ABC Analysis in Excel

This document explains how to do ABC analysis of inventory items in Excel.

What you will learn from this handout

1. To do an ABC analysis of inventory items in Excel
2. To sort data in Excel, using the data in a particular column as a basis for sorting
3. To compute cumulative sums in Excel

Steps in the ABC Analysis

We are given item numbers, annual demand, and unit price for 15 inventory items. A spreadsheet for this problem is shown below. In the workbook, this is Sheet 1.

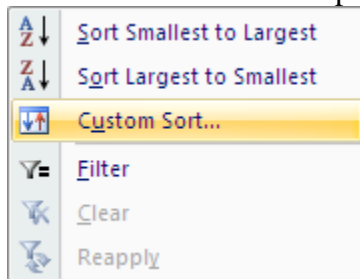|	A	B	C	D	E	F	G
1	ABC Analysis Example - Example 12.15, pages 449-450						
2					Annual	Annual	
3	Item	Annual	Unit	Annual	Usage ($)	Usage ($)	
4	Number	Demand	Price ($)	Usage ($)	Percentage	Cumulative %	Category
5	101	80	$12.00	$960.00	2.00%		
6	102	10	$50.00	$500.00	1.04%		
7	103	50	$15.00	$750.00	1.56%		
8	104	40	$50.00	$2,000.00	4.17%		
9	105	80	$40.00	$3,200.00	6.68%		
10	106	220	$75.00	$16,500.00	34.42%		
11	107	250	$4.00	$1,000.00	2.09%		
12	108	400	$1.50	$600.00	1.25%		
13	109	250	$2.00	$500.00	1.04%		
14	110	500	$25.00	$12,500.00	26.08%		
15	111	450	$5.00	$2,250.00	4.69%		
16	112	80	$7.50	$600.00	1.25%		
17	113	250	$3.50	$875.00	1.83%		
18	114	1200	$1.00	$1,200.00	2.50%		
19	115	300	$15.00	$4,500.00	9.39%		
20		Total annual usage ($)		$47,935.00			
21							

1. Annual usage in $ = (annual demand)x(unit price). Develop an Excel formula for the annual usage of Item 101 (cell D5). Copy cell D5 to cells D6 – D19.
2. Develop an Excel formula for Total Annual Usage (cell D20).
3. We need to compute the percentage of annual usage for each item. The formula for cell E5 is =D5/D20. Enter the formula, and format the answer as a percentage.
4. Copy cell E5 to cells E6-E19.
5. Save your file.
6. Your assignment must include both sorted and unsorted versions of your work. Copy your spreadsheet to Sheet 2.
7. In Sheet 2, sort the data by Annual Usage, in descending order.
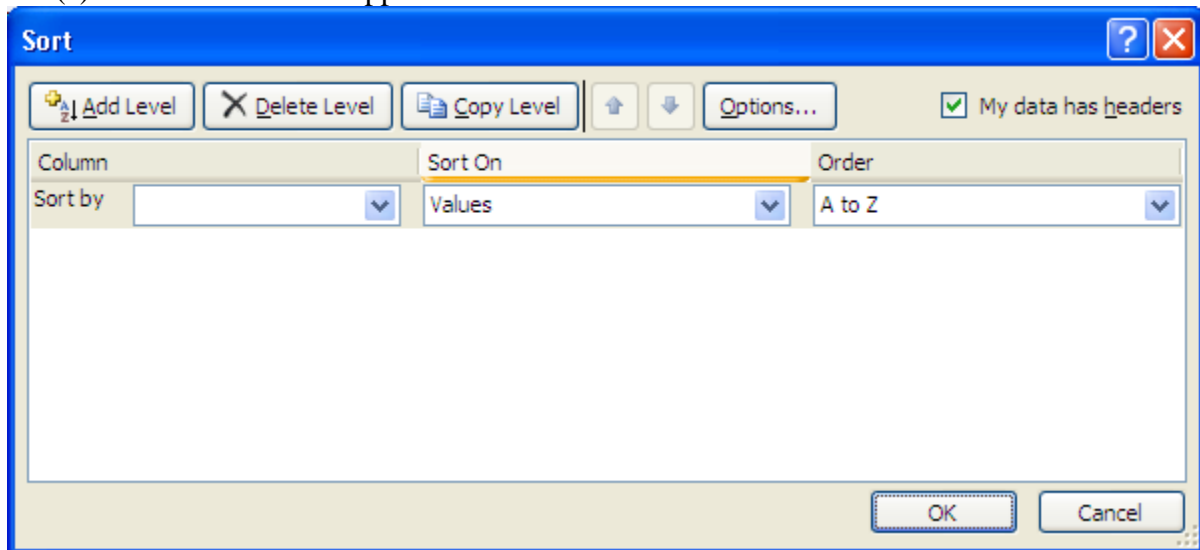
Sorting Data in Office 2007

(a) We want to sort cells A6-E20. Highlight those cells, as shown below.

	A	B	C	D	E	F	G	H
			fx	101				

Cell reference: A6

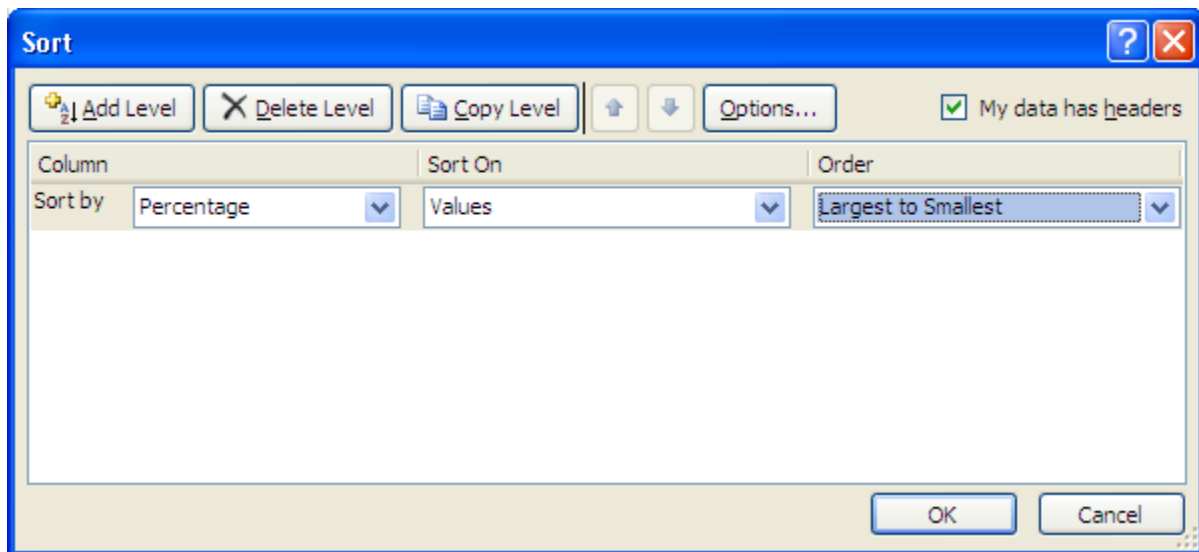|	A	B	C	D	E	F	G	H
1	ABC Analysis Example - Example 12.15, pages 449-450							
2								
3					Annual	Annual		
4	Item	Annual	Unit	Annual	Usage ($)	Usage ($)		
5	Number	Demand	Price ($)	Usage ($)	Percentage	Cumulative %	Category	
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9	104	40	$50.00	$2,000.00	4.17%			
10	105	80	$40.00	$3,200.00	6.68%			
11	106	220	$75.00	$16,500.00	34.42%			
12	107	250	$4.00	$1,000.00	2.09%			
13	108	400	$1.50	$600.00	1.25%			
14	109	250	$2.00	$500.00	1.04%			
15	110	500	$25.00	$12,500.00	26.08%			
16	111	450	$5.00	$2,250.00	4.69%			
17	112	80	$7.50	$600.00	1.25%			
18	113	250	$3.50	$875.00	1.83%			
19	114	1200	$1.00	$1,200.00	2.50%			
20	115	300	$15.00	$4,500.00	9.39%			
21		Total annual usage ($)		$47,935.00				
22								

(b) Click the Sort & Filter editing tool in the upper right hand corner in the tool bar. Select the Custom Sort option.

- Sort Smallest to Largest
- Sort Largest to Smallest
- Custom Sort...
- Filter
- Clear
- Reapply

(c) This screen should appear.

Sort

Add Level | Delete Level | Copy Level | Options... | ☑ My data has headers

Column	Sort On	Order
Sort by	Values	A to Z

OK | Cancel

(d) Under the Sort by Column use the Percentage value. Under the Order Column order from largest to smallest.

(e) Select OK. The box should disappear, and the data should be sorted from largest to smallest percentage.

	A	B	C	D	E	F	G	H
	A1				ABC Analysis Example - Example 12.15, pages 449-450			
1	ABC Analysis Example - Example 12.15, pages 449-450							
2								
3					Annual	Annual		
4	Item	Annual	Unit	Annual	Usage ($)	Usage ($)		
5	Number	Demand	Price ($)	Usage ($)	Percentage	Cumulative %	Category	
6	106	220	$75.00	$16,500.00	34.42%			
7	110	500	$25.00	$12,500.00	26.08%			
8	115	300	$15.00	$4,500.00	9.39%			
9	105	80	$40.00	$3,200.00	6.68%			
10	111	450	$5.00	$2,250.00	4.69%			
11	104	40	$50.00	$2,000.00	4.17%			
12	114	1200	$1.00	$1,200.00	2.50%			
13	107	250	$4.00	$1,000.00	2.09%			
14	101	80	$12.00	$960.00	2.00%			
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17	108	400	$1.50	$600.00	1.25%			
18	112	80	$7.50	$600.00	1.25%			
19	102	10	$50.00	$500.00	1.04%			
20	109	250	$2.00	$500.00	1.04%			
21		Total annual usage ($)		$47,935.00				
22								

Sorting Data in Office 2003

(a) We want to sort cells A5-E19. Highlight those cells, as shown on the next page.

	A	B	C	D	E	F	G
1	ABC Analysis Example - Example 12.15, pages 449-450						
2					Annual	Annual	
3	Item	Annual	Unit	Annual	Usage ($)	Usage ($)	
4	Number	Demand	Price ($)	Usage ($)	Percentage	Cumulative %	Category
5	101	80	$12.00	$960.00	2.00%		
6	102	10	$50.00	$500.00	1.04%		
7	103	50	$15.00	$750.00	1.56%		
8	104	40	$50.00	$2,000.00	4.17%		
9	105	80	$40.00	$3,200.00	6.68%		
10	106	220	$75.00	$16,500.00	34.42%		
11	107	250	$4.00	$1,000.00	2.09%		
12	108	400	$1.50	$600.00	1.25%		
13	109	250	$2.00	$500.00	1.04%		
14	110	500	$25.00	$12,500.00	26.08%		
15	111	450	$5.00	$2,250.00	4.69%		
16	112	80	$7.50	$600.00	1.25%		
17	113	250	$3.50	$875.00	1.83%		
18	114	1200	$1.00	$1,200.00	2.50%		
19	115	300	$15.00	$4,500.00	9.39%		
20		Total annual usage ($)		$47,935.00			
21							

(b) On the Menu bar, click Data and then Sort.
(c) The Sort dialog box will appear.
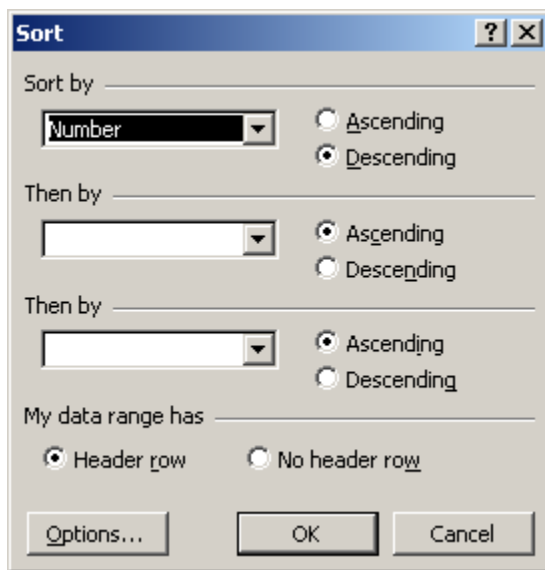
By default, Sort assumes that we want to sort on the first column in our data. We need to sort on the percentage of Annual Usage. Click the "Sort by" dropdown menu, and highlight percentage.
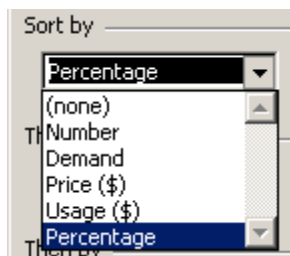
We want to sort in descending order (largest to smallest). Descending order is the Sort default. We do not need to change it.

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(d) Click OK to sort your data. The sorted data for this problem is shown below:

	A	B	C	D	E	F	G
1	ABC Analysis Example - Example 12.15, pages 449-450						
2					Annual	Annual	
3	Item	Annual	Unit	Annual	Usage ($)	Usage ($)	
4	Number	Demand	Price ($)	Usage ($)	Percentage	Cumulative %	Category
5	106	220	$75.00	$16,500.00	34.42%		
6	110	500	$25.00	$12,500.00	26.08%		
7	115	300	$15.00	$4,500.00	9.39%		
8	105	80	$40.00	$3,200.00	6.68%		
9	111	450	$5.00	$2,250.00	4.69%		
10	104	40	$50.00	$2,000.00	4.17%		
11	114	1200	$1.00	$1,200.00	2.50%		
12	107	250	$4.00	$1,000.00	2.09%		
13	101	80	$12.00	$960.00	2.00%		
14	113	250	$3.50	$875.00	1.83%		
15	103	50	$15.00	$750.00	1.56%		
16	108	400	$1.50	$600.00	1.25%		
17	112	80	$7.50	$600.00	1.25%		
18	102	10	$50.00	$500.00	1.04%		
19	109	250	$2.00	$500.00	1.04%		
20		Total annual usage ($)		$47,935.00			
21							

8. Check to see that all your data has been sorted by annual usage percentage, in descending order. Also, check at least one item to be sure that columns A-E match. If the Sort is not correctly, click the Undo icon to restore your data to its original order. Then sort again

9. For the item with the largest percentage of annual usage, the cumulative percentage is the same as the percentage. The formula for cell F5 is =E5.

10. For all other items in the list,
cumulative % = (% for the current item) + (cumulative % for the previous item).
The formula for cell F6 is =E6+F5 . This formula can be copied to cells F7-F19.

	A	B	C	D	E	F	G	H
1	ABC Analysis Example - Example 12.15, pages 449-450							
2					Annual	Annual		
3	Item	Annual	Unit	Annual	Usage ($)	Usage ($)		
4	Number	Demand	Price ($)	Usage ($)	Percentage	Cumulative %	Category	
5	106	220	$75.00	$16,500.00	34.42%	34.42%	A	
6	110	500	$25.00	$12,500.00	26.08%	60.50%	A	
7	115	300	$15.00	$4,500.00	9.39%	69.89%	B	
8	105	80	$40.00	$3,200.00	6.68%	76.56%	B	
9	111	450	$5.00	$2,250.00	4.69%	81.26%	B	
10	104	40	$50.00	$2,000.00	4.17%	85.43%	B	
11	114	1200	$1.00	$1,200.00	2.50%	87.93%	C	
12	107	250	$4.00	$1,000.00	2.09%	90.02%	C	
13	101	80	$12.00	$960.00	2.00%	92.02%	C	
14	113	250	$3.50	$875.00	1.83%	93.85%	C	
15	103	50	$15.00	$750.00	1.56%	95.41%	C	
16	108	400	$1.50	$600.00	1.25%	96.66%	C	
17	112	80	$7.50	$600.00	1.25%	97.91%	C	
18	102	10	$50.00	$500.00	1.04%	98.96%	C	
19	109	250	$2.00	$500.00	1.04%	100.00%	C	
20		Total annual usage ($)		$47,935.00				

11. Classify the items as A, B, or C items.
(a) The first two items account for 60% of annual usage and should be classified as A items.
(b) The next four items account for about 25% of annual usage and should be B items.
(c) The remaining items should be classified as C items.