Importing Data from Excel Into MINITAB Using ODBC

Introduction

The purpose of this document is to demonstrate how to use MINITAB's **File> Query Database (ODBC)** method to import data from a database (e.g. Excel) into MINITAB. There are many different choices to be made in setting up ODBC and many different ways to do it. This document presents two examples. The first sets up a simple one-time link that produces the code necessary to implement ODBC from VBA in Word. The second example creates a new link accessible from MINITAB any time a manual connection to the data file is required.

There are instructions for using ODBC posted at MINTAB's web site that start here: <u>http://support.minitab.com/en-us/minitab/17/topic-library/minitab-environment/input-output/import-data-from-a-database-with-odbc/basics-of-odbc-in-minitab/</u>

Example 1 – One-Time ODBC Connection

In this example we will use an ODBC connection to import data from an Excel file into MINITAB. The target Excel file should already exist and have data in it. The code produced by this method can be saved in a MINITAB LOCAL macro and called as needed from MINITAB or using VBA from Word.

From MINITAB start configuring ODBC by clicking **File> Query Database (ODBC)**. You will see this window.

Select Data Source	×
File Data Source Machine Data Source	
Look in: Data Sources	
DSN Name: New	
Select the file data source that describes the driver that you wish to connect to. You can use any file data source that refers to an ODBC driver which is installed on your machine.	
OK Cancel Help	

The **File Data Source** and **Machine Data Source** tabs select options that control the location of and user access to the data. See the following link for more information on this issue. <u>https://msdn.microsoft.com/en-us/library/ee265698%28v=bts.10%29.aspx</u>

Select Data Source				?	×
File Data Source Machine Data So	ource				1
Data Source Name dBASE Files Excel Files MS Access Database Visual FoxPro Database Visual FoxPro Tables	Type User User User User	Description		<u>N</u> ew	
A Machine Data Source is speci sources are specific to a user or all users on this machine, or by a	fic to this m 1 this machi 1 system-wi	iachine, and c ine. "System" ide service. OK	cannot be share ' data sources c Cancel	d. "User" data an be used by Help	

For the purpose of our example choose the **Machine Data Source** tab.

Choose Excel Files and click OK.

If you click **New** at this point you will be lead through a lengthy process of creating a new **Data Source Name** (DSN) link to your Excel file. The new DSN will be added to the list in the GUI so that you can access that Excel file by ODBC whenever you want. The steps to create the new link are described in Example 2.

Select Data Source				? 🗙
File Data Source Machine Data S	Source			1
Data Source Name dBASE Files Excel Files MS Access Database Visual FoxPro Database Visual FoxPro Tables	Type User User User User User	Description		
				<u>N</u> ew
A Machine Data Source is spec sources are specific to a user o all users on this machine, or by	cific to this r on this macl a system-v	nachine, and ca hine. "System" o vide service.	nnot be sharec lata sources ca	d. "User" data an be used by
		ОК	Cancel	Help

Select Workbook		×
Database N <u>a</u> me	Directories: c:\\my documents C:\\my documents C:\ C:\ DOCUMENTS AND S C:\ C:\ PAUL MATHEWS C:\ C:\ DOCUMENTS AND S C:\ C:\ DOCUMENTS AND S C:\ C:\ DOCUMENTS AND S C:\ C:\ DOCUMENTS AND S C:\ C:\ DOCUMENTS AND S C:\ C:\ DOCUMENTS AND S C:\ C:\ DOCUMENTS AND S C:\ C:\ C:\ C:\ C:\ C:\ C:\ C:\	OK Cancel <u>H</u> elp
List Files of <u>Type</u> : Excel Files (*xls*)	Dri⊻es: ■ c: Preload	Network

The program opens a file browser window. Navigate to the folder where your data file is located.

Click on your data file name in the list box on the left and then click OK.

Select Workbook		×
Database N <u>a</u> me NITAB ODBC functionality.xls	Directories: c:\statistics\minitab\odbc C:\ C:\ C:\ C:\ C:\ C:\ C:\ C:\	OK Cancel Help Read Only
List Files of <u>T</u> ype: Excel Files (*.xls*)	Dri⊻es:)	→ <u>N</u> etwork

This GUI shows the worksheets of the Excel file and the columns in those worksheets that are available for import.

Query Database (ODBC)	
Available <u>t</u> ables:	
Sheet1\$	•
<u>A</u> vailable fields:	Selected fields:
у >>> <<	
🔽 List available tables and fields in alphabetica	ıl order
Help	Use rows QK Cancel

Choose the worksheet from the Excel file in the **Available tables** list box and then select the columns that you want to import from Excel into MINITAB. Then click **OK**.

Query Database (ODBC)	×
Available <u>t</u> ables:	
Sheet1\$	•
<u>A</u> vailable fields:	Selected fields:
	ID У >>> <<
✓ List available tables and field	ds in alphabetical order
Help	

The ODBC command is complete and runs. The **Session** window shows the ODBC command and the imported data appear in columns C1 and C2 in the MINITAB worksheet.

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If you intend to access data from this Excel file automatically using a VBA call from Word then create an EXEC macro containing the ODBC code. Copy the ODBC code from the **Session** or **History** window, then paste the code into a text file (use NotePad). Save the file with the *.mtb* file extension in your MINITAB Macros folder. Run the macro as needed from the **File> Other Files> Run an EXEC** menu.

Here is the ODBC code as copied from the **History** window. The ampersand (&) symbols at the ends of some lines are MINITAB's line continuation character for lines that are too long to break.

ODBC;

```
Connect "DSN=Excel Files;DBQ=C:\Statistics\MINITAB\ODBC\Data for test of MI" &
"NITAB ODBC functionality.xls;DefaultDir=C:\Statistics\MINITAB\ODBC;DriverI" &
"d=1046;MaxBufferSize=2048;PageTimeout=5;";
SQLString "SELECT `ID`,`y` FROM `C:\Statistics\MINITAB\ODBC\Data for test o" &
"f MINITAB ODBC functionality.xls`.`Sheet1$`".
```

Here is the same code with the line breaks cleaned up. The lines from Connect to PageTimeOut are all one MINITAB subcommand line strung together by the &s. Note the semicolon at the end of the PageTimeOut command that ends the Connect subcommand. The SQLString command is broken over two lines and is the one that selects which columns to import from Excel into MINITAB. This code can be copied to the MINITAB command line and run or it can be saved as an EXEC macro with the *.mtb* file extension and then called as needed. The macro method is preferred for implementing ODBC calls from within VBA code in Word.

```
ODBC;
Connect &
  "DSN=Excel Files;" &
   "DBQ=C:\Statistics\MINITAB\ODBC\Data for test of MINITAB ODBC functionality.xls;" &
   "DefaultDir=C:\Statistics\MINITAB\ODBC;" &
   "DriverId=1046;" &
   "MaxBufferSize=2048;" &
   "PageTimeout=5;";
   SQLString "SELECT `ID`,`Y` FROM `C:\Statistics\MINITAB\ODBC\Data for test of " &
        "MINITAB ODBC functionality.xls`.`Sheet1$`".
```

Example 2 – New Permanent ODBC Connection

This example creates a new permanent ODBC Data Source Name (DSN) that, after it's initially set up, simplifies making the ODBC connection to Excel from MINITAB.

From MINITAB click File> Query Database (ODBC), then select the Machine Source Data tab, under the Data Source Name window select Excel Files, and then click New. In the next menu, shown below, choose User Data Source or System Data Source depending on who should have access to the data. Then click Next.

Create New Data Source		×
	S <u>e</u> lect a type of data source: <u>User Data Source (Applies to this machine only)</u> <u>System Data Source (Applies to this machine only)</u>	
	Selecting User Data Source creates a data source which is specific to this machine, and visible only to you.	
	< Back Next > Cance	

In the next menu choose a driver appropriate to the file type of the data source. There are several drivers available for Excel. The one chosen below is the most modern and the most likely to work for modern versions of Excel. Click **Next** and MINITAB will confirm your choice of driver as shown in the screen shot on the next page.

Create New Data Source		×
	Select a driver for which you want to set up a data so Name Microsoft dBase Driver (*.dbf) Microsoft dBase VFP Driver (*.dbf) Microsoft dBase-Treiber (*.dbf) Microsoft Excel Driver (*.xls) Microsoft Excel Driver (*.xls) Microsoft Excel-Treiber (*.xls) Microsoft FoxPro VFP Driver (*.dbf) Microsoft ODBC for Oracle Microsoft Paradox Driver (*.db) Microsoft Paradox Driver (*.db)	Durce.
	< <u>B</u> ack <u>N</u> ext >	Cancel

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If you chose the correct driver then click **Finish**.

Create New Data Source	
	When you click Finish, you will create the data source which you have just configured. The driver may prompt you for more information. User Data Source Driver: Microsoft Excel Driver (*.xls, *.xlsx, *.xlsm, *.xlsb)
	< Back Finish Cancel

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Enter a **Data Source Name** and an appropriate description of the data file or activity type. The name specified in the **Data Source Name** field (no more than 32 characters) will be used as the name of an ODBC data source name file with the *.dsn* file extension. Choose the Excel version, then click **Select Workbook**.

ODBC Microsoft Excel Setup	? 🗙
Data Source Name:	OK
Description:	Cancel
Version: Excel 12.0	Help
Workbook:	
Select Workbook	
Use Current Directory	<u>O</u> ptions>>

Navigate to the folder containing the data file (**Directories**), select the data file (**Database Name**), and then click **OK**.

Select Workbook		×
Database N <u>a</u> me NITAB ODBC functionality.xls Data for test of MINITAB	Directories: c:\statistics\minitab\odbc C:\ C:\ C:\ C:\ C:\ C:\ C:\ C:\	OK Cancel ∐elp ▼ Bead Only
List Files of <u>Type</u> : Excel Files (*.xls*)	Dri⊻es: ा c: Preload _ ▼	Network

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With a data source name specified and the workbook selected click **OK**.

ODBC Microsoft E	? 🗙						
Data Source <u>N</u> ame:	Demo ODBC Excel/MINITAB	ОК					
<u>D</u> escription:	Demo	Cancel					
Database	Help						
⊻ersion: Exc	Version: Excel 12.0						
Workbook: C:\							
	Select Workbook						
Use Current Dir	<u>O</u> ptions>>						

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A new ODBC connection has been created and added to the list of available connections. Any time in the future that you want to make this ODBC connection you can choose this item from the list.

FYI: To remove a data source from this list, in Windows go to **Start> Control Panel>** Administrative Tools> Data Sources (ODBC). Then select and delete the item from the list.

Select Data Source				? 🗙			
File Data Source Machine Data So	ource						
Data Source Name dBASE Files Demo ODBC Excel/MINITAB Excel Files MS Access Database Visual FoxPro Database Visual FoxPro Tables	Type User User User User User	Description Demo					
				<u>N</u> ew			
A Machine Data Source is specific to this machine, and cannot be shared. "User" data sources are specific to a user on this machine. "System" data sources can be used by all users on this machine, or by a system-wide service.							
		ОК	Cancel	Help			

With the new connection selected click **OK**.

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Select Workbook		×
Database N <u>a</u> me NITAB ODBC functionality.xls	<u>D</u> irectories: c:\statistics\minitab\odbc	OK
Data for test of MINITAB	C:\ C Statistics MINITAB ODBC	
·	~	☐ <u>R</u> ead Only
List Files of <u>T</u> ype: Excel Files (*.xls*)	Dri⊻es:	Network

Confirm that the correct workbook is selected and click **OK**.

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Choose the worksheet in the Excel file and the columns to be imported into MINITAB. Then click **OK**.

Query Database (ODBC)			×						
Available <u>t</u> ables:									
Sheet1\$			-						
<u>A</u> vailable fields:		Selected fields:							
	> >> <	ID Y							
 List available tables and fields in alphabetical order Use rows Help QK Cancel 									

The ODBC code to make the Excel/MINITAB connection appears in the **Session** window and the data from Excel are imported into the MINITAB **Worksheet**.

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S S	ession												
<pre>Welcome to Minitab, press F1 for help. MTB > ODBC; SUBC> Connect "DSN=Demo ODBC Excel/MINITAB;DBQ=C:\Statistics\MINITAB\ODBC\Data fo" & CONT> "r test of MINITAB ODBC functionality.xls;DefaultDir=C:\Statistics\MINITAB\" & CONT> "ODBC;DriverId=1046;FIL=excel 12.0;MaxBufferSize=2048;PageTimeout=5;"; SUBC> SQLString "SELECT 'ID', 'y' FROM 'C:\Statistics\MINITAB\ODBC\Data for test o" & CONT> "f MINITAB ODBC functionality.xls'.'Sheet1\$'". Successfully retrieved ODBC data set Data Source Name: Demo ODBC Excel/MINITAB Database Name: C:\Statistics\MINITAB\ODBC\Data for test of MINITAB ODBC functionality.xls DBMS Name: EXCEL DBMS Version: 12.00.0000 MTB ></pre>													
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3	1	0.24369											-
4	1	-0.03624											-
5	2	-0.19261											1
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7	2	-0.81095											
8	2	-0.90290											
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Current	Worksheet:	Worksheet 1											