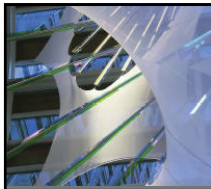


Tutorial 11

Importing Data Into Excel

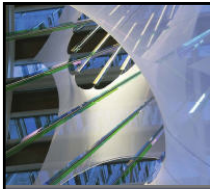


Most of the materials in the presentation
werederived from *New Perspectives Excel 2003*,
2nd Ed.



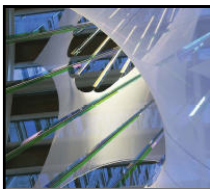
Import data from a text file into Excel

- ▶ Sometimes it is necessary to import data from another source into an Excel worksheet. One possible source of data is a text file.
- ▶ A text file is a file without formulas, graphics, special fonts, or formatting.
- ▶ A text file contains alphanumeric data, letters, numbers, and symbols like commas and tabs.
- ▶ Any structure the text file has must be supplied by some combination of text symbols.



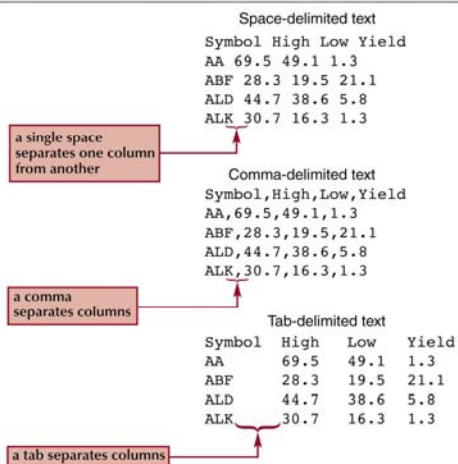
Types of text files

- ▶ If the data is in columns, for instance, the column breaks must be indicated in some way.
 - In some text files, the columns are separated by a delimiter, such as a space, a comma, or a tab, that shows where one column of data ends and another begins
- ▶ In other text files, the columns are fixed-width, which means that in each column, all the data begins at a fixed place on the line.
 - That is, in every row of data, the data in the first column starts at, say, the first space, the data in the second column starts at the thirteenth space, and so on



Common text file delimiters

Figure 11-3 Examples of delimited text





A fixed-width text file

An example of fixed-width text

Figure 11-4

Symbol	High	Low	Yield
AA	69.5	49.1	1.3
ABF	28.3	19.5	21.1
ALD	44.7	38.6	5.8
ALK	30.7	16.3	1.3

each column entry begins at the same point in the text file



Text Import Wizard

- ▶ If you open a text file in Excel, Excel starts the Text Import Wizard.
- ▶ The Text Import Wizard takes you through three dialog boxes:
 1. In the first dialog box you have to check whether the data is delimited or fixed-width. The Wizard will try to determine this itself, but if it is wrong, you can set this manually
 2. In the next dialog box, the Wizard helps you set up the breaks between the columns. The Wizard tries to detect the correct space to begin each column, but sometimes it cannot. When that happens, you need to edit the column break lines manually
 3. The final dialog box of the Text Import Wizard allows you to format the columns of data, one at a time. You can highlight each column, and check off whether the column contains text or dates

Text Import Wizard dialog box #1

Figure 11-5 Text Import Wizard - Step 1 of 3

the Text Import Wizard automatically detects the type of text file

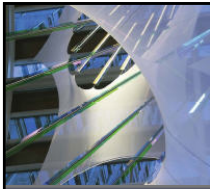
preview window

Text Import Wizard dialog box #2

Figure 11-6 Text Import Wizard - Step 2 of 3

instructions for changing column breaks

column break

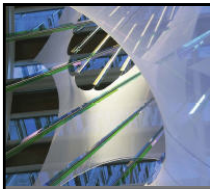


Modifications to the second text box

Figure 11-7 Revised column breaks

column breaks are now in the correct locations

Date	High	Low	Close	Open
20030102	26.39	24.88	24.9	25.92
20030109	24.92	24.51	24.64	24.9
20030106	25.97	23.28	24.83	24.64
20030107	26.74	23.63	25.25	24.83



Text Import Wizard dialog box #3

Figure 11-8 Text Import Wizard - Step 3 of 3

identifies the data format for the column

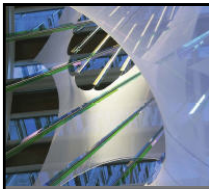
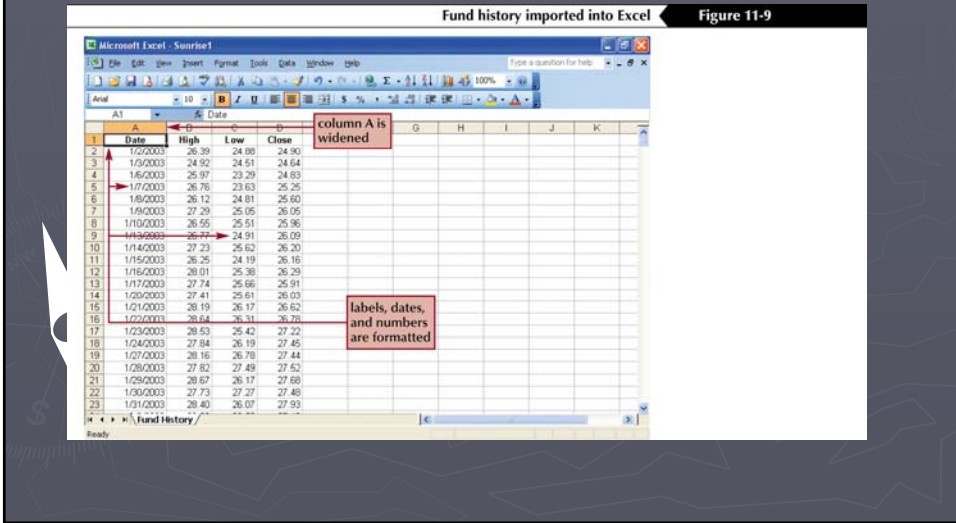
data format options

click to skip importing the selected column

Date	High	Low	Close	Open
20030102	26.39	24.88	24.9	25.92
20030109	24.92	24.51	24.64	24.9
20030106	25.97	23.28	24.83	24.64
20030107	26.74	23.63	25.25	24.83



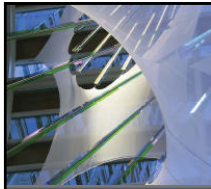
An example of an imported text file



Retrieve data from database tables

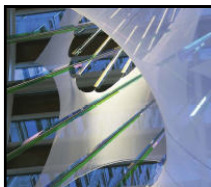
- ▶ Another possible source from which you could import data into is a database.
- ▶ A database is a program that can store large amounts of data in tables.
- ▶ The rows in a database table are called records.
- ▶ The columns are called fields.
 - Each record in the table contains the same fields

Similar to a list in Excel



What is a query?

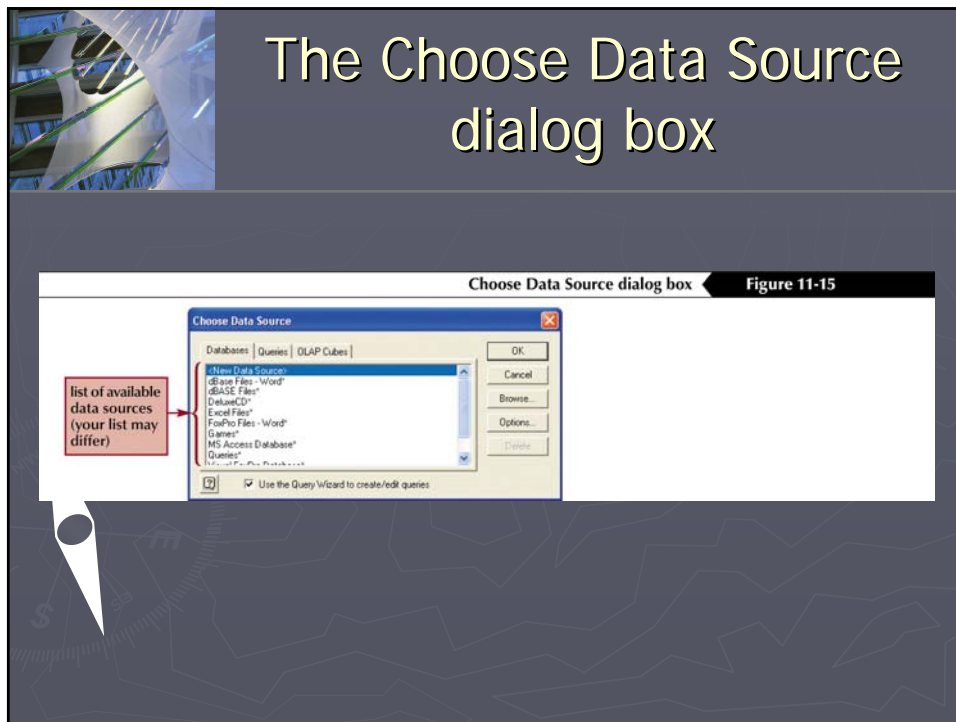
- ▶ Excel can import data from most database tables.
- ▶ To get information from a database, you must create a query.
- ▶ The query tells the database:
 - What information you want
 - Which records you want it from
 - How you want the data arranged
- ▶ Excel has an add-in called the Query Wizard to help you write queries to extract data from a database.



Start the Query Wizard

- ▶ To import data using the Query Wizard, from the Data menu, choose Import External Data, and from the submenu that appears, select New Database Query.
- ▶ This brings up the Query Wizard - Choose Data Source dialog box.
- ▶ On the Databases tab of the dialog box you will see a list of possible data sources.
- ▶ You choose the database type and proceed to the next step, which is to locate the database file to be imported.

The Choose Data Source dialog box



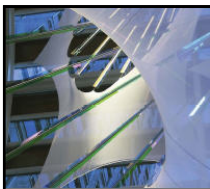
Select tables and fields to import

- ▶ When you have located the database and clicked the OK button, the database opens the Query Wizard – Choose Columns dialog box.
- ▶ In the *Available tables and columns:* box, you will see a list of the tables in the database.
- ▶ You can see the columns (fields) in each table by clicking on the plus sign in front of the table.
- ▶ From these fields, you can select the ones you want to import and add them to the Columns in your query: box.

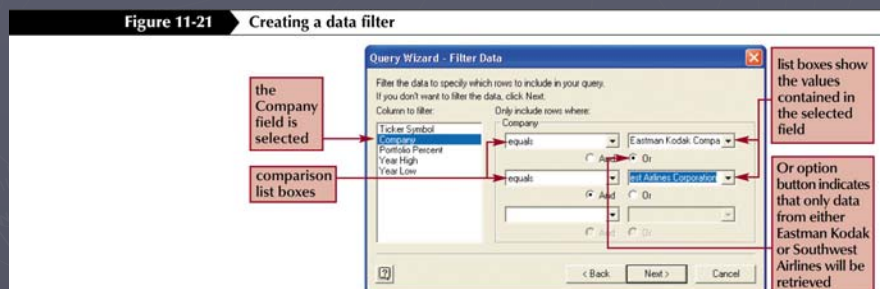


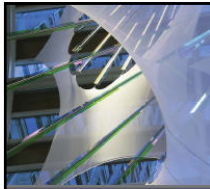
Apply filters to import data

- ▶ When you have selected all your fields, click the Next button to bring up the Query Wizard - Filter Data dialog box.
- ▶ When you are importing data from a database, you may want to filter the data by choosing some filtering criteria.
- ▶ To do this, in the Filter Data dialog box:
 - Click the column you wish to filter
 - Specify a comparison operator
 - Enter the desired criterion in the appropriate box
- ▶ If you want to use all the data or if you have finished writing all your filters, click Next to go to the Query Wizard - Sort By dialog box where you can specify what sequence the data is to be sorted in.



The Filter Data dialog box





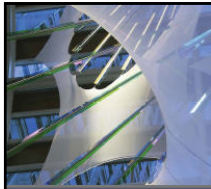
Save and run the query

- ▶ Your query is now defined.
- ▶ Click Next to bring up the final Query Wizard dialog box.
- ▶ This dialog box allows you to save the query you have just created, with a file extension of .dqy.
- ▶ Now, you may choose the *Return Data to Microsoft Office Excel* button.
- ▶ When you now select a cell in the worksheet, the Query Wizard runs the query against the database and inserts the data it extracts into the worksheet beginning at the selected cell.



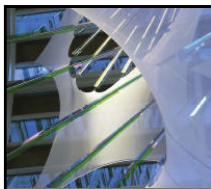
Editing queries

- ▶ Excel knows when the data in a worksheet has been imported from an external source, and provides an External Data toolbar that makes available several options.
- ▶ To bring up the External Data toolbar, first make sure that your cursor is pointing to a cell containing external data.
- ▶ Choose Toolbars from the View menu, and choose External Data in the sub-menu.



The Refresh Data button

When you click this, Excel goes to the data source that the data was imported from, and brings into the worksheet any changes that have occurred since the data was loaded (or last refreshed)



Set Data Range properties

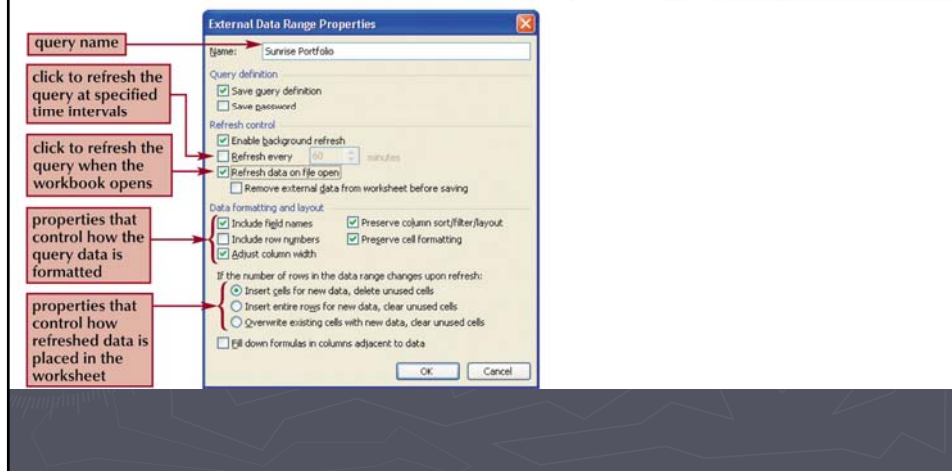
- ▶ Clicking the Data Range Properties button on the External Data toolbar brings up the External Data Range Properties dialog box.
- ▶ The name under which you saved the query that produced this data appears in the Name: box.
- ▶ You can save the query, and even save a password for the query so that it cannot be changed unless the password is entered.
- ▶ You have several options about refreshing the data, about the data formatting and layout, and about what to do if the layout of the source document has changed when you attempt to refresh.
- ▶ Selecting the *Refresh data on file open* check box will cause Excel to query the data source for updated data every time the file containing this worksheet is opened.



External Data Range Properties

External Data Range Properties dialog box

Figure 11-25



Retrieve data from a database into a PivotTable

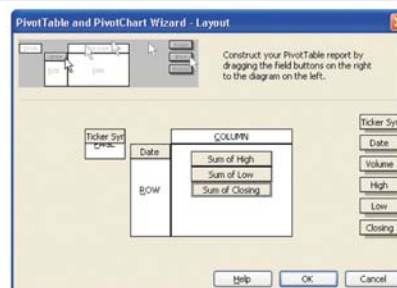
- ▶ First, choose or create an empty worksheet.
- ▶ From the Data menu choose *PivotTable and PivotChart Report*.
- ▶ When the Wizard comes up with the dialog box labeled Step 1 of 3, choose *External data source* and *PivotChart report (with PivotTable report)*, then click Next.
- ▶ This will bring up Step 2 of 3 of the Wizard. Click the Get Data button. This will bring up the Query Wizard - Choose Data Source dialog box.
- ▶ Choose the data source type, and click OK. Select your database from its folder on the Data Disk, and click OK. Select your table in the list of tables.
 - If you click Add, the Query Wizard will add all of the columns in the selected table to the Columns in your query: box
 - If you do not want to filter or sort the data, you can click Next repeatedly until you have reached the end of the Query Wizard, and have returned to Step 2 of 3 in the PivotTable and PivotChart Wizard

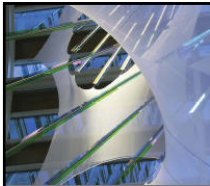
Set the PivotTable layout

- ▶ Click Next to go to Step 3 of 3. Here, choose the Existing worksheet option, and click the cell where you want to start the PivotTable.
- ▶ Click Layout, which will bring up a Layout dialog box, on which you will design the PivotTable.
- ▶ You can drag the buttons on the right side of the dialog box to the diagram on the left side.
- ▶ You can change the words on the column labels by double clicking on the fields and using the Name text box.
- ▶ Also, while you are in the PivotTable Field dialog box, you can format fields as a number.

The Layout dialog box

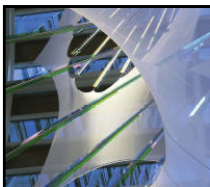
Figure 11-30 Layout of the PivotTable



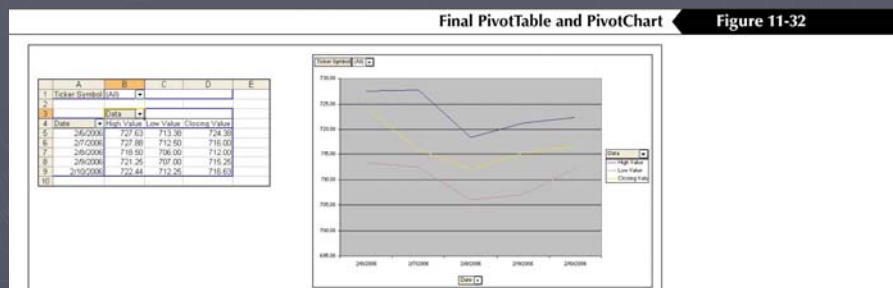


Finish the Pivot Table

- ▶ In the Step 3 of 3 dialog box, you can click Options so that selected columns or rows are not selected.
- ▶ You should also select *Refresh on open* in this dialog box.
- ▶ Click OK and Finish.
- ▶ You have designed a PivotTable and PivotChart, and a query to get the data to go in them.
- ▶ The PivotTable will be on a worksheet called Recent Results; the PivotChart will be on a sheet called Chart1 for the example created here.



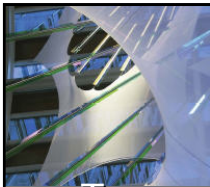
Example PivotTable and PivotChart





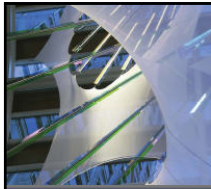
Retrieve stock market data from the Web

- ▶ To access a Web page, you must know the URL.
- ▶ The URL of a Web page is its address, the place the network browser goes to find the page.
- ▶ Web pages stored on the Web usually (although not always) have a URL that starts with `http://www`.
- ▶ Web pages can also be accessed from a disk instead of from the Web.



Begin the Query Wizard

- ▶ To create a Web query, find or create a new worksheet in your Excel workbook.
- ▶ Point to the cell where you want the imported information to start.
- ▶ From the Data menu, choose Import External Data, and then New Web Query.
- ▶ The Query Wizard will invoke your Web browser, and open your home or default Web page.
- ▶ Type in the address of the HTML file to be used.



Import the Web page data

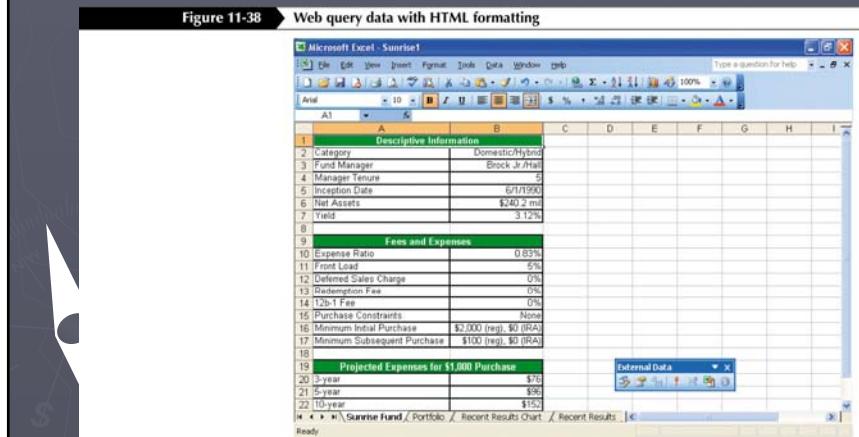
- ▶ When the Web page is opened with the Query Wizard, the Wizard puts little selection arrows in front of each section.
- ▶ As you click on the sections you want to import, the arrow changes to a check mark.
- ▶ There is a selection arrow at the top of the page; you select this arrow to select the entire page.
- ▶ Click on the arrows that point to the tables on the Web page, and then click Import.
- ▶ Check the address in the Import Data dialog box, and click OK.
- ▶ The Query Wizard has created a query to select the parts of the Web page you want, and has imported the data into your worksheet.



Import pages with HTML formatting retained

- ▶ One of the options on the External Data toolbar is to *Edit Query*.
- ▶ You can edit the query to import the data with all its HTML formatting features, such as complicated table structures, and hyperlinks.
- ▶ From the Edit Web Query page, select Options, and from the Web Query Options page, select *Full HTML formatting*. Select OK, and then Import.
- ▶ You can save a Web query, and then use it in any Excel workbook To do so:
 - Select the Edit Query button from the External Data toolbar, and select the Save Query button
 - Key in the path to the folder where you want the query to be saved, and give it a name

An imported Web page with its HTML formatting



Import stock quotes

- ▶ There are some Web queries that Microsoft provides for you. One of these is the Microsoft Investor Stock Quotes query.
- ▶ From the Data menu, choose Import External Data, then choose Import Data.
- ▶ This will bring up the Select Data Source dialog box, where you will see a list of available queries.
- ▶ Choose *MSN MoneyCentral Investor Stock Quotes*, and click Open.



Enter parameters for the Stock Quote query

- ▶ In the Import Data dialog box, click Parameters. In the Parameters dialog box, notice that you can choose *Get the value from the following cell:*, and then enter a cell address or range.
- ▶ If you have already imported the list of ticker symbols for a list of stocks into a worksheet, you can read the ticker symbols from that worksheet.
- ▶ Click *Get the value from the following cell:*, click Collapse Dialog Box, open the worksheet where the ticker symbols are listed, highlight them, and press Enter.
- ▶ Click OK twice to activate the Web query. If you have an open connection to the Web, the query will get and display the current stock information for the stocks whose ticker symbols you entered.



Stock quotes imported from the Web

Stock quotes imported from the Web Figure 11-40

	Last	Previous Close	High	Low	Volume	Change
AT&T Corp.	20.44	20.12	20.53	20.23	2,065,700	0.32
Alcoa Inc.	30.07	30.12	30.21	30	801,000	-0.05
Amgen Corporation	30.98	31.11	31.14	30.87	168,700	-0.13
General Motors Corporation	42.92	43.14	43.55	42.81	945,000	-0.22
Chemontexaco Corporation	73.49	73.73	74	73.48	407,700	-0.24
Eastman Kodak Company	23.16	23.25	23.34	23.09	1,021,600	-0.09
Ryder System, Inc.	30.62	30.93	31	30.61	42,800	-0.31
Delta Air Lines, Inc.	13.3	13.07	13.55	13.13	694,600	0.23
Southwest Airlines Co.	18.57	18.4	18.96	18.4	806,900	0.17
Canadian National Railway	54.74	54.9	54.96	54.65	22,800	-0.16
Union Pacific Corp.	58.93	59.37	59.44	58.92	178,300	-0.44
Consolidated Edison, Inc.	40.4	40.47	40.67	40.3	145,700	-0.07
American Electric Power	29.45	29.44	29.62	29.44	124,100	0.01
DPL Corporation	40.79	40.84	40.84	40.71	78,600	-0.05
Wisconsin Energy Corporation	31.27	31.4	31.49	31.23	88,300	-0.13



Use hyperlinks

- ▶ Sometimes text from a Web page is underlined in blue.
- ▶ This indicates that the text is a *hyperlink*.
- ▶ A hyperlink is any text or spot on a page that, when you click on it, takes you to another location.



A worksheet with hyperlinks

Figure 11-45 XML Source task pane

The screenshot shows a Microsoft Excel spreadsheet with the following data:

			Previous	Current	High
1	Stock Quotes Provided				
2	click here to visit MSN Money				
3					
4	AT&T Corp.	Chart	News	20.44	20.12
5	Alcoa Inc.	Chart	News	21.07	21.12
6	United Corporation	Chart	News	31.07	30.21
7	General Motors Corporation	Chart	News	41.1	31.14
8	Chesapeake Energy Corporation	Chart	News	12.49	74
9	Eastman Kodak Company	Chart	News	23.16	23.26
10	Cyber System, Inc.	Chart	News	30.62	30.93
11	Delta Air Lines, Inc.	Chart	News	13.3	13.07
12	Southwest Airlines Co.	Chart	News	13.3	13.56
13	Canadian National Railway	Chart	News	43.21	43.86
14	Union Pacific Corp.	Chart	News	59.93	59.37
15	Consolidated Edison, Inc.	Chart	News	40.4	40.47
16	American Electric Power	Chart	News	29.45	29.44
17	PP&L Corporation	Chart	News	43.21	40.84
18	Wisconsin Energy Corporation	Chart	News	31.4	31.49
19					
20					
21	Find stocks, mutual funds, options				
22	Discover MSN Money				

The XML Source task pane on the right shows a tree view of the XML map structure. Red arrows point from text boxes to specific elements in the task pane and the worksheet:

- click to display the list of XML maps in the workbook (points to the XML Source task pane)
- schematic diagram of current map (points to the document_Map element in the task pane)
- click to add a new map (points to the Add New Map button in the task pane)
- click for options for displaying XML data (points to the Options button in the task pane)