



Advanced Microsoft Excel - PivotTable

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+ Agenda



Create a PivotTable and PivotChart

Rearranging Fields in a PivotTable

Grouping, Filtering & Sorting Data

Refresh PivotTable

Format a PivotTable

Calculation in a PivotTable

Using External Data Sources for Your PivotTable

Save Files



Create a PivotTable and PivotChart

Advanced Microsoft Excel - PivotTable



Preparing Your Data for PivotTable Reporting

REGION	MARKET	STORE	MODEL	MONTH	REVENUE
North	Great Lakes	65561011	4055T	April	\$2,354
North	Great Lakes	65561011	4055T	February	\$3,540
North	Great Lakes	65561011	4055T	January	\$3,454
North	Great Lakes	65561011	4055T	March	\$2,479
North	Great Lakes	65561011	4055T	May	\$2,071
North	New England	21001015	2500P	April	\$11,881
North	New England	21001015	2500P	February	\$19,304
North	New England	21001015	2500P	January	\$17,591
North	New England	21001015	2500P	March	\$13,448
North	New England	21001015	2500P	May	\$15,529
North	New England	20020102	3002C	April	\$256
North	New England	20020102	3002C	February	\$330
North	New England	20020102	3002C	January	\$375
North	New England	20020102	3002C	March	\$290

Ensure Your Data Is in a Tabular Layout

North	
Model 2500P	January 33,073
	February 35,680
	March 40,250
	April 13,250
	May 100,197
Model 3002C	January 29,104
	February 31,574
	March 79,427
	April 11,660
	May 88,173

Avoid Storing Data in Section Headings

Model	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
4054T	\$2,789	\$2,454	\$2,180	\$1,901	\$1,675	\$1,472
4500C	\$52,605	\$28,682	\$25,249	\$22,239	\$19,353	\$17,207
3002P	\$52,407	\$46,145	\$45,607	\$51,734	\$71,446	\$77,673
2500P	\$17,381	\$15,394	\$15,468	\$11,851	\$10,459	\$9,178
4055T	\$2,468	\$2,172	\$1,911	\$1,682	\$1,460	\$1,302
3002C	\$375	\$330	\$290	\$276	\$225	\$198

Avoid Repeating Groups as Columns

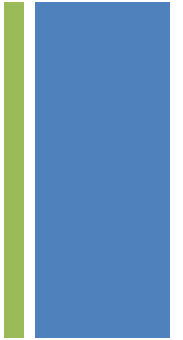
North			
Model	JANUARY	FEBRUARY	MARCH
4054T	\$2,789	\$2,454	\$2,180
4500C	\$52,605	\$28,682	\$25,249
3002P	\$52,407	\$46,145	\$45,607
2500P	\$17,381	\$15,394	\$15,468
4055T	\$2,468	\$2,172	\$1,911
3002C	\$375	\$330	\$290

Eliminate Gaps and Blank Cells in Your Data Source

Apply Appropriate Type Formatting to Your Fields



Good Data Source Design



The first row of your data source is made up of field labels or headings that describe the information in each column.

Each column in your data source represents a unique category of data.

Each row in your data source represents individual items in each column.

None of the column names in your data source double as data items that will be used as filters or query criteria (that is, names of months, dates, years, names of locations, names of employees).



Creating a Basic PivotTable

Insert Tab → PivotTable →
PivotTable

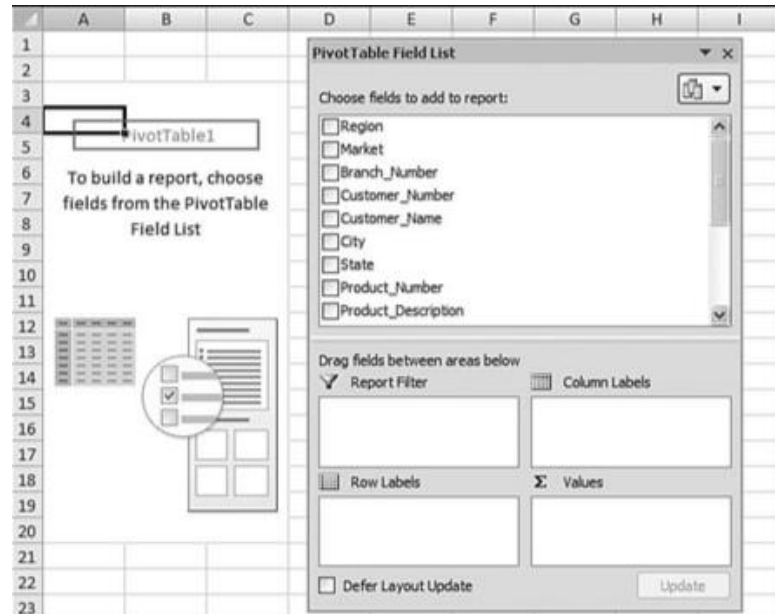
Adding Fields to the Report

- Report Filter
- Column Labels
- Row Labels
- Values

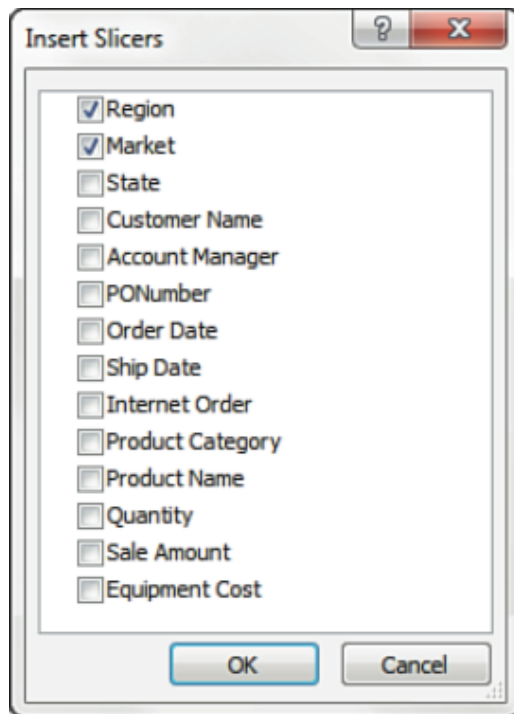
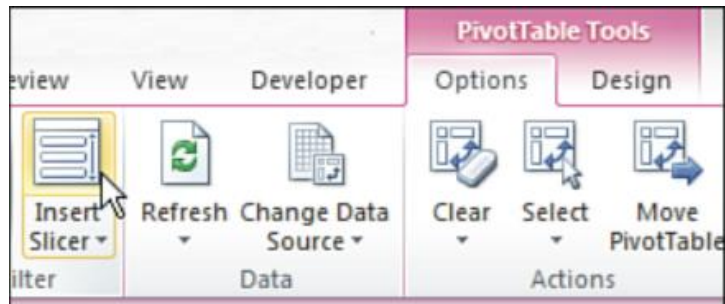
Adding Layers to a PivotTable

Rearranging a PivotTable

Creating a Report Filter



+ Introducing Slicers



	A	B	C
1			
2	Sum of Sale Amount	Column Labels	
3	Row Labels	Bar Equipment	Commercial Appliances
4	Baltimore	80	
5	California	66356.65	294155.55
6	Charlotte	283682.15	1525742.3
7	Chicago	3168	9081
8	Grand Total	353286.8	1828978.85
9			
10	Region		Market
11	Midwest		Baltimore
12	Northeast		Buffalo
13	Southeast		California
14	West		CANADA
15	CANADA		Charlotte
16	North		Chicago
17	South		Dakotas
18	Southwest		Dallas
19			Denver
20			
21			
22			
23			
24			
25			
26			

+ Keeping Up with Changes in Your Data Source

Changes Have Been Made to Existing Data Sources

- Refresh Data

Data Source's Range Has Expanded

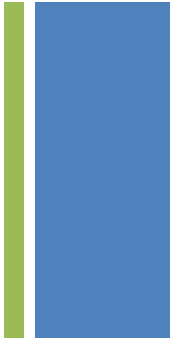
- Change Data Source
- Using Table



Rearranging Fields in a PivotTable

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+ The Need to Customize

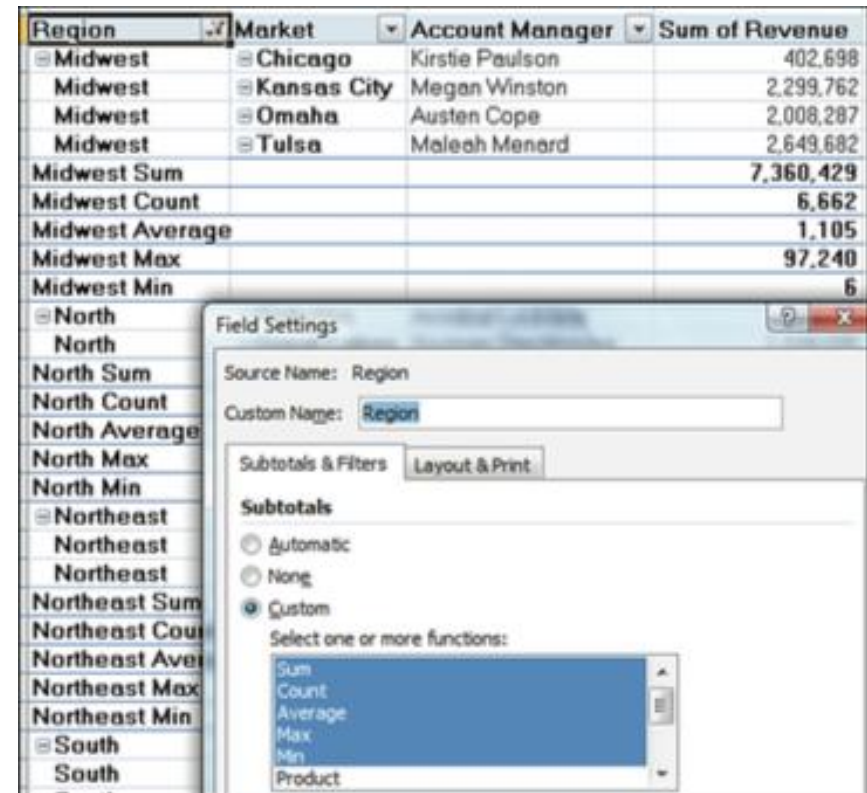
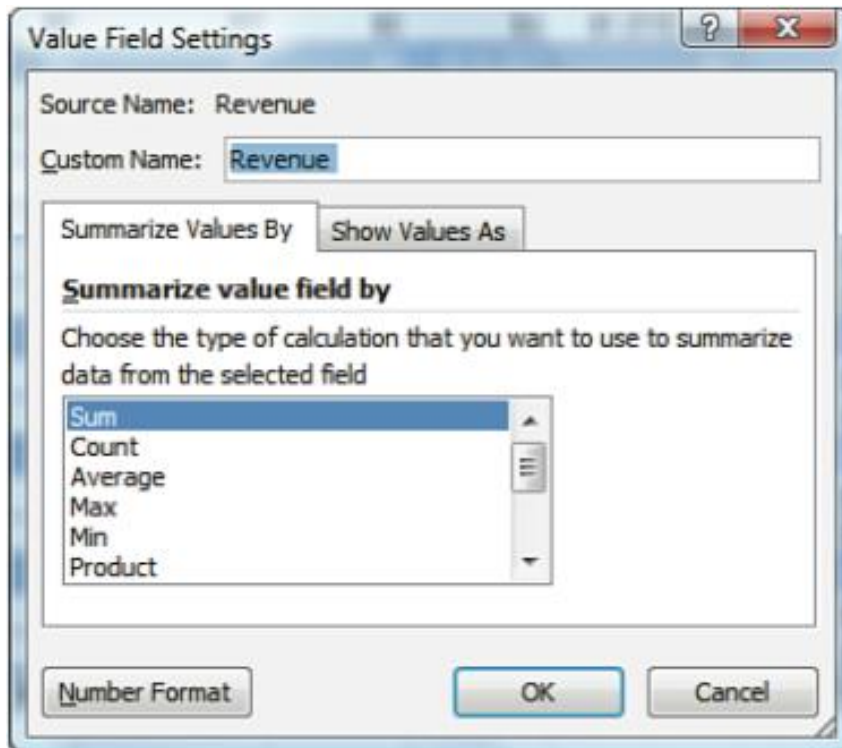


- Create new field or items
 - 11 subtotal options
 - 9 different running total options
- Controlled in the PivotTable Field dialog box



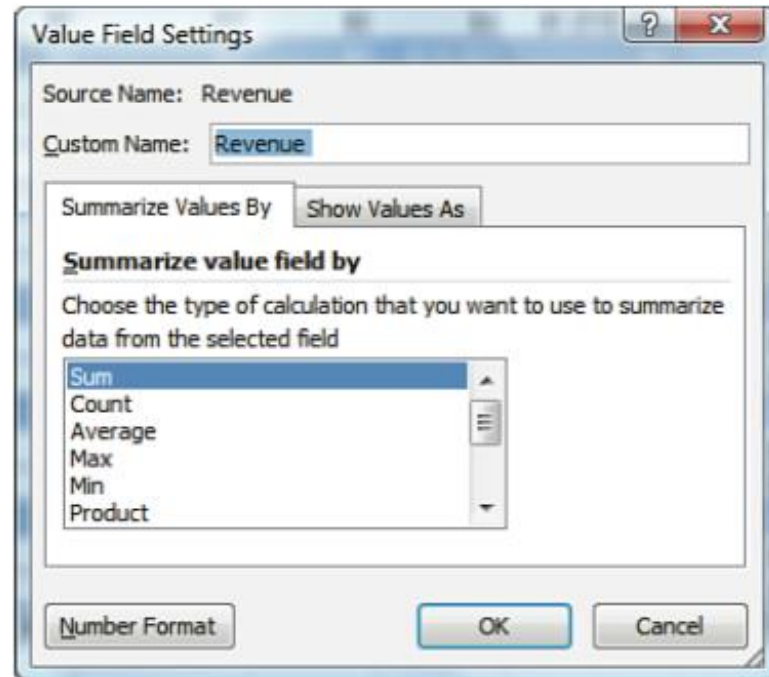
Displaying the PivotTable Field Dialog Box

- Double Click Field Name on the PivotTable



+ Customizing Field Names

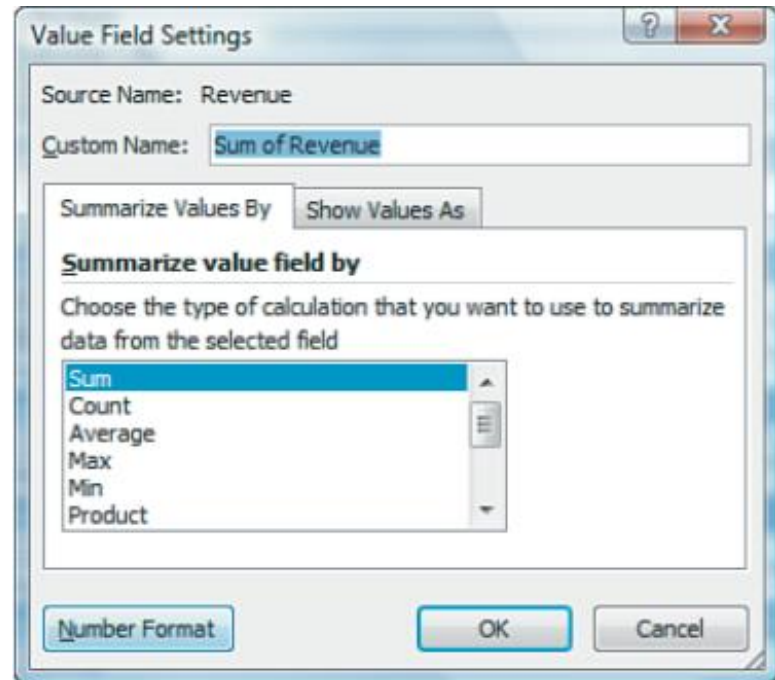
- Options Tab → Field Settings
- Data Field Settings → Type New Name





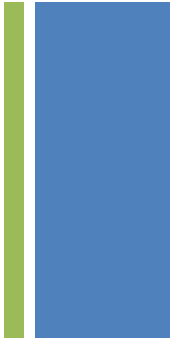
Applying Numeric Formats to Data Fields

- Right-click a number → Value Field Settings
- Sum of field in the PivotTable Field List → Field Settings
- Options tab → Field Settings





Changing Summary Calculations



- Understanding Why One Blank Cell Causes a Count
- Using Functions Other Than Count or Sum
 - Sum
 - Count
 - Average
 - Max
 - Min
 - Count Nums



Adding and Removing Subtotals

- Suppress Subtotals When You Have Many Row Fields
- Adding Multiple Subtotals for One Field

Region	Market	Account Manager	Sum of Revenue
Midwest	Chicago	Kirstie Paulson	402,698
Midwest	Kansas City	Megan Winston	2,299,762
Midwest	Omaha	Austen Cope	2,008,287
Midwest	Tulsa	Maleah Menard	2,649,682
Midwest Sum			7,360,429
Midwest Count			6,662
Midwest Average			1,105
Midwest Max			97,240
Midwest Min			6
North			
North Sum			
North Count			
North Average			
North Max			
North Min			
Northeast			
Northeast Sum			
Northeast Count			
Northeast Average			
Northeast Max			
Northeast Min			
South			
South Sum			
South Count			
South Average			
South Max			
South Min			

Field Settings

Source Name: Region

Custom Name:

Subtotals & Filters Layout & Print

Subtotals

☐ Automatic

☐ None

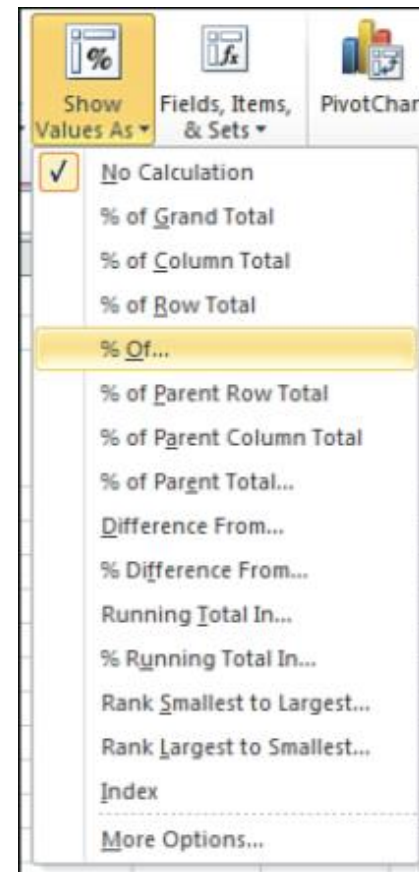
☒ Custom

Select one or more functions:

- Sum
- Count
- Average
- Max
- Min
- Product

+ Using Running Total Options

- YTD Numbers with Running Total In
- Percent of Running Total
- Percent of Parent Item
- Display Change from a Previous Field
- Showing Rank
- Using % of to Compare One Line to Another Line



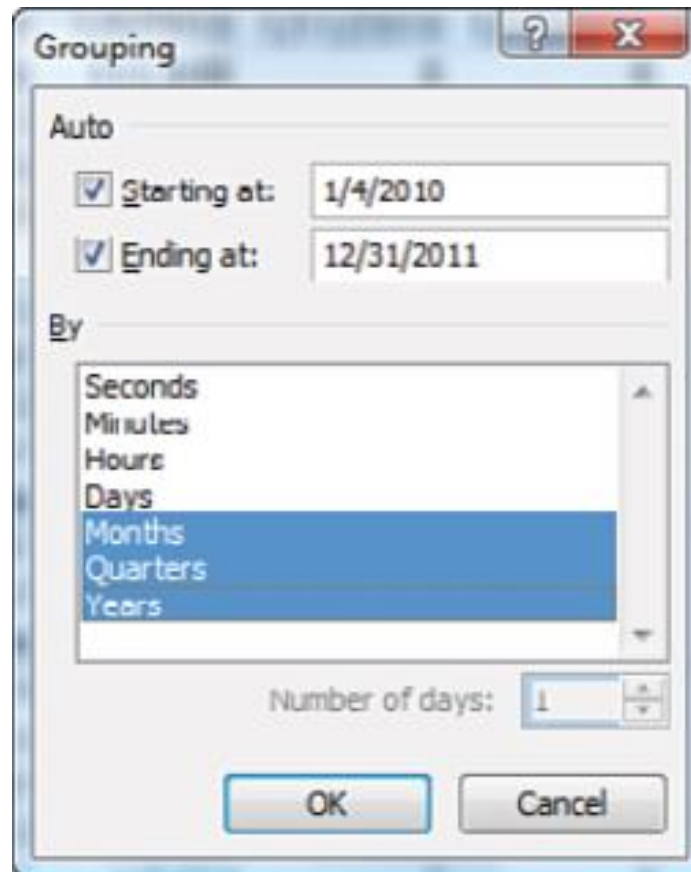


+ Grouping, Filtering & Sorting Data

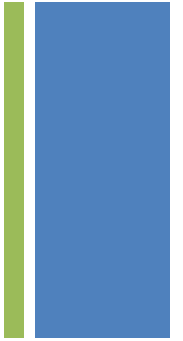
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+ Grouping Pivot Fields

- Grouping Date Fields
- Including Years When Grouping by Months
- Grouping Date Fields by Week
- Grouping Numeric Fields
- Ungrouping



+ Sorting in a PivotTable



- Sorting Using the Sort Icons on the Options Tab
- Sorting Using the Field List Hidden Drop-Down

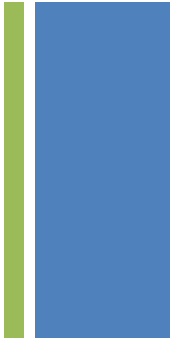
+ Filtering the PivotTable



- Using Filters in the Label Areas



Filtering Using the Report Filter



- Adding Fields to the Report Filter Area
- Choosing One Item from a Report Filter
- Choosing Multiple Items from a Report Filter
- Quickly Selecting or Clearing All Items from a Filter
- Using Slicers

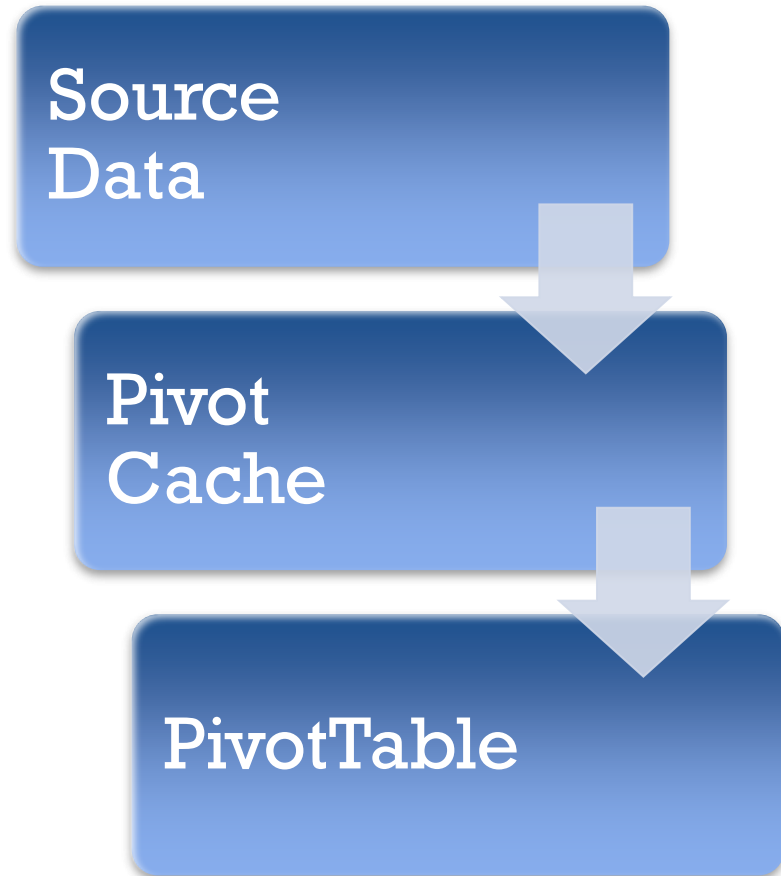


Refresh PivotTable

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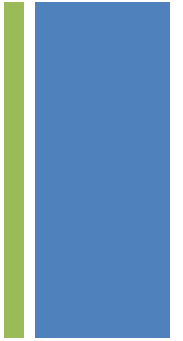
+ Sharing the Pivot Cache

- Create new PivotTable, a new Pivot Cache is automatically created
- Copy and Paste a PivotTable will create a new PivotTable without duplicating the pivot cache





Side Effects of Sharing a Pivot Cache



- Refreshing your Data
 - Affect both tables
- Adding a Calculated Field
 - Shows in both tables
- Adding a Calculated Item
 - Shows in both tables
- Grouping or Ungrouping Fields
 - Affect both tables

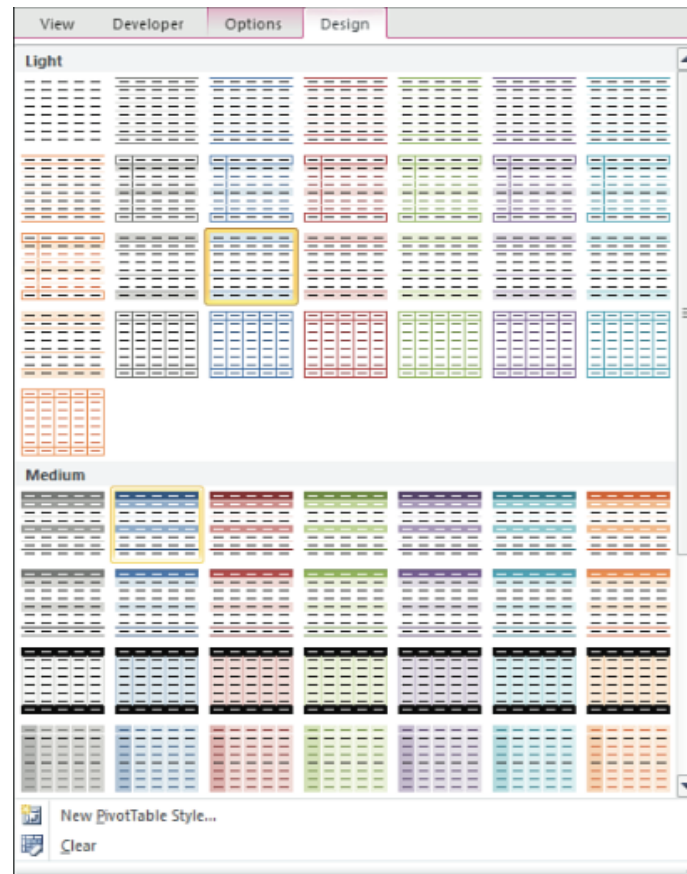


Format a PivotTable

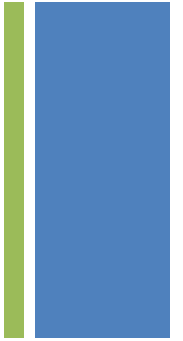
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+ Using AutoFormat

- Applying a Table Style to Restore Gridlines



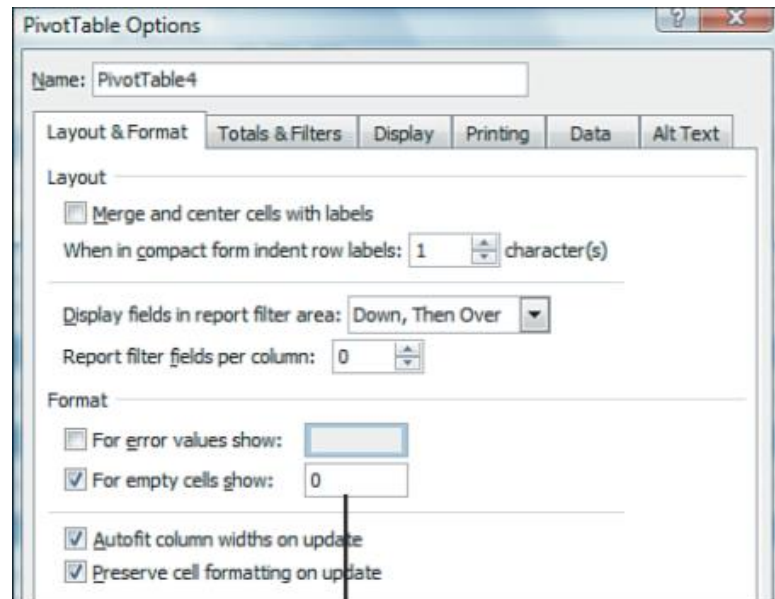
+ Applying Your Own Style



- Customizing a Style
- Choosing a Default Style for Future PivotTables
- Modifying Style with Document Themes

+ Setting Table Options

- Replacing Blanks with Zeros
 - Select a Cell
 - Options Tab → Options
 - Layout & Format → For empty cells show



Enter a zero here



Calculation in PivotTable

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Introducing Calculated Fields and Calculated Items

	N	O	P	Q	R
1	Sales_Amount	Contracted_Hours	Sales_Period	Sales_Rep	Avg Dollar Per Hour
2	\$197.95	2 P08	5060		\$38.98
3	\$197.95	2 P08	5060		\$38.98
4	\$191.28	3 P08	5060		\$37.76
5	\$140.07	4 P11	44651		\$30.02
6	\$147.22	2 P08	160410		\$73.61
7	\$163.51	2 P02	243		\$67.26
8	\$134.01	3 P02	243		\$44.67
9	\$134.01	3 P02	243		\$44.67
10	\$134.01	3 P02	243		\$44.67
11	\$239.00	3 P01	4244		\$79.67
12	\$215.87	4 P02	5030		\$53.97
13	\$180.57	4 P02	64610		\$45.14
14	\$140.07	4 P02	213		\$65.02
15	\$180.57	4 P02	55031		\$45.14
16	\$180.57	4 P02	55031		\$45.14
17	\$180.57	4 P02	55031		\$45.14

Manually Add to the Data Source

Use a Formula Outside the PivotTable

	A	B	C	D	E
1	Market	(All)			
2					
3	Sales_Amount	Contracted_Hours		Avg Dollar Per Hour	
4	\$10,776,172	\$85,380			<= This is a formula
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

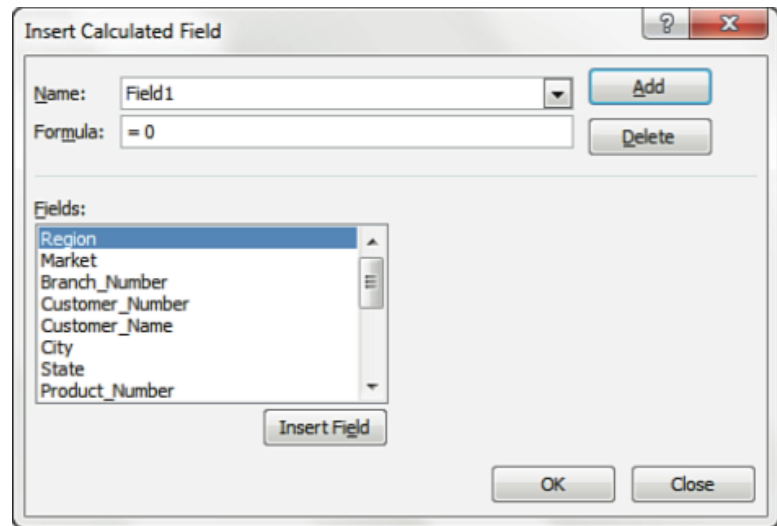
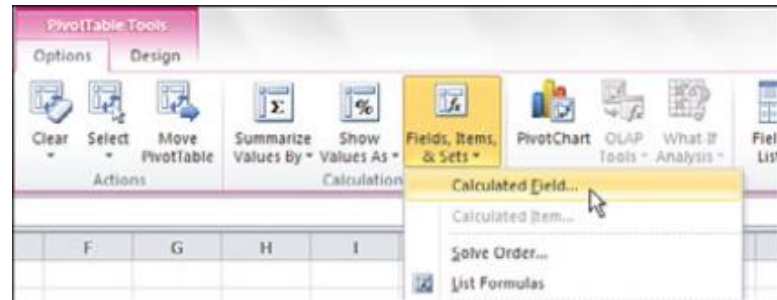
	A	B	C	D	E
1					
2	Market	Product_Description	Sales_Amount	Contracted_Hours	Avg Dollar Per Hour
3	CALIFORNIA	Cleaning & Housekeeping Services	\$85,345	980	\$88
4		Facility Maintenance and Repair	\$85,370	821	\$95
5		Pest Maintenance	\$86,460	1,439	\$60
6		Green Pasture and Fridge Care	\$14,881	480	\$31
7		Landscape/grounds Care	\$84,465	1,171	\$72
8		Professional Maintenance/Preservative Maintenance	\$127,387	1,880	\$68
9					
10	CALIFORNIA Total		\$654,478	6,884	\$98
11	CALIFORNIA	Cleaning & Housekeeping Services	\$37,431	591	\$75
12		Facility Maintenance and Repair	\$38,198	5,039	\$85
13		Pest Maintenance	\$37,295	1,577	\$24
14		Green Pasture and Fridge Care	\$380,413	1,340	\$28
15		Landscape/grounds Care	\$148,343	1,421	\$10
16		Professional Maintenance/Preservative Maintenance	\$332,186	8,022	\$41
17	CALIFORNIA Total		\$1,244,785	19,014	\$65
18					

Insert a Calculated Field Directly into the Pivot Table



Creating Your First Calculated Field

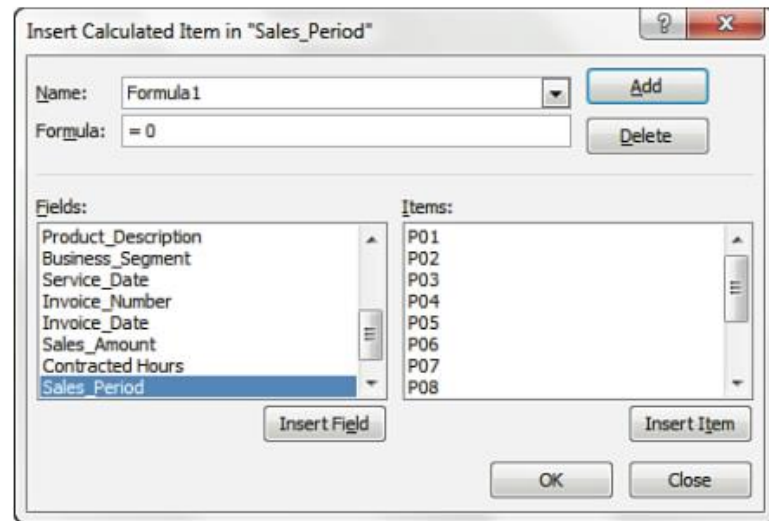
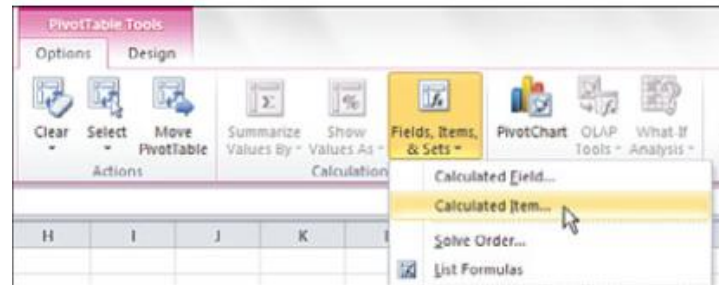
- Insert Calculated Field
 - Name
 - Formula
- Add Field and create formula
- No change in source data





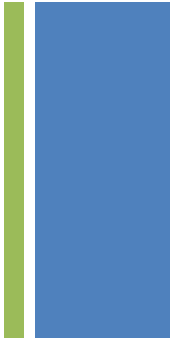
Creating Your First Calculated Item

- Virtual data item
- Group and aggregate a set of data items
- Fields, Items, & Sets → Calculated Item
- Create formula
- Use Filter





Understanding Rules and Shortcomings of Pivot Table Calculations



Remember the order of operator Precedence

Using Cell Reference and Named Ranges

Using Worksheet Functions

Using Constants

Cannot referencing Totals

+ Managing and Maintaining Your Pivot Table Calculation

Editing and Deleting Pivot Table Calculations

Changing the Solve Order of Calculated Items

Documenting Formulas

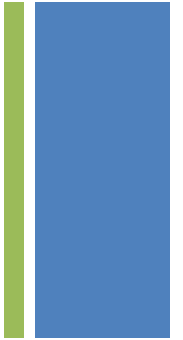


Using External Data Sources for Your PivotTable

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Building a PivotTable Using External Data Sources

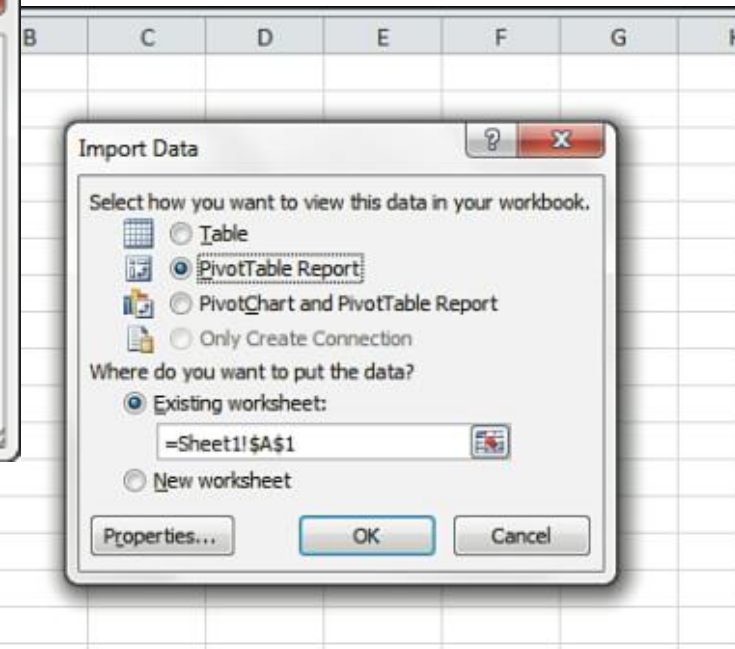
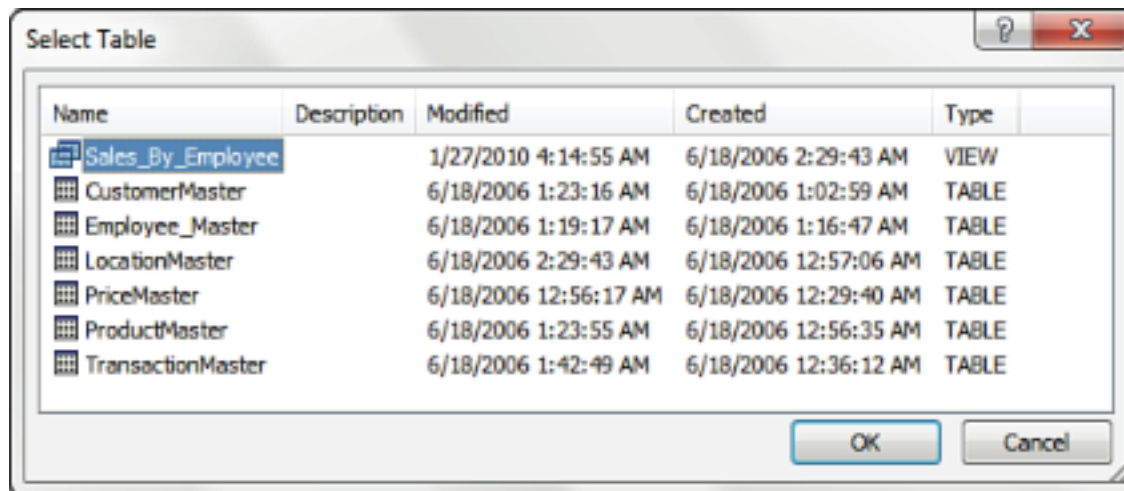
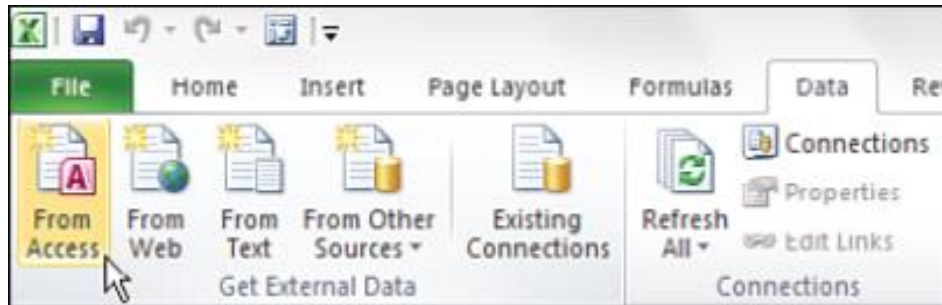


Building a Pivot Table with
Microsoft Access Data

Building a Pivot Table with
SQL Server Data



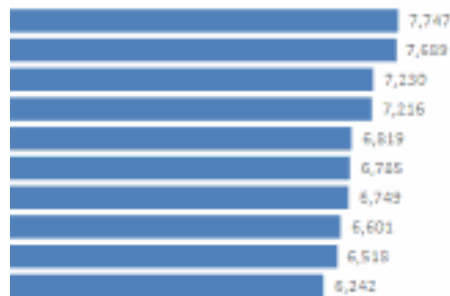
Importing and Using External Data Without the PivotTable Wizard



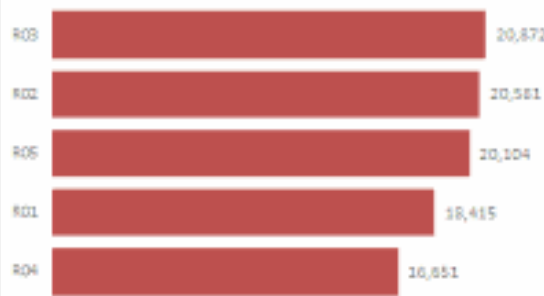
+ Creating Dynamic PivotTable Reporting Systems

Center Dashboard

Customers by Sales (\$)



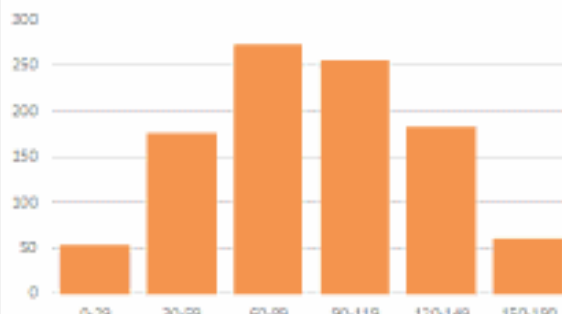
Top Representatives by Sales (\$)



Sales & Calls by Month



Call Duration Distribution (count of calls)



Filter Dashboard

Customer ID

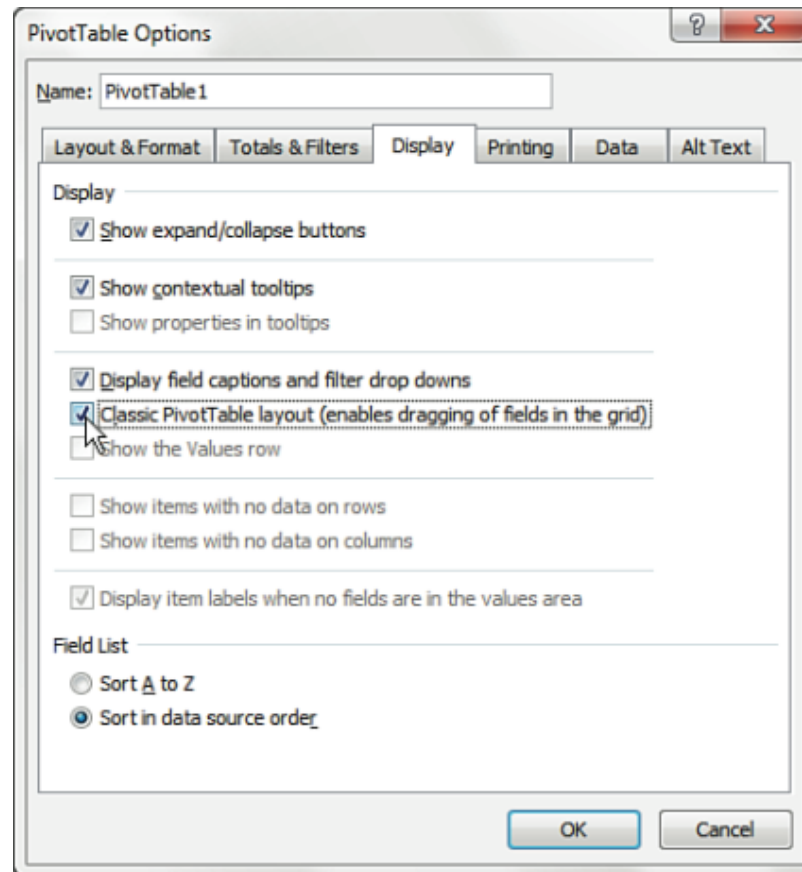
C0001	C0002	C0003	C0004
C0005	C0006	C0007	C0008
C0009	C0010	C0011	C0012

R01	R02
R03	R04
R05	

Sep	Oct	Nov	Dec
Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
<9/9/2...	>12/9/...		

0-29	120-149
150-180	30-59
60-89	90-119
<0	>180

+ PivotTable Data Options





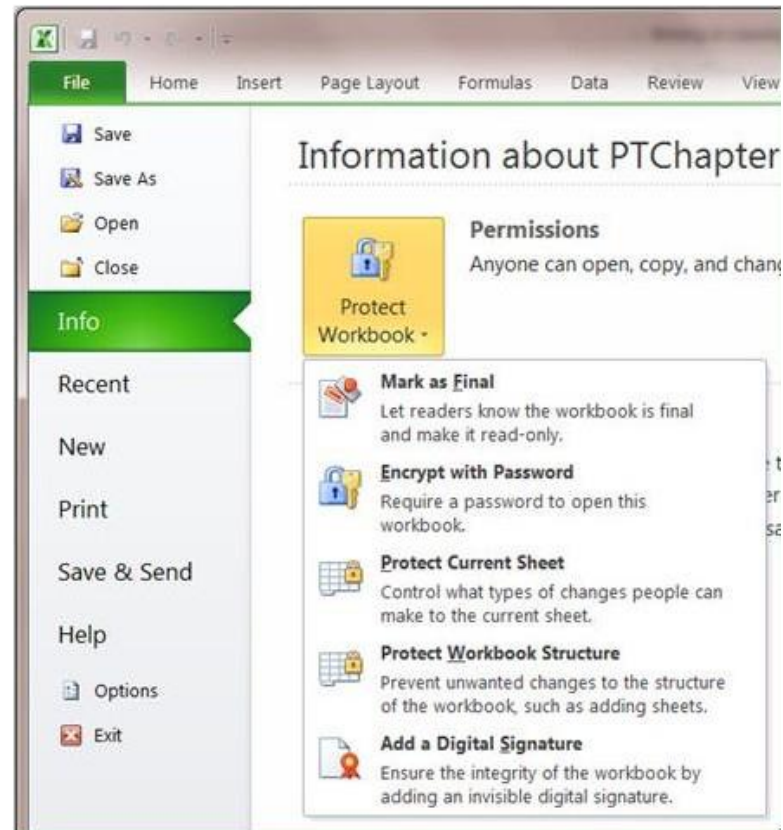
Save Files

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Save File With Password Protection

- File → Info → Protect Workbook → Encrypt with Password





Q & A

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