



Excel Chapter 8: Lookup Functions and Outlines



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Learning Objectives

- After studying this chapter, you will be able to:
 - ▲ Create formulas using lookup functions
 - ▲ Use the Outline feature
 - ▲ Create subtotals
 - ▲ Use the Quick Analysis tool

Introducing Lookup Functions

- Lookup functions retrieve data from one table using a piece of information from a single record
- The VLOOKUP and HLOOKUP Functions
 - ▲ Most commonly used Lookup functions
 - ▲ VLOOKUP looks for information arranged in columns
 - ▲ HLOOKUP looks for information arranged in rows

Introducing Lookup Functions (cont.)

■ Lookup function arguments

LOOKUP FUNCTION ARGUMENTS	
Argument	Description
Lookup_Value	This is the value to be found, either in the first column (VLOOKUP) or row (HLOOKUP) of the table.
Table_Array	This is the range of cells used to search for the lookup value and retrieve the result.
Column/Row Index Number (Col_Index_Num/Row_Index_Num)	This number indicates the column (VLOOKUP) or row (HLOOKUP) in the table from which the matching value will be retrieved; the first column/row in the Table Array is always 1.
Range_Lookup (Optional)	If TRUE or omitted, this function searches for the value closest to but less than the lookup value; if FALSE, the function searches for exact matches only. If TRUE or omitted, the data must be sorted in ascending order.

Introducing Lookup Functions (cont.)

- VLOOKUP example: Look up amount each customer spent to date to determine the discount:

Excel formula bar: `=VLOOKUP(B3,E3:F7,2)`

	A	B	C	D	E	F
1					Discount Table	
2	Customer	Annual Spending To Date	Discount		Annual Spending	Discount Rate
3	Robert Stephenson	\$28,000	<code>=\$F\$7,2)</code>		\$0	0.00%
4	James Tolkien	\$41,500			\$20,000	2.00%
5	Nancy Andrews	\$49,600				
6	Beth Kappers	\$34,000				
7	Lidia Clark	\$78,250				
8						
9						
10						
11						

Function Arguments dialog box:

Function Arguments	
VLOOKUP	
Lookup_value	B3
Table_array	\$E\$3:\$F\$7
Col_index_num	2
Range_lookup	

Lookup_Value: Amount in column B each customer spent

Table_Array: Cell range E3-F7 contains data to look up

Col_Index_Num: Column 2 (F) of the table array contains the value to retrieve

Using the Outline Feature

- Group related data together by columns or rows
- Outline lets you control which data to display

Show or hide column details

1	2	3	A	B	C	D	E	F	G	H
1			Last Name	First Name	Position	Region	State	ModSales	AppSales	Total Sales
2			Alvizo	Alex	Senior Account Mgr	Western	CA	602,000	622,000	1,224,000
3			Huy	Lin	Senior Account Mgr	Central	IL	234,000	560,000	794,000
4			Martinez	Carlos	Senior Account Mgr	Eastern	FL	450,000	450,000	900,000
5			McGee	Olivia	Senior Account Mgr	Eastern	MA	317,000	513,000	830,000
6					Senior Acct Mgr Total					3,748,000
7			Fernandez	Maria	Sales Account Mgr	Eastern	MA	228,000	216,000	444,000
8			Hasan	Taz	Sales Account Mgr	Western	CA	446,000	120,000	566,000
9			Sutton	David	Sales Account Mgr	Central	CO	162,000	151,000	313,000
10			Williams	LaShaun	Sales Account Mgr	Central	CO	210,000	340,000	550,000
11			Zain	Elizabeth	Sales Account Mgr	Western	CA	340,000	700,000	1,040,000
12					Sales Acct Mgr Total					2,913,000
18					Sales Rep Total					1,479,000
19					Grand Total					8,140,000

Show or hide row details



Using the Outline Feature (cont.)



- Use AutoSum to calculate subtotals and Grand Total
- Auto Outline uses sums and subtotals
- Row and column level buttons collapse and expand outline
- Quickly create subtotals using the Subtotal dialog box

1	2	3	A	B
1			Last Name	First Name
2	-		Alvizo	Alex
3	-		Huy	Lin
4	-		Martinez	Carlos
5	-		McGee	Olivia
6	-			
7	-		Fernandez	Maria
8	-		Hasan	Taz
9	-		Sutton	David
10	-		Williams	LaShau
11	-		Zain	Elizabe
12	-			
13	-		Clayton	Taneisl
14	-		Cray	Karen
15	-		Hill	Patricia

Subtotal

At each change in:

Region

Use function:

Sum

Add subtotal to:

- ☐ Position
- ☐ Region
- ☐ State
- ☐ ModSales
- ☐ AppSales
- ☒ Total Sales



Creating Subtotals

- Must first sort list on the column used to group subtotals

Subtotal

At each change in:
Region

Use function:
Sum

Add subtotal to:
☐ Position
☐ Region
☐ State
☒ ModSales
☒ AppSales
☒ Total Sales

☒ Replace current subtotals
☐ Page break between groups
☒ Summary below data

Remove All OK Cancel

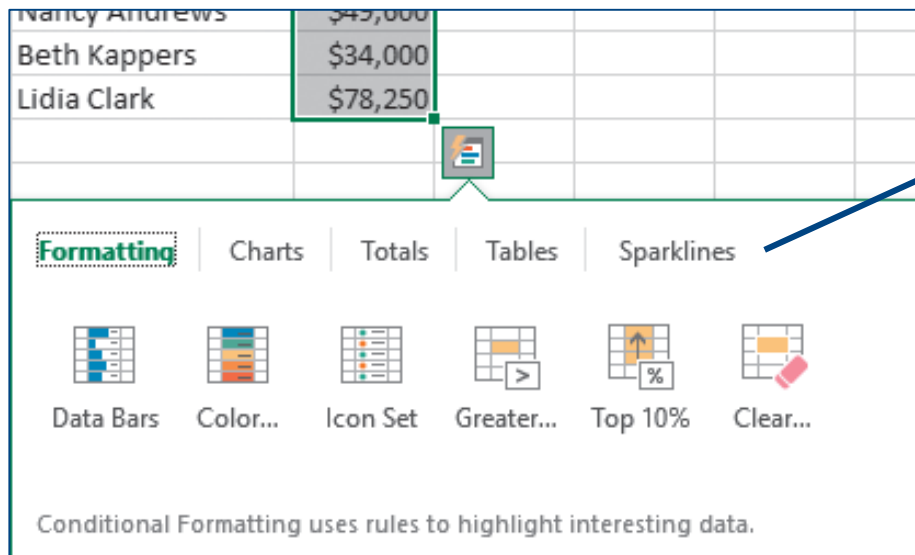
Column to create groups

Function to use for subtotals
(Sum, Count, Average, Max, or Min)

Which column(s) will be subtotaled

Using the Quick Analysis Tool

- Quick, easy way to access popular analysis options without using the Ribbon commands
- Quick Analysis tool button only appears when the mouse is near a selected range



Options contain five categories based on the type of selected data.