieving content information from a database [1]. ODBC drivers exist for many applications [5], making a wide range of data available to LISTSERV Maestro for recipient retrieval or drop-in content definition.

When Excel spreadsheets, called worksheets, are treated like database tables, you can use WHERE clauses to select a subset of the content from the spreadsheet. For Excel files containing more than one worksheet, called Workbooks, you can also join tables to augment the data from one spreadsheet with data from another.

# Setting Up the ODBC Driver Plugin in LISTSERV Maestro

Before the ODBC driver plugin can be used for recipient or drop-in content definition, it must first be registered as an available plugin in the Administration Hub. This needs to be done by the LISTSERV Maestro administrator. Please see Section 9.2, Registering a Database Plugin, of the *LISTSERV Maestro Administrator's Manual* [2].

# Setting Up the ODBC Driver for Excel in LISTSERV Maestro

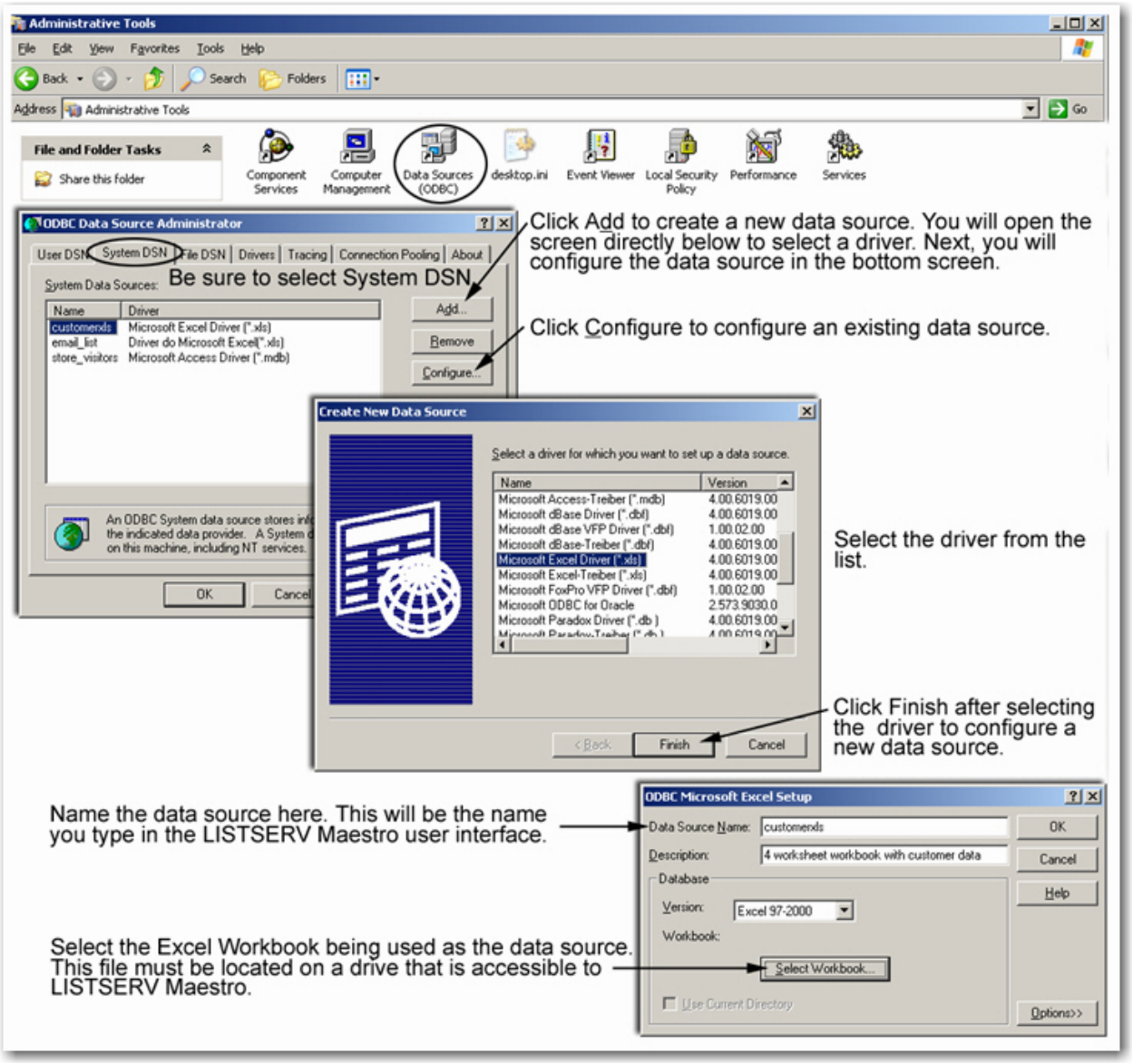
Once the ODBC driver plugin has been enabled in the Hub, the specific driver for Excel ODBC access needs to be on the server where the LISTSERV Maestro User Interface (LUI) resides. For machines running Windows, the Excel ODBC driver should already be present as part of the operating system.

# Setting Up the ODBC Data Source

Before it is possible to access an ODBC data source from inside of LISTSERV Maestro, the data source needs to be set up first. This setup must be done on the server where the Maestro User Interface (LUI) component of LISTSERV Maestro is installed. This task needs to be done by the LISTSERV Maestro administrator or another administrator with access to this server. How this is accomplished depends on the operating system and the ODBC driver being used for the data source.

In Microsoft Windows 2000 and Windows XP, for example, an ODBC data source can be set up by using **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Data Sources (ODBC)**.

*Figure 1 Setting Up an ODBC Data Source in Microsoft Windows*




**Important Security Note:** The Excel ODBC driver does not require a user name or password. This gives access to the spreadsheet to every LISTSERV Maestro account that has the right to connect to a database. The ODBC connection for Excel is not recommended for high-volume applications or installations serving multiple groups.

# Accessing the ODBC Data Source from LISTSERV Maestro

Once a data source is set up, access to it from LISTSERV Maestro user accounts can occur any time from any computer that has access to the LISTSERV Maestro installation. This data source can be used for recipient definition (recipients wizard or target groups wizard – see Figures 2 and 3) or for content definition using a database drop-in (see Figure 4).

Please see the *LISTSERV Maestro User's Manual*, Section 5.6 Selecting Recipients From a Database for more information on the "*Select Recipients From a Database*" recipients type, and Section 15.3 Creating Drop-In Content Elements for more information on database drop-ins. [1] Section 16 of the LISTSERV Maestro Data Administrator's Manual has more information on the "*Select Recipients from a Database*" target group type [3].

These functions all need the database connection details to specify from where the recipients or the drop-in content will be retrieved. To specify the connection details:

1. Select the **ODBC Driver Database Plugin** from the drop-down list of available plugins.
2. Enter the name of the data source to be accessed.
3. Leave the **Database User Name** field and **Password** field blank (these entries are not required by the Excel ODBC driver).
4. Enter the **SQL statement** needed to retrieve the recipients/content desired in the format required by the Excel ODBC driver. See the Excel ODBC driver documentation [4] for details (some syntax examples for Excel are provided in the next section).

*Figure 2 Using the ODBC Plugin in the Define Recipients Wizard to Select Recipients from a Database*

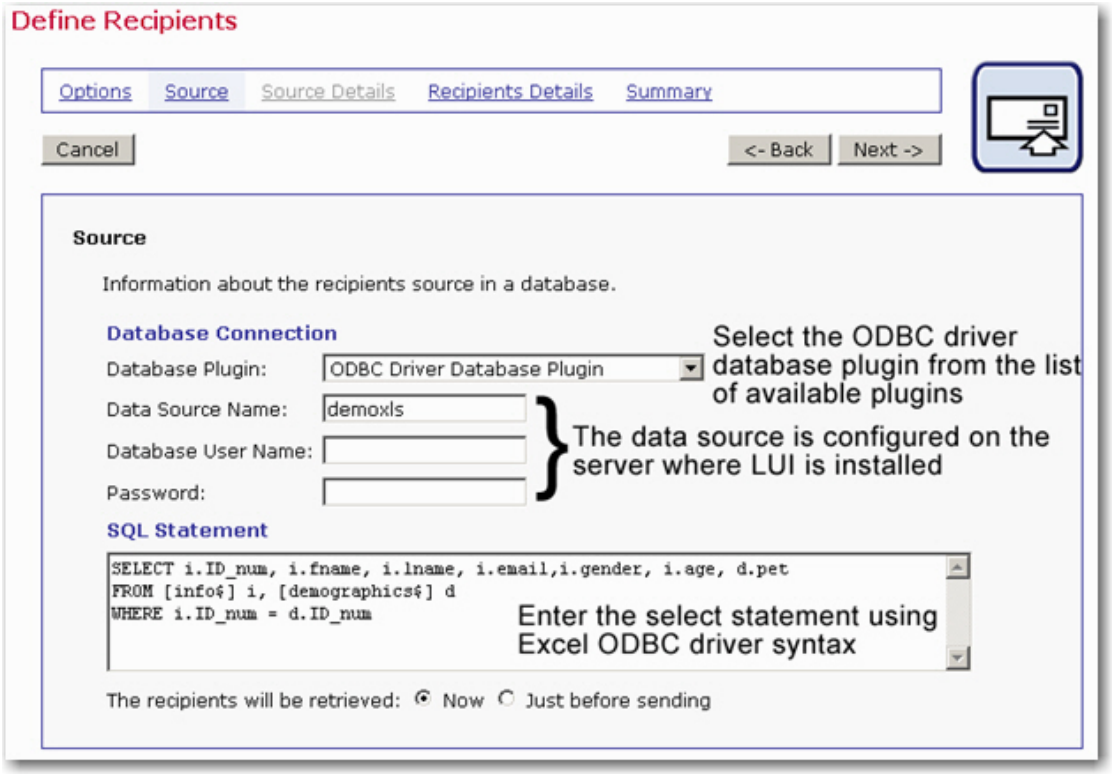


*Figure 3 Using the ODBC Plugin in the Target Groups Wizard to Select Recipients from a Database*

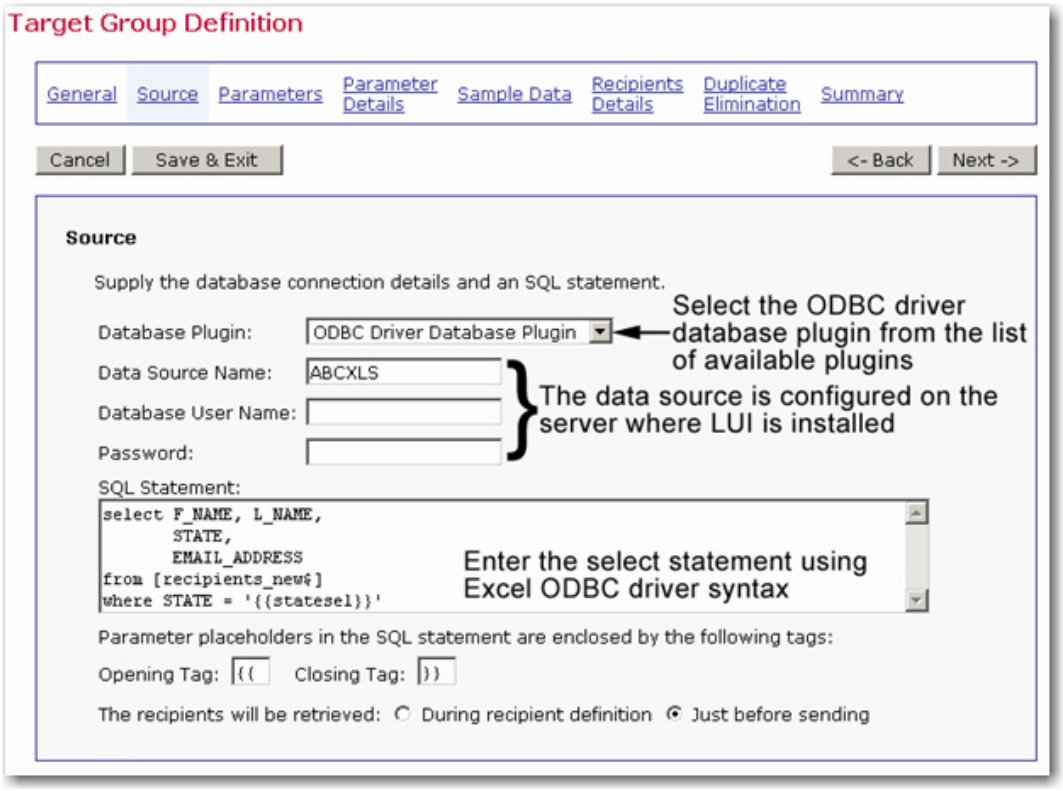
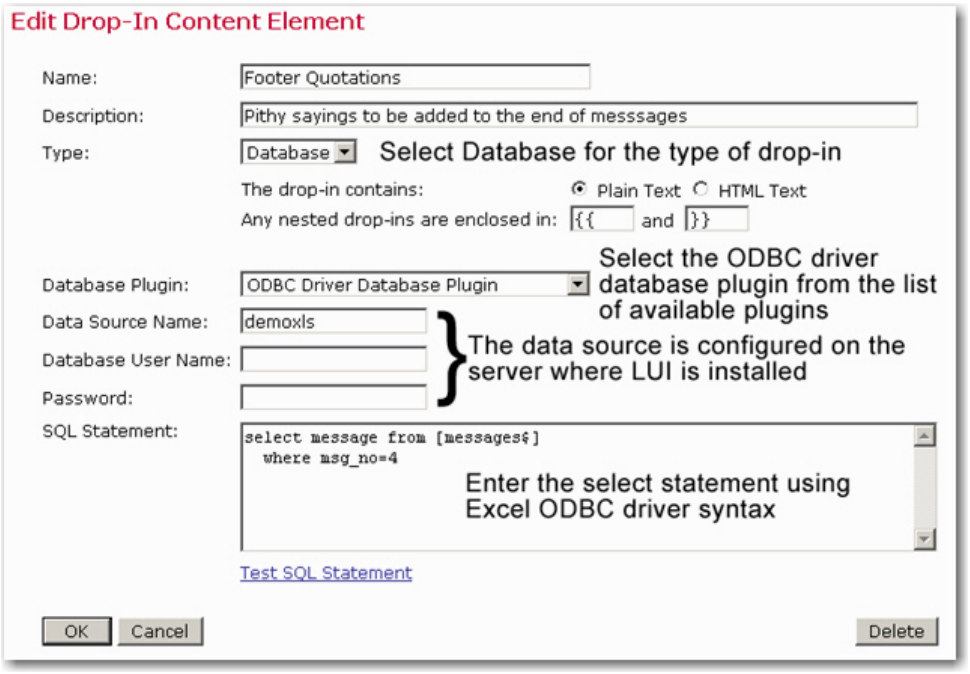



*Figure 4 Using the ODBC Plugin for Drop-In Content Definitions*



# SQL Statements and Excel

The syntax for making queries using Microsoft Excel as a data source is based on the SQL SELECT statement syntax; however it is not fully SQL-92 compliant. Refer to the *Microsoft Jet Database Engine Programmer's Guide* [4] for a listing of the limitations.

The Excel ODBC driver will use the column names in your spreadsheets as the column names in the SELECT and WHERE clauses as long as they are part of the table as defined in the FROM clause.

There are three different forms of table names to use in the FROM clause. Each form refers to a range of cells in a workbook that acts like a table in a regular database. The three forms of table names, which are described in more detail below, are:

- Named Ranges
- Worksheet Names
- Cell Ranges

## *Using Named Ranges*

Excel has a function that allows you to name a range of cells within a worksheet. The name of this defined range of cells acts like a table name in a regular database. It is easier to remember than numerical cell ranges, and easier to combine different columns of data into a table. Named ranges must be enclosed within square brackets [ ] and appended with a dollar sign $ in the SQL statement.

An example of a select statement using this format would be:

```
SELECT * from [age_gender$] where gender = 'm' AND age >=18
```

Named ranges confine data access to a selected set of columns and rows.

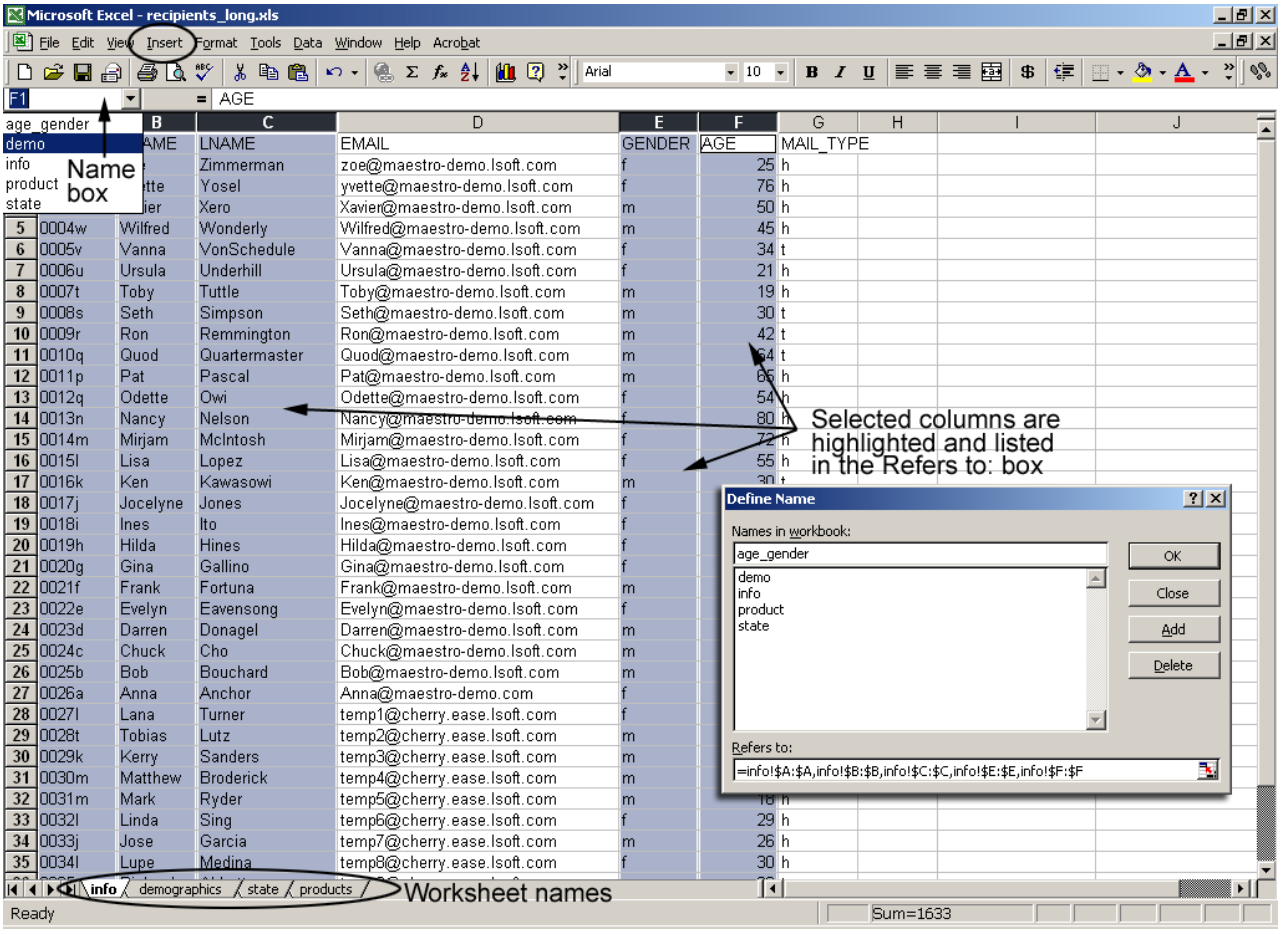
### Naming Data Ranges in Excel

To name column data in Excel follow these steps:

1. Select the columns and rows of data in the spreadsheet by clicking on the letter (or number) of the column heading. Holding down the SHIFT key to select adjacent columns or the CTRL key to select non-adjacent columns.
2. From the top tool bar, click on **Insert**, select **Name**, and then click on **Define**.
3. You can just accept the name that appears in the edit box, which will be the data from the top left cell of the selected range, or you can type in something different. The name must not be the same as a cell reference, such as AB1. Check the Excel online help for the complete rules on names.

   Whatever name you enter here acts like a table name and must be used exactly as you typed it in the SQL statement. Once a name is defined, it will appear in the Name Box near the formula bar.

*Figure 5 Excel Spreadsheet with Named Data Ranges*




## Using Worksheet Names

An Excel file is called a “Workbook”. A workbook can contain one or more worksheets. Each worksheet in the workbook is named. Worksheet names are located on the bottom tabs of an open workbook (see Figure 5). You can change the name of a worksheet by selecting the tab containing the name, right clicking, and then selecting the **Rename** option.

Individual worksheet names act like table names in normal databases. Select statements for Excel need to have the worksheet name enclosed within square brackets [ ] and appended with a dollar sign $.

An example of a simple select statement using an Excel worksheet name would be:

```
SELECT * from [info$] WHERE email LIKE '%@lsoft.com'
```

Using a worksheet name as a cell range automatically selects the entire worksheet.

## Using Cell Ranges

Excel automatically assigns each column in a worksheet a letter. Each record is automatically assigned a number. This letter/number assignment can be used to locate ranges of data in the worksheet. To use a cell range in a query, use the worksheet name enclosed in square brackets [ ] followed by a dollar sign $, and then add a cell range. Use a colon : between the starting and ending cell positions. An example of a select statement using this format would be:

```
SELECT * from [state$A1:B10] WHERE zip = 20020
```

Queries using cell ranges will be confined to the designated range of rows and columns. In order to be used effectively, you will have to know the exact data range for the cells in the worksheet.

If rows or columns are added or removed in the Excel spreadsheet, the range of values in the query may have to be changed to return the expected values.

## Joining Data from Multiple Named Ranges or Worksheets

Having multiple "virtual" tables (named ranges, worksheets, and/or cell ranges) within the same Excel file (workbook) is similar to having multiple tables in a database. You can write select statements using joins to pull data from the different sheets. Here is an example of a query for a target group that has parameters using a join to extract data from two worksheets in the same workbook:

```
SELECT i.ID_num, i.fname, i.lname, i.email,i.gender, i.age, d.pet
FROM [info$] i, [demographics$] d
WHERE (i.age between {{minage}} and {{maxage}})
AND i.ID_num = d.ID_num
```

## Conclusion

Using the ODBC plugin to connect to an Excel file as a data source can increase the flexibility of LISTSERV Maestro for those users who have data in Excel spreadsheets. Although this is not a recommended solution for large production or for those LISTSERV Maestro installations supporting multiple distinct groups, this option can save time and resources by using existing files. To take even better advantage of existing data in Excel spreadsheets and to avoid the limitations of the Excel ODBC driver, you can import the data directly into Microsoft® Access or another database that fully supports standard SQL.

## References


[1] LISTSERV Maestro User's Manual

http://www.lsoft.com/resources/manuals.asp

[2] LISTSERV Maestro Administrator's Manual

http://www.lsoft.com/resources/manuals.asp

[3] LISTSERV Maestro Data Administrator's Manual

http://www.lsoft.com/resources/manuals.asp

[4] Microsoft® Jet Database Engine Programmer's Guide, Second Edition
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[5] Open Database Connectivity
http://searchvb.techtarget.com/sDefinition/0,,sid8_gci214133,00.html