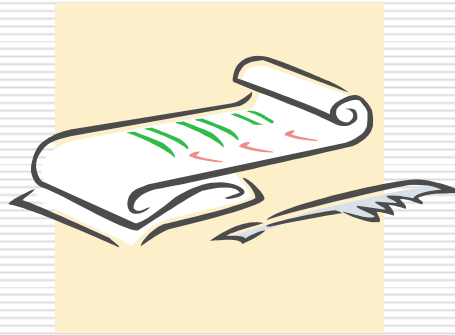


Tutorial 5

Lists



Lists

- ❑ Excel provides features that allow you to maintain lists of information such as customer lists, telephone lists, inventory lists, and so on. An **Excel list** is a collection of rows and columns that contain similar data.
 - ❑ In a worksheet, each column represents a **field** of data and each row represents a **record** of data. The first row of the list always contains the name of the fields and is called a field **header** row.
-

Open the Vehicle Spreadsheet in Tutorial 5 in the LMAYER instructor folder for CIS143.

Figure 5-1 Portions of the vehicles list

each column is a field

each row is a record

ID #	YEAR	MAKE	TYPE	ODOMETER	DEPARTMENT ASSIGNED	PRICE	MAINTENANCE
2	02	2002 Ford	Sedan	3780	Police & Security	\$ 20,880	\$ 1,933
3	195	2004 Ford	Truck	19870	Telecomm	\$ 18,682	\$ 1,331
4	503	2003 Chevrolet	Sedan	8900	Police & Security	\$ 20,904	\$ 939
5	078	1995 Ford	Pickup	27419	Housing & Residential Life	\$ 11,866	\$ 607
6	696	2000 Dodge	Van	43907	Police & Security	\$ 15,844	\$ 666
7	798	2003 Ford	Van	24575	Housing & Residential Life	\$ 19,846	\$ 168
8	817	2004 Chevrolet	Van	16896	Housing & Residential Life	\$ 20,824	\$ 705
9	818	2000 Chevrolet	Pickup	37786	Housing & Residential Life	\$ 13,783	\$ 1,584
10	829	1995 Ford	Pickup	32765	Housing & Residential Life	\$ 5,000	\$ 1,370
11	834	1991 Chevrolet	Van	13846	Property	\$ 11,449	\$ 1,295
12	841	1999 Ford	Sedan	53378	Printing Services	\$ 20,315	\$ 473
13	865	2000 GMC	Van	42313	Housing & Residential Life	\$ 12,490	\$ 38
14	866	2001 Ford	Sedan	49973	Police & Security	\$ 15,090	\$ 667
15	874	2004 Ford	Van	43678	Telecomm	\$ 21,580	\$ 28
16	877	1996 Chevrolet	Pickup	50580	Property	\$ 14,130	\$ 278
17	888	1999 Ford	Sedan	62743	Police & Security	\$ 22,413	\$ 112
18	897	2005 Ford	Truck	12703	Housing & Residential Life	\$ 22,724	\$ 1,591
19	904	1996 Chevrolet	Sedan	53383	Police & Security	\$ 16,539	\$ 1,641
20	1016	1997 Ford	Pickup	53728	Housing & Residential Life	\$ 14,757	\$ 2,000
21	1055	2004 Ford	Van	3500	Dining Services	\$ 22,438	\$ 695
22	1071	1993 Ford	Van	93464	Printing Services	\$ 12,149	\$ 378
23	1140	2003 Ford	Truck	29781	Property	\$ 19,634	\$ 675

Freeze rows and columns



- ❑ worksheet, you can move data off the screen.
- ❑ If you prefer to have portions of data remain on the screen at all times, such as the column and/or row headings, you can freeze a portion of the list so that it remains while the rest of the data scrolls.
- ❑ To freeze rows and columns:
 - Click in a cell to select it
 - Click Window on the menu bar, and then click Freeze Panes to freeze the rows above the selected cell, and the columns to the left of the selected cell
 - Excel will display dark vertical and horizontal lines to indicate the rows and columns that are frozen

Split panes

The screenshot shows the 'Window' menu with the 'Split' option selected. The spreadsheet data is as follows:

	A	B	C	
1	Product	Month	Region	
2	Lively Lemon Tea	April	East	\$
3	Wild Berry Tea	April	East	\$
4	Duke Gray Tea	April	East	\$
5	Lively Lemon Tea	April	North	\$42,097.00
6	Wild Berry Tea	April	North	\$36,770.00
7	Duke Gray Tea	April	North	\$47,280.00
8	Lively Lemon Tea	April	South	\$46,414.00
9	Wild Berry Tea	April	South	\$25,716.00
10	Duke Gray Tea	April	South	\$52,002.00
11	Lively Lemon Tea	April	West	\$41,444.00
12	Wild Berry Tea	April	West	\$23,328.00
13	Duke Gray Tea	April	West	\$51,304.00
14	Lively Lemon Tea	February	East	\$45,805.00
15	Wild Berry Tea	February	East	\$26,287.00
16	Duke Gray Tea	February	East	\$53,007.00

Similar to Freeze Panes, but each section is scrollable.

Zoom

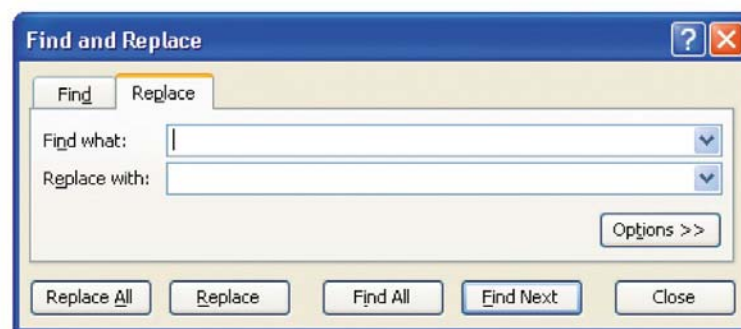
The screenshot shows the 'Zoom' dialog box with the 'Magnification' section. The spreadsheet data is as follows:

	A	B	C	D	E
1	Product		Region	Revenue	
2	Lively Lemon Tea		East	#####	
3	Wild Berry Tea		East	#####	
4	Duke Gray Tea		East	#####	
5	Lively Lemon Tea		North	#####	
6	Wild Berry Tea		North	#####	
7	Duke Gray Tea	April	North	#####	
8	Lively Lemon Tea	April	South	#####	

Find and replace values in a worksheet (under Edit menu)

- The Find command allows you to search through the data in a worksheet for a particular character string.
- Optionally, you can choose to replace the character string with another string.
 - For example, you might want to find every occurrence of ACCT and replace it with Accounting. (Called Find and Replace)

The Find and Replace dialog box



Sort data in a list (Data Menu)

- ❑ Excel makes it easy to sort a list in ascending or descending order based on any field(s) in the list.
- ❑ The field(s) selected on which to sort are called the sort fields or the sort keys.
- ❑ You may choose to sort the data on a single field or on a collection of fields.

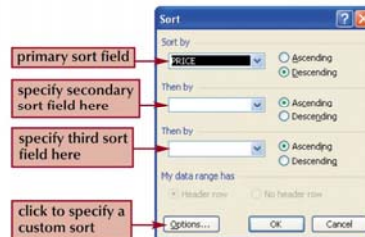
Sort using a single sort key

Vehicles list sorted by DEPARTMENT ASSIGNED Figure 5-8

ID#	Year	Make	Type	ODOMETER	DEPARTMENT ASSIGNED	PRICE	MAINTENANCE
1	1415	1997 GMC	Van	8500	Athletics	\$ 16,740	\$ 755
3	1462	1997 GMC	Van	8209	Athletics	\$ 20,802	\$ 980
4	2004	1997 GMC	Van	7430	Athletics	\$ 14,187	\$ 659
5	2128	1994 Ford	Van	9689	Athletics	\$ 15,197	\$ 1,975
6	2364	1990 Chevrolet	Sedan	9241	Athletics	\$ 11,630	\$ 2,257
7	1056	2004 Ford	Van	3650	Dining Services	\$ 22,436	\$ 695
8	1602	1999 GMC	Van	3686	Dining Services	\$ 16,366	\$ 1,826
9	1949	2004 Chevrolet	Van	3447	Dining Services	\$ 18,712	\$ 1,025
10	2021	1999 Dodge	Van	5908	Dining Services	\$ 14,965	\$ 1,940
11	2167	2003 Ford	Truck	1467	Dining Services	\$ 21,743	\$ 202
12	2363	2001 GMC	Pickup	5967	Dining Services	\$ 14,127	\$ 1,255
13	678	1996 Ford	Pickup	7341	Housing & Residential Life	\$ 11,866	\$ 507
14	798	2003 Ford	Van	2457	Housing & Residential Life	\$ 19,846	\$ 168
15	817	2004 Chevrolet	Van	1668	Housing & Residential Life	\$ 20,624	\$ 705
16	818	2000 Chevrolet	Pickup	3779	Housing & Residential Life	\$ 13,783	\$ 1,594
17	829	1996 Ford	Pickup	3276	Housing & Residential Life	\$ 5,000	\$ 1,370
18	856	2000 GMC	Van	4231	Housing & Residential Life	\$ 12,500	\$ 30
19	897	2006 Ford	Truck	1270	Housing & Residential Life	\$ 22,724	\$ 1,691
20	1016	1997 Ford	Pickup	5272	Housing & Residential Life	\$ 14,757	\$ 2,000
21	1167	2000 Ford	Truck	3929	Housing & Residential Life	\$ 15,366	\$ 3,491
22	1196	1998 Chevrolet	Van	5356	Housing & Residential Life	\$ 12,493	\$ 1,299
23	1375	1999 Ford	Pickup	4508	Housing & Residential Life	\$ 15,866	\$ 72

Sort using multiple keys

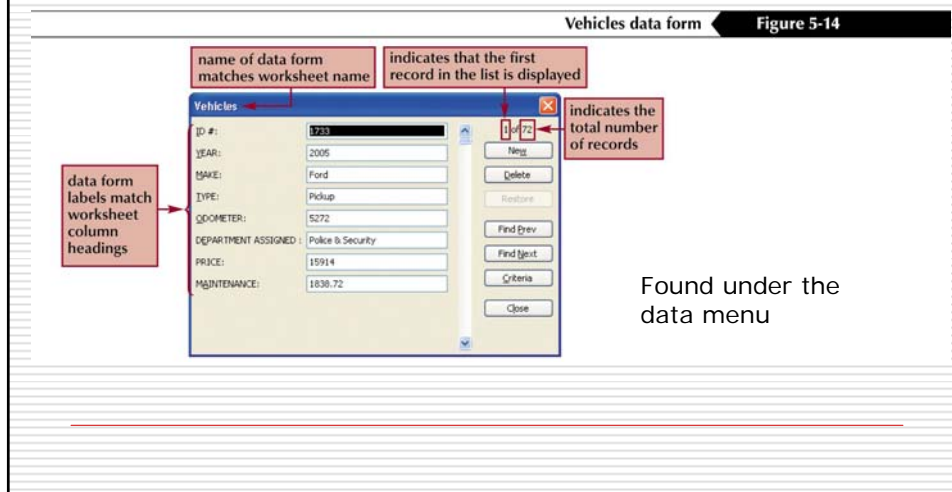
Figure 5-11 Sort dialog box



Use a data form to enter, search for, edit, and delete records

- ❑ Sometimes it is easier to view the data in a list through a data form. A data form is a dialog box that you can use to arrange data to view one record at a time.
 - ❑ You can use the data form to display records, to search for records, to modify records, and to delete records from the Excel list.
 - ❑ Use "criteria" to view specific records.
-

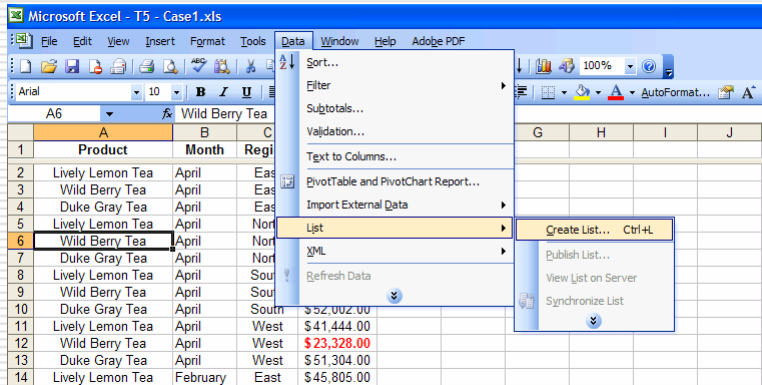
An Excel data form



To create a List Range

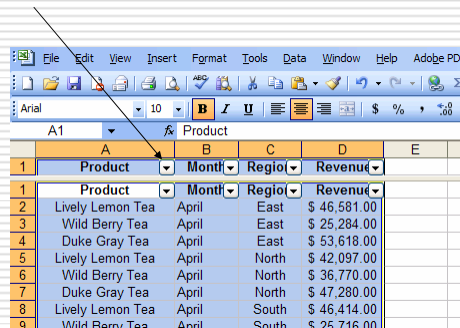
- Click on desired cell within list
- Click Data on menu and point to List
- Click on Create List option
- Click OK to accept settings in dialog box

Create the range list



After the range list is created

AutoFilter arrows are automatically added



Filter data in a list using AutoFilters

- Sometimes you will want to see a portion of the records instead of all of them.
- The process of displaying only those records that meet some criteria is called Filtering.
- When data in the list is filtered, records that do not meet your criteria are hidden.
 - These records are not removed from the list and, therefore, can be redisplayed by removing the filter
- Simple filters can be specified by clicking the list arrow on any field name cell.
- More complex filters must be created using the Custom AutoFilters option.

AutoFilter options

Filtering options for the MAKE field Figure 5-16

to display all items in the column, removing any previously specified filtering for the column

ID	YEAR	MAKE	TYPE	ODOMETRY	DEPARTMENT ASSIGNMENT	PRICE	MAINTENANCE
1733			Pickup	5272	Police & Security	\$ 15,914	\$ 1,839
1648			Pickup	2250	Printing Services	\$ 20,880	\$ 370
1686			Pickup	23915	Housing & Residential Life	\$ 16,763	\$ 1,775
1476			Pickup	47222	Property	\$ 11,232	\$ 2,000
2131			Pickup	31394	Housing & Residential Life	\$ 15,613	\$ 450
2353			Pickup	59570	Dining Services	\$ 14,127	\$ 1,255
818			Pickup	37788	Housing & Residential Life	\$ 13,763	\$ 1,584
1575			Pickup	43896	Property	\$ 12,643	\$ 603
1375			Pickup	45608	Housing & Residential Life	\$ 15,866	\$ 72
1075			Pickup	54741	Property	\$ 9,839	\$ 160
2132			Pickup	77104	Housing & Residential Life	\$ 14,019	\$ 594
1016			Pickup	52728	Housing & Residential Life	\$ 14,757	\$ 2,000
877			Pickup	50580	Property	\$ 14,130	\$ 279
829			Pickup	32765	Housing & Residential Life	\$ 5,000	\$ 1,370
503			Sedan	8900	Police & Security	\$ 20,904	\$ 939

to specify more complex criteria

to display one make of vehicle based on a value in the column

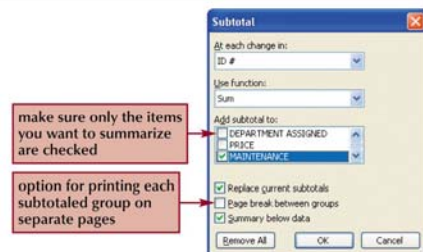
to display the top or bottom n items

Insert subtotals into a list

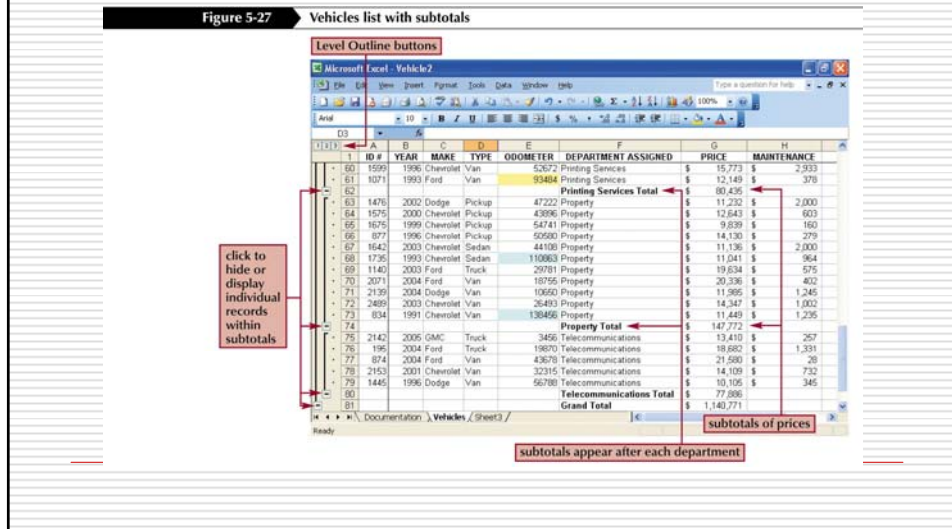
- ❑ The data in a list can be summarized by adding subtotals to the list.
- ❑ You can include summary information such as a count, a sum, an average, a minimum value, and or a maximum value.
- ❑ When the Subtotals command is applied to the list, a subtotal row is automatically added to the list.
- ❑ You can specify that you want the subtotal(s) to apply to the worksheet and/or groups within the worksheet.

The Subtotal dialog box

Subtotal dialog box ◀ Figure 5-26



An Excel datasheet with totals added



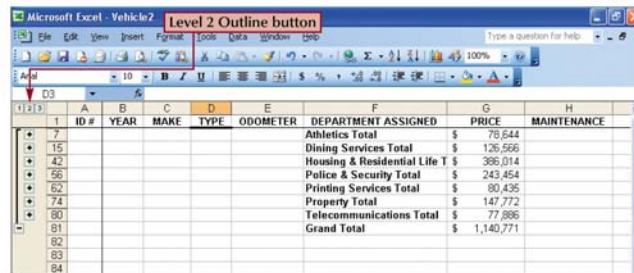
Use the subtotals outline view

- ❑ Previously you learned about creating subtotal lines within a worksheet.
- ❑ Sometimes, it might be more beneficial to view the summary information only.
- ❑ You can do this by displaying the data in Subtotals Outline View.
- ❑ You may choose from Level 1, Level 2, and Level 3 outline view.

Totals displayed in Outline view

Subtotals after Level 2 Outline button is selected

Figure 5-28

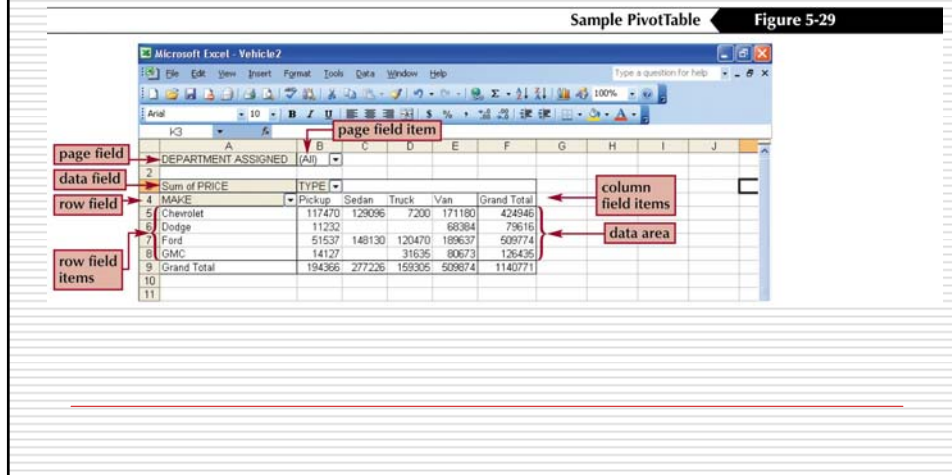


	A	B	C	D	E	F	G	H
	ID #	YEAR	MAKE	TYPE	ODOMETER	DEPARTMENT ASSIGNED	PRICE	MAINTENANCE
7						Athletics Total	\$ 78,644	
15						Dining Services Total	\$ 126,566	
42						Housing & Residential Life T	\$ 386,014	
56						Police & Security Total	\$ 243,454	
62						Printing Services Total	\$ 80,435	
74						Property Total	\$ 147,772	
80						Telecommunications Total	\$ 77,886	
81						Grand Total	\$ 1,140,771	
82								
83								
84								

Summarize a list using a PivotTable and a PivotChart

- difficult to analyze the data.
- A PivotTable report provides a meaningful summary of the data in an organized manner.
- In the PivotTable, data is summarized into categories of data.
- A PivotChart is associated with a PivotTable report.
- To create the PivotChart you must specify the data fields to be included in the chart as well as the category fields.

An example of a Pivot Table



Plan a Pivot Table

- ❑ Creating a PivotTable requires pre-planning of the data you would like to see summarized in the PivotTable.
- ❑ It is often a good idea to create a plan and even sketch the desired table.
- ❑ This will help you decide which fields should be placed in the row, column, and data placeholders when running the wizard.

A Pivot Table plan

Figure 5-30 PivotTable plan for calculating average annual maintenance costs

My Goal
Create a table that compares average maintenance costs for each department by type of vehicle

What results do I want to see?
Average departmental maintenance cost for each type of vehicle
Overall average maintenance cost for each department
Overall average maintenance cost for each type of vehicle
Overall average maintenance cost for each vehicle

What information do I need?
The table rows will show the data for each department.
The table columns will show the data for each type of vehicle.
The table will summarize annual maintenance cost.

What calculation method will I use?
The annual maintenance cost will be averaged.

Sketch your Pivot Table

Figure 5-31 Sketch of table to compare average annual maintenance costs

Average Maintenance Cost by Department and Type of Vehicle

Department	Pickup	Sedan	Truck	Van	Total
Athletics					
Dining Services					
Housing & Residential Life					
Police & Security					
Printing Services					
Property					
Telecommunications					
Total					

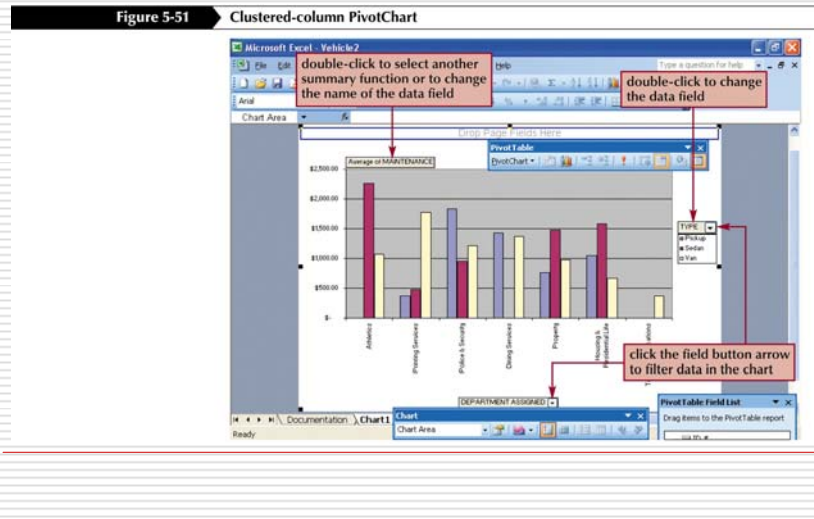
Create a pivot table

- Select Pivot Table/Chart Wizard from under data menu
 - Choose either table or chart
 - Also specify data source (Excel list, or Access database, etc.)
 - verify data range
 - specify location of table/chart
 - complete layout on worksheet or choose layout tab
-

Modify a Pivot Table

- After the PivotTable is created you can change the layout of the table.
 - You may want to make changes to the formatting, sort the data, add a field, or add a Page View.
 - You can also easily turn the PivotTable into a chart by clicking the Chart button while the cursor is anywhere in the PivotTable.
-

An example of a Pivot Chart



Keep in mind...

- ❑ Formatting: Cell, Column, Row formatting is as expected
- ❑ AutoFormat will list formats specific for Pivot Reports
- ❑ Changing the layout: drag fields under arrow to add or off table to delete
- ❑ Page view allows filters
- ❑ Hide fields by clicking on list arrow then clearing check box
- ❑ You cannot directly change data in a pivot table!!!
Use form to edit, add, delete data then click refresh button on Pivot Table toolbar.