Assignment 3

This week "work through" Excel Unit H, Analyzing Table Data. To "work through" means reading and performing all hands-on exercises. The exercises give detailed step-by-step instructions with corresponding screen shot figures of the Excel interface tabs, menus, toolbars, dialog boxes, and correct output. You should perform all of these to learn how to complete each skill.

Objectives

Students will have mastered the material in Excel Unit H when they can:

- Filter a table
- Create a custom filter
- Filter a table with Advanced Filter
- Extract table data
- Look up values in a table
- Summarize table data
- Validate table data
- Create subtotals

Unit Study Tips

Custom Filtering

When specifying criteria in the Custom Filter dialog box, you can use the ? wildcard to represent any single character and the * wildcard to represent any series of characters.

Conditional Formatting

You can apply conditional formatting to table cells in the same way that you can format a range of worksheet data. You can add multiple rules by clicking the Home tab, clicking the Conditional Formatting button in the Styles group, then clicking New Rule for each additional rule that you want to apply. You can also add rules using the Conditional Formatting Rules Manager, which displays all of the rules for a data range. To use the Rules Manager, click the Home tab, click the Conditional Formatting button in the Styles group, click Manage Rules, then click New Rule for each rule that you want to apply to the data range.

Using advanced formatting options

You can emphasize top or bottom ranked values in a field using conditional formatting. To highlight the top or bottom values in a field, select the field data, click the Conditional Formatting button on the Home tab, point to Top/Bottom Rules, select a Top or Bottom rule, if necessary enter the percentage or number of cells in the selected range that you want to format, select the format for the cells that meet the top or bottom criteria, then click OK. You can also format your worksheet or table data using icon sets and color scales based on the cell values. A color scale uses a set of two, three, or four fill colors to convey relative values. For example, red could fill cells to indicate they have higher values and green could signify lower values. To add a color scale, select a data range, click the Home tab, click the Conditional Formatting button in the Styles group, then point to Color Scales. On the submenu, you can select preformatted color sets or click More Rules to create your own color sets. Icon sets let you visually communicate relative cell values by adding icons to cells based on the values they contain. An upward pointing green arrow might represent the highest values, and downward-pointing red arrows could represent lower values. To add an icon set to a data range, select a data range, click the Conditional Formatting button in the Styles group, then point to Icon Sets. You can customize the values that are used as thresholds for color scales and icon sets by clicking the Conditional Formatting button in the Styles group, clicking Manage Rules, clicking the rule in the Conditional Formatting Rules Manager dialog box, then clicking Edit Rule.

Understanding the criteria range and the copy-to location

When you define the criteria range and the copy-to location in the Advanced Filter dialog box, Excel automatically creates the names Criteria and Extract for these ranges in the worksheet. The criteria range includes the field names and any criteria rows underneath them. The extract range includes just the field names above the extracted table. You can select these ranges by clicking the Name box list arrow, then clicking the range name. If you click the Name Manager button in the Defined Names group on the Formulas tab, you will see these new names and the ranges associated with the names.

Using the VLOOKUP, HLOOKUP and MATCH functions

The VLOOKUP (Vertical Lookup) function is useful when your data is arranged vertically, in columns. The HLOOKUP (Horizontal Lookup) function is useful when your data is arranged horizontally, in rows. HLOOKUP searches horizontally across the upper row of a table until it finds the matching value, then looks down the number of rows you specify. The arguments for this function are identical to those for the VLOOKUP function, with one exception. Instead of a Col_index_ number, HLOOKUP uses a Row_index_number, which indicates the location of the row you want to search. For example, if you want to search the fourth row from the top, the Row_index_number should be 4.

If you want to find only the closest match for a value, enter TRUE in the Range lookup text box. However, this can give misleading results if you are looking for an exact match. If you use FALSE and Excel can't find the value, you see an error message.

You can use the MATCH function when you want the position of an item in a range. The MATCH function uses the syntax: MATCH (lookup_value,lookup_array,match_ type) where lookup_value is the value you want to match in the lookup_array range. The match_type can be 0 for an exact match, 1 for matching the largest value that is less than or equal to lookup_value, or –1 for matching the smallest value that is greater than or equal to lookup_value.

Data Validation: restricting cell values and data length

In addition to providing an in-cell drop-down list for data entry, you can use data validation to restrict the values that are entered into cells. For example, if you want to restrict cells to values less than a certain number, date, or time, click the Data tab, click the Data Validation button in the Data Tools group, and on the Settings tab, click the Allow list arrow, select Whole number, Decimal, Date, or Time, click the Data list arrow, select less than, then in the bottom text box, enter the maximum value. You can also limit the length of data entered into cells by choosing Text length in the Allow list, clicking the Data list arrow and selecting less than, then entering the maximum length in the Maximum text box.

Data Validation: adding input messages and error alerts

You can customize the way data validation works by using the two other tabs in the Data Validation dialog box: Input Message and Error Alert. The Input Message tab lets you set a message that appears when the user selects that cell; for example, the message might contain instructions about what type of data to enter. On the Input Message tab, enter a message title and message, then click OK. The Error Alert tab lets you set one of three alert levels if a user enters invalid data. The Information level displays your message with the information icon but allows the user to proceed with data entry. The Warning level displays your information with the warning icon and gives the user the option to proceed with data entry or not. The Stop level, which you used in this lesson, displays your message and only lets the user retry or cancel data entry for that cell.

Graded Exercises to be Submitted

- Independent Challenge 1, Jams, pages Excel 196-197. Omit the Advanced Challenge Exercise part of the exercise.

- Independent Challenge 2, Paw Tags, pages Excel 197-198. Omit the Advanced Challenge Exercise part of the exercise.

- Independent Challenge 3, Gifts, pages Excel 198-199. Omit the Advanced Challenge Exercise part of the exercise.

Turn in each completed exercise to me using the assignment "delivery boxes" on the Moodle course site in the Week 4 section.

For Assignment 4, you will find these 4 "delivery boxes" in the Week 4 section:

- ✓ Jams
- ✓ Paw Tags
- ✓ Gifts

A solution printout (in PDF format) is provided for each of the above files. Compare your output to the solution printout to gauge correctness. The printout identifies the items that will be checked in your submitted file.

Note that turning in assignment files to be graded by email attachment is not acceptable. Use of the Moodle assignment "delivery boxes" enables recording of grades and feedback on the Moodle course website.

Exercises submitted by midnight Thursday will be graded for feedback purposes by midnight Friday. Errors may be corrected and exercises resubmitted by midnight Saturday for full credit.

These problems are due according to the schedule given in the course syllabus, Independent Challenges 1, 2, and 3 are due by next Saturday evening. Note that the college requires a 20% penalty be imposed for all work submitted late in online courses.

As always, contact me by email if you have any questions or problems. If you have a question about a specific Excel exercise, you may attach your Excel file to your email. If you wish me to call you, then include your phone number in the email.

Trip Code	Tour	Depart Date	Price	Number of	Seat Capacit	Seats Reserv	Seats Availa	Air Include	Meals Include
124A	Pacific Odyssey	1/11/2010	$ 3,105	14	50	30	20	Yes	No
325B	Down Under Exodus	1/18/2010	$ 2,800	10	50	39	11	Yes	Yes
311A	Essential India	1/20/2010	$ 3,933	18	50	45	5	Yes	Yes
431V	Costa Rica Rainforests	1/30/2010	$ 2,590	7	50	30	20	Yes	Yes
762N	Nepal Trekking	1/31/2010	$ 4,200	14	50	38	12	Yes	Yes
215C	Cruising the Mergui Archipelago	2/23/2010	$ 4,877	14	50	42	8	No	No
251D	Cooking in France	2/28/2010	$ 2,822	7	50	48	2	Yes	No
966W	Pearls of the Orient	3/12/2010	$ 3,400	14	50	22	28	Yes	No
653S	Silk Road Travels	3/18/2010	$ 2,190	18	50	44	6	Yes	Yes
245M	Costa Rica Rainforests	3/20/2010	$ 2,590	7	50	32	18	Yes	Yes
334Q	Green Adventures in Ecuador	3/23/2010	$ 2,450	18	50	45	5	No	No
452R	African National Parks	4/7/2010	$ 4,870	30	50	18	32	Yes	Yes
331E	Experience Cambodia	4/10/2010	$ 2,908	12	50	29	21	Yes	No
855R	Cruising the Mergui Archipelago	4/14/2010	$ 4,877	14	50	20	30	No	No
754Q	Down Under Exodus	4/18/2010	$ 2,800	10	50	29	21	Yes	Yes
543Y	Essential India	4/20/2010	$ 3,933	18	50	43	7	Yes	Yes
556J	Amazing Amazon	4/23/2010	$ 2,877	14	50	48	2	No	No
675Y	Catalonia Adventure	5/9/2010	$ 3,100	14	50	38	12	Yes	No
544T	Treasures of Ethiopia	5/18/2010	$ 3,200	10	50	18	32	Yes	Yes
778W	Monasteries of Bulgaria	5/20/2010	$ 2,103	7	50	19	31	Yes	Yes
446R	Cooking in Croatia	5/23/2010	$ 2,110	7	50	25	25	No	No
677Y	Magnificent Montenegro	5/27/2010	$ 1,890	10	50	41	9	No	No
433Q	Catalonia Adventure	6/9/2010	$ 3,100	14	50	19	31	Yes	No
550O	Nepal Trekking	6/9/2010	$ 4,200	14	50	28	22	Yes	Yes
335P	Corfu Sailing Voyage	6/10/2010	$ 3,190	21	50	11	39	Yes	No
661Y	Ireland by Bike	6/11/2010	$ 2,600	10	50	21	29	Yes	No
422R	Exotic Morocco	6/12/2010	$ 1,900	7	50	34	16	Yes	No
749L	Kayak Newfoundland	6/12/2010	$ 1,970	7	50	41	9	Yes	Yes
467B	Panama Adventure	6/18/2010	$ 2,304	10	50	22	28	Yes	Yes
739J	Costa Rica Rainforests	6/20/2010	$ 2,590	7	50	15	35	Yes	Yes

558B	Wild River Escape	6/27/2010	$	1,944	10	50	1	49	No	No
831P	Galapagos Adventure	7/2/2010	$	3,100	14	50	15	35	Yes	Yes
133E	Pacific Odyssey	7/7/2010	$	3,105	14	50	32	18	Yes	No
674T	Corfu Sailing Voyage	7/9/2010	$	3,190	21	50	11	39	Yes	No
867M	Ireland by Bike	7/11/2010	$	2,600	10	50	40	10	Yes	No
670G	Kayak Newfoundland	7/12/2010	$	1,970	7	50	49	1	Yes	Yes
622V	Old Japan	7/12/2010	$	2,100	21	50	33	17	Yes	No
590X	Magnificent Montenegro	7/27/2010	$	1,890	10	50	11	39	No	No
412Z	Ireland by Bike	8/11/2010	$	2,600	10	50	21	29	Yes	No
335V	Kayak Newfoundland	8/12/2010	$	1,970	7	50	2	48	Yes	Yes
668W	Essential India	8/20/2010	$	3,933	18	50	41	9	Yes	Yes
977Y	Amazing Amazon	8/23/2010	$	2,877	14	50	19	31	No	No
923Q	Wild River Escape	8/27/2010	$	1,944	10	50	18	32	No	No
439U	Cooking in France	8/29/2010	$	2,822	7	50	49	1	Yes	No
792G	Essential India	9/11/2010	$	3,933	18	50	26	24	Yes	Yes
572D	Pearls of the Orient	9/12/2010	$	3,400	14	50	19	31	Yes	No
698N	Pacific Odyssey	9/14/2010	$	3,105	14	50	26	24	Yes	No
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644A	Catalonia Adventure	10/9/2010	$	3,100	14	50	31	19	Yes	No
461Z	Green Adventures in Ecuador	10/23/2010	$	2,450	18	50	44	6	No	No
557N	African National Parks	10/27/2010	$	4,870	30	50	36	14	Yes	Yes
524Z	Nepal Trekking	10/29/2010	$	4,200	14	50	28	22	Yes	Yes
509V	Exotic Morocco	10/31/2010	$	1,900	7	50	18	32	Yes	No
397S	Experience Cambodia	10/31/2010	$	2,908	12	50	22	28	Yes	No
621R	Treasures of Ethiopia	11/18/2010	$	3,200	10	50	46	4	Yes	Yes
793T	Panama Adventure	12/18/2010	$	2,304	10	50	30	20	Yes	Yes
592D	Galapagos Adventure	12/20/2010	$	3,100	14	50	11	39	Yes	Yes
307R	Pacific Odyssey	12/21/2010	$	3,105	14	50	50	0	Yes	No
927F	Essential India	12/30/2010	$	3,933	18	50	31	19	Yes	Yes
448G	Old Japan	12/31/2010	$	2,100	21	50	44	6	Yes	No

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Trip Code

Criteria

Tour

Pacific Odyssey

558B	Wild River Escape	6/27/2010	$	1,944	10	50	1	49	No	No
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592D	Galapagos Adventure	12/20/2010	$	3,100	14	50	11	39	Yes	Yes
307R	Pacific Odyssey	12/21/2010	$	3,105	14	50	50	0	Yes	No
927F	Essential India	12/30/2010	$	3,933	18	50	31	19	Yes	Yes
448G	Old Japan	12/31/2010	$	2,100	21	50	44	6	Yes	No

Tour

Seats Available
Number of tours scheduled

Employee Number	First Name	Last Name	Hire Date	Branch	Monthly Salary	Annual Salary	Annual Bonus	Benefits Dollars	Annual Compensation
1311	Mary	Lawson	2/12/2007	NY	$ 4,500	$ 54,000	$ 1,200	$ 12,420	$ 67,620
4522	Laurie	Wales	4/1/2008	Boston	$ 5,800	$ 69,600	$ 5,400	$ 16,008	$ 91,008
4177	Donna	Dahar	5/6/2006	Philadelphia	$ 7,500	$ 90,000	$ 16,000	$ 20,700	$ 126,700
2571	Mary	Marlin	12/10/2007	Boston	$ 8,000	$ 96,000	$ 18,000	$ 22,080	$ 136,080
2214	Paul	Gamache	2/15/2009	Boston	$ 2,900	$ 34,800	$ 570	$ 8,004	$ 43,374
6587	Peter	Erickson	3/25/2007	NY	$ 2,775	$ 33,300	$ 770	$ 7,659	$ 41,729
2123	Erin	Mallo	6/23/2006	NY	$ 3,990	$ 47,880	$ 2,500	$ 11,012	$ 61,392
4439	Mark	Merry	8/3/2009	Philadelphia	$ 6,770	$ 81,240	$ 5,000	$ 18,685	$ 104,925
9807	Hailey	Reed	9/29/2008	Philadelphia	$ 8,600	$ 103,200	$ 14,000	$ 23,736	$ 140,936
3944	Joyce	Roy	5/12/2007	Boston	$ 3,500	$ 42,000	$ 900	$ 9,660	$ 52,560

Jam Label	Type of Jam	Size	Unit Price	Quantity	Total
Tipperary Ranch	Gooseberry	Small	€ 5.75	6	€ 34.50
Tipperary Ranch	Blackberry	Medium	€ 6.00	11	€ 66.00
Tipperary Ranch	Rhubarb	Small	€ 6.50	5	€ 32.50
Cork Estate	Gooseberry	Small	€ 5.75	8	€ 46.00
Galway Estate	Blackberry	Small	€ 5.25	12	€ 63.00
Galway Estate	Rhubarb	Small	€ 6.25	11	€ 68.75
Wexford Hills	Gooseberry	Small	€ 5.75	21	€ 120.75
Wexford Hills	Rhubarb	Small	€ 5.25	31	€ 162.75
Wexford Hills	Blackberry	Medium	€ 5.75	15	€ 86.25
Kerry Lane	Gooseberry	Medium	€ 7.25	18	€ 130.50
Kerry Lane	Blackberry	Small	€ 6.55	12	€ 78.60
Kerry Lane	Rhubarb	Medium	€ 7.55	24	€ 181.20

Invoice Number	Last Name	First Name	Order Date	Tag	Name	Engraving	Price	Sales Tax (7.5%)	Total
23698	Applegate	Chris	10/1/2010	Cat	Molly	Single	$ 10.99	$ 0.82	$ 11.81
23699	Lahey	Steve	10/1/2010	Dog	Nellie	Single	$ 12.99	$ 0.97	$ 13.96
23700	Jannus	Sally	10/1/2010	Cat	Tiger	Double	$ 11.99	$ 0.90	$ 12.89
23701	Allennurst	Mary	10/2/2010	Dog	Peanut	Double	$ 13.99	$ 1.05	$ 15.04
23702	Jonah	Mike	10/2/2010	Dog	Sage	Double	$ 13.99	$ 1.05	$ 15.04
23703	Brown	Shelia	10/4/2010	Dog	Lady	Double	$ 13.99	$ 1.05	$ 15.04
23704	Hess	Brandon	10/5/2010	Cat	Fluffy	Single	$ 10.99	$ 0.82	$ 11.81
23705	Ellis	Paul	10/8/2010	Cat	Gus	Double	$ 11.99	$ 0.90	$ 12.89
23706	Black	Sandy	10/9/2010	Dog	Hunter	Double	$ 13.99	$ 1.05	$ 15.04
23707	Craig	Clarence	10/10/2010	Dog	Scooter	Single	$ 12.99	$ 0.97	$ 13.96
23708	Connoley	Sam	10/11/2010	Dog	Oliver	Double	$ 13.99	$ 1.05	$ 15.04
23709	Bower	Errol	10/13/2010	Cat	Oscar	Double	$ 11.99	$ 0.90	$ 12.89
23710	Bailey	Julio	10/15/2010	Cat	Kitty	Single	$ 10.99	$ 0.82	$ 11.81
23711	Wilber	Tedd	10/15/2010	Cat	Belle	Single	$ 10.99	$ 0.82	$ 11.81
23712	Moss	Donna	10/19/2010	Dog	Spot	Double	$ 13.99	$ 1.05	$ 15.04
23713	Warren	John	10/20/2010	Dog	Shady	Single	$ 12.99	$ 0.97	$ 13.96
23714	Kross	Sal	10/22/2010	Dog	Freckles	Double	$ 13.99	$ 1.05	$ 15.04
23715	Sales	Peter	10/24/2010	Cat	Coco	Double	$ 11.99	$ 0.90	$ 12.89
23716	Gerry	Frederico	10/26/2010	Cat	Willie	Double	$ 11.99	$ 0.90	$ 12.89
23717	Wilson	Sam	10/28/2010	Dog	Rex	Single	$ 12.99	$ 0.97	$ 13.96
23718	Sprague	Adrian	10/29/2010	Cat	Felix	Single	$ 10.99	$ 0.82	$ 11.81
23719	Rose	Frederico	10/30/2010	Cat	Mittens	Double	$ 11.99	$ 0.90	$ 12.89
23720	Pauley	Bob	10/31/2010	Dog	Scout	Double	$ 13.99	$ 1.05	$ 15.04
23721	Morris	Jason	10/31/2010	Dog	Tucker	Single	$ 12.99	$ 0.97	$ 13.96

Price	Order Date	Invoice #	Total	Order Date	Number of Invoices

Vendor	Item	Date	Category	1-Month Order
All Foods	Tea	8/30/2010	Food	$ 500
Epicurean Delights	Jam	8/31/2010	Food	$ 998
All Foods	Coffee	9/1/2010	Food	$ 900
Epicurean Delights	Bottled water	9/2/2010	Food	$ 2,800
Souvenir Trade	Short sleeve t-shirts	9/3/2010	Clothing	$ 2,500
Best T	Long sleeve t-shirts	9/4/2010	Clothing	$ 2,390
Readers	Vermont travel guides	9/5/2010	Book	$ 580
Best Sellers	Vermont maps	9/6/2010	Book	$ 400
Readers	Paperback books	9/7/2010	Book	$ 1,500
Best Sellers	Vermont history books	9/8/2010	Book	$ 1,050
Epicurean Delights	Candy	9/9/2010	Food	$ 800
Best T	Baseball caps	9/10/2010	Clothing	$ 1,900
Souvenir Trade	Robes	9/11/2010	Clothing	$ 2,100
Best Sellers	Magazines	9/12/2010	Book	$ 1,200
Readers	Sudoku and Crosswords	9/13/2010	Book	$ 800
Best Sellers	Vermont cookbooks	9/14/2010	Book	$ 1,000
Souvenir Trade	Silk Ties	9/15/2010	Clothing	$ 1,800
Best T	Sweatshirts	9/16/2010	Clothing	$ 2,100
Souvenir Trade	Umbrellas	9/17/2010	Clothing	$ 280
Souvenir Trade	Postcards	9/18/2010	Book	$ 900
Best T	Towels	9/19/2010	Clothing	$ 1,000
Souvenir Trade	Earrings	9/20/2010	Clothing	$ 1,500
Souvenir Trade	Bracelets	9/21/2010	Clothing	$ 1,300
Best Sellers	Cards	9/22/2010	Book	$ 1,250
Souvenir Trade	Swim trunks	9/23/2010	Clothing	$ 1,000
Best T	Swimsuits	9/24/2010	Clothing	$ 1,500
Allmart	Toothpaste	9/25/2010	Personal	$ 200
Allmart	Toothbrushes	9/26/2010	Personal	$ 250
Allmart	Aspirin	9/27/2010	Personal	$ 560
Allmart	Shampoo	9/28/2010	Personal	$ 800
Allmart	Deodorant	9/29/2010	Personal	$ 900
Allmart	Comb	9/30/2010	Personal	$ 1,100
Allmart	manicure sets	10/1/2010	Personal	$ 1,400

Spring 2011 Schedule of History Classes

Course number	ID #	Time	Day	Room	Credits	Instructor
HIS100	1245	8:00 - 9:00	M,W,F	126	3	Walsh
HIS101	1356	8:00 - 9:30	T,TH	136	3	Guan
HIS102	1567	9:00 - 10:00	M,W,F	150	3	Marshall
HIS103	1897	10:00 - 11:30	T,TH	226	3	Benson
HIS104	3456	2:00 - 3:30	M,W,F	129	4	Paulson
HIS200	4678	12:00 - 1:30	T,TH	156	3	Dash
HIS300	7562	3:00 - 4:30	M,W,F	228	4	Christopher
HIS400	9823	11:00 - 12:00	M,W,F	103	3	Robbinson
HIS500	7123	3:00 - 4:30	T,TH	214	3	Matthews

Course Number Instructor Day Time Room

Day
M,W,F

Microsoft Office 2007 - Illustrated

Analyzing Table Data

UNIT
H
Excel 2007

UNIT H
Excel 2007

Objectives

- Filter a Table
- Create a custom filter
- Filter a Table with Advanced Filter
- Extract Table data

UNIT H
Excel 2007

Objectives

- Look up values in a table
- Summarize table data
- Validate table data
- Create subtotals

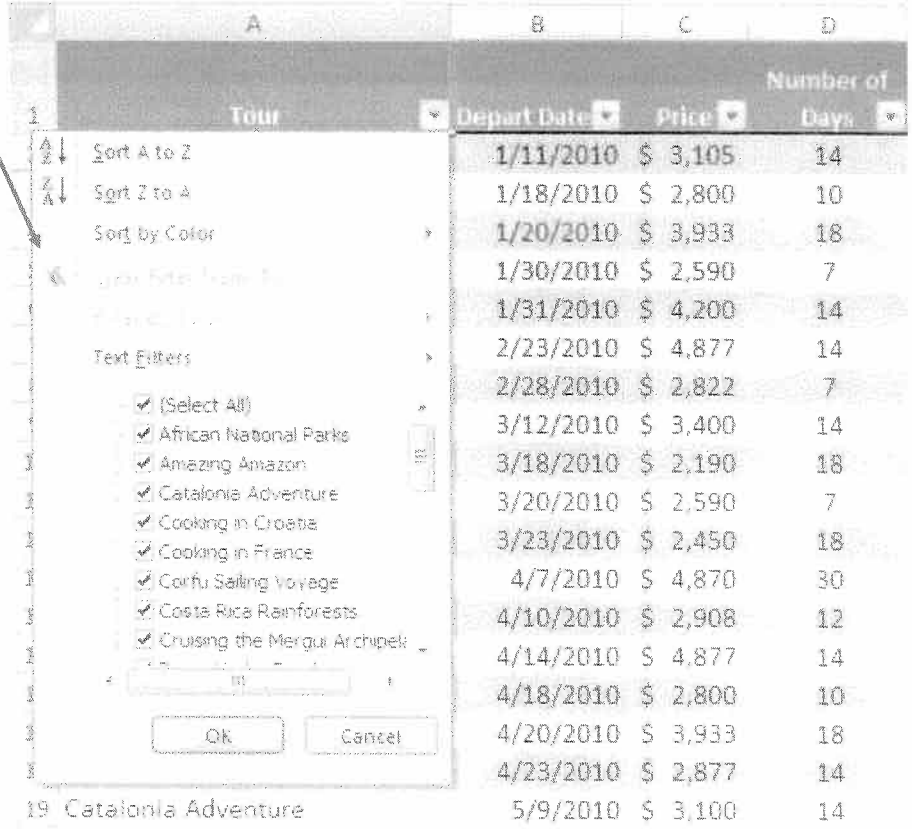
UNIT H
Excel 2007

Filtering a Table

- The Filter feature retrieves records that meet user-specified criteria.
  - Filter out or hide data that fails to meet certain criteria
  - Filter specific values

Filtering a Table (cont.)

Filter options



Tour	Depart Date	Price	Number of Days
	1/11/2010	$ 3,105	14
	1/18/2010	$ 2,800	10
	1/20/2010	$ 3,933	18
	1/30/2010	$ 2,590	7
	1/31/2010	$ 4,200	14
	2/23/2010	$ 4,877	14
	2/28/2010	$ 2,822	7
	3/12/2010	$ 3,400	14
	3/18/2010	$ 2,190	18
	3/20/2010	$ 2,590	7
	3/23/2010	$ 2,450	18
	4/7/2010	$ 4,870	30
	4/10/2010	$ 2,908	12
	4/14/2010	$ 4,877	14
	4/18/2010	$ 2,800	10
	4/20/2010	$ 3,933	18
	4/23/2010	$ 2,877	14
Catalonia Adventure	5/9/2010	$ 3,100	14

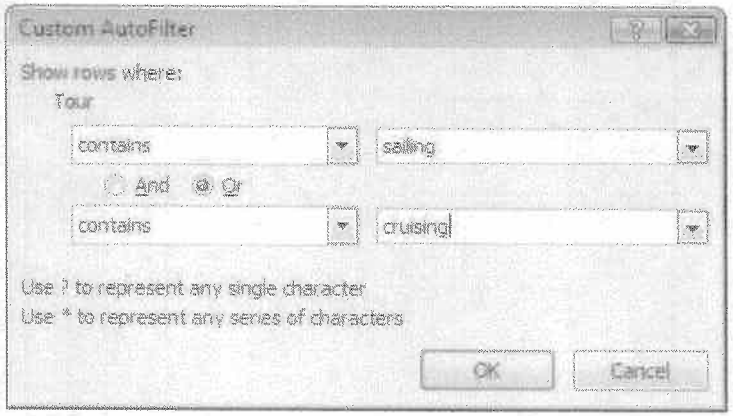
UNIT H
Excel 2007

Creating a Custom Filter

- Perform complex filters using options in the Custom AutoFilter dialog box
  - Filter data based on two entries in a single column
  - Use comparison operators, like "greater than" and "less than"

Creating a Custom Filter (cont.)

Custom AutoFilter dialog box



Creating a Custom Filter (cont.)

Results of filter

	A	B	C	D	E	F	G	H	I
1	Tour	Depart Date	Price	Number of Days	Seat Capacity	Seats Reserved	Seats Available	Air Included	Meals Included
7	Cruising the Merguí Archipelago	2/23/2010	$ 4,877	14	50	42	8	No	No
8	Cooking in France	2/28/2010	$ 2,822	7	50	18	32	Yes	No
9	Pearls of the Orient	3/12/2010	$ 3,400	14	50	22	28	Yes	No
10	Silk Road Travels	3/18/2010	$ 2,190	18	50	44	6	Yes	Yes
11	Costa Rica Rainforests	3/20/2010	$ 2,590	7	50	32	18	Yes	Yes
12	Green Adventures in Ecuador	3/23/2010	$ 2,450	18	50	45	5	No	No
13	African National Parks	4/7/2010	$ 4,870	30	50	18	32	Yes	Yes
14	Experience Cambodia	4/10/2010	$ 2,908	12	50	29	21	Yes	No
15	Cruising the Merguí Archipelago	4/14/2010	$ 4,877	14	50	20	30	No	No
64									

Creating a Custom Filter (cont.)

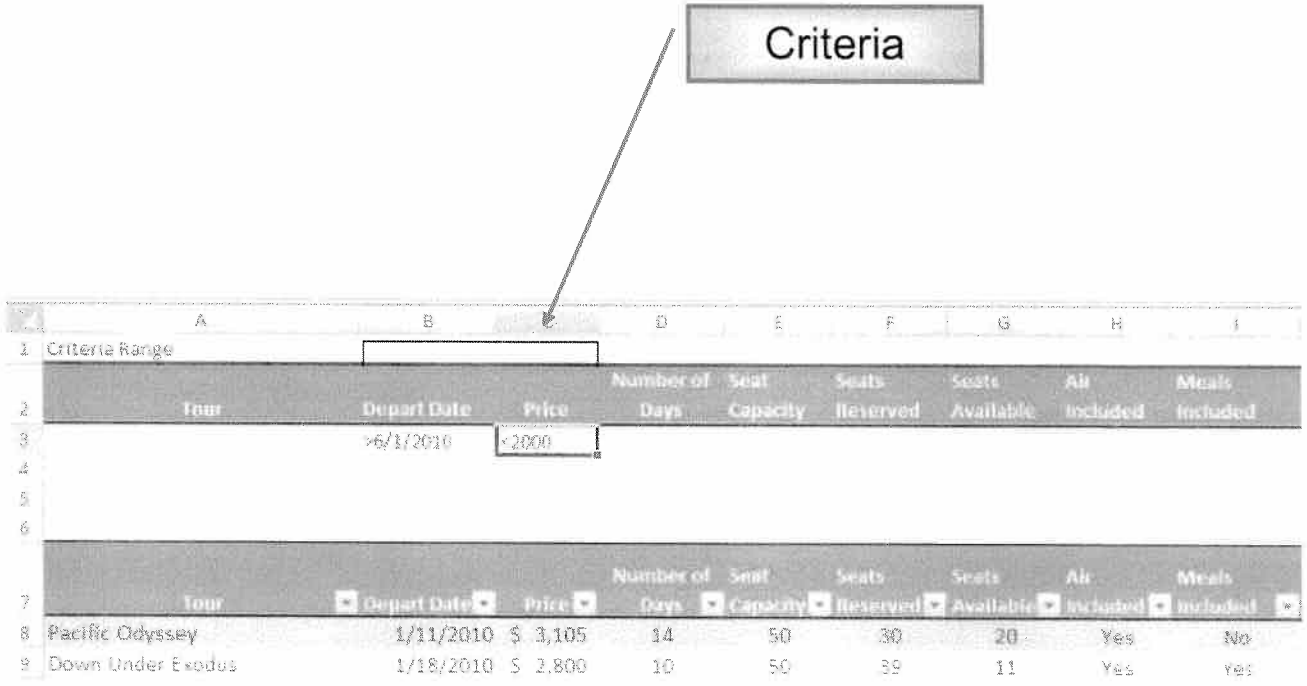
- "And" and "Or" logical conditions
  - Narrow a search using either the And or Or buttons in the Custom AutoFilter dialog box
  - Referred to as logical conditions

UNIT H
Excel 2007

Filtering a Table with Advanced Filter

- Search for data that matches complicated criteria in more than one column using the Advanced Filter command
  - Use "And" and "Or" conditions
  - Define a criteria range
    - A criteria range is a cell range containing one row of labels and at least one row underneath the row of labels that contains the criteria you want to match

Filtering a Table with Advanced Filter (cont.)



Extracting Table Data

- When you extract data, you place a copy of a filtered Table in a range you specify in the Advanced Filter dialog box
  - Prevents accidental clearing of the filter or the loss of complied records

Extracting Table Data (cont.)

	A	B	C	D	E	F	G	H	I
1	Criteria Range								
2	Tour	Depart Date	Price	Number of Days	Seat Capacity	Seats Reserved	Seats Available	Air Included	Meals Included
3	Exotic Morocco	>6/1/2010	<2000						
4	Kayak Newfoundland	>6/1/2010	<2000						
5									

Two sets of search criteria

Extracting Table Data (cont.)

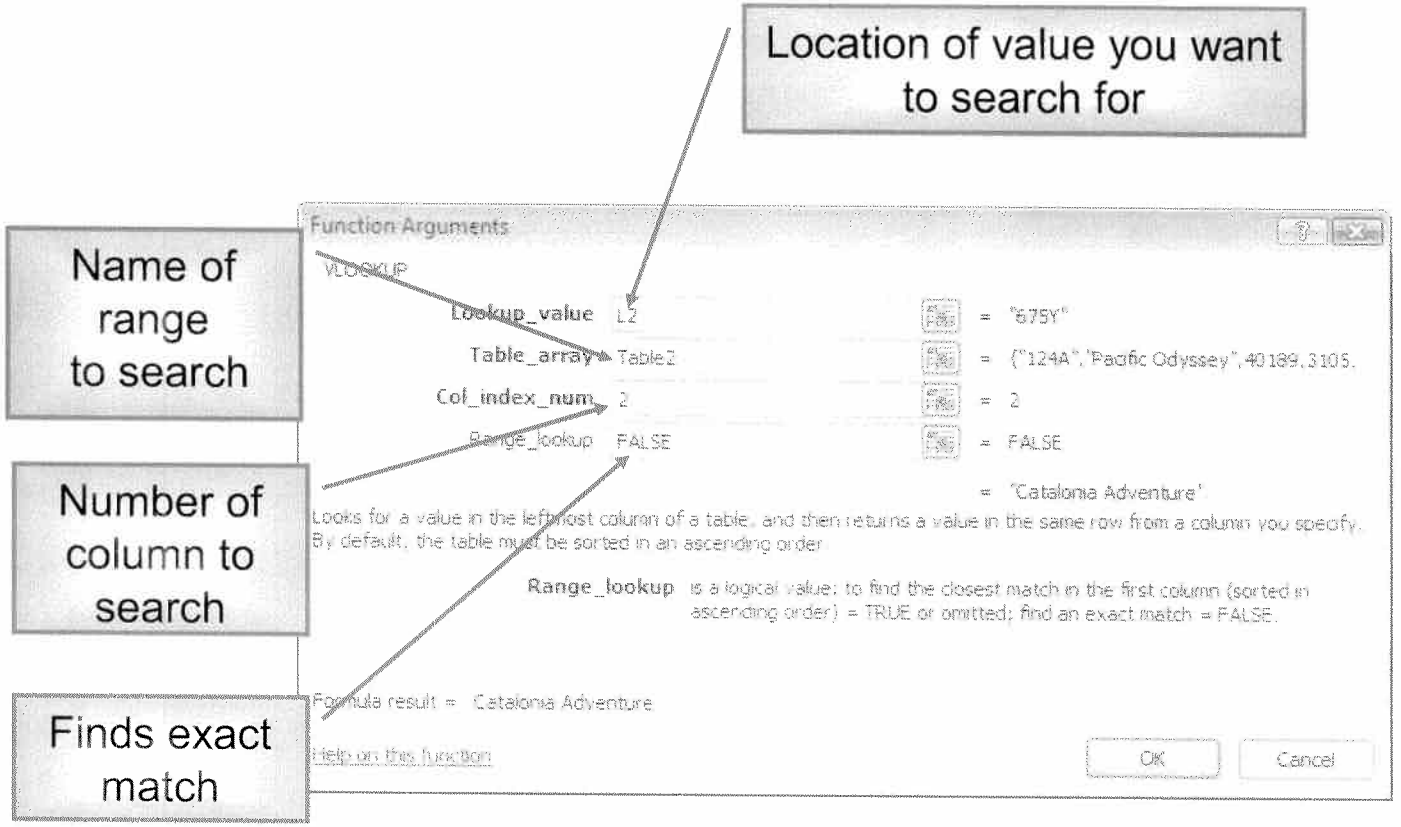
- Understanding the criteria range and the copy-to location.
  - When you define the criteria range and the copy-to location, Excel automatically creates the names Criteria and Extract for these ranges in the worksheet
  - The criteria range includes the fields names and any criteria rows underneath them
  - The extract range includes just the field names above the extracted Table

UNIT H
Excel 2007

Look Up Values in a Table

- The Excel VLOOKUP function helps you locate values in a Table
  - VLOOKUP searches vertically down the leftmost column of a Table then reads across the row to find the value in the column you specify
    - Like looking up a number in a phone book

Look Up Values in a Table (cont.)



Look Up Values in a Table (cont.)

UNIT H
Excel 2007

- Using the HLOOKUP and MATCH functions
  - The VLOOKUP function is useful when your data is arranged vertically, in columns
  - The HLOOKUP function is useful when your data is arranged horizontally, in rows
  - Use the Match function when you want the position of an item in a range

UNIT H
Excel 2007

Summarizing Table Data

- Database functions allow you to summarize Table data in a variety of ways
  - Count, average, or total values in a field for only those records that meet specified criteria

Summarizing Table Data

Name of database function

Column label the function will use

DSUM(Table, K1, H40:H41)

Name of range the function will use

Range that contains the Table criteria

UNIT H
Excel 2007

Summarizing Table Data

Summary area

	D	E	F	G	H	I	J	K	L	M	N
1	Price	Number of Seat Days	Capacity	Seats Reserved	Seats Available	Air Included	Meals Included				
2	$ 3,105	14	50	30	20	Yes	No		Trip Code	Tour	
3	$ 2,800	10	50	39	11	Yes	Yes		4990	Cooking in France	
4	$ 3,933	18	50	45	5	Yes	Yes				
5	$ 2,590	7	50	30	20	Yes	Yes		Criteria		
6	$ 4,200	14	50	38	12	Yes	Yes		Tour	Seats Available	3
7	$ 4,877	14	50	42	8	No	No		Cooking in France	Number of tours scheduled	2
8	$ 2,822	7	50	48	2	Yes	No				

Validating Table Data

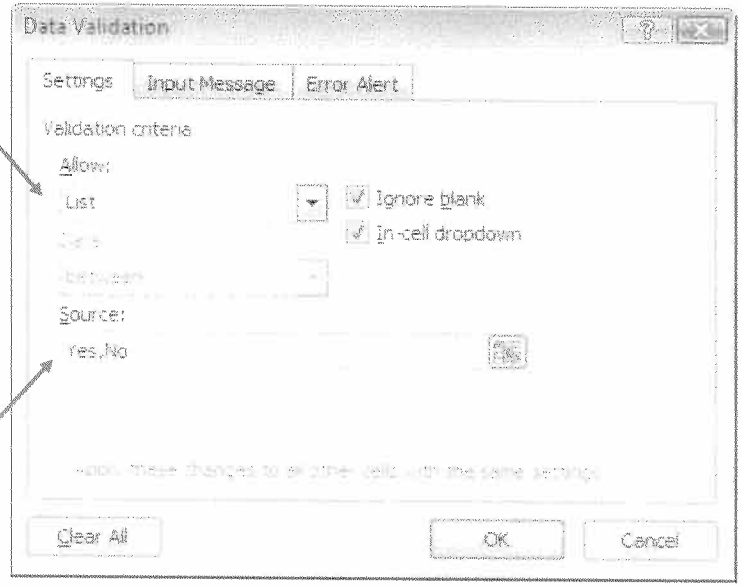
UNIT H
Excel 2007

- The Data Validation feature allows you to specify what data is valid for a range of cells
  - Restrict data to whole numbers, decimal numbers, or text
  - Specify a Table of acceptable entries
    - Set limits on entries
  - Excel prevents users from entering any data which is considered invalid

Validating Table Data (cont.)

Restricts entries to a Table of value options

Table of valid options



Validating Table Data (cont.)

UNIT H
Excel 2007

Entering data in restricted cells

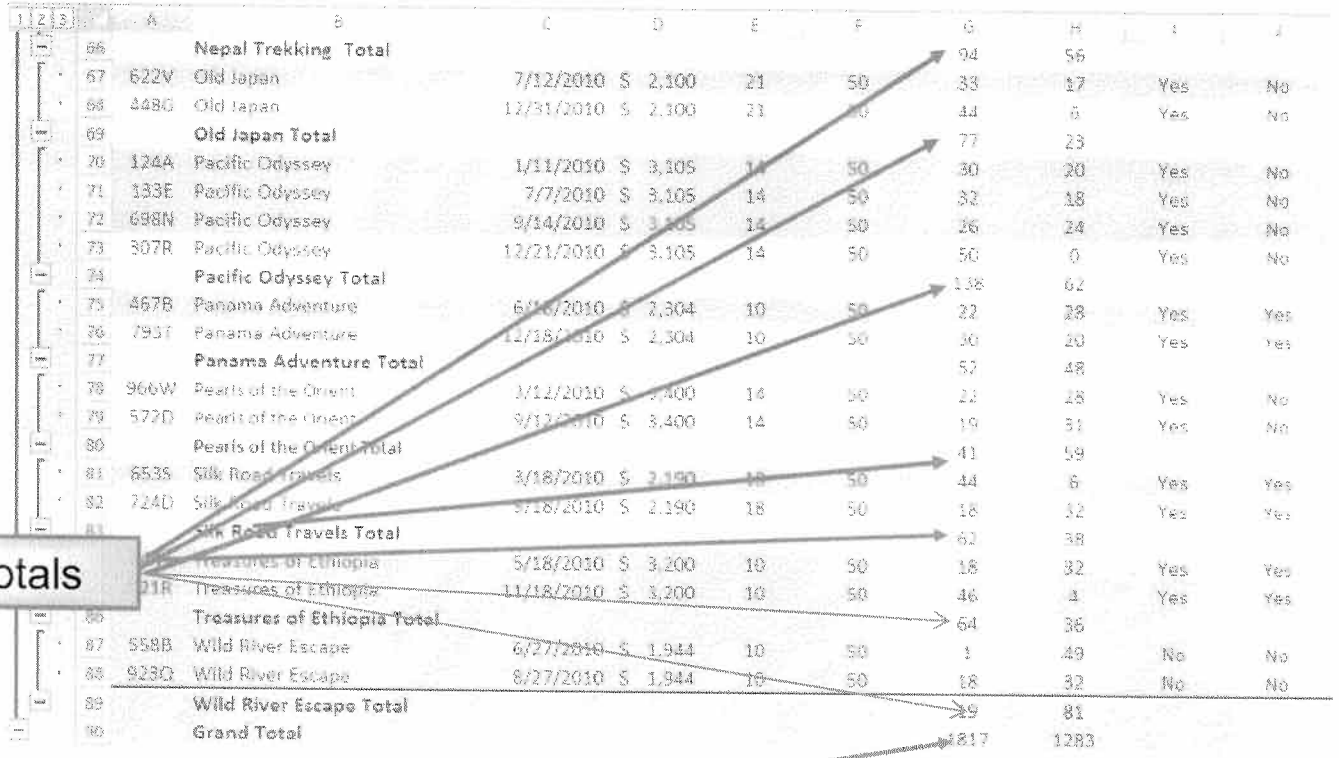
61	307R	Pacific Odyssey	12/21/2010	$	3,105	14	50	50	0	Yes	No
62	927F	Essential India	12/30/2010	$	3,933	18	50	31	19	Yes	Yes
63	448G	Old Japan	12/31/2010	$	2,100	21	50	44	6	Yes	No
64									0		
65										Yes	
66										No	

UNIT H
Excel 2007

Creating Subtotals

- The Excel subtotals feature provides an easy way to group and summarize data in a Table
  - Create a subtotal with the SUM function
    - Also use the COUNT, AVERAGE, MAX, and MIN functions

Creating Subtotals (cont.)



	A	B	C	D	E	F	G	H	I	J
66		Nepal Trekking Total					94	56		
67	622V	Old Japan	7/12/2010	$ 2,100	21	50	33	17	Yes	No
68	448G	Old Japan	12/31/2010	$ 2,100	21	50	44	0	Yes	No
69		Old Japan Total					77	23		
70	124A	Pacific Odyssey	1/11/2010	$ 3,105	14	50	30	20	Yes	No
71	133E	Pacific Odyssey	7/7/2010	$ 3,105	14	50	32	18	Yes	No
72	698N	Pacific Odyssey	9/14/2010	$ 3,105	14	50	26	24	Yes	No
73	307R	Pacific Odyssey	12/21/2010	$ 3,105	14	50	50	0	Yes	No
74		Pacific Odyssey Total					138	62		
75	467B	Panama Adventure	6/16/2010	$ 2,304	10	50	22	28	Yes	Yes
76	795T	Panama Adventure	12/18/2010	$ 2,304	10	50	30	20	Yes	Yes
77		Panama Adventure Total					52	48		
78	966W	Pearls of the Orient	3/12/2010	$ 3,400	14	50	23	28	Yes	No
79	572D	Pearls of the Orient	9/13/2010	$ 3,400	14	50	19	31	Yes	No
80		Pearls of the Orient Total					41	59		
81	653S	Silk Road Travels	3/18/2010	$ 2,190	18	50	44	6	Yes	Yes
82	724D	Silk Road Travels	9/18/2010	$ 2,190	18	50	18	32	Yes	Yes
83		Silk Road Travels Total					62	38		
84		Treasures of Ethiopia	5/18/2010	$ 3,200	18	50	18	32	Yes	Yes
85	01R	Treasures of Ethiopia	11/18/2010	$ 3,200	18	50	46	4	Yes	Yes
86		Treasures of Ethiopia Total					64	36		
87	558B	Wild River Escape	6/27/2010	$ 1,944	10	50	1	49	No	No
88	923Q	Wild River Escape	8/27/2010	$ 1,944	10	50	18	32	No	No
89		Wild River Escape Total					19	81		
90		Grand Total					1817	1283		

Subtotals

Grand total

UNIT H
Excel 2007

Creating Subtotals (cont.)

- Using + and - buttons in an outline
  - button hides groups of records
  + button displays groups of records

Summary

UNIT H
Excel 2007

- Use Filter to retrieve records
- Use custom filters to add logical conditions to a filter
- Use Advanced filters to search for data in more than one column
- Create subtotals
- Use LookUp functions to find values in a Table
- Use data validation to specify Table entries

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Video: Sort data

Quick start: Sort data in a worksheet

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Guidelines and examples for sorting and filtering data by color

Outline (group) data in a worksheet

Filter for unique values or remove duplicate values

Quick start: Filter data by using an AutoFilter

Filter data in a range or table

Insert subtotals in a list of data in a worksheet

Sort data in a range or table

Quick start: Sort data in a worksheet

Outline (group) data in a worksheet

Guidelines and examples for sorting and filtering data by color

Find and remove duplicates

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Excel Vlookup Function - 3 Tutorial Videos With Examples

After watching these videos and reading the tutorial, you will get to fully understand how to use this function and the cases in which it is useful. It includes easy examples demonstrating the difference between finding an exact match and a closer match. Also, you will see how you can use it to match lists and spot their differences.

- Video: How to use the VLOOKUP function (exact match)
- Video: How to use the VLOOKUP function (closest match)
- Using Vlookup to Match Lists (And: Getting rid of the #N/A error)

Simple Vlookup Tutorial – for Dummies

Let's assume we are given the following sales table:

	A	B	C
1	Salesperson	January Sales	February Sales
2	Jake	45	54
3	Dan	32	36
4	Samantha	24	56
5			
6			
7			

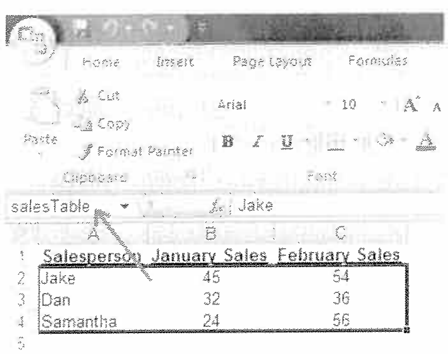
If you wish to retrieve Dan's January sales (hence cell B3), the function will be:

=vlookup("Dan", a2:c4, 2, false)

Let's go over the different parts of the function in plain English (note the highlighted parts in the following sentence, taken out directly from the formula):
The function will look for the word "Dan" at the first (left) column of the range a2:c4. It will retrieve the value adjacent to it on the 2nd column (thus the "January" column).

The word "false" tells the function to find Exactly the word "Dan", and not something close or similar to it.

A way to make the function more readable is to name the table, and use this name in the vlookup function.
Select the table (no need to include the headers row), and write a name inside the name box (it's located at the top left of the screen). In our vlookup example, we used the name "salesTable" (Try to avoid using spaces).



Thus, the function can now look like this:

[illegible]

[illegible]

[illegible]

[illegible]

When and how should you use the VLOOKUP function?

[illegible]

[illegible]

A simple explanation of the lookup in Excel VLOOKUP
You have an Excel table with some values (let's call it lookup)
You wish that you could somewhere in the sheet type a value and have Excel look up the value in the first column of the table, and then return the value in the same row from a column you specify.
To achieve this, you can use "Vlookup" function. It looks for the value in the leftmost column of the table, and then returns the value in the same row from a column you specify.

[illegible]

Vlookup example
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible]

[illegible]

Apply data validation to cells

You use data validation to control the type of data or the values that users enter into a cell. For example, you may want to restrict data entry to a certain range of dates, limit choices by using a list, or make sure that only positive whole numbers are entered.

+ Show All

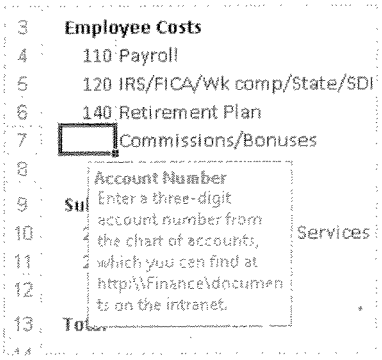
This article describes how data validation works in Excel and outlines the different data validation techniques available to you. It does not cover cell protection, which is a feature that lets you "lock" or hide certain cells in a worksheet so that they can't be edited or overwritten. For more information about how to protect cells, see the links in the **See Also** section.

In this article

What is data validation?

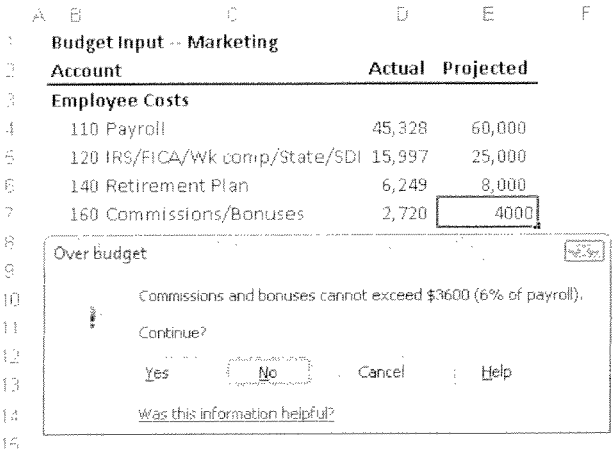
Data validation is an Excel feature that you can use to define restrictions on what data can or should be entered in a cell. You can configure data validation to prevent users from entering data that is not valid. If you prefer, you can allow users to enter invalid data but warn them when they try to type it in the cell. You can also provide messages to define what input you expect for the cell, and instructions to help users correct any errors.

For example, in a marketing workbook, you can set up a cell to allow only account numbers that are exactly three characters long. When users select the cell, you can show them a message such as this one:



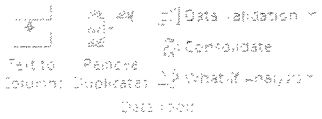
If users ignore this message and type invalid data in the cell, such as a two-digit or five-digit number, you can show them an actual error message.

In a slightly more advanced scenario, you might use data validation to calculate the maximum allowed value in a cell based on a value elsewhere in the workbook. In the following example, the user has typed $4,000 in cell E7, which exceeds the maximum limit specified for commissions and bonuses.

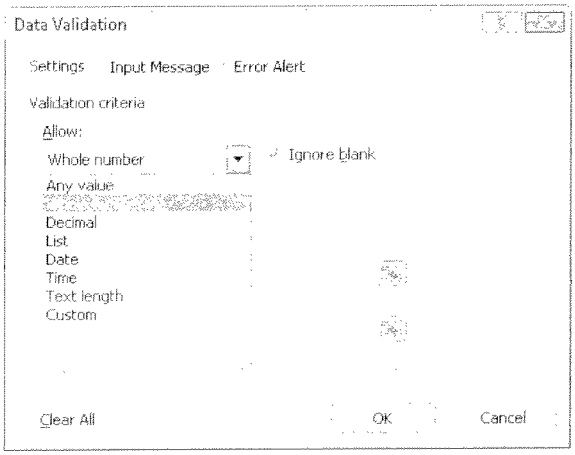


If the payroll budget were to increase or decrease, the allowed maximum in E7 would automatically increase or decrease with it.

Data validation options are located in the **Data Tools** group.



You configure data validation in the **Data Validation** dialog box.



When is data validation useful?

Data validation is invaluable when you want to share a workbook with others in your organization, and you want the data entered in the workbook to be accurate and consistent.

Among other things, you can use data validation to do the following:

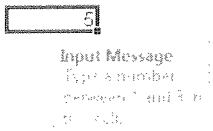
- **Restrict data to predefined items in a list** For example, you can limit types of departments to Sales, Finance, R&D, and IT. Similarly, you can create a list of values from a range of cells elsewhere in the workbook. For more information, see Create a drop-down list from a range of cells.

- **Restrict numbers outside a specified range** For example, you can specify a minimum limit of deductions to be claimed if the number of children in a particular cell

- **Restrict dates outside a certain time frame** For example, you can specify a time frame between today's date and 3 days from today's date.
- **Restrict times outside a certain time frame** For example, you can specify a time frame for serving breakfast between the time when the restaurant opens and 5 hours after the restaurant opens.
- **Limit the number of text characters** For example, you can limit the allowed text in a cell to 10 or fewer characters. Similarly, you can set the specific length for a full name field (C1, to be the current length of a first name field (A1) and a last name field (B1) plus 10 characters.
- **Validate data based on formulas or values in other cells** For example, you can use data validation to set a maximum limit for commissions and bonuses at $2,600, based on the overall projected payroll value. If users enter more than $3,600 in the cell, they see a validation message.

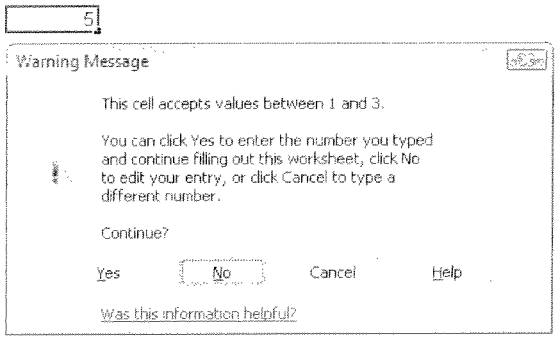
Data validation messages

What users see when they enter invalid data into a cell depends on how you have configured the data validation. You can choose to show an *input message* when the user selects the cell. This type of message appears near the cell. You can move this message if you want to, and it remains until you move to another cell or press ESC.



Input messages are generally used to offer users guidance about the type of data that you want entered in the cell.

You can also choose to show an *error alert* that appears only after users enter invalid data.



You can choose from three types of error alerts:

ICON	TYPE	USE TO
	Stop	Prevent users from entering invalid data in a cell. A **Stop** alert message has two options: **Retry** or **Cancel**.
	Warning	Warn users that the data they entered is invalid, without preventing them from entering it. When a **Warning** alert message appears, users can click **Yes** to accept the invalid entry, **No** to edit the invalid entry, or **Cancel** to remove the invalid entry.
	Information	Inform users that the data they entered is invalid, without preventing them from entering it. This type of error alert is the most flexible. When an **Information** alert message appears, users can click **OK** to accept the invalid value or **Cancel** to reject it.

You can customize the text that users see in an error alert message. If you choose not to do so, users see a default message.

Input messages and error alerts appear only when data is typed directly into the cells. They do not appear under the following conditions:

- A user enters data in the cell by copying or filling.
- A formula in the cell calculates a result that is not valid.
- A macro enters invalid data in the cell.

How to handle a data validation alert

When you try to enter or change data in a worksheet cell, you see a data validation error alert. This alert signifies that the owner of the workbook applied data validation to the cell to prevent users from entering invalid data and implemented the error alert to let you know that the data you entered is invalid.

You can enter only valid data in cells that have data validation applied. If you are not clear about the validity of the data that you can enter, you should contact the owner of the workbook.

If you invented the workbook, you can modify or remove the data validation unless the worksheet is protected with a password that you do not know. If possible, you can contact the previous owner to help you unprotect the worksheet. You can also copy the data to another worksheet, and then remove the data validation. For more information about how to change or remove data validation, see Change data validation settings or Remove data validation.

Tips for working with data validation

In the following list, you will find tips and tricks for working with data validation in Excel.

- If you plan to protect the worksheet or workbook, protect it after you have finished specifying data validation settings. Make sure that you unlock any validated cells before you protect the worksheet. Otherwise, users will not be able to type any data in the cells.
- If you plan to share the workbook, share it only after you have finished specifying data validation and protection settings. After you share a workbook, you won't be able to change the validation settings unless you stop sharing, but Excel will continue to validate the cells that you have designated while the workbook is being shared.
- You can apply data validation to cells that already have data entered in them. However, Excel does not automatically notify you that the existing cells contain invalid data. In this scenario, you can highlight invalid data by instructing Excel to circle it on the worksheet. Once you have identified the invalid data, you can hide the circles again. If you correct an invalid entry, the circle disappears automatically.

- To quickly remove data validation for a cell, select it, and then open the **Data Validation** dialog box (**Data** tab, **Data Tools** group). On the **Settings** tab, click **Clear All**.
- To find the cells on the worksheet that have data validation, on the **Home** tab, in the **Editing** group, click **Find & Select**, and then click **Data Validation**. After you have found the cells that have data validation, you can change, copy, or remove validation settings.
- When creating a drop-down list, you can use the **Define Name** command (**Formulas** tab, **Defined Names** group) to define a name for the range that contains the list. After you create the list on another worksheet, you can hide the worksheet that contains the list and then protect the workbook so that users won't have access to the list.

If data validation isn't working, make sure that:

Users are not copying or filling data Data validation is designed to show messages and prevent invalid entries only when users type data directly in a cell. When data is copied or filled, the messages do not appear. To prevent users from copying and filling data by dragging and dropping cells, clear the **Enable fill handle and cell drag-and-drop** check box (**Excel Options** dialog box, **Advanced** options), and then protect the worksheet.

Manual recalculation is turned off If manual recalculation is turned on, uncalculated cells can prevent data from being validated correctly. To turn off manual recalculation, on the **Formulas** tab, in the **Calculation** group, click **Calculation Options**, and then click **Automatic**.

Formulas are error free Make sure that formulas in validated cells do not cause errors, such as #REF! or #DIV/0!. Excel ignores the data validation until you correct the error.

Cells referenced in formulas are correct If a referenced cell changes so that a formula in a validated cell calculates an invalid result, the validation message for the cell won't appear.

Add data validation to a cell or range

In the next sections, you will learn the different techniques for adding validation to cells in a worksheet.

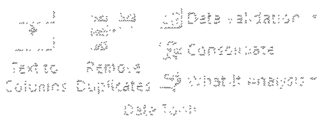
Restrict data entry to values in a drop-down list
Restrict data entry to a whole number within limits

- Restrict data entry to a decimal number within limits
- Restrict data entry to a date within a time frame
- Restrict data entry to a time within a time frame
- Restrict data entry to text of a specified length
- Calculate what is allowed based on the content of another cell
- Use a formula to calculate what is allowed

Restrict data entry to values in a drop-down list

It is not possible to change the font or font size for items in a list.

1. Select one or more cells to validate.
2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



1.
2. Issue: The **Data Validation** command is unavailable.

3. In the **Data Validation** dialog box, click the **Settings** tab.
4. In the **Allow** box, select **List**.
5. Click the **Source** box and then type the list values separated by the Microsoft Windows list separator character (commas by default).
   1. For example:
      - To limit entry to a question, such as "Do you have children?", to two choices, type **Yes, No**
      - To limit a vendor's quality reputation to three ratings, type **Low, Average, High**

        1. You can also create the list entries by referring to a range of cells elsewhere in the workbook. For more information, see Create a drop-down list from a range of cells.

        2. NOTE The width of the drop-down list is determined by the width of the cell that has the data validation. You might need to adjust the width of that cell to prevent truncating the width of valid entries that are wider than the width of the drop-down list.
6. Make sure that the **In-cell dropdown** check box is selected. Otherwise, you won't be able to see the drop-down arrow next to the cell.
7. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

   1. NOTE If your allowed values are based on a cell range that has a defined name and there is a blank cell anywhere in that range, selecting the **Ignore blank** check box allows any value to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas: if any referenced cell is blank, selecting the **Ignore blank** check box allows any value to be entered in the validated cell.
8. Optionally, display an input message when the cell is clicked.

   1. How to display an input message
9. Specify how you want Microsoft Office Excel to respond when invalid data is entered.

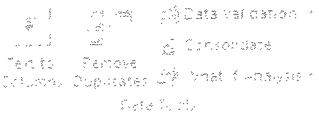
   1. How to specify a response to invalid data
10. Test the data validation to make sure that it is working correctly.

    Try entering both valid and invalid data in the cells to make sure that your settings are working as you intended and your messages are appearing when you expect.

    Tip If you change the validation settings for a cell, you can automatically apply your changes to all other cells that have the same settings. To do so, open the **Data Validation** dialog box, and then select the **Apply these changes to all other cells with the same settings** check box on the **Settings** tab.

Restrict data entry to a whole number within limits

1. Select one or more cells to validate.
2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



2. Issue: The **Data Validation** command is unavailable

3. In the **Data Validation** dialog box, click the **Settings** tab.

4. In the **Allow** box, select **Whole number**.

5. In the **Data** box, select the type of restriction that you want. For example, to set upper and lower limits, select **between**.

6. Enter the minimum, maximum, or specific value to allow. You can also enter a formula that returns a number value.

   1. For example, to set a maximum limit of deductions to two times the number of dependents in cell F1, select **greater than or equal to** in the **Data** box and enter the formula, **=2*F1**, in the **Minimum** box.

7. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

   1. NOTE If your allowed values are based on a cell range with a defined name, and there is a blank cell anywhere in the range, setting the **Ignore blank** check box allows any values to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas: if any referenced cell is blank, setting the **Ignore blank** check box allows any values to be entered in the validated cell.

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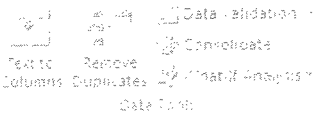
    Try entering both valid and invalid data in the cells to make sure that your settings are working as you intended, and your messages are appearing when you expect.

    Tip If you change the validation settings for a cell, you can automatically apply your changes to all other cells that have the same settings. To do so, open the **Data Validation** dialog box, and then select the **Apply these changes to all other cells with the same settings** check box on the **Settings** tab.

Restrict data entry to a decimal number within limits

1. Select one or more cells to validate.

2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



3. Issue: The **Data Validation** command is unavailable

4. In the **Data Validation** dialog box, click the **Settings** tab.

5. In the **Allow** box, select **Decimal**.

6. In the **Data** box, select the type of restriction that you want. For example, to set upper and lower limits, select **between**.

7. Enter the minimum, maximum, or specific value to allow. You can also enter a formula that returns a number value.

   1. For example, to set a maximum limit for commissions and bonuses of 6% of a salesperson's salary in cell E1, select **less than or equal to** in the **Data** box and enter the formula, **=E1*6%**, in the **Maximum** box.

      - NOTE To let a user enter percentages, for example 20%, select **Decimal** in the **Allow** box, select the type of restriction that you want in the **Data** box, enter the minimum, maximum, or specific value as a decimal, for example .2, and then display the data validation cell as a percentage by selecting the cell and clicking **Percent Style** % in the **Number** group on the **Home** tab.

7. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

   1. NOTE If your allowed values are based on a cell range with a defined name, and there is a blank cell anywhere in the range, setting the **Ignore blank** check box allows any values to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas: if any referenced cell is blank, setting the **Ignore blank** check box allows any values to be entered in the validated cell.

8. Optionally, display an input message when the cell is clicked.

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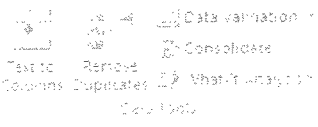
    Try entering both valid and invalid data in the cells to make sure that your settings are working as you intended and your messages are appearing when you expect.

    Tip If you change the validation settings for a cell, you can automatically apply your changes to all other cells that have the same settings. To do so, open the **Data Validation** dialog box, and then select the **Apply these changes to all other cells with the same settings** check box on the **Settings** tab.

Restrict data entry to a date within a time frame

1. Select one or more cells to validate.
2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



1. Data Tools

2. Issue: The **Data Validation** command is unavailable.

3. In the **Data Validation** dialog box, click the **Settings** tab.
4. In the **Allow** box, select **Date**.
5. In the **Data** box, select the type of restriction that you want. For example, to allow dates after a certain day, select **greater than**.
6. Enter the start, end, or specific date to allow. You can also enter a formula that returns a date.

   1. For example, to set a time frame between today's date and 3 days from today's date, select **between** in the **Data** box, enter **=TODAY()** in the **Minimum** box, and enter **=TODAY()+3** in the **Maximum** box.

7. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

   1. NOTE If your allowed values are based on a cell range with a defined name, and there is a blank cell anywhere in the range, setting the **Ignore blank** check box allows any values to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas: if any referenced cell is blank, setting the **Ignore blank** check box allows any values to be entered in the validated cell.

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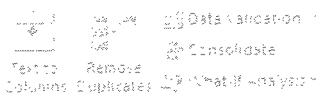
    Tip If you change the validation settings for a cell, you can automatically apply your changes to all other cells that have the same settings. To do so, open the **Data Validation** dialog box, and then select the **Apply these changes to all other cells with the same settings** check box on the **Settings** tab.

Restrict data entry to a time within a time frame

1. Select one or more cells to validate.

2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



3. Issue: The **Data Validation** command is unavailable.

4. In the **Data Validation** dialog box, click the **Settings** tab.

5. In the **Allow** box, select **Time**.

6. In the **Data** box, select the type of restriction that you want. For example, to allow times before a certain time of day, select **less than**.

7. Enter the start, end, or specific time to allow. You can also enter a formula that returns a time.

   - For example, to set a time frame for serving breakfast between the time when the restaurant opens, the value in cell H1, and five hours after that, select **between** in the **Data** box, enter **=H1** in the **Minimum** box, and then enter **=H1+"5:00"** in the **Maximum** box.

8. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

   - NOTE: If your allowed values are based on a cell range with a defined name, and there's a blank cell anywhere in the range, setting the **Ignore blank** check box allows any values to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas: if any referenced cell is blank, setting the **Ignore blank** check box allows any values to be entered in the validated cell.

9. Optionally, display an input message when the cell is clicked.

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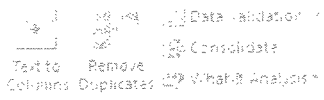
    Try entering both valid and invalid data in the cells to make sure that your settings are working as you intended and your messages are appearing when you expect.

    Tip If you change the validation settings for a cell, you can automatically apply your changes to all other cells that have the same settings. To do so, open the **Data Validation** dialog box, and then click the **Apply these changes to all other cells with the same settings** check box on the **Settings** tab.

Restrict data entry to text of a specified length

1. Select one or more cells to validate.

2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



3. Issue: The **Data Validation** command is unavailable.

4. In the **Data Validation** dialog box, click the **Settings** tab.

5. In the **Allow** box, select **Text Length**.

6. In the **Data** box, select the type of restriction that you want. For example, to allow up to a certain number of characters, select **less than or equal to**.

7. Enter the minimum, maximum, or specific length for the text. You can also enter a formula that returns a number value.

   - For example, to set the specific length for a full name field (C1) to be the current length of a first name field (A1) and a last name field (B1) plus 10, select **less than or equal to** in the **Data** box and enter **=SUM(LEN(A1),LEN(B1),10)** in the **Maximum** box.

8. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

- NOTE If your allowed values are based on a cell range with a defined name, and there is a blank cell anywhere in the range, setting the **Ignore blank** check box allows any values to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas. if any referenced cell is blank, setting the **Ignore blank** check box allows any values to be entered in the validated cell.

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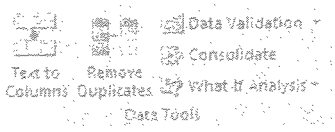
Calculate what is allowed based on the content of another cell

1. Select one or more cells to validate.
2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



1.

2. + Issue: The **Data Validation** command is unavailable.

3. In the **Data Validation** dialog box, click the **Settings** tab.
4. In the **Allow** box, select the type of data that you want.
5. In the **Data** box, select the type of restriction that you want.
6. In the box or boxes below the **Data** box, click the cell that you want to use to specify what is allowed.
   - For example, to allow entries for an account only if the result won't go over the budget in cell E4, select **Decimal** for **Allow**, select **less than or equal to** for **Data**, and in the **Maximum** box, enter **=E4**.
7. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.
   - NOTE If your allowed values are based on a cell range with a defined name, and there is a blank cell anywhere in the range, setting the **Ignore blank** check box allows any values to be entered in the validated cell. This is also true for any cells that are referenced by validation formulas; if any referenced cell is blank, setting the **Ignore blank** check box allows any values to be entered in the validated cell.
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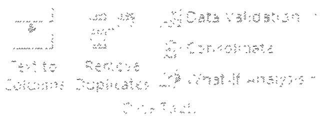
Use a formula to calculate what is allowed

1. Select one or more cells to validate.
2. On the **Data** tab, in the **Data Tools** group, click **Data Validation**.



Issue: The **Data Validation** command is unavailable.

3. In the **Data Validation** dialog box, click the **Settings** tab.
4. In the **Allow** box, select **Custom**.
5. In the **Formula** box, enter a formula that calculates a logical value (TRUE for valid or FALSE for invalid entries). For example:

1. TO MAKE SURE THAT	2. ENTER THIS FORMULA
3. The cell for the picnic account (B1) can only be updated if nothing is budgeted for the discretionary account (D1) and the total budget (D2) is less than the $40,000 allocated.	4. =AND(D1=0,D2<40000)
5. The cell that contains a product description (B2) only contains text.	6. =ISTEXT(B2)
7. For the cell that contains a projected advertising budget (B3), the subtotal for subcontractors and services (E1) must be less than or equal to $800, and the total budget amount (E2) must also be less than or equal to $97,000.	8. =AND(E1<=800,E2<=97000)
9. The cell that contains an employee age (B4) is always greater than the number of full years of employment (F1) plus 18 (the minimum age of employment).	10. =IF(B4>F1+18,TRUE,FALSE)
11. All the data in the cell range A1:A20 contains unique values.	12. =COUNTIF($A$1:$A$20,A1)=1 13. You must enter the formula in the data validation for cell A1, and then fill the cells A2 through A20 so that the data validation for each cell in the range has a similar formula, but the second argument to the **COUNTIF** will match the current cell.
14. The cell that contains a product code name (B5) always begins with the standard prefix of ID- and is at least 10 characters long.	15. =AND(LEFT(B5, 3) ="ID-",LEN(B5) > 9)

6. To specify how you want to handle blank (null) values, select or clear the **Ignore blank** check box.

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DMAX

DSTDEV

DCOUNT

DAVERAGE

DCOUNTA

Database functions

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Jam Label	Type of Jam	Size	Unit Price	Quantity	Total
Tipperary Ranch	Gooseberry	Small	€ 5.75	6	€ 34.50
Tipperary Ranch	Blackberry	Medium	€ 6.00	11	€ 66.00
Tipperary Ranch	Rhubarb	Small	€ 6.50	5	€ 32.50
Cork Estate	Gooseberry	Small	€ 5.75	8	€ 46.00
Galway Estate	Blackberry	Small	€ 5.25	12	€ 63.00
Galway Estate	Rhubarb	Small	€ 6.25	11	€ 68.75
Wexford Hills	Gooseberry	Small	€ 5.75	21	€ 120.75
Wexford Hills	Rhubarb	Small	€ 5.25	31	€ 162.75
Wexford Hills	Blackberry	Medium	€ 5.75	15	€ 86.25
Kerry Lane	Gooseberry	Medium	€ 7.25	18	€ 130.50
Kerry Lar		Small	€ 6.55	12	€ 78.60
Kerry Lar		Medium	€ 7.55	24	€ 181.20

A table listing small gooseberry jams begins in cell A20

The labels in A1:F1 are copied to A16:F16

Jam Label	Type of Jam	Size	Unit Price	Quantity	Total
	Gooseberry	Small			

Cell B17 reads Gooseberry and C17 reads Small

Jam Label	Type of Jam	Size	Unit Price	Quantity	Total
Tipperary Ranch	Gooseberry	Small	€ 5.75	6	€ 34.50
Cork Estate	Gooseberry	Small	€ 5.75	8	€ 46.00
Wexford Hills	Gooseberry	Small	€ 5.75	21	€ 120.75

Your Name

Jam Label	Type of Jam	Size	Unit Price	Quantity	Total
Tipperary Ranch	Blackberry	Medium	6.00	11	66.00
Galway Estate	Blackberry	Small	5.25	12	63.00
Wexford Hills	Blackberry	Medium	5.75	15	86.25
Kerry Lane	Blackberry	Small	6.55	12	78.60
	Blackberry Total			50	
Tipperary Ranch	Gooseberry	Small	5.75	6	34.50
Cork Estate	Gooseberry	Small	5.75	8	46.00
Wexford Hills	Gooseberry	Small	5.75	21	120.75
Kerry Lane	Gooseberry	Medium	7.25	18	130.50
	Gooseberry To			53	
Tipperary Ranch	Rhubarb	mall	6.50	5	32.50
Galway Estate	Rhubarb	all	6.25	11	68.75
Wexford Hills	Rhubarb		5.25	31	162.75
Kerry Lane	Rhubarb	M n	7.55	24	181.20
	Rhubarb Total			71	
	Grand Total			174	

Data file is saved as Jams

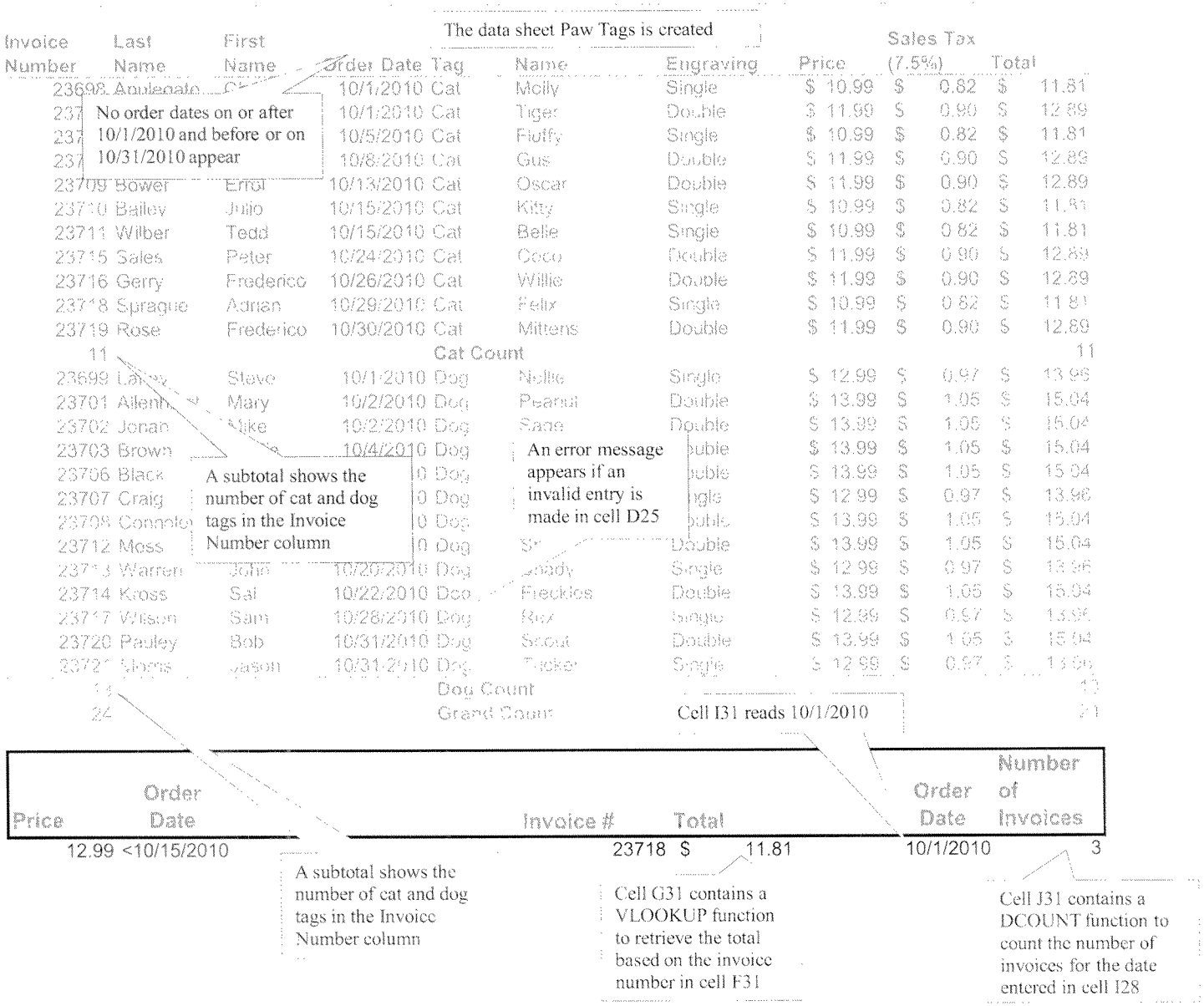
Table is sorted by types of jam in ascending order

Only Gooseberry, Blackberry and Rhubarb are entered in column B

100

Cell contains a function that calculates the total number of blackberry jams

Your Name


The data sheet Paw Tags is created
Invoice Number
Last Name
First Name
Order Date
Tag
Name
Engraving
Price
Sales Tax (7.5%)
Total
No order dates on or after 10/1/2010 and before or on 10/31/2010 appear
Cat Count
A subtotal shows the number of cat and dog tags in the Invoice Number column
An error message appears if an invalid entry is made in cell D25
Dog Count
Grand Count
Cell I31 reads 10/1/2010
Price
Order Date
Invoice #
Total
Order Date
Number of Invoices
12.99 <10/15/2010
23718 $ 11.81
10/1/2010
3
A subtotal shows the number of cat and dog tags in the Invoice Number column
Cell G31 contains a VLOOKUP function to retrieve the total based on the invoice number in cell F31
Cell J31 contains a DCOUNT function to count the number of invoices for the date entered in cell I28

Your name

Vendor	Item	Date	Category	1-Month Order
Readers	Vermont travel guides	9/5/2010	Book	$ 580
Best Sellers	Vermont maps	9/6/2010	Book	$ 400
Readers	Paperback books	9/7/2010	Book	$ [illegible]
Best Sellers	Vermont history books	9/8/2010	Book	$ 1,050
Best Sellers	Magazines	9/12/2010	Book	$ 1,200
Readers	Sudoku and Crosswords	9/13/2010	Book	$ 800
Best Sellers	Vermont cookbooks	9/14/2010	Book	$ 1,000
Souvenir Trade	Postcards	9/18/2010	Book	$ 900
Best Sellers	Cards	9/22/2010	Book	$ 1,250
			Book Total	$ 8,680
Souvenir Trade	Short sleeve t-shirts	9/3/2010	Clothing	$ 2,500
Best T	Long sleeve t-shirts	9/4/2010	Clothing	$ 2,390
Best T	Baseball caps	9/10/2010	Clothing	$ 1,[illegible]
Souvenir Trade	Robes	9/11/2010	Clothing	$ [illegible]
Souvenir Trade	Silk Ties	9/15/2010	Clothing	$ 1,800
Best T	Sweatshirts	9/16/2010	Clothing	$ 2,100
Souvenir Trade	Umbrellas	9/17/2010	Clothing	$ 280
Best T	Towels	9/19/2010	Clothing	$ 1,000
Souvenir Trade	Earrings	9/20/2010	Clothing	$ 1,500
Souvenir Trade	Bracelets	9/[illegible]/2010	Clothing	$ 1,300
Souvenir Trade	Swim trunks	9/23/2010	Clothing	$ [illegible]
Best T	Swimsuits	9/24/2010	Clothing	$ 1,500
			Clothing Total	$ 19,370
All Foods	Tea	8/30/2010	Food	$ 500
Epicurean Delights	Jam	8/31/2010	Food	$ 998
All Foods	Coffee	9/1/2010	Food	$ 900
Epicurean Delights	Bottled water	9/2/2010	Food	$ 2,800
Epicurean Delights	Candy	9/9/2010	Food	$ 800
			Food Total	$ 5,998
Allmart	Toothpaste	9/25/2010	Personal	$ 200
Allmart	Toothbrushes	9/26/2010	Personal	$ 250
Allmart	Aspirin	9/27/2010	Personal	$ 560
Allmart	Shampoo	9/28/2010	Personal	$ 800
Allmart	Deodorant	9/29/2010	Personal	$ 900
Allmart	Comb	9/30/2010	Personal	$ 1,100
Allmart	manicure sets	10/1/2010	Personal	$ 1,400
			Personal Total	$ 5,210
			Grand Total	$ 39,258

An in-cell drop-down restricting category entries is created

Cell H2 contains a DSUM function totaling amounts found for the category entered in cell G2, formatted for accounting with no decimal places and the $ symbol

Table is sorted by category in ascending order

Outline displays only category names with subtotals and the grand total

The Gifts data file is created

An advanced filter has extracted records with dates before 9/10/2010 and whose orders were greater than $1000

A table records orders greater than $1000 having dates before 9/10/2010 or after 9/24/2010

Vendor	Item	Date	Category	1-Month Order
Epicurean Delights	Bottled water	9/2/2010	Food	$ 2,800
Souvenir Trade	Short sleeve t-shirts	9/3/2010	Clothing	$ 2,500
Best T	Long sleeve t-shirts	9/4/2010	Clothing	$ 2,390
Readers	Paperback books	9/7/2010	Book	$ 1,500
Best Sellers	Vermont history books	9/8/2010	Book	$ 1,050
Allmart	Comb	9/30/2010	Personal	$ 1,100
Allmart	manicure sets	10/1/2010	Personal	$ 1,400