



*Calc Guide*

# *Chapter 8*

## *Using the DataPilot*

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# Introduction

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Many requests for software support are caused by complicated formulas and solutions to simple day to day procedures. For more efficient and effective solutions use the DataPilot, a tool for combining, comparing, and analyzing large amounts of data easily. By using the DataPilot, you can view different summaries of the source data, display the details of areas of interest, and create reports, whether you are a beginner or an intermediate or advanced user.

This chapter is divided into two sections:

- “Examples with step by step instructions” uses three typical cases to demonstrate the advantages and applications of the DataPilot. Follow the examples to learn how easy it is to use the DataPilot.
- “DataPilot functions in detail” starting on page 27 describes the DataPilot in detail. You can use this part for looking up how a function is used.

## Examples with step by step instructions

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This section demonstrates some of the possibilities of the DataPilot in typical use cases. By following the step by step instructions, you can recreate the examples and learn about the power of the DataPilot.

### Example 1: Sales volume overview

A typical introductory example in courses and books for beginners with spreadsheets is a simple sales volume overview.

	A	B	C	D	E	F	G
1							
2				Experience-Travel			
3							
4			Jan	Feb	Mar	Apr	Total
5		Golf	1000	1100	1200	1300	4600
6		Tennis	2000	2200	2400	2600	9200
7		Sailing	3000	3300	3600	3900	13800
8		Total	=SUM(C5:C7)		7200	7800	27600
9							

Figure 1: Typical example for beginners

This example demonstrates the user interface and how to insert text and numbers into cells. Useful aids like *AutoFill* and *drag and drop* have been demonstrated in other chapters. The most important part is

the connection between cells through formulas, for example addition with the plus operator or the *SUM* function.

This small exercise might be useful for a first contact with the program, but it shows only a very small fraction of the tasks in an office. To create such a sales overview, you also need the original data. That is, before you can use a spreadsheet for creating the sales overview, you need to add many single purchases from different lists and then enter the sums into the relevant cells **C5** to **F7**.

### **Practical problems and questions**

- For displaying additional values for May, June, July, and so on, you need to add extra columns. This means that you have to change the structure of the calculation sheet. This is not only somewhat inefficient from a workflow point of view, it also adds some practical questions: How do references react, if you add more columns or rows to the sum formulas?
- The layout, where the timeline is displayed horizontally, might be less convenient if you add more months. A vertical layout might be a more efficient use of space. How can the table then be transposed? Do you have to enter everything again?
- What if the management asks unexpected questions or adds an additional subdivision for the different sales regions or a constraint of the sales for a given employee. In these cases you again have to manually add all the sums and create different tables in many variations.
- Is it really acceptable and realistic to create such an overview by adding the different values manually? This is really a lot of work and extremely error-prone!

### **Solution**

The most important part of your task in the example is the addition of the Total sales per month cells. This had to be done manually. To do this automatically with the program, just get the data into Calc. You can enter the single numbers by hand or you can import a file from your bookkeeping software. In any case we assume a continuous table that keeps track of all sales in a somewhat primitive form.

	A	B	C	D	E
1	date	sales	category	region	employee
2	4/13/08	\$498.00	sailing	north	Kurt
3	2/7/08	\$1,383.00	sailing	south	Kurt
4	5/28/08	\$4,655.00	tennis	east	Hans
5	4/20/08	\$3,993.00	sailing	east	Fritz
6	2/28/08	\$3,377.00	golfing	south	Ute
7	1/27/08	\$2,095.00	sailing	north	Brigitte
8	2/16/08	\$4,731.00	sailing	east	Ute
9	4/15/08	\$4,330.00	tennis	south	Kurt
10	4/20/08	\$3,664.00	golfing	south	Kurt
11	6/7/08	\$769.00	tennis	west	Brigitte
12	2/29/08	\$293.00	sailing	east	Kurt
13	4/6/08	\$3,705.00	tennis	north	Kurt
14	6/19/08	\$1,747.00	golfing	west	Hans
15	5/14/08	\$449.00	tennis	west	Ute
16	5/30/08	\$1,795.00	golfing	south	Kurt
17	2/28/08	\$610.00	sailing	west	Ute
18	6/8/08	\$1,625.00	tennis	east	Fritz
19	5/12/08	\$3,887.00	sailing	south	Brigitte
20	1/30/08	\$2,458.00	tennis	west	Hans
21	5/9/08	\$4,369.00	golfing	south	Ute
22	3/15/08	\$1,785.00	golfing	east	Hans
23	3/27/08	\$669.00	sailing	south	Hans
24	1/28/08	\$155.00	sailing	west	Brigitte
25	2/5/08	\$2,657.00	golfing	south	Hans
26	2/28/08	\$3,145.00	tennis	west	Brigitte
27	2/4/08	\$2,433.00	tennis	south	Kurt
28	2/2/08	\$1,218.00	tennis	west	Brigitte
29	1/2/08	\$410.00	tennis	north	Kurt
30	2/6/08	\$3,443.00	golfing	north	Fritz
31	1/6/08	\$3,821.00	tennis	south	Fritz

Figure 2: Basic data in Calc

You can create the sales volume overview by following these instructions:

- 1) Select the cell **A1** (or any other single cell within the list).
- 2) Select **Data > DataPilot > Start**. On the Select Source dialog, select **Current selection** and click **OK**.
- 3) The DataPilot dialog (Figure 3) has four white layout areas and several fields that look like buttons. These small fields are the titles of the different columns of your list.
  - Move the **date** field into the *Column Fields* area.
  - Move the **sales** field into the *Data Fields* area.
  - Move the **category** field into the *Row Fields* area.
- 4) Click **More**, to see more options in the lower part of the dialog.
- 5) In the *Results to field*, select - **new sheet** - from the drop-down list.

6) Click **OK**.

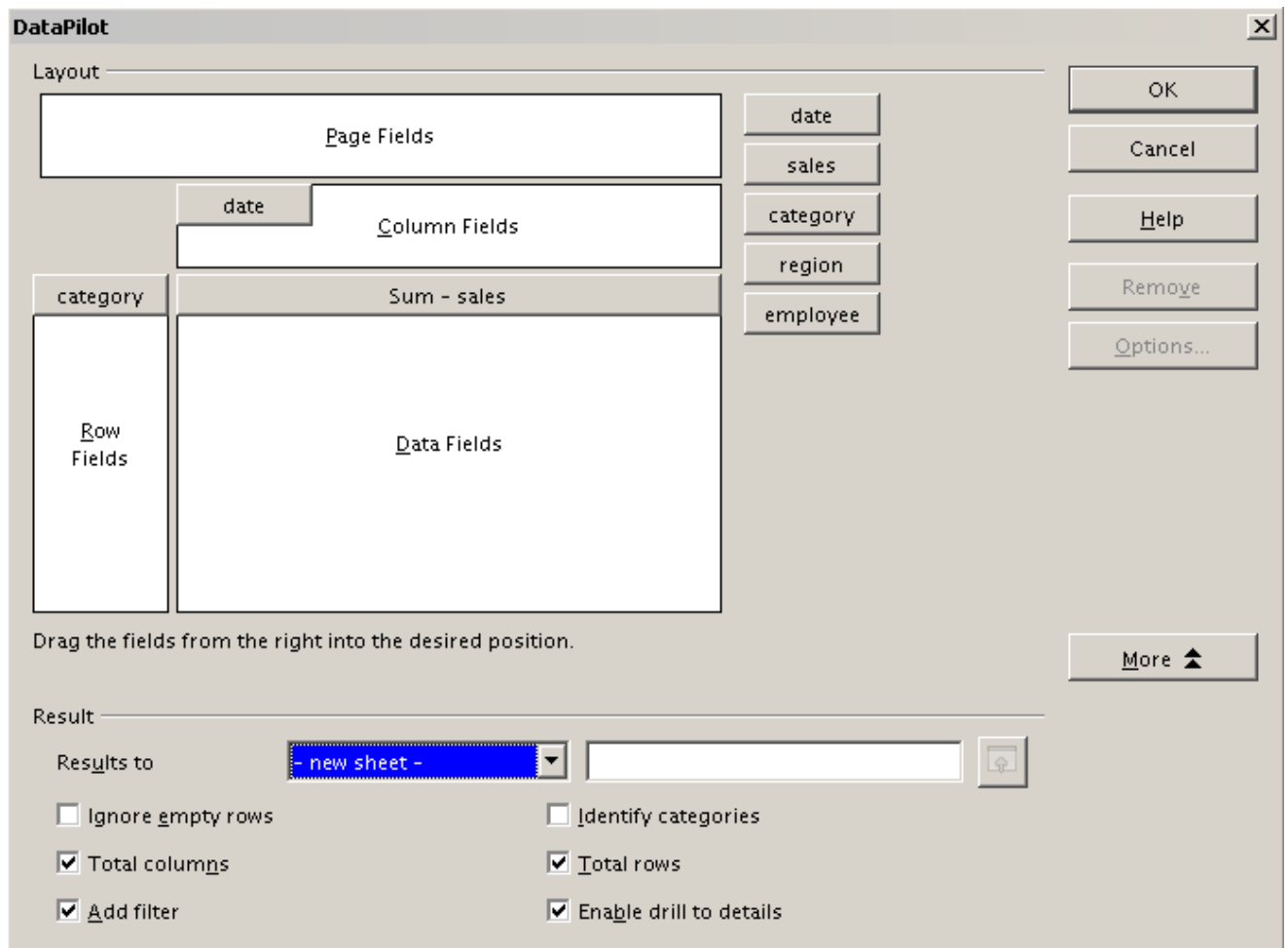


Figure 3: DataPilot dialog

7) The result appears on a new sheet. It has the desired structure, but the columns are not yet grouped into months.

	A	B	C	D	E	F	G	H
1	Filter							
2								
3	Sum - sales	date						
4	category	01/02/08	01/03/08	01/06/08	01/07/08	01/08/08	01/10/08	01/14/08
5	golfing	\$1,508.00			\$3,739.00	\$4,195.00	\$2,023.00	
6	sailing	\$2,340.00						
7	tennis	\$410.00	\$4,872.00	\$6,444.00				\$2,804.00
8	<b>Total Result</b>	<b>\$4,258.00</b>	<b>\$4,872.00</b>	<b>\$6,444.00</b>	<b>\$3,739.00</b>	<b>\$4,195.00</b>	<b>\$2,023.00</b>	<b>\$2,804.00</b>
9								

Figure 4: DataPilot result without grouping

8) To group the columns, select cell **B4** or any other cell that contains a date. Then select **Data > Group and Outline > Group**. On the Grouping dialog (Figure 5), make sure *Intervals* and *Months* are selected in the *Group by* section, and click **OK**. The result is now grouped for months (Figure 6).



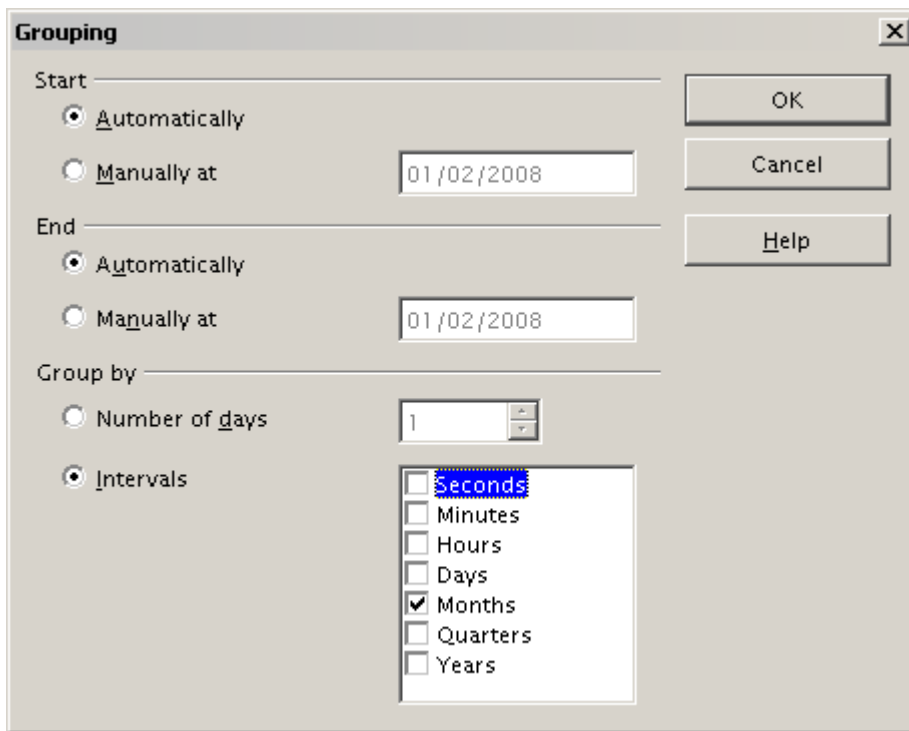


Figure 5: Grouping on months

	A	B	C	D	E	F	G	H
1	Filter							
2								
3	Sum - sales	date						
4	category	Jan	Feb	Mar	Apr	May	Jun	Total Result
5	golfing	\$26,180.00	\$30,444.00	\$31,714.00	\$24,747.00	\$24,686.00	\$18,443.00	\$156,214.00
6	sailing	\$13,979.00	\$15,625.00	\$17,409.00	\$19,769.00	\$21,799.00	\$21,271.00	\$109,852.00
7	tennis	\$39,206.00	\$23,710.00	\$12,097.00	\$31,918.00	\$11,439.00	\$24,329.00	\$142,699.00
8	Total Result	\$79,365.00	\$69,779.00	\$61,220.00	\$76,434.00	\$57,924.00	\$64,043.00	\$408,765.00
9								

Figure 6: DataPilot result grouped for months

In this result you will recognize the beginners' example. It is very easy to produce, without any further knowledge about the spreadsheet. You do not have to enter any formulas.

## Advantages

- 1) No manual entering or adding of any values is necessary. There is less work and fewer errors.
- 2) The layout is very flexible: months are listed horizontally and fields vertically or vice versa, in two mouse clicks.
- 3) Additional differentiating factors are immediately available.
- 4) Many types of evaluation are possible; for example, number or average instead of sum, accumulated values, comparisons, and so on.

We will now demonstrate some of these advantages.

Starting with the result of Figure 6, drag the **Date** field under the **Category** field, as shown in Figure 7.

	A	B	C	D
1	Filter			
2				
3	Sum - sales	date		
4	category	Jan	Feb	Mar
5	golfing	\$26,180.00	\$30,444.00	\$31,714.00
6	sailing	\$13,979.00	\$15,625.00	\$17,409.00
7	tennis	\$39,206.00	\$23,710.00	\$12,097.00
8	<b>Total Result</b>	<b>\$79,365.00</b>	<b>\$69,779.00</b>	<b>\$61,220.00</b>
9				

Figure 7: Drag Date field under Category field

Now the summary is as shown in Figure 8.

	A	B	C
1	Filter		
2			
3	category	date	
4	golfing	Jan	\$26,180.00
5		Feb	\$30,444.00
6		Mar	\$31,714.00
7		Apr	\$24,747.00
8		May	\$24,686.00
9		Jun	\$18,443.00
10	sailing	Jan	\$13,979.00
11		Feb	\$15,625.00
12		Mar	\$17,409.00
13		Apr	\$19,769.00
14		May	\$21,799.00
15		Jun	\$21,271.00
16	tennis	Jan	\$39,206.00
17		Feb	\$23,710.00
18		Mar	\$12,097.00
19		Apr	\$31,918.00
20		May	\$11,439.00
21		Jun	\$24,329.00
22	<b>Total Result</b>		<b>\$408,765.00</b>
23			

Figure 8: Changed layout

To transpose the table completely, just drag the **Category** field above the area of the displayed values, to cell **C3** (see Figure 9). The result of this action is shown in Figure 10.

	A	B	C
1	Filter		
2			
3	category	date	
4	golfing	Jan	\$26,180.00
5		Feb	\$30,444.00
6		Mar	\$31,714.00
7		Apr	\$24,747.00

Figure 9: Drag Category field to right of Data field

	A	B	C	D	E
1	Filter				
2					
3	Sum - sales	category			
4	date	golfing	sailing	tennis	<b>Total Result</b>
5	Jan	\$26,180.00	\$13,979.00	\$39,206.00	<b>\$79,365.00</b>
6	Feb	\$30,444.00	\$15,625.00	\$23,710.00	<b>\$69,779.00</b>
7	Mar	\$31,714.00	\$17,409.00	\$12,097.00	<b>\$61,220.00</b>
8	Apr	\$24,747.00	\$19,769.00	\$31,918.00	<b>\$76,434.00</b>
9	May	\$24,686.00	\$21,799.00	\$11,439.00	<b>\$57,924.00</b>
10	Jun	\$18,443.00	\$21,271.00	\$24,329.00	<b>\$64,043.00</b>
11	<b>Total Result</b>	<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>
12					

Figure 10: Transposed layout of Figure 8

In contrast to the beginners' example in Figure 1, it is now very simple to view or add different aspects of the underlying data. For example, to see the values for different regions, do the following:

- 1) Select the cell **A3** (or any other single cell that is part of the DataPilot result).
- 2) Select **Data > DataPilot > Start** to start the DataPilot again.  
 Drag the **Region** field into the *Row Fields* area. Depending on the order you choose for the row fields, the result is either regions with date subdivisions or vice versa.
- 3) Click **OK**. The result is shown in Figure 11.

	A	B	C	D	E	F
1	Filter					
2						
3	Sum - sales		category			
4	date	region	golfing	sailing	tennis	Total Result
5	Jan	east	\$3,531.00	\$1,956.00	\$18,566.00	\$24,053.00
6		north	\$4,842.00	\$2,095.00	\$7,791.00	\$14,728.00
7		south	\$11,580.00	\$2,340.00	\$3,821.00	\$17,741.00
8		west	\$6,227.00	\$7,588.00	\$9,028.00	\$22,843.00
9	Feb	east	\$5,392.00	\$6,124.00		\$11,516.00
10		north	\$3,443.00		\$938.00	\$4,381.00
11		south	\$15,990.00	\$4,458.00	\$12,490.00	\$32,938.00
12		west	\$5,619.00	\$5,043.00	\$10,282.00	\$20,944.00
13	Mar	east	\$11,962.00	\$5,275.00	\$2,219.00	\$19,456.00
14		north	\$5,193.00		\$4,903.00	\$10,096.00
15		south	\$4,881.00	\$5,546.00		\$10,427.00
16		west	\$9,678.00	\$6,588.00	\$4,975.00	\$21,241.00
17	Apr	east	\$5,343.00	\$4,902.00	\$2,417.00	\$12,662.00
18		north		\$10,551.00	\$12,658.00	\$23,209.00
19		south	\$7,750.00	\$4,316.00	\$9,203.00	\$21,269.00
20		west	\$11,654.00		\$7,640.00	\$19,294.00
21	May	east	\$10,557.00	\$2,092.00	\$7,137.00	\$19,786.00
22		north	\$2,214.00	\$520.00		\$2,734.00
23		south	\$11,228.00	\$18,307.00	\$675.00	\$30,210.00
24		west	\$687.00	\$880.00	\$3,627.00	\$5,194.00
25	Jun	east	\$5,186.00	\$2,135.00	\$5,627.00	\$12,948.00
26		north	\$3,049.00	\$9,302.00	\$8,243.00	\$20,594.00
27		south	\$4,828.00	\$9,834.00	\$8,069.00	\$22,731.00
28		west	\$5,380.00		\$2,390.00	\$7,770.00
29	Total Result		\$156,214.00	\$109,852.00	\$142,699.00	\$408,765.00
30						

Figure 11: Additional subdivision into regions, added later

In another variation you may want to add the employees.

- 1) Select the cell **A3** (or any other single cell that is part of the DataPilot result).
- 2) Select **Data > DataPilot > Start**, to start the DataPilot again.
  - You do not need the **Region** field in this case. Drag it out of the layout area.
  - Drag the **Employee** field into the *Page Fields* area.
- 3) Click **OK**. The result is shown in Figure 12.

Fields that you use as page fields are placed in the result above the summary with the name *Filter*. You then have a drop-down list that you can use to show only the sums of a given employee.

Up to now we have not seen the most powerful features of the DataPilot. The following examples will show you more.

	A	B	C	D	E
1	Filter				
2	employee	- all -			
3		- all -			
4	Sum - sales	Brigitte			
5	date	Fritz	sailing	tennis	<b>Total Result</b>
6	Jan	Hans	\$13,979.00	\$39,206.00	<b>\$79,365.00</b>
7	Feb	Kurt	\$15,625.00	\$23,710.00	<b>\$69,779.00</b>
8	Mar	Ute	\$17,409.00	\$12,097.00	<b>\$61,220.00</b>
9	Apr		\$19,769.00	\$31,918.00	<b>\$76,434.00</b>
10	May		\$21,799.00	\$11,439.00	<b>\$57,924.00</b>
11	Jun		\$21,271.00	\$24,329.00	<b>\$64,043.00</b>
12	<b>Total Result</b>		<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>
13					
14					

Figure 12: Selection of subtotals for several employees.

## Example 2: Timekeeping

This example is often used by consultants and in several variations in user support. The task is to provide a means for one or more users to keep track of working hours.

A typical way of doing this is to create a spreadsheet per month and a sum sheet with all the results of one year. For each employee, there is one file (see Figures 13 and 14 for examples of two pages from the file for one employee).

### Practical problems and questions

- It is very difficult and time-consuming to create the timekeeping table: 12 sheets that have to be copied from a raw template and adjusted for each month, and a sheet with all the yearly sums with references to all the other sheets. Users often search for a macro to make the creation easier.
- The file shown contains only the data of one employee. How can you get all the data for all the employees, so that you can have a summary of all the work hours from all employees of a department or the whole company?
- How can you compare employees and/or departments?
- The shown file contains data for one year. How can you compare it with the data of the previous years?

	A	B	C	D	E	F
1			<b>Time sheet for Erika Mustermann</b>			
2			<b>January 2008</b>			
3						
4		<b>date</b>	<b>arrives</b>	<b>leaves</b>	<b>break</b>	<b>hours</b>
5		01/01/08	08:00	17:30	00:30	9.00
6		01/02/08	07:45	14:45	00:30	6.50
7		01/03/08	09:00	18:00	00:30	8.50
8		01/04/08	07:15	17:45	01:00	9.50
9		01/05/08				
10		01/06/08				
11		01/07/08	08:15	19:30	01:00	10.25
12		01/08/08	08:15	20:00	00:30	11.25
13		01/09/08	07:45	16:45	00:30	8.50
14		01/10/08	08:15	13:45	00:00	5.50
15		01/11/08	08:00	15:15	00:30	6.75
16		01/12/08				
17		01/13/08				
18		01/14/08	08:00	13:45	00:00	5.75
19		01/15/08	07:30	13:00	00:00	5.50
20		01/16/08	08:45	18:45	00:30	9.50
21		01/17/08	08:45	20:30	01:00	10.75
22		01/18/08	07:30	13:45	00:30	5.75
23		01/19/08				
24		01/20/08				
25		01/21/08	08:15	18:45	01:00	9.50
26		01/22/08	08:15	16:45	00:30	8.00
27		01/23/08	08:45	15:00	00:30	5.75
28		01/24/08	08:30	19:30	01:00	10.00

Figure 13: One month of timekeeping for one employee

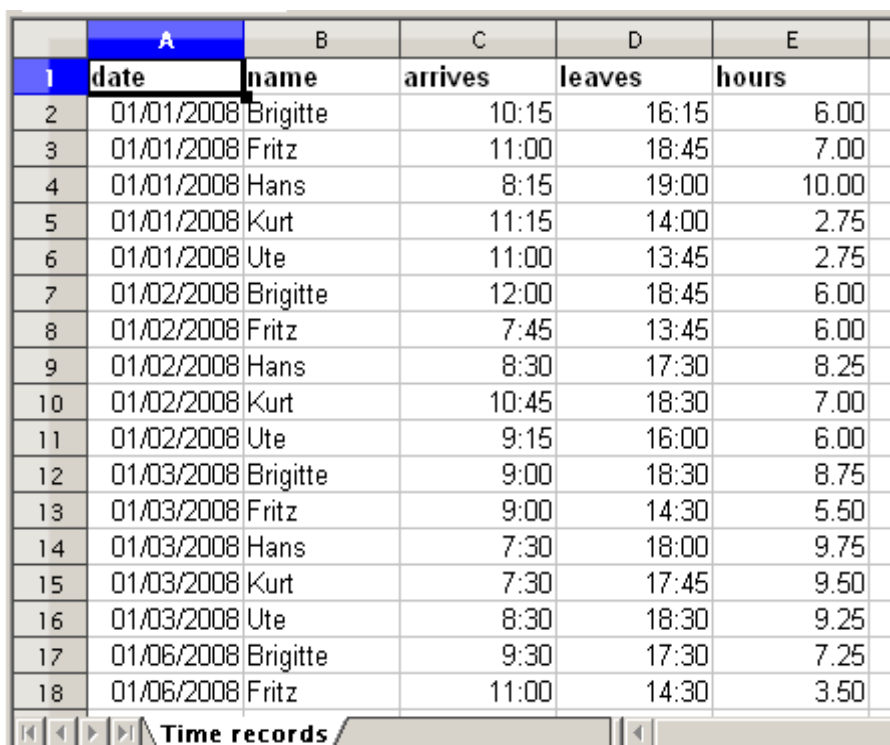
1		
2		<b>Timekeeping for Erika Mustermann</b>
3		
4		<b>2008</b>
5		
6	January	183.25
7	February	165.50
8	March	172.25
9	April	162.00
10	May	168.50
11	June	0.00
12	July	0.00
13	August	
14	September	
15	October	
16	November	
17	December	
18	Total	851.50
19		
20		
21		

Figure 14: Yearly sums for one employee

## Solution

To use the DataPilot for this task, collect all the data into one single table. This can be done either manually or by importing a file from an (electronic) timekeeping machine.

In very simple cases, each employee takes care of their own working hours. If you need calculations that cover several employees, departments, or the whole company, just copy everything into one huge table (Figure 15).



	A	B	C	D	E
1	date	name	arrives	leaves	hours
2	01/01/2008	Brigitte	10:15	16:15	6.00
3	01/01/2008	Fritz	11:00	18:45	7.00
4	01/01/2008	Hans	8:15	19:00	10.00
5	01/01/2008	Kurt	11:15	14:00	2.75
6	01/01/2008	Ute	11:00	13:45	2.75
7	01/02/2008	Brigitte	12:00	18:45	6.00
8	01/02/2008	Fritz	7:45	13:45	6.00
9	01/02/2008	Hans	8:30	17:30	8.25
10	01/02/2008	Kurt	10:45	18:30	7.00
11	01/02/2008	Ute	9:15	16:00	6.00
12	01/03/2008	Brigitte	9:00	18:30	8.75
13	01/03/2008	Fritz	9:00	14:30	5.50
14	01/03/2008	Hans	7:30	18:00	9.75
15	01/03/2008	Kurt	7:30	17:45	9.50
16	01/03/2008	Ute	8:30	18:30	9.25
17	01/06/2008	Brigitte	9:30	17:30	7.25
18	01/06/2008	Fritz	11:00	14:30	3.50

Figure 15: Data basis in Calc

Using the DataPilot requires only 12 mouse clicks and gives you a nice overview within seconds :

- 1) Select the cell **A1** (or any other single cell within the list).
- 2) Choose **Data > DataPilot > Start** and click **OK**.
- 3) On the DataPilot dialog (Figure 16):
  - Drag **date** into the *Row Fields* area.
  - Drag **hours** into the *Data Fields* area. Notice that it becomes **Sum - hours**.
  - Drag **name** into the *Column Fields* area.
- 4) Click **More** to show more options in the lower part of the dialog.
- 5) In the *Results to* field, select - **new sheet** - from the drop-down list.
- 6) Click **OK**.

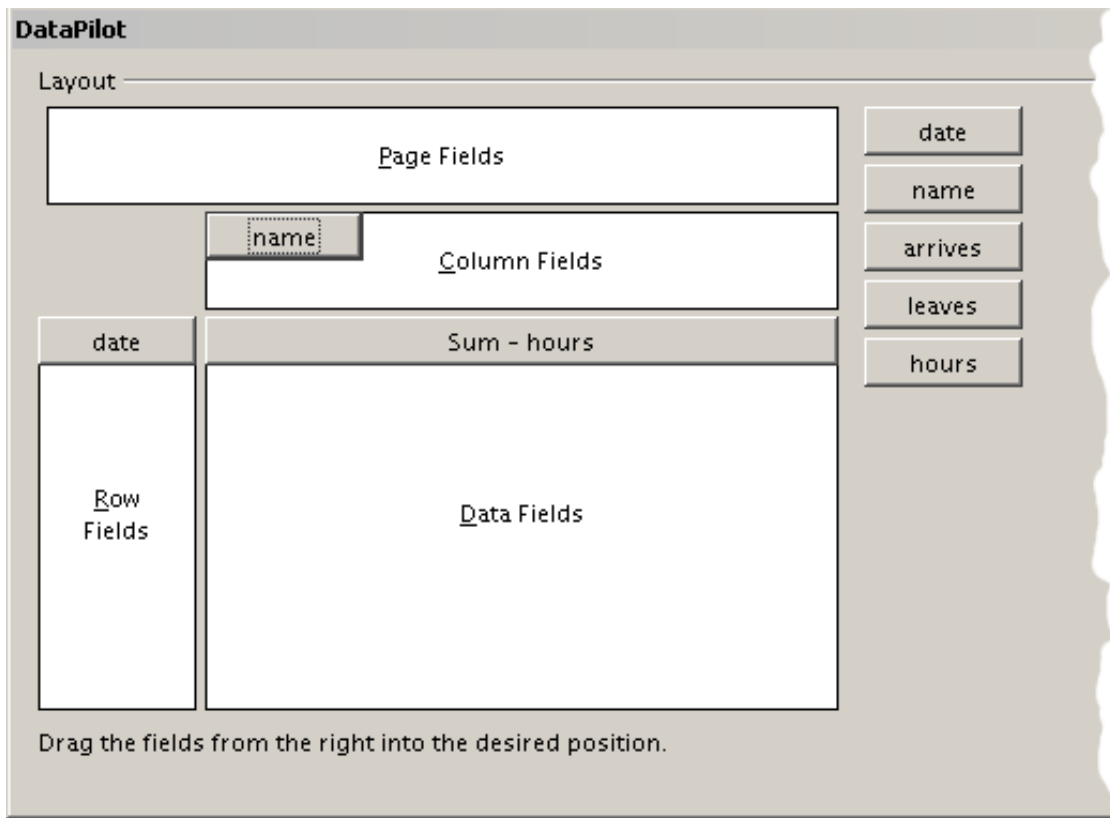


Figure 16: Part of DataPilot dialog

The result appears on a new sheet.

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - hours	name					
4	date	Brigitte	Fritz	Hans	Kurt	Ute	<b>Total Result</b>
5	01/01/08	6.00	7.00	10.00	2.75	2.75	<b>28.50</b>
6	01/02/08	6.00	6.00	8.25	7.00	6.00	<b>33.25</b>
7	01/03/08	8.75	5.50	9.75	9.50	9.25	<b>42.75</b>
8	01/06/08	7.25	3.50	6.00	5.00	4.50	<b>26.25</b>
9	01/07/08	4.75	9.00	6.00	5.75	5.75	<b>31.25</b>
10	01/08/08	7.25	4.75	7.75	4.75	7.25	<b>31.75</b>
11	01/09/08	6.75	2.50	5.50	6.00	5.00	<b>25.75</b>
12	01/10/08	7.00	8.75	3.75	10.50	3.50	<b>33.50</b>
13	01/13/08	6.00	7.00	7.50	2.75	5.50	<b>28.75</b>
14	01/14/08	5.50	6.75	7.25	4.25	8.00	<b>31.75</b>
15	01/15/08	4.75	7.75	4.00	9.25	7.00	<b>32.75</b>
16	01/16/08	10.25	4.50	8.00	5.75	5.50	<b>34.00</b>
17	01/17/08	4.75	7.00	8.75	5.50	6.50	<b>32.50</b>
18	01/20/08	8.75	5.75	10.75	6.25	8.75	<b>40.25</b>
19	01/21/08	10.00	6.00	9.25	6.75	3.25	<b>35.25</b>
20	01/22/08	8.50	8.00	9.75	1.50	7.00	<b>34.75</b>
21	01/23/08	5.50	6.00	5.50	8.25	3.50	<b>28.75</b>
22	01/24/08	7.25	3.00	5.50	7.50	4.00	<b>27.25</b>

Figure 17: The evaluation, done within seconds with DataPilot



The result is much more powerful than is possible with the classic formula-based calculation. For example, you can summarize the daily results to a monthly result very easily:

- 1) To group together the rows, select the cell **A5** (or any other cell that contains a date).
- 2) Choose **Data > Group and Outline > Group** and click **OK**. The result is now grouped into months.

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - hours	name					
4	date	Brigitte	Fritz	Hans	Kurt	Ute	<b>Total Result</b>
5	Jan	150.75	137.00	166.50	141.75	137.00	<b>733.00</b>
6	Feb	131.50	139.25	112.25	119.75	116.75	<b>619.50</b>
7	Mar	140.25	154.50	135.75	134.75	141.00	<b>706.25</b>
8	Apr	140.50	128.50	131.75	131.25	144.00	<b>676.00</b>
9	May	126.00	134.75	116.00	121.25	140.00	<b>638.00</b>
10	Jun	127.75	128.00	118.25	120.25	121.25	<b>615.50</b>
11	<b>Total Result</b>	<b>816.75</b>	<b>822.00</b>	<b>780.50</b>	<b>769.00</b>	<b>800.00</b>	<b>3988.25</b>
12							

*Figure 18: Monthly sums*

If you need a result with a percentage, start the DataPilot from this page.

- 1) Select the cell **A3** (or any other single cell that contains a result of the DataPilot).
- 2) Choose **Data > DataPilot > Start**.
- 3) Double-click on **Sum - hours** to open the Data Field dialog (Figure 19).
- 4) Click on **More**, to see more options.
- 5) Switch **Displayed value > Type** to **% of column**.
- 6) Click **OK** twice.

The result shows percentages as a decimal number. If you prefer to have a percent format, select the cells and click on the % icon in the menu bar.

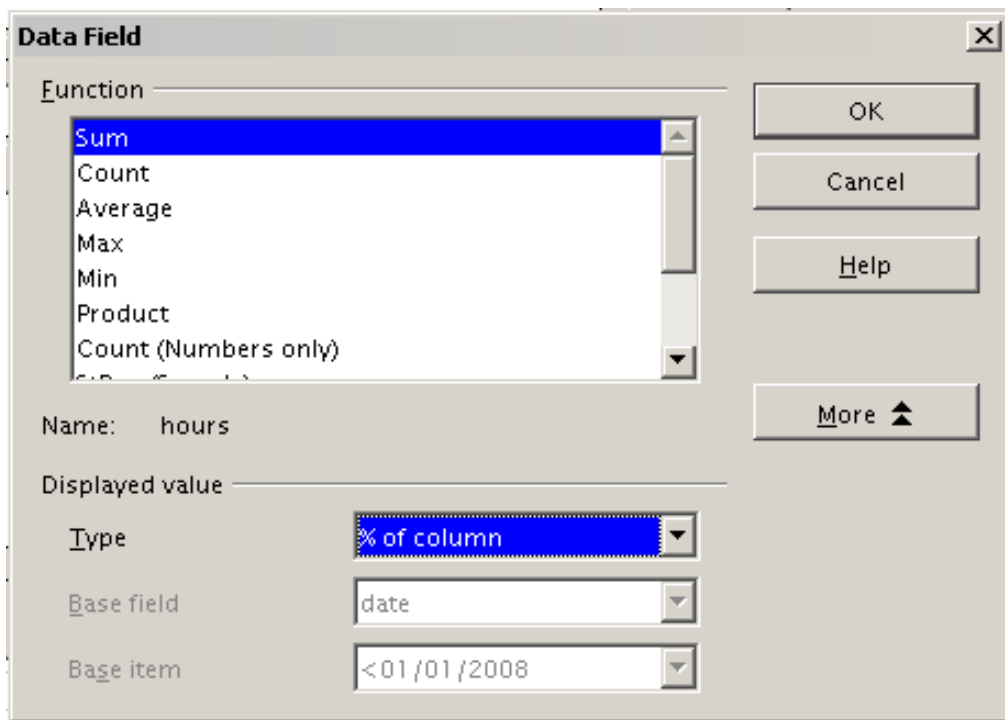


Figure 19: Properties of the data field

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - hours	name					
4	date	Brigitte	Fritz	Hans	Kurt	Ute	<b>Total Result</b>
5	Jan	18.46%	16.67%	21.33%	18.43%	17.13%	<b>18.38%</b>
6	Feb	16.10%	16.94%	14.38%	15.57%	14.59%	<b>15.53%</b>
7	Mar	17.17%	18.80%	17.39%	17.52%	17.63%	<b>17.71%</b>
8	Apr	17.20%	15.63%	16.88%	17.07%	18.00%	<b>16.95%</b>
9	May	15.43%	16.39%	14.86%	15.77%	17.50%	<b>16.00%</b>
10	Jun	15.64%	15.57%	15.15%	15.64%	15.16%	<b>15.43%</b>
11	<b>Total Result</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>
12							

Figure 20: Result with percentages

To get a comparison between employees, start the DataPilot again:

- 1) Select the cell **A3** (or any other cell that contains a result of the DataPilot).
- 2) Choose **Data > DataPilot > Start**.
- 3) Double-click on **Sum - hours** to open the Data Field dialog.
- 4) Click **More**, to see more options.
  - Switch the *Type* of the displayed value to **Difference from**.
  - Switch the *Base Field* to name.
  - Switch the *Base Item* to Brigitte.
- 5) Click **OK** twice.

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - hours	name					
4	date	Brigitte	Fritz	Hans	Kurt	Ute	Total Result
5	Jan		-13.75	15.75	-9.00	-13.75	
6	Feb		7.75	-19.25	-11.75	-14.75	
7	Mar		14.25	-4.50	-5.50	0.75	
8	Apr		-12.00	-8.75	-9.25	3.50	
9	May		8.75	-10.00	-4.75	14.00	
10	Jun		0.25	-9.50	-7.50	-6.50	
11	Total Result		5.25	-36.25	-47.75	-16.75	

Figure 21: Absolute comparison with Brigitte

As a final example we switch to an accumulated view; that is, continuing sums of all values:

- 1) Choose **Data > DataPilot > Start**.
- 2) Double-click on **Sums - hours** to open the Data Field dialog.
- 3) Click **More**, to see more options.
  - Switch the type of the displayed value to **Running total in**.
  - Switch the *Base Field* to **Date**.
- 4) Click **OK** twice.

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - hours	name					
4	date	Brigitte	Fritz	Hans	Kurt	Ute	Total Result
5	Jan	150.75	137.00	166.50	141.75	137.00	733.00
6	Feb	282.25	276.25	278.75	261.50	253.75	1352.50
7	Mar	422.50	430.75	414.50	396.25	394.75	2058.75
8	Apr	563.00	559.25	546.25	527.50	538.75	2734.75
9	May	689.00	694.00	662.25	648.75	678.75	3372.75
10	Jun	816.75	822.00	780.50	769.00	800.00	3988.25
11	Total Result						
12							

Figure 22: The DataPilot now shows accumulated values

## Differences and advantages

These examples show an important aspect of the DataPilot. Normally you have to collect your data according to the way you want the result to be represented. This means you have to use a specific structure and you are stuck with it.

The DataPilot works more like a real database. The source data is collected in a simple spreadsheet that contains all data. Only when you want to look at it do you select which part of the data you want to use.

### Example 3: Frequency distribution

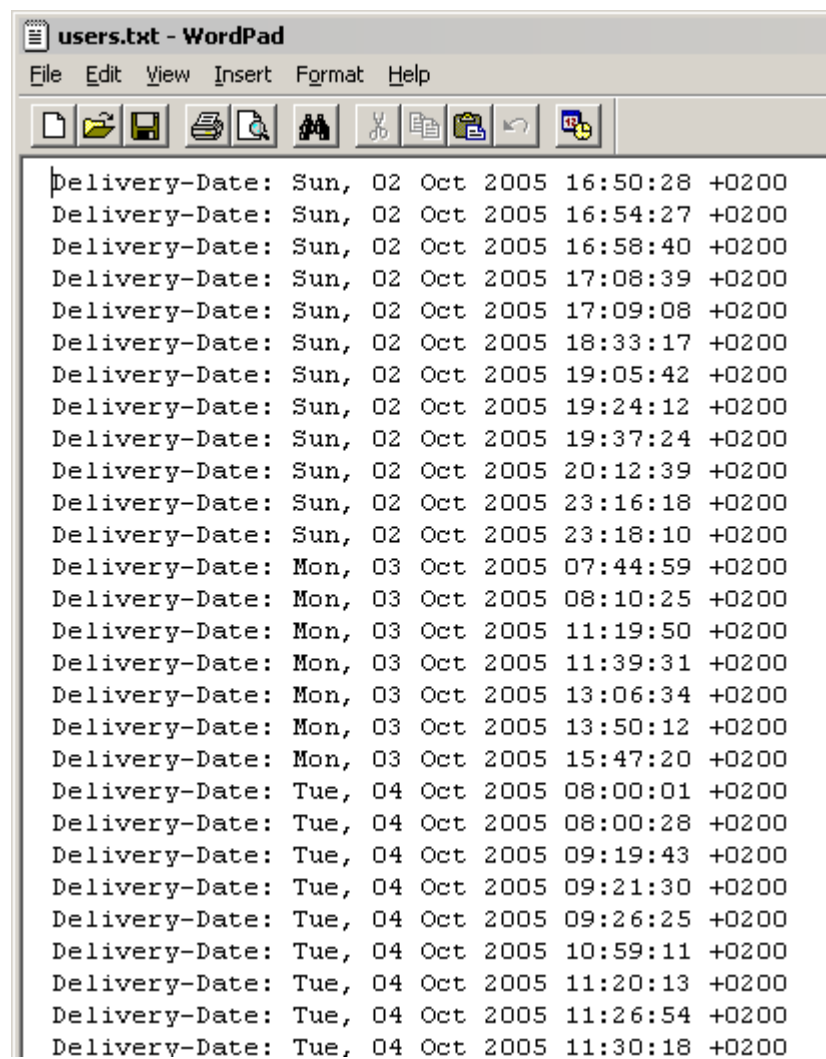
For showing the frequency of incidents, Calc uses the function FREQUENCY. This formula has to be used in a so-called matrix formula. This is an advanced feature. Alternatively you can use the DataPilot, which requires almost no knowledge of spreadsheets.

In our example we want to investigate the number of emails that go to the Germanophone support mailing list ([users@de.openoffice.org](mailto:users@de.openoffice.org)). We want to know how the activity on the list is distributed during the day.

The starting point for this example is the mailbox file of the Thunderbird mail client. The command

```
grep 'Delivery-Date:' Inbox
```

creates a text file that contains for the timespan of more than 2 years one line for each message, with date and time (Figure 23).



*Figure 23: Raw data for the frequency of the messages*

To import the data into a table in Calc, open the text file *users.txt* containing the raw data. The Text Import dialog appears. Here you can choose your import options. Use the following properties:

Separator options: *Fixed width*

Divide into columns at position 20, 31 and 40

Column types:

Column 1: *Hide*

Column 2: *Date (DMY)*

Column 3: *Standard*

Column 4: *Hide*

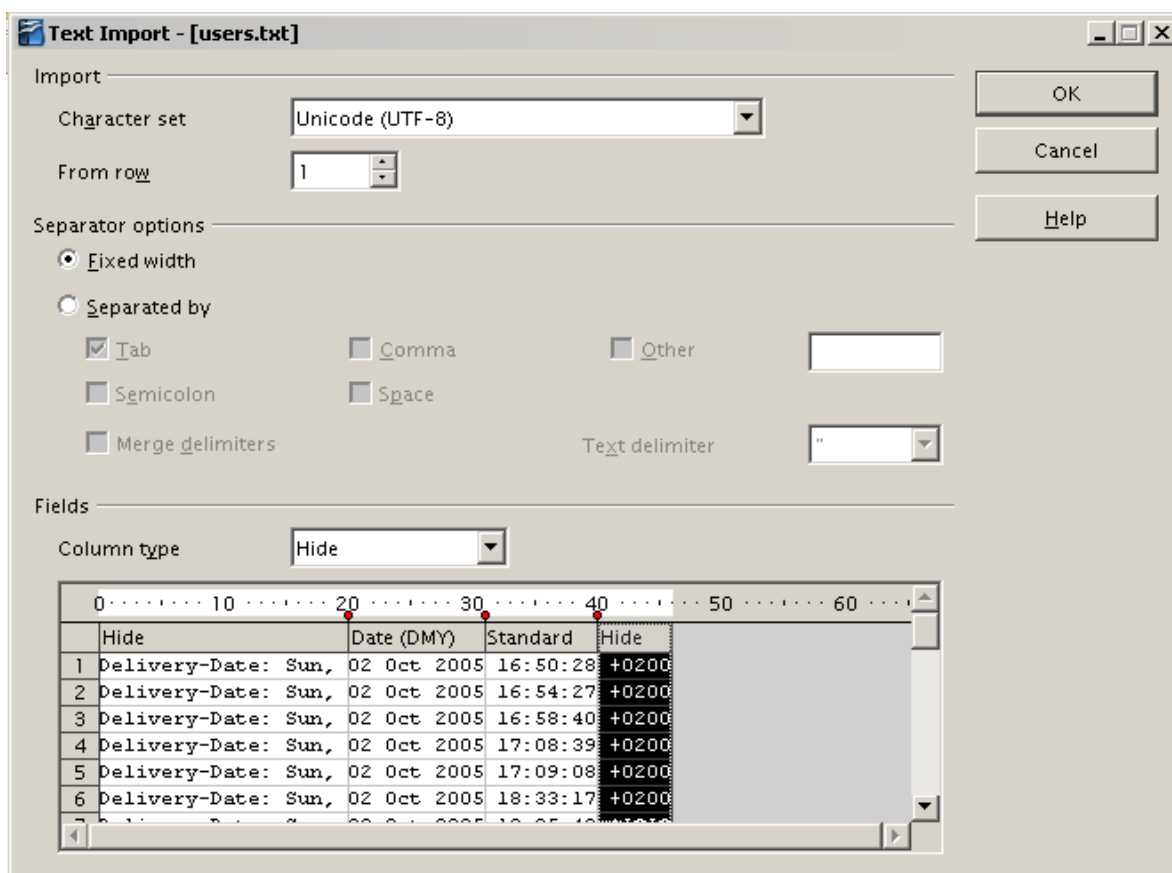


Figure 24: Import settings

Figure 25 shows the imported raw data with a line added at the top containing titles for each column.

	A	B
1	Date	Time
2	10/02/05	16:50:28
3	10/02/05	16:54:27
4	10/02/05	16:58:40
5	10/02/05	17:08:39
6	10/02/05	17:09:08
7	10/02/05	18:33:17
8	10/02/05	19:05:42
9	10/02/05	19:24:12
10	10/02/05	19:37:24
11	10/02/05	20:12:39

Figure 25: Raw data in Calc

### **Solution with a matrix formula**

To calculate the frequency you have to create 24 classes, one for each hour. In the next column you enter the number of emails with the function FREQUENCY.

={FREQUENCY(B2:B38096;E2:E25)}		
D	E	F
	01:00	922
	02:00	466
	03:00	204
	04:00	123
	05:00	97
	06:00	110
	07:00	272
	08:00	772
	09:00	1538
	10:00	1944
	11:00	2214
	12:00	2418
	13:00	2382
	14:00	2327
	15:00	2428
	16:00	2524
	17:00	2398
	18:00	2273
	19:00	2260
	20:00	2368
	21:00	2264
	22:00	2131
	23:00	2089
	00:00	1571

Figure 26: FREQUENCY function in a matrix formula

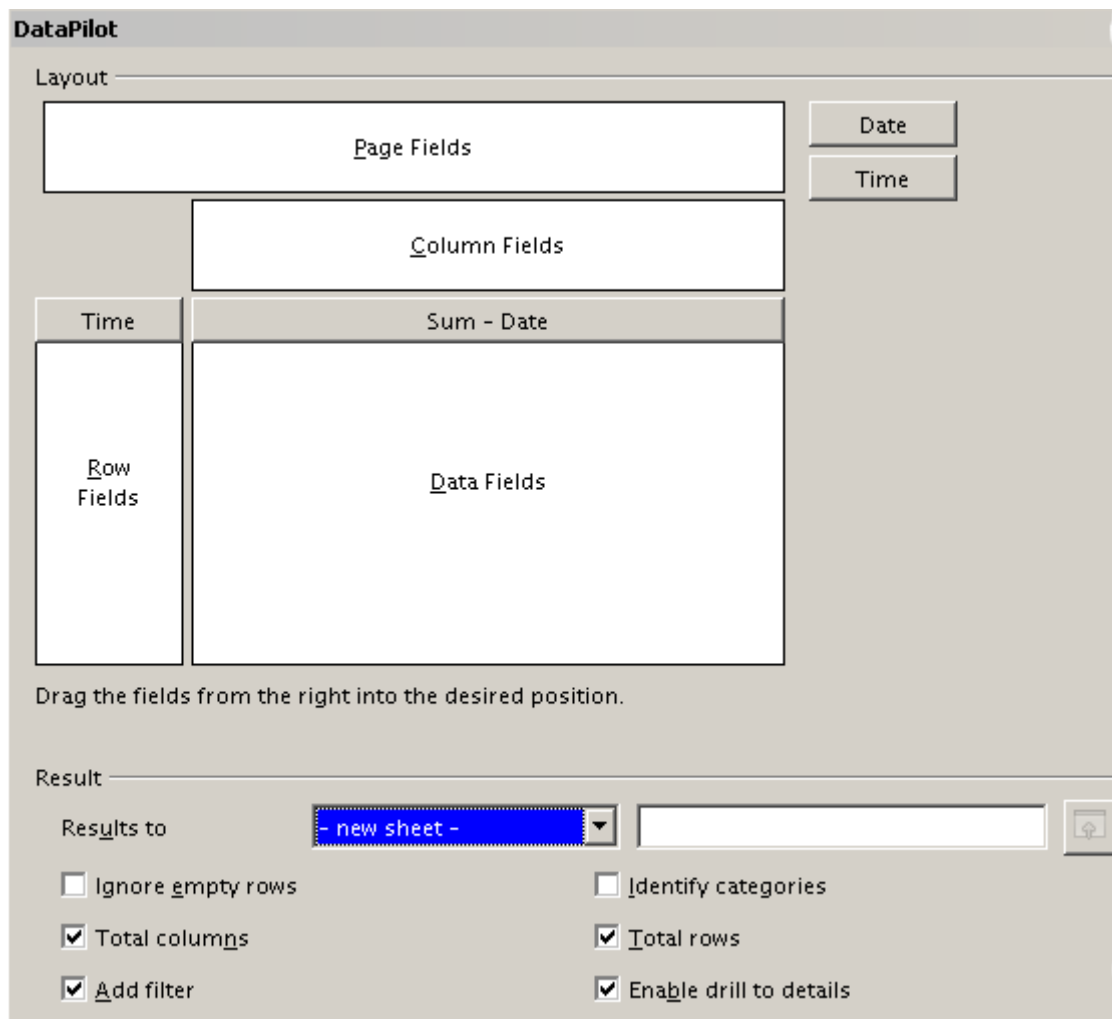
The first argument is the cell area with the times of all approximately 38,000 emails. The second argument is the cell area E2:E25 that describes the frequency classes. To enter the formula, first select the cell area F2:F25, then enter the formula. Then finish the formula by using the key combination *Shift+Ctrl+Enter*. This indicates to the program that you want to use a matrix formula. To indicate the matrix formula, the program uses curly brackets.

This technique is most often known only to advanced users.

### ***Solution with the DataPilot***

With the DataPilot you can achieve the same result much easier and faster. The solution is also possible for less advanced users. Starting with the raw data (Figure 25), you need only a few mouse clicks.

- 1) Select the cell **A1** (or any other cell within the list).
- 2) Choose **Data > DataPilot > Start** and click **OK**.



*Figure 27: Part of DataPilot dialog*

- 3) In the DataPilot:
  - Drag **Time** into the *Row Fields* area.
  - Drag **Date** into the *Data Fields* area.
- 4) Click **More** to show more options in the lower part of the dialog.
- 5) Choose - **new sheet** - for *Results to*.
- 6) In this case we need to count the number of values, not their sum. Double-click on **Sum - Date** to open the Data Field dialog and select the function *Count* (see Figure 28).
- 7) Click **OK**. As an intermediate result, you get a DataPilot table that has for every time within the raw data a separate line.

### Note

This may be a very time-consuming process because of the large number of items. The time does not depend that much on the number of lines but rather on the number of rows needed for the table that contains the results.

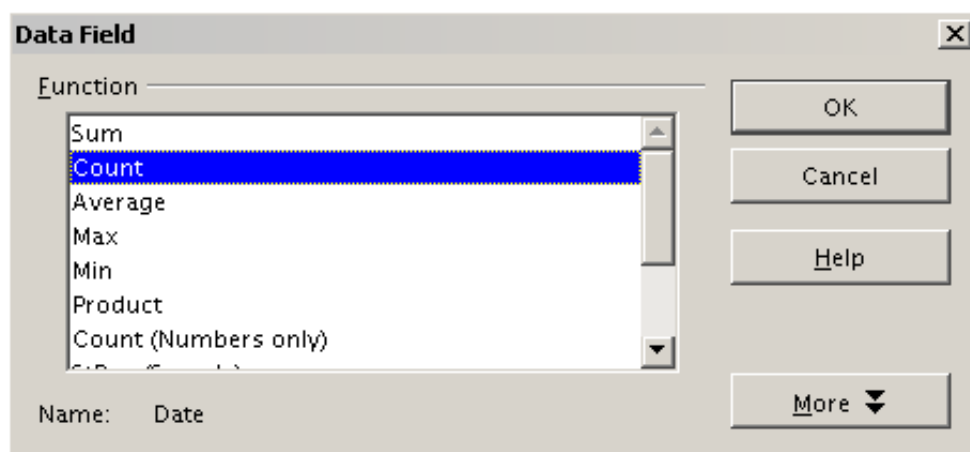


Figure 28: Properties of the data field

- 8) For grouping the rows, select the cell **A4** or any other cell that contains a time.
- 9) Choose **Data > Group and Outline > Group**, select for the interval *Hours* and click **OK**. The result is now grouped according to hours.



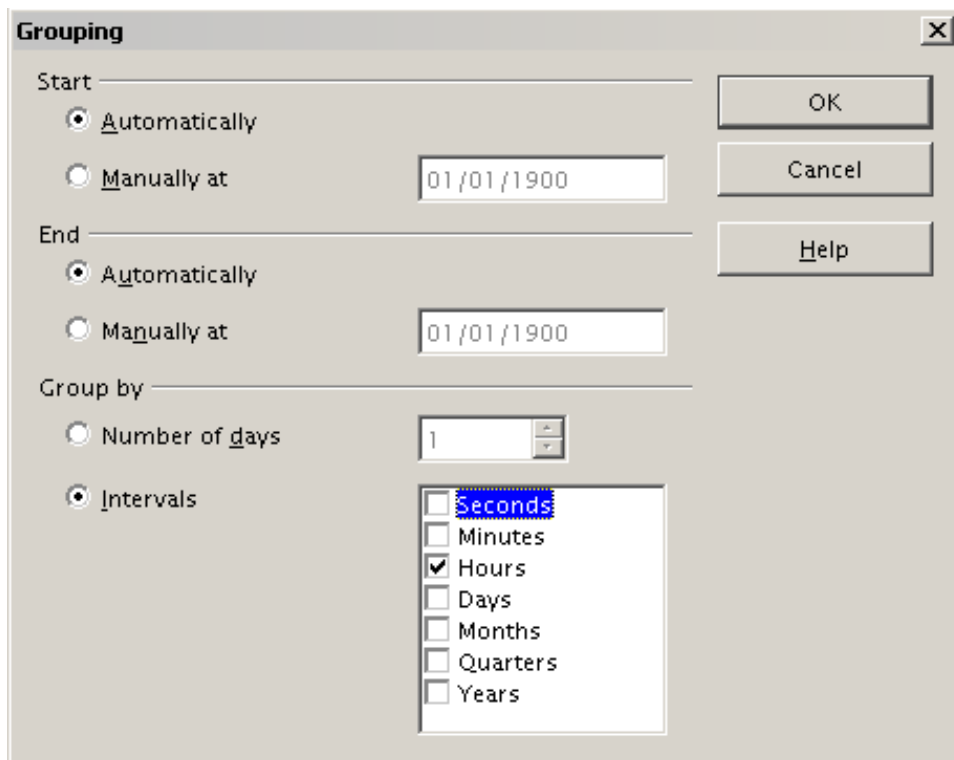


Figure 29: properties for grouping according to hours

- 10) Figure 30 shows the Data Field dialog for the data field **Number - Date**. Click **More** and select as type *% of column*. The result is shown in Figure 32. Figure 31 shows the absolute occurrence. Whether the relative values are shown as a decimal (0.1) or as a percentage (10%) depends only on the cell formatting itself and has nothing to do with the DataPilot.

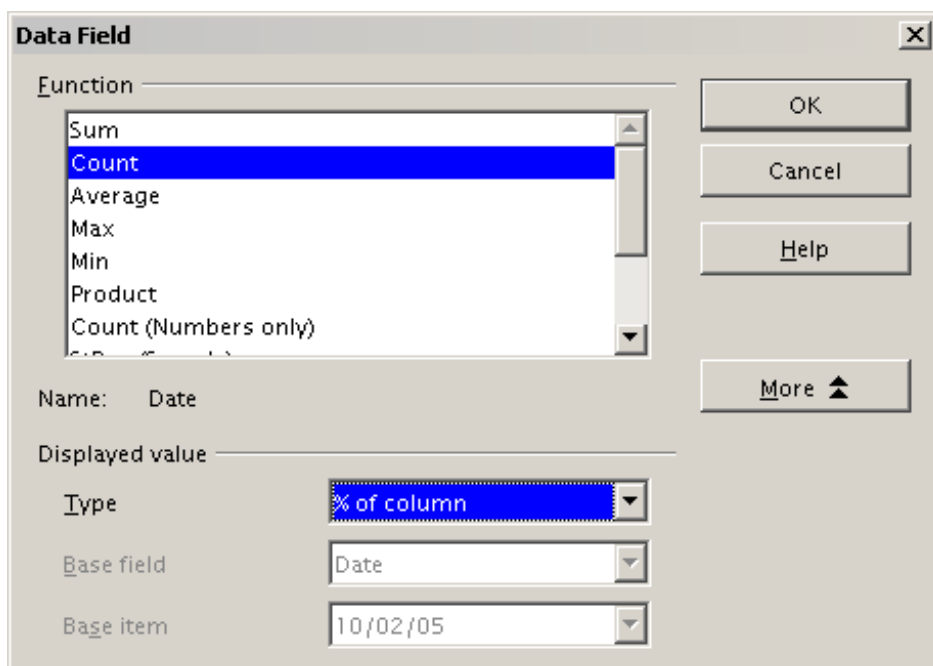


Figure 30: Data Field settings for relative values

	A	B
1	Filter	
2		
3	Time	
4	00	921
5	01	467
6	02	204
7	03	123
8	04	97
9	05	110
10	06	271
11	07	773
12	08	1537
13	09	1945
14	10	2212
15	11	2420
16	12	2382
17	13	2327
18	14	2427
19	15	2525
20	16	2397
21	17	2274
22	18	2259
23	19	2367
24	20	2266
25	21	2130
26	22	2089
27	23	1572
28	<b>Total Result</b>	<b>38095</b>

*Figure 31: Frequency distribution with the DataPilot*

	A	B
1	Filter	
2		
3	Time	
4	00	2.42%
5	01	1.23%
6	02	0.54%
7	03	0.32%
8	04	0.25%
9	05	0.29%
10	06	0.71%
11	07	2.03%
12	08	4.03%
13	09	5.11%
14	10	5.81%
15	11	6.35%
16	12	6.25%
17	13	6.11%
18	14	6.37%
19	15	6.63%
20	16	6.29%
21	17	5.97%
22	18	5.93%
23	19	6.21%
24	20	5.95%
25	21	5.59%
26	22	5.48%
27	23	4.13%
28	<b>Total Result</b>	<b>100.00%</b>

*Figure 32: Relative occurrence*

# DataPilot functions in detail

---

This part describes the use and options of the DataPilot in detail.

## The database (preconditions)

The first thing needed to work with the DataPilot is a list of raw data, similar to a database table, consisting of rows (data sets) and columns (data fields). The field names are in the first row above the list.

The data source could be an external file or database. For the simplest case, where data is contained in a Calc spreadsheet, Calc offers sorting functions that do not require the DataPilot.

For processing data in lists, the program needs to know where in the spreadsheet the table is. The table can be anywhere in the sheet, in any position. A spreadsheet can contain several unrelated tables.

Calc recognizes your lists automatically. It uses the following logic:

Starting from the cell you've selected (which must be within your list), Calc checks the surrounding cells in all 4 directions (left, right, above, below). The border is recognized if the program discovers an empty row or column, or if it hits the left or upper border of the spreadsheet.

This means that the described functions can only work correctly if there are no empty rows or columns in your list. Avoid empty lines (for example for formatting). You can format your list by using cell formats.

---

**Rule** No empty rows or empty columns are allowed within lists.

---

If you select more than one single cell before you start sorting, filtering or calling the DataPilot, then the automatic list recognition is switched off. Calc assumes that the list matches exactly the cells you have selected.

---

**Rule** For sorting, filtering, or using the DataPilot, always select only *one* cell.

---

A relatively big source for errors is that you might declare a list by mistake and you sort your list. If you select multiple cells (for example, a whole column) then the sorting mixes up the data that should be together in one row.

In addition to these formal aspects, the logical structure of your table is very important when using the DataPilot.

---

<b>Rule</b>	Calc lists must have the <i>normal form</i> ; that is, they must have a simple linear structure.
-------------	--

---

When entering the data, do not add outlines, groups, or summaries. This becomes clear when we think about what we could have done wrong in our Sales list example in the section “Examples with step by step instructions” starting at page 5. Here are some mistakes commonly made by inexperienced spreadsheet users:

- 1) You could have made several sheets, for example, a sheet for each group of articles. Analyses are then possible only within each group. Analyses for several groups would be a lot of work.
- 2) In the Sales list, instead of only one column for the amount, you could have made a column for the amounts for each employee. The amounts then had to be entered into the appropriate column. An analysis with the DataPilot would not be possible any more. In contrast, one result of the DataPilot is that you can get results for each employee if you have entered everything in one column.
- 3) You could have entered the amounts in chronological order. At the end of each month you could have made a sum total. In this case, sorting the list for different criteria is not possible because the DataPilot will treat the sum totals the same as any other figure. Getting monthly results is one of the very fast and easy features of the DataPilot.

## Start

Start the DataPilot with **Data > DataPilot > Start**. If the list to be analyzed is in a spreadsheet table, select one cell within this list. Calc recognizes and selects the list automatically for use with the DataPilot.

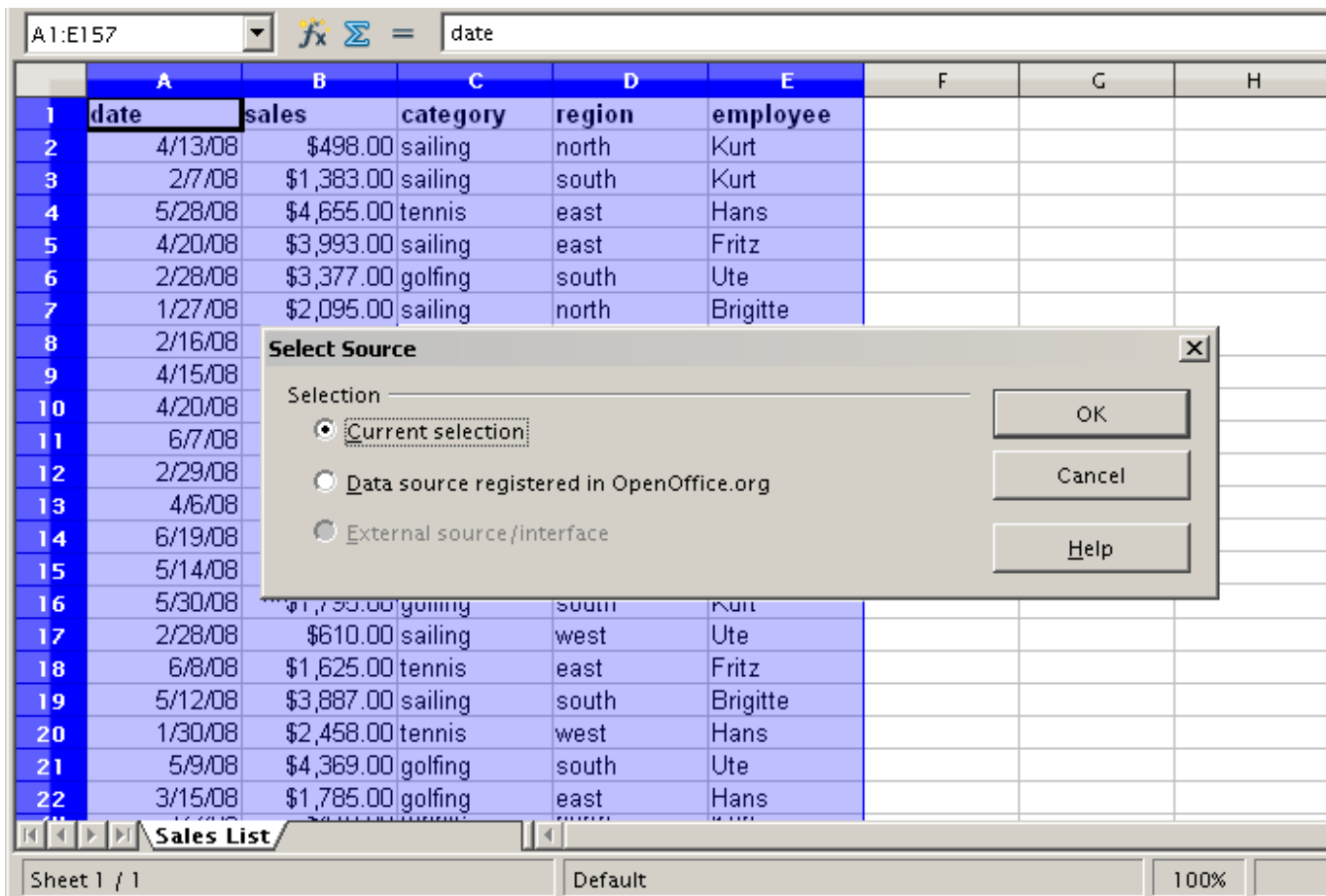


Figure 33: After the start of the DataPilot

## Data source

There are usually three possibilities for the DataPilot to have a data source: a Calc spreadsheet, an external data source that has to be registered in OpenOffice.org, and access to an OLAP system (not available at this time).

### Calc spreadsheet

The simplest and most often used case is analyzing a list in a Calc spreadsheet. The list might be updated regularly or the data might be imported from a different application.

A huge list can, for example, be copied from a different application and pasted into Calc. The behavior of Calc while inserting the data depends on the format of the data. If the format is acceptable, the data is copied directly into Calc. However, if the data is in plain text, a dialog appears with the text import assistant; see Chapter 1 (Introducing Calc) for more information.

Calc can import data from a huge number of foreign data formats, for example from other spreadsheets (Excel, Lotus 1, 2, 3), from databases (like dBase), and from simple text files.

The drawback of copying or importing foreign data is that it will not update automatically if there are changes in the source file. With a Calc file you are limited to 65535 rows.

### **Registered data source**

A registered data source in OpenOffice.org is a connection to data held in a database outside Calc. This means that the data to be analyzed will not be saved in Calc. It always uses the data from the original source. Calc is able to use many different data sources and also databases that are created and maintained with OpenOffice.org Base. See Chapter 10 (Linking Calc Data) for more information.

### **External data (OLAP)**

No implementation exists at the moment so this option is not available.

## **The DataPilot dialog**

The function of the DataPilot is managed in two places: first in the DataPilot dialog and second through manipulations of the result in the spreadsheet. This section describes the dialog in detail.

### **Basic layout**

In the DataPilot are four white areas that show the layout of the result. Beside these fields are buttons with the names of the fields in your data source. To define a layout, drag and drop these field buttons into the white areas.

The *Data Fields* area in the middle must contain at least one field. Advanced users can use more than one field here. For the data field an aggregate function is used. For example, if you move the **sales** field into the *Data Fields* area, it appears there as **Sum - sales**.

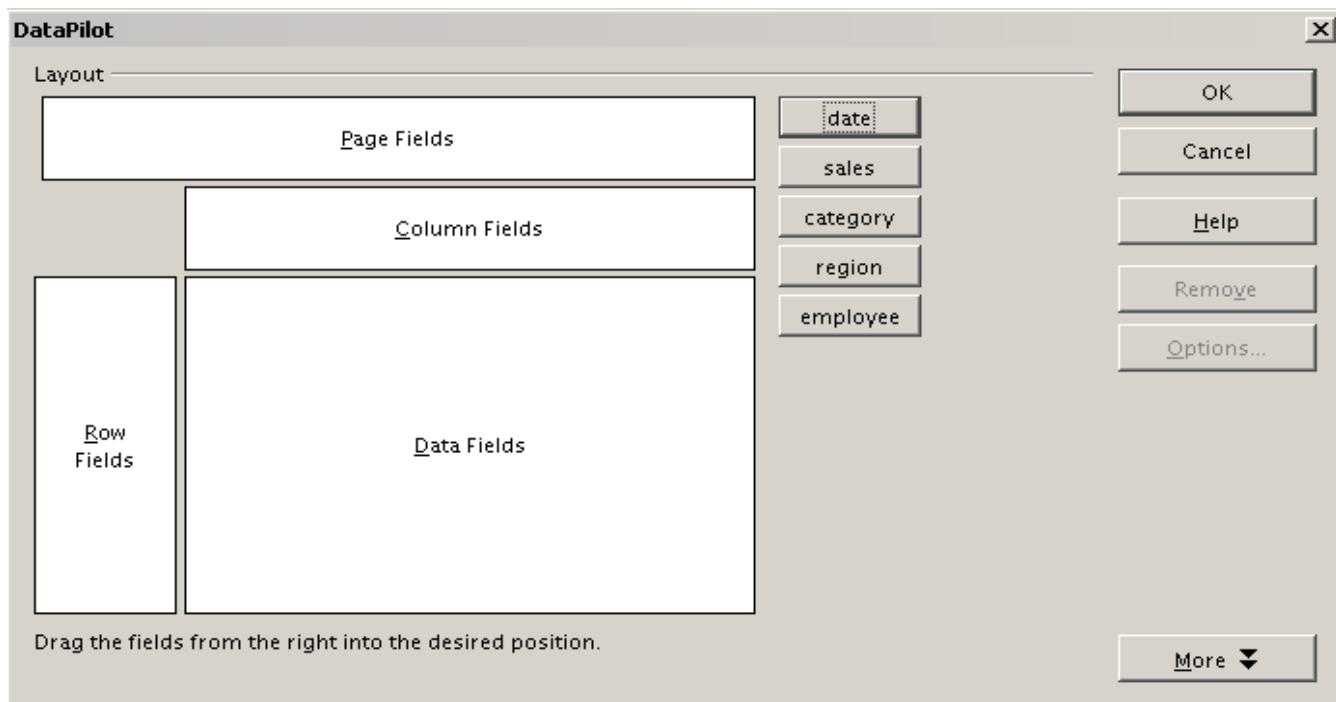


Figure 34: DataPilot dialog

*Row Fields* and *Column Fields* indicate in which groups the result will be sorted in the rows and columns. If there are no entries in one of these areas, then partial sums will not be provided for the corresponding rows or columns. Often more than one field is used at the same time to get partial sums for rows or columns. The order of the fields gives the order of the sums from overall to specific.

For example, if you drag **region** and **employee** into the *Row Fields* area, the sum will be divided into the employees. Within the employees will be the listing for the different regions.

Fields that are placed into the *Page Fields* area appear in the result above as a drop-down list. The summary in your result takes only that part of your base data into account that you've selected. For example, if you use **employee** as a page field, you can filter the result shown for each employee.

To remove a field from the white layout area just drag it to the border and drop it (the cursor will change to a crossed symbol), or click the **Remove** button.

### **More options**

To expand the DataPilot and show more options, click **More**.

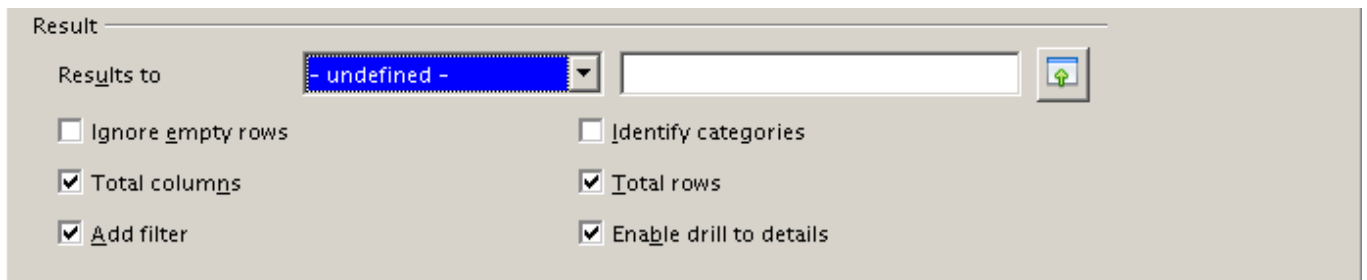


Figure 35: Expanded dialog of the DataPilot

## Results to

*Results to* defines where your result will be shown. If you do not enter anything, the DataPilot will put your result below the list that contains your data. This could result in overwriting any data that is already in that location. To avoid overwriting data, you can leave *Results to* as - **undefined** - and enter a cell reference to tell the DataPilot where to show the results.<sup>1</sup> However, a generally better approach is to use - **new sheet** - to add a new sheet to the spreadsheet file and place the results there.

## Ignore empty rows

If the source data is not in the recommended form, this option tells the DataPilot to ignore empty rows.

## Identify categories

If the source data has missing entries in a list and does not meet the recommended data structure (see Figure 36), the DataPilot adds it to the listed category above it. If this option is not chosen, then the DataPilot inserts (*empty*).

	A	B	C
1	Produce	Region	Quantity
2	Apples	Italy	6.2 t
3		Lake Constance	19.2 t
4		California	3.6 t
5	Pears	Italy	7.0 t
6		Lake Constance	22.0 t
7			

Figure 36: Example of data with missing entries in Column A

The option *Identify categories* ensures that in this case rows 3 and 4 are added to the product Apples and row 6 is added to Pears (see Figure 37).

<sup>1</sup> In this case the word - *undefined* - is misleading because the output position is in fact defined.



Sum - Quantity	Region			
Produce	California	Italy	Lake Constance	<b>Total Result</b>
Apples	3.6 t	6.2 t	19.2 t	<b>29.0 t</b>
Pears		7.0 t	22.0 t	<b>29.0 t</b>
<b>Total Result</b>	<b>3.6 t</b>	<b>13.2 t</b>	<b>41.2 t</b>	<b>58.0 t</b>

Figure 37: DataPilot result with Identify categories selected

Without category recognition, the DataPilot shows an (*empty*) category (Figure 38).

Sum - Quantity	Region			
Product	California	Italy	Lake Constance	<b>Total Result</b>
(empty)	3.6 t		41.2 t	<b>44.8 t</b>
Apples		6.2 t		<b>6.2 t</b>
Pears		7.0 t		<b>7.0 t</b>
<b>Total Result</b>	<b>3.6 t</b>	<b>13.2 t</b>	<b>41.2 t</b>	<b>58.0 t</b>

Figure 38: DataPilot result without Identify categories selected

Logically, the behavior without category recognition is better. A list with the shown missing entries is also less useful, because you cannot use other functions such as sorting or filtering.

### Total columns / total rows

With this option you decide if the DataPilot will show an extra row with the sums of each column or if it adds on the very right a column with the sums of each row. In some cases, an added total sum is useless, for example if your entries are accumulated or in comparisons.

### Add filter

Use this option to add or hide the cell labelled **Filter** above the DataPilot results. This cell is a convenient button for additional filtering options within the DataPilot.

### Enable drill to details

If you double-click on a single cell in the DataPilot result, this function gives a more detailed listing of an individual entry. If this function is disabled, the double-click will keep its usual edit function within a spreadsheet.

## More settings for the fields

The options discussed in the previous section are valid for the DataPilot in general. Additionally, you can change settings for every field that you have added to the DataPilot layout. Do this either by clicking on the **Options** button in the DataPilot dialog or by double-clicking on the appropriate field.

There are differences between data fields, row or column fields, and page fields of the DataPilot.

## Data fields

In the preferences dialog of a data field you can select the Sum function for accumulating the values from your data source. In many cases you will need the sum function, but other functions (like standard distribution or a counting function) are also available. For example, the counting function can be useful for non-numerical data fields.

On the Data Field dialog, click **More** to see more options.

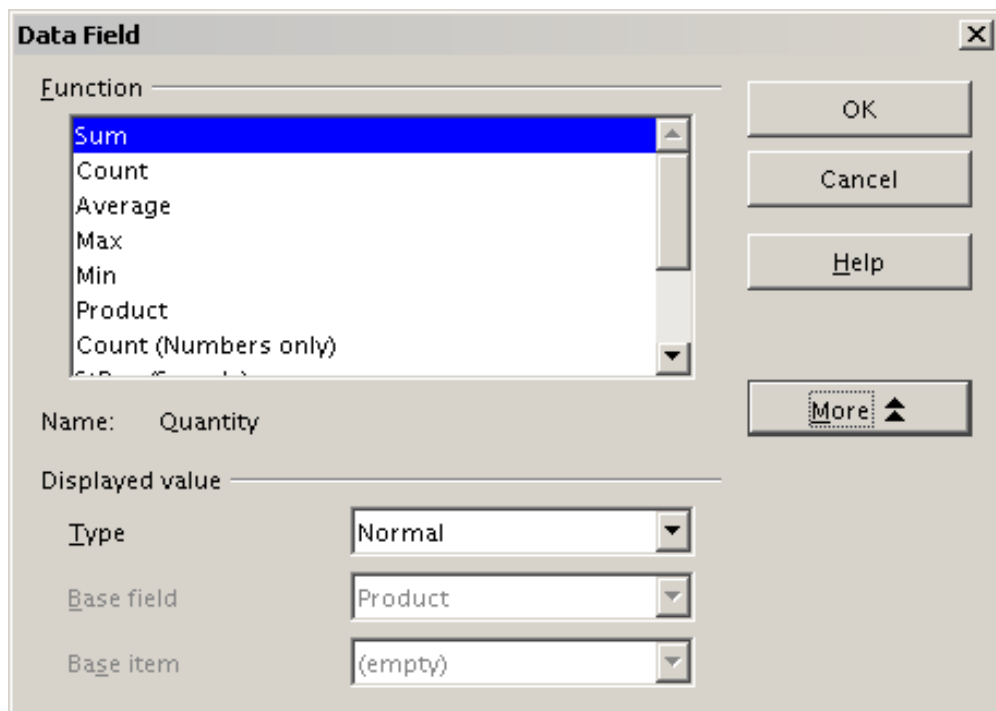


Figure 39: Expanded dialog for a data field

In the *Displayed value* section, you can choose more possibilities for analysis by using the aggregate function. Depending on the setting for **Type**, you have to choose a definition for **Base field** and **Base element**.

<b>Type</b>	<b>Base field</b>	<b>Base element</b>	<b>Analysis</b>
Normal	—	—	Simple use of the chosen aggregate function (for example, sum)
Difference from	Selection of a field from the data source of the DataPilot (for example, employee)	Selection of an element from the selected base field (for example, Brigitte)	Result as difference to the result of the base element (for example, Sales volume of the employees as difference of the sales volume of Brigitte)
% of	Selection of a field from the data source of the DataPilot (for example, employee)	Selection of an element from the selected base field (for example, Brigitte)	Result as a ratio based on the result of the base element (for example, Sales result of the employee relative to the sales result of Brigitte)
% difference from	Selection of a field from the data source of the DataPilot (for example, employee)	Selection of an element from the selected base field (for example, Brigitte)	Result as relative difference to the result of the base element (for example, Sales volume of the employees as relative difference of the sales volume of Brigitte)
Running total in	Selection of a field from the data source of the DataPilot (for example, date)	—	Result as a continuing sum (for example, Continuing sum of the sales volume for days or months)
% of row	—	—	Result as relative part of the result in the whole row (for example the row sum)

<b>Type</b>	<b>Base field</b>	<b>Base element</b>	<b>Analysis</b>
% of column	—	—	Result as relative part of the total column (for example, the column sum)
% of total	—	—	Result as relative part of the overall result (for example the total sum)
Index	—	—	Default result x total result / (row result x column result)

### **Row and column fields**

In the preferences dialog for the row or column fields, you can display the partial sums for each category. Partial sums are deactivated by default. They are only useful if the values in one row or column field can be divided into partial sums for another (sub)field.

Some examples are shown in the next three figures.

Sum - sales	category			
region	golfing	sailing	tennis	<b>Total Result</b>
east	\$41,971.00	\$22,484.00	\$35,966.00	<b>\$100,421.00</b>
north	\$18,741.00	\$22,468.00	\$34,533.00	<b>\$75,742.00</b>
south	\$56,257.00	\$44,801.00	\$34,258.00	<b>\$135,316.00</b>
west	\$39,245.00	\$20,099.00	\$37,942.00	<b>\$97,286.00</b>
<b>Total Result</b>	<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>

*Figure 40: No subdivision with only one row or column field*

Sum - sales		category			
region	employee	golfing	sailing	tennis	Total Result
east	Brigitte	\$5,822.00	\$2,135.00	\$4,872.00	\$12,829.00
	Fritz	\$15,172.00	\$5,730.00	\$12,455.00	\$33,357.00
	Hans	\$5,316.00	\$909.00	\$12,220.00	\$18,445.00
	Kurt	\$9,707.00	\$6,475.00	\$2,417.00	\$18,599.00
	Ute	\$5,954.00	\$7,235.00	\$4,002.00	\$17,191.00
north	Brigitte	\$3,814.00	\$10,151.00	\$3,985.00	\$17,950.00
	Fritz	\$3,443.00	\$2,698.00	\$9,115.00	\$15,256.00
	Hans	\$3,049.00	\$3,008.00	\$5,361.00	\$11,418.00
	Kurt	\$2,214.00	\$3,485.00	\$10,499.00	\$16,198.00
	Ute	\$6,221.00	\$3,126.00	\$5,573.00	\$14,920.00
	<b>east Sum - sales</b>	<b>\$41,971.00</b>	<b>\$22,484.00</b>	<b>\$35,966.00</b>	<b>\$100,421.00</b>
north	Brigitte	\$3,814.00	\$10,151.00	\$3,985.00	\$17,950.00
	Fritz	\$3,443.00	\$2,698.00	\$9,115.00	\$15,256.00
	Hans	\$3,049.00	\$3,008.00	\$5,361.00	\$11,418.00
	Kurt	\$2,214.00	\$3,485.00	\$10,499.00	\$16,198.00
	Ute	\$6,221.00	\$3,126.00	\$5,573.00	\$14,920.00
	<b>north Sum - sales</b>	<b>\$18,741.00</b>	<b>\$22,468.00</b>	<b>\$34,533.00</b>	<b>\$75,742.00</b>
south	Brigitte	\$5,151.00	\$4,432.00		\$9,583.00
	Fritz	\$23,290.00	\$4,806.00	\$15,641.00	\$43,737.00
	Hans	\$4,196.00	\$9,263.00	\$3,858.00	\$17,317.00
	Kurt	\$11,681.00	\$7,270.00	\$14,759.00	\$33,710.00
	Ute	\$11,939.00	\$19,030.00		\$30,969.00
	<b>south Sum - sales</b>	<b>\$56,257.00</b>	<b>\$44,801.00</b>	<b>\$34,258.00</b>	<b>\$135,316.00</b>
west	Brigitte	\$12,174.00	\$7,704.00	\$8,864.00	\$28,742.00
	Fritz	\$4,934.00	\$6,742.00	\$1,427.00	\$13,103.00
	Hans	\$5,380.00	\$880.00	\$9,028.00	\$15,288.00
	Kurt	\$4,744.00	\$3,584.00		\$8,328.00
	Ute	\$12,013.00	\$1,189.00	\$18,623.00	\$31,825.00
	<b>west Sum - sales</b>	<b>\$39,245.00</b>	<b>\$20,099.00</b>	<b>\$37,942.00</b>	<b>\$97,286.00</b>
	<b>Total Result</b>	<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>

Figure 41: Division of the regions for employees without partial sums

Sum - sales		category			
region	employee	golfing	sailing	tennis	Total Result
east	Brigitte	\$5,822.00	\$2,135.00	\$4,872.00	\$12,829.00
	Fritz	\$15,172.00	\$5,730.00	\$12,455.00	\$33,357.00
	Hans	\$5,316.00	\$909.00	\$12,220.00	\$18,445.00
	Kurt	\$9,707.00	\$6,475.00	\$2,417.00	\$18,599.00
	Ute	\$5,954.00	\$7,235.00	\$4,002.00	\$17,191.00
	<b>east Sum - sales</b>	<b>\$41,971.00</b>	<b>\$22,484.00</b>	<b>\$35,966.00</b>	<b>\$100,421.00</b>
north	Brigitte	\$3,814.00	\$10,151.00	\$3,985.00	\$17,950.00
	Fritz	\$3,443.00	\$2,698.00	\$9,115.00	\$15,256.00
	Hans	\$3,049.00	\$3,008.00	\$5,361.00	\$11,418.00
	Kurt	\$2,214.00	\$3,485.00	\$10,499.00	\$16,198.00
	Ute	\$6,221.00	\$3,126.00	\$5,573.00	\$14,920.00
	<b>north Sum - sales</b>	<b>\$18,741.00</b>	<b>\$22,468.00</b>	<b>\$34,533.00</b>	<b>\$75,742.00</b>
south	Brigitte	\$5,151.00	\$4,432.00		\$9,583.00
	Fritz	\$23,290.00	\$4,806.00	\$15,641.00	\$43,737.00
	Hans	\$4,196.00	\$9,263.00	\$3,858.00	\$17,317.00
	Kurt	\$11,681.00	\$7,270.00	\$14,759.00	\$33,710.00
	Ute	\$11,939.00	\$19,030.00		\$30,969.00
	<b>south Sum - sales</b>	<b>\$56,257.00</b>	<b>\$44,801.00</b>	<b>\$34,258.00</b>	<b>\$135,316.00</b>
west	Brigitte	\$12,174.00	\$7,704.00	\$8,864.00	\$28,742.00
	Fritz	\$4,934.00	\$6,742.00	\$1,427.00	\$13,103.00
	Hans	\$5,380.00	\$880.00	\$9,028.00	\$15,288.00
	Kurt	\$4,744.00	\$3,584.00		\$8,328.00
	Ute	\$12,013.00	\$1,189.00	\$18,623.00	\$31,825.00
	<b>west Sum - sales</b>	<b>\$39,245.00</b>	<b>\$20,099.00</b>	<b>\$37,942.00</b>	<b>\$97,286.00</b>
	<b>Total Result</b>	<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>

Figure 42: Division of the regions for employees with partial sums

Select the option **Automatically** to use the aggregate function for the partial results that can also be used for the data fields (see above). To

set up the aggregate function for the partial results independently from the overall settings of the DataPilot, select **User-defined**.

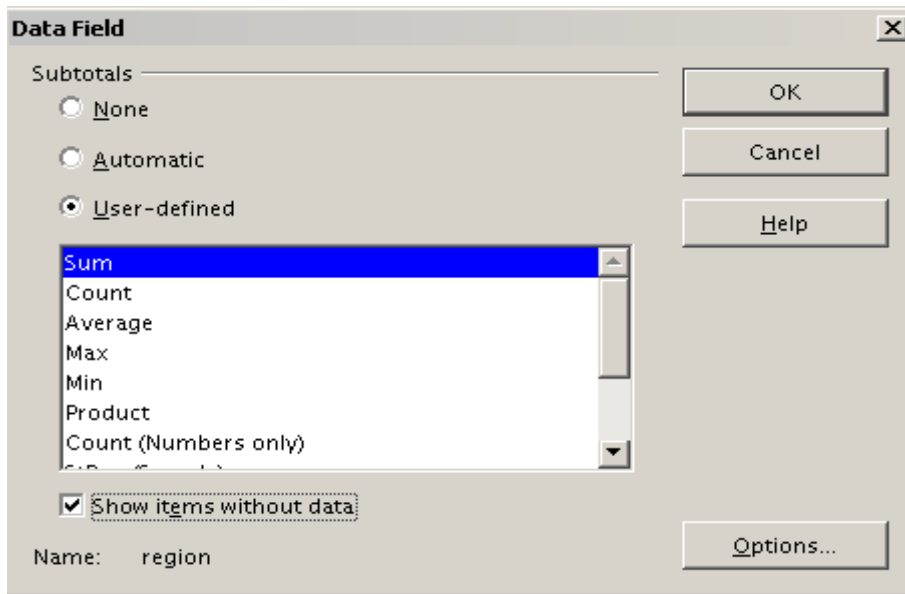


Figure 43: Preferences dialog of a row or column field

Normally, the DataPilot does not show a row or column for categories that have no entries in the underlying database. By choosing the **Show items with no data** option, you can force this.

For illustration purposes, the data was manipulated in such a way that the employee Brigitte has no sales values for the golfing category.

employee	Brigitte			
Sum - sales	category			
region	sailing	tennis	Total Result	
east	\$2,135.00	\$4,872.00	\$7,007.00	
north	\$10,151.00	\$3,985.00	\$14,136.00	
south	\$4,432.00		\$4,432.00	
west	\$7,704.00	\$8,864.00	\$16,568.00	
<b>Total Result</b>	<b>\$24,422.00</b>	<b>\$17,721.00</b>	<b>\$42,143.00</b>	

Figure 44: Default setting

employee	Brigitte			
Sum - sales	category			
region	golfing	sailing	tennis	Total Result
east		\$2,135.00	\$4,872.00	\$7,007.00
north		\$10,151.00	\$3,985.00	\$14,136.00
south		\$4,432.00		\$4,432.00
west		\$7,704.00	\$8,864.00	\$16,568.00
<b>Total Result</b>		<b>\$24,422.00</b>	<b>\$17,721.00</b>	<b>\$42,143.00</b>

Figure 45: Setting "Show Items with no data"

## **Page fields**

The preferences dialog for page fields is the same as for row and column fields, even though it appears to be useless to do the same settings as described for the row and column fields. With the flexible use of the DataPilot you can often switch the use of the different fields for pages, columns or rows. The fields keep the settings that you made for them. For this, the page field has the same properties as a row or column field. These settings only take effect when you use the field not as page field but as row or column field.

## **Working with the results of the DataPilot**

One very important feature is the flexibility of the DataPilot. An analysis can be changed with only a few mouse clicks. Some functions of the DataPilot can be used only with the results of an analysis.

### **Start the dialog**

Right-click in the area of the resulting table of the DataPilot and choose **Start** to open the DataPilot dialog with all current settings.

### **Change layout by using drag and drop**

The easiest and fastest method to change the layout of the DataPilot is drag and drop. Within the result table of the DataPilot, move one of the page, column, or row fields to a different position (see “Examples with step by step instructions” starting on page 5).

You can remove a column, row, or page field from the DataPilot by clicking on and dragging it out of the DataPilot.

### **Grouping rows or columns**

For many analyses or summaries, the categories have to be grouped. You can merge the results in classes or periods. In the DataPilot you do a grouping after you have first made an ungrouped DataPilot table.

You can access the grouping with the menu entry **Data > Group and Outline > Group** or by pressing *F12*. It is important that you select the correct cell area. The grouping function is mainly determined by the type of values that have to be grouped. You need to distinguish if you have scalar values, date or time values, or other values, such as text, that you want grouped.

---

**Note**

Before you can group, you have to produce a DataPilot with ungrouped data. The time needed for creating a DataPilot depends mostly on the number of columns and rows and not on the size of the basic data. Through grouping you can produce the DataPilot with a small number of rows and columns. The DataPilot can contain a lot of categories, depending on your data source. Computing time may take several minutes.

---

### ***Grouping of categories with scalar values***

For grouping scalar values, select a single cell in the row or column of the category to be grouped.

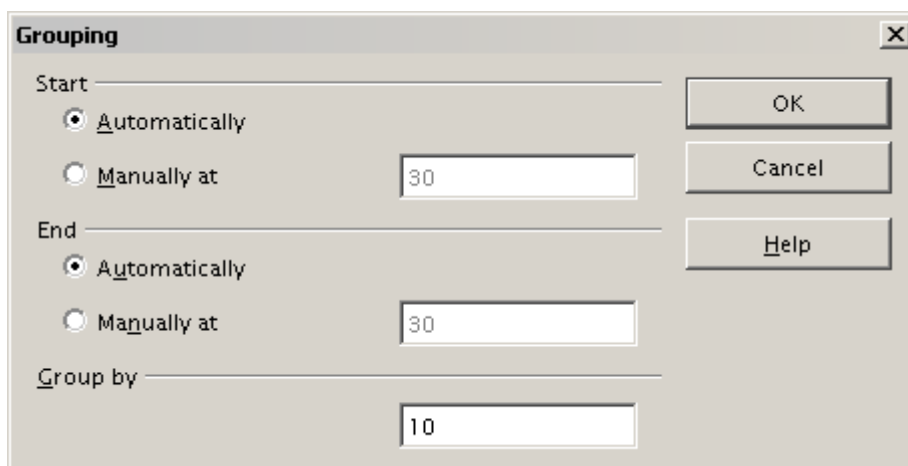
km/h	
30	2
31	1
32	5
33	4
34	5
35	2
36	2
37	1
38	6
39	1
40	1
41	4
42	2
43	3

*Figure 46: DataPilot without grouping (frequency of the km/h values of a radar control)*

km/h	
30-39	29
40-49	22
50-59	23
60-69	23
70-79	18
80-89	23
90-99	18
100-109	27
110-119	35
<b>Total Result</b>	<b>218</b>

*Figure 47: DataPilot with grouping (classes of 10 km/h each)*

Choose **Data > Group and Outline > Group** from the menu bar or press *F12*; you get the following dialog.



*Figure 48: Grouping dialog with scalar categories*

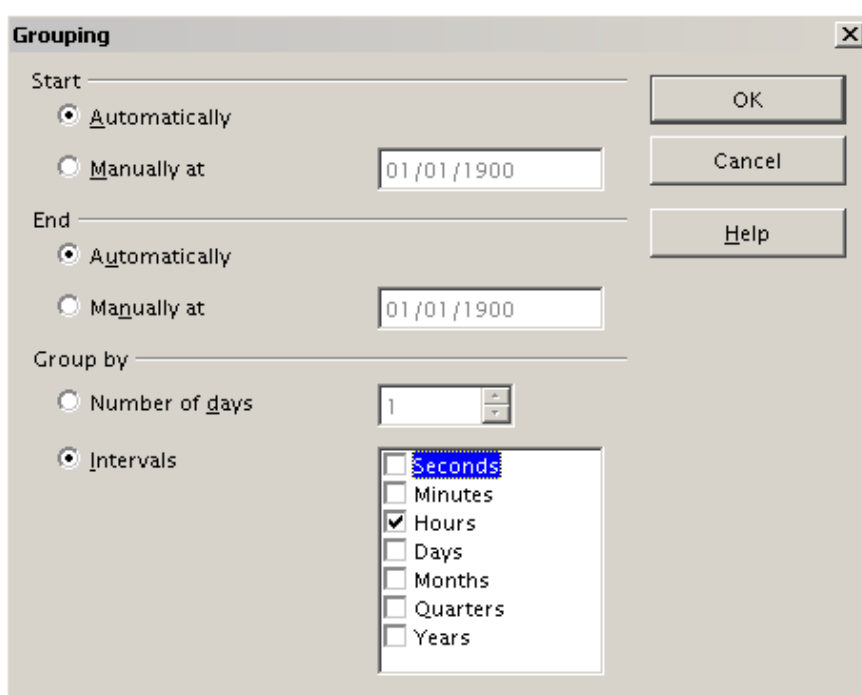


You can define in which value range (start/end) the grouping should take place. The default setting is the whole range from smallest to biggest value. In the *Grouping after* field you can enter the class size, this means the interval size (in this example groups of 10 km/h each).

### **Grouping of categories with date or time values**

For grouping date or time values select a single cell in the column or row of the category that should be grouped. This was demonstrated in all three examples in the section “Examples with step by step instructions” starting on page 5.

With the menu entry **Data > Group and Outline > Group** or by pressing *F12*, you get the following dialog.



*Figure 49: Grouping dialog for categories with dates or times*

You can decide in which date or time area (start/end) the grouping should take place. The default setting is the whole area from the earliest to the latest value. In the *Group by* field you can enter the class size (the interval size), that should be used for grouping.

Possible intervals are: seconds, minutes, hours, days, months, quarters and years. These can be combined, for example grouping of years and within the years according to months.

As alternative you can enter any number of days as grouping interval.

---

**Tip**

For grouping the DataPilot in calendar weeks, define the beginning as a Sunday or Monday and manually enter the grouping interval of 7 days.

---

### ***Grouping without the automatic creation of intervals***

If the categories contain text fields, then the automatic creation of intervals isn't possible. You can define for each category of any data type which categories you want to put together in one group.

Every time you use the menu entry **Data > Group and Outline > Group** or you press *F12* and you have more than one cell selected, then all the cells will be selected as one group.

Last name	First name	Department	Sick days
Meier	Hans	Sales	7
Muller	Karin	Accounting	7
Schuster	Josef	Purchasing	3
Huber	Erna	Purchasing	3
Aigner	Hermann	Production	7
Schulze	Josef	Production	7
Schroder	Gerhard	Production	4
Forster	Inge	Assembly	4
Meier	Gunter	Assembly	1
Gabriel	Juri	Warehouse	0
Schumacher	Helmut	Warehouse	5

*Figure 50: Database with nonscalar categories (departments)*

Department	
Accounting	7
Assembly	5
Production	18
Purchasing	6
Sales	7
Warehouse	5
<b>Total Result</b>	<b>48</b>

*Figure 51: DataPilot with nonscalar categories*

For grouping of non scalar categories, select in the result of the DataPilot all single categories that you want to put in one group.

---

**Tip**

You can select several non-contiguous cells in one step by pressing and holding the *Control* key while left-clicking with the mouse.

---

Choose the **Data > Group and Outline > Group** from the Menu bar or press *F12*. Repeat this for all groups that you want to create from the different categories.

Department2	Department	
Assembly	Assembly	5
Group1	Accounting	7
	Purchasing	6
	Sales	7
Production	Production	18
Warehouse	Warehouse	5
<b>Total Result</b>		<b>48</b>

Figure 52: Summary of single categories in one group

Department3	Department	
Group1	Accounting	7
	Purchasing	6
	Sales	7
Group2	Assembly	5
	Production	18
	Warehouse	5
<b>Total Result</b>		<b>48</b>

Figure 53: Grouping finished

You can change the automatically given names for the groups and the newly created group field by right-clicking on a name. The DataPilot will remember these settings, even if you change the layout later on. For the following pictures, the dialog was called again (with a right-click) and within the preferences menu the option **Automatic** was selected.

Department3	Department2	Department	
Group1	Group1	Accounting	7
		Purchasing	6
		Sales	7
Technical	Assembly	Assembly	5
	Production	Production	18
	Warehouse	Warehouse	5
<b>Total Result</b>			<b>48</b>

Figure 54: Renamed groups and partial results

Department3	
Group1	20
Group2	28
<b>Total Result</b>	<b>48</b>

Figure 55: Reduced to the new groups

## Note

A well-structured database makes manual sorting within the DataPilot obsolete. In the example shown, you could add another column with the name Department, that has the correct entry for each person based on whether the employee's department belongs to either the Office or Technical group. The mapping for this (1:n relationship) can be done easily with the VLOOKUP function from Calc.

## Sorting the result

The result of any DataPilot is sorted (categories) in columns and rows in an ascending order. You can change the sorting in two ways:

- Sort manually by using drag and drop.
- Sort automatically by choosing the options in the preferences dialog of the row or column field.

## Sort manually by using drag and drop

You can change the order within the categories by moving the cells with the category values in the result table of the DataPilot.

Please be aware that in Calc a cell must be selected. It is not enough that this cell contains the cell cursor. The background of a selected cell is marked with a different color. To achieve this, click in one cell with no extra key pressed and redo this by pressing also the *Shift* or *Ctrl* key. Another possibility is to keep the mouse button pressed on the cell you want to select, move the mouse to a neighbor cell and move back to your original cell before you release the mouse button.

## Sort automatically

- 1) To sort automatically, start the preference options of the row or column field by right-clicking on the table area with the DataPilot result.
- 2) Select **Start** to open the DataPilot (Figure 3).
- 3) Within the Layout area of the DataPilot, double-click the field you want to sort.
- 4) In the Data Field dialog (Figure 43), click **Options** to display the Data Field Options dialog (Figure 56).

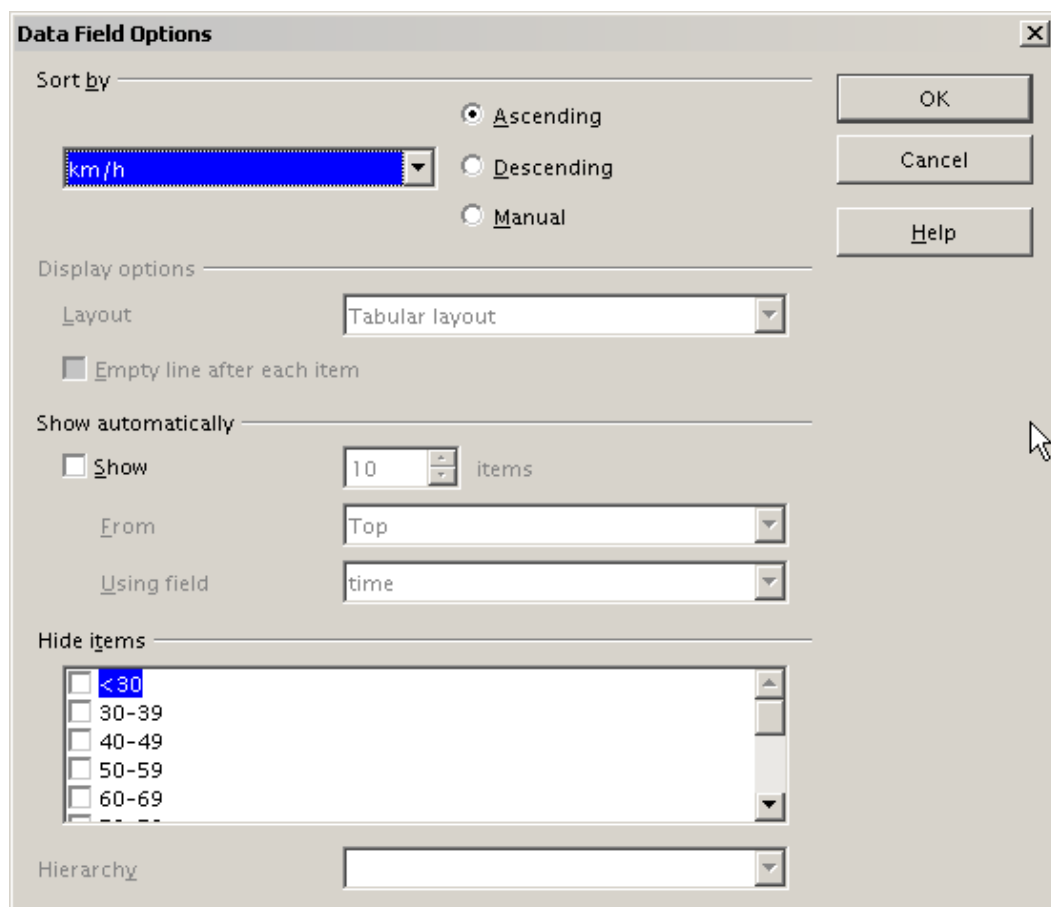


Figure 56: Options for a row or column field

For **Sort by** select how to display the information, either *Ascending* or *Descending*. On the left side is a drop-down list where you can select the field this setting should apply to. With this method you can specify that sorting does not happen according to the categories but according to the results of the data field.

### **Drilling (showing details)**

Drill allows you to show the related detailed data for a single, compressed value in the DataPilot result. To activate a drill, double-click on the cell or choose **Data > Group and Outline > Show Details**. You have to distinguish two cases:

- 1) The active cell is the category of a row or column field.

In this case drill means an additional breakdown into the categories of another field.

For example, double-click on the cell with the value *golfing* in the row field **region**. In this case the values that are aggregated in the *golfing* category are subdivided according to another field.

Sum - sales	region				
category	east	north	south	west	Total Result
golfing	\$41,971.00	\$18,741.00	\$56,257.00	\$39,245.00	\$156,214.00
sailing	\$22,484.00	\$22,468.00	\$44,801.00	\$20,099.00	\$109,852.00
tennis	\$35,966.00	\$34,533.00	\$34,258.00	\$37,942.00	\$142,699.00
<b>Total Result</b>	<b>\$100,421.00</b>	<b>\$75,742.00</b>	<b>\$135,316.00</b>	<b>\$97,286.00</b>	<b>\$408,765.00</b>

Figure 57: Before the drill down for the category *golfing*

Since there are more possibilities for subdivision, a dialog appears so you can choose your setting.

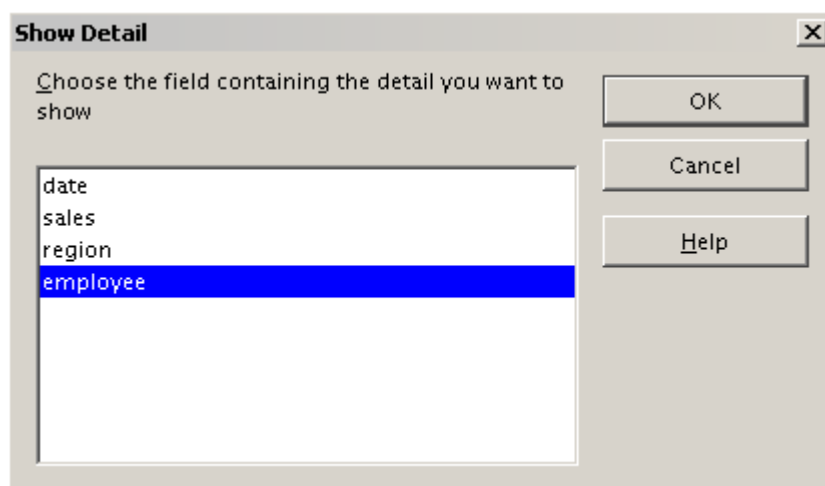


Figure 58: Selection of the field for the subdivision

Sum - sales		region				
category	employee	east	north	south	west	Total Result
golfing	Brigitte	\$5,822.00	\$3,814.00	\$5,151.00	\$12,174.00	\$26,961.00
	Fritz	\$15,172.00	\$3,443.00	\$23,290.00	\$4,934.00	\$46,839.00
	Hans	\$5,316.00	\$3,049.00	\$4,196.00	\$5,380.00	\$17,941.00
	Kurt	\$9,707.00	\$2,214.00	\$11,681.00	\$4,744.00	\$28,346.00
	Ute	\$5,954.00	\$6,221.00	\$11,939.00	\$12,013.00	\$36,127.00
sailing		\$22,484.00	\$22,468.00	\$44,801.00	\$20,099.00	\$109,852.00
tennis		\$35,966.00	\$34,533.00	\$34,258.00	\$37,942.00	\$142,699.00
<b>Total Result</b>		<b>\$100,421.00</b>	<b>\$75,742.00</b>	<b>\$135,316.00</b>	<b>\$97,286.00</b>	<b>\$408,765.00</b>

Figure 59: After the drill down

To hide the details again, double-click on the cell containing *golfing* or choose **Data > Group and Outline > Hide Details**. The DataPilot remembers your selection (in our example the **employee** field), so that for the next drill down for a category in the **region** field, the dialog does not appear. To remove the **employee** selection, open the DataPilot dialog by right-clicking and choosing **Start**, then delete the unwanted selection in the row or column field.

- 2) The active cell is a value of the data field.

In this case *drilldown* means a listing of all data entries of the data source that aggregates to this value.

Double-click on the cell with the value \$18,741 from Figure 57. You now have a new list of all data sets that are included in this value. This list is shown in a new sheet.

	A	B	C	D	E
1	date	sales	category	region	employee
2	2/6/08	\$3,443.00	golfing	north	Fritz
3	3/18/08	\$3,814.00	golfing	north	Brigitte
4	1/17/08	\$4,842.00	golfing	north	Ute
5	6/28/08	\$3,049.00	golfing	north	Hans
6	3/6/08	\$1,379.00	golfing	north	Ute
7	5/30/08	\$2,214.00	golfing	north	Kurt
8					

Figure 60: New table sheet after the drilldown for a value in a data field.

## Filtering

To limit the DataPilot analysis to a subset of the information that is contained in the data basis, you can filter with the DataPilot.

---

**Note** An Autofilter or default filter used on the sheet has no effect for the analysis of the DataPilot. The DataPilot always uses the complete list that was selected when it was started.

---

To do this, click **Filter** on the top left side above the results.

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - sales	employee					
4	region	Brigitte	Fritz	Hans	Kurt	Ute	<b>Total Result</b>
5	east	\$12,829.00	\$33,357.00	\$18,445.00	\$18,599.00	\$17,191.00	<b>\$100,421.00</b>
6	north	\$17,950.00	\$15,256.00	\$11,418.00	\$16,198.00	\$14,920.00	<b>\$75,742.00</b>
7	south	\$9,583.00	\$43,737.00	\$17,317.00	\$33,710.00	\$30,969.00	<b>\$135,316.00</b>
8	west	\$28,742.00	\$13,103.00	\$15,288.00	\$8,328.00	\$31,825.00	<b>\$97,286.00</b>
9	<b>Total Result</b>	<b>\$69,104.00</b>	<b>\$105,453.00</b>	<b>\$62,468.00</b>	<b>\$76,835.00</b>	<b>\$94,905.00</b>	<b>\$408,765.00</b>

Figure 61: Filter field in the upper left area of the DataPilot

In the Filter dialog, you can define of up to 3 filter options that are used in the same way as Calc's default filter.

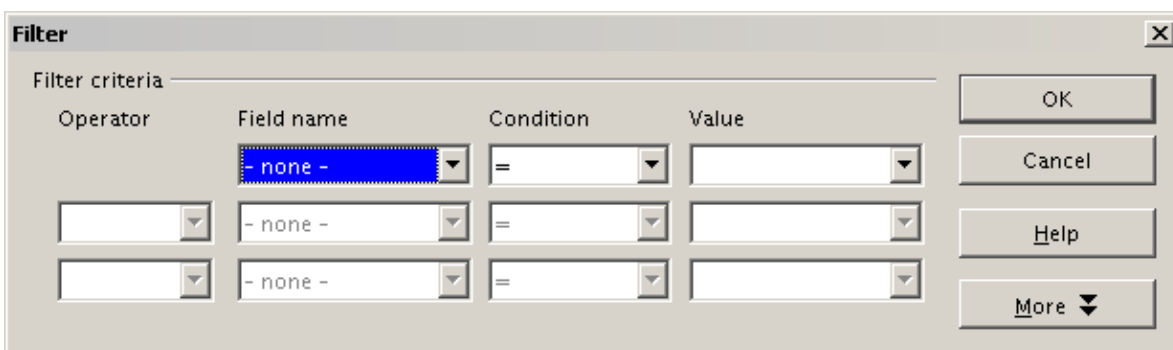


Figure 62: Dialog for defining the filter

---

**Note** Even if they are not called a filter, page fields are a practical way to filter the results. The advantage is that the filtering criteria used are clearly visible.

---

### **Updating (refreshing) changed values**

After you have created the DataPilot, changes in the source data do not cause an automatic update in the resulting table. You have to always update (refresh) the DataPilot manually.

Changes in the source data could appear in two ways:

- 1) The content of existing data sets has been changed.

For example, you might have changed a sales value afterward. To update the DataPilot, right-click in the result area and choose **Refresh** (or choose **Data > DataPilot > Refresh** from the menu bar).

2) You have added or deleted data sets in the original list.

In this case the change means that the DataPilot has to use a different area of the spreadsheet for its analysis. A change of the data reference for an existing DataPilot is not possible. You must redo the DataPilot.

## Cell formatting

The cells in the results area of the DataPilot are automatically formatted in a simple format by Calc. You can change this formatting using all the tools in Calc, but please note that if you make any change in the design of the DataPilot or any updates, the formatting will return to the that applied automatically by Calc.

For the number format in the data field, Calc uses the number format that is used in the corresponding cell in the source list. In most cases, this is useful (for example, if the values are in the currency format, then the corresponding cell in the result area is also formatted as currency). However, if the result is a fraction or a percentage, the DataPilot does not recognize that this might be a problem; such results must either be without a unit or be displayed as a percentage. Although you can correct the number format manually, the correction stays only until the next update.

## Multiple data fields

Until now we have assumed that the layout of the DataPilot contains only one data field. However, it is possible to have several data fields in the middle of the layout. This makes summaries and analyses of multiple aspects possible.

You could, for example, list all the sales values per day and additionally give the number of entries per day. To do this, put both the **sales** field and the **date** field into the *Data Fields* area. For the **date** field, select the *Count-date* option for the aggregate function (see Figure 63).

Since every entry has a specific date, this field will give you the number of entries for each date. If you group the values per month, you get an overview with the sales value and the number of closed sales for each category and month (see Figure 64).



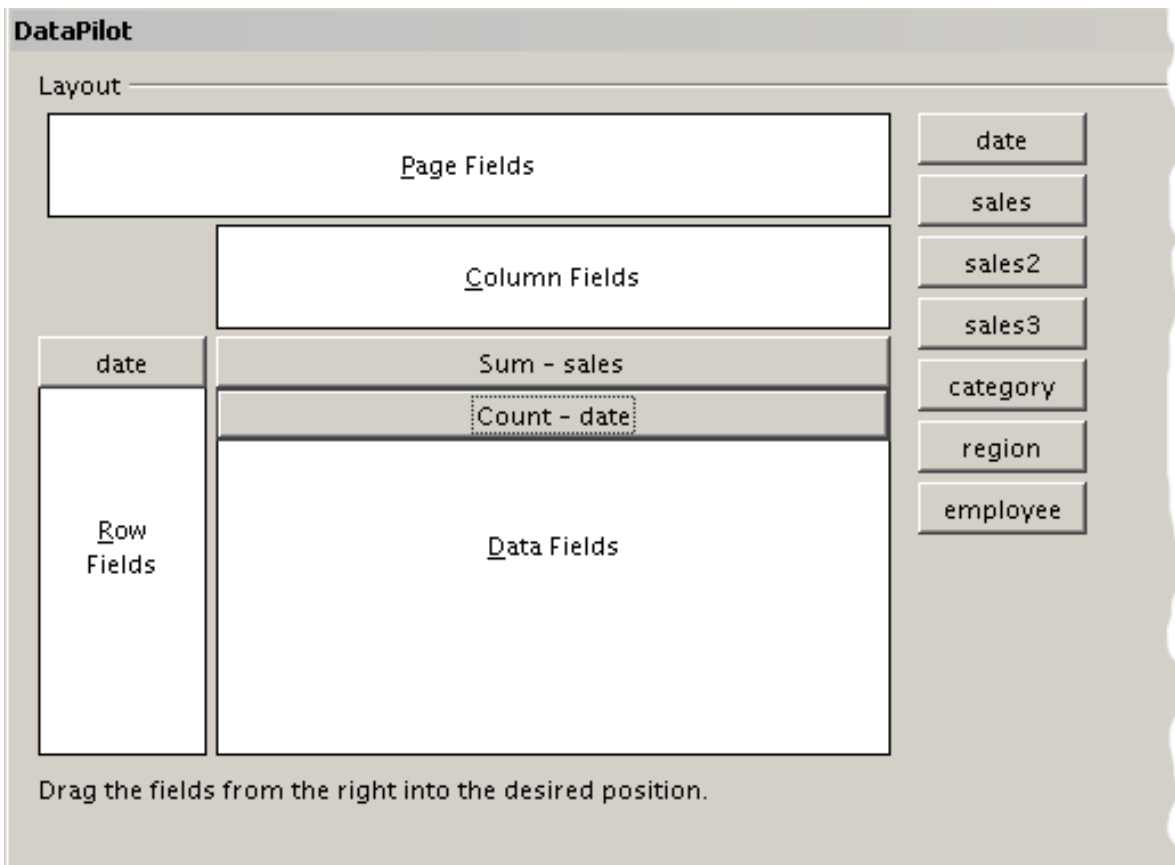


Figure 63: Multiple data fields in the DataPilot

		category			
date	Data	golfing	sailing	tennis	Total Result
Jan	Sum - sales	\$26,180.00	\$13,979.00	\$39,206.00	\$79,365.00
	Count - date	9	8	13	30
Feb	Sum - sales	\$30,444.00	\$15,625.00	\$23,710.00	\$69,779.00
	Count - date	11	8	10	29
Mar	Sum - sales	\$31,714.00	\$17,409.00	\$12,097.00	\$61,220.00
	Count - date	10	7	5	22
Apr	Sum - sales	\$24,747.00	\$19,769.00	\$31,918.00	\$76,434.00
	Count - date	8	8	9	25
May	Sum - sales	\$24,686.00	\$21,799.00	\$11,439.00	\$57,924.00
	Count - date	11	9	6	26
Jun	Sum - sales	\$18,443.00	\$21,271.00	\$24,329.00	\$64,043.00
	Count - date	8	7	9	24
<b>Total Sum - sales</b>		<b>156214</b>	<b>109852</b>	<b>142699</b>	<b>408765</b>
<b>Total Count - date</b>		<b>57</b>	<b>47</b>	<b>52</b>	<b>156</b>

Figure 64: DataPilot shows sales value and number of entries

For manipulating the existing data fields, DataPilot result contains a field called **Data**. You can move it just like row or column fields by using drag and drop. This is an easy way to archive a different structure for the results (see Figures 65 and 66).

		category			
Data	date	golfing	sailing	tennis	Total Result
Sum - sales	Jan	\$26,180.00	\$13,979.00	\$39,206.00	\$79,365.00
	Feb	\$30,444.00	\$15,625.00	\$23,710.00	\$69,779.00
	Mar	\$31,714.00	\$17,409.00	\$12,097.00	\$61,220.00
	Apr	\$24,747.00	\$19,769.00	\$31,918.00	\$76,434.00
	May	\$24,686.00	\$21,799.00	\$11,439.00	\$57,924.00
	Jun	\$18,443.00	\$21,271.00	\$24,329.00	\$64,043.00
Count - date	Jan	9	8	13	30
	Feb	11	8	10	29
	Mar	10	7	5	22
	Apr	8	8	9	25
	May	11	9	6	26
	Jun	8	7	9	24
<b>Total Sum - sales</b>		<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>
<b>Total Count - date</b>		<b>57</b>	<b>47</b>	<b>52</b>	<b>156</b>

*Figure 65: Layout option for presenting the sums and numbers of the sales values*

	category	Data						
	golfing		sailing		tennis		Total Sum - sales	Total Count - date
date	Sum - sales	Count - date	Sum - sales	Count - date	Sum - sales	Count - date		
Jan	\$26,180.00	9	\$13,979.00	8	\$39,206.00	13	\$79,365.00	30
Feb	\$30,444.00	11	\$15,625.00	8	\$23,710.00	10	\$69,779.00	29
Mar	\$31,714.00	10	\$17,409.00	7	\$12,097.00	5	\$61,220.00	22
Apr	\$24,747.00	8	\$19,769.00	8	\$31,918.00	9	\$76,434.00	25
May	\$24,686.00	11	\$21,799.00	9	\$11,439.00	6	\$57,924.00	26
Jun	\$18,443.00	8	\$21,271.00	7	\$24,329.00	9	\$64,043.00	24
<b>Total Result</b>	<b>\$156,214.00</b>	<b>57</b>	<b>\$109,852.00</b>	<b>47</b>	<b>\$142,699.00</b>	<b>52</b>	<b>\$408,765.00</b>	<b>156</b>

*Figure 66: Another layout option for presenting the sums and numbers of the sales values*

If you want to put the different data fields in different columns and your DataPilot does not contain another column field or you sort the different data fields in different rows and don't have another row field, then it is useful to disable the view of the row or column sums

	Data			
date	Sum - sales	Count - date	Total Sum - sales	Total Count - date
Jan	\$79,365.00	30	\$79,365.00	30
Feb	\$69,779.00	29	\$69,779.00	29
Mar	\$61,220.00	22	\$61,220.00	22
Apr	\$76,434.00	25	\$76,434.00	25
May	\$57,924.00	26	\$57,924.00	26
Jun	\$64,043.00	24	\$64,043.00	24
<b>Total Result</b>	<b>\$408,765.00</b>	<b>156</b>	<b>\$408,765.00</b>	<b>156</b>

*Figure 67: Unnecessary columns*

date	Data	
Jan	Sum - sales	\$79,365.00
	Count - date	30
Feb	Sum - sales	\$69,779.00
	Count - date	29
Mar	Sum - sales	\$61,220.00
	Count - date	22
Apr	Sum - sales	\$76,434.00
	Count - date	25
May	Sum - sales	\$57,924.00
	Count - date	26
Jun	Sum - sales	\$64,043.00
	Count - date	24
<b>Total Sum - sales</b>		<b>408765</b>
<b>Total Count - date</b>		<b>156</b>

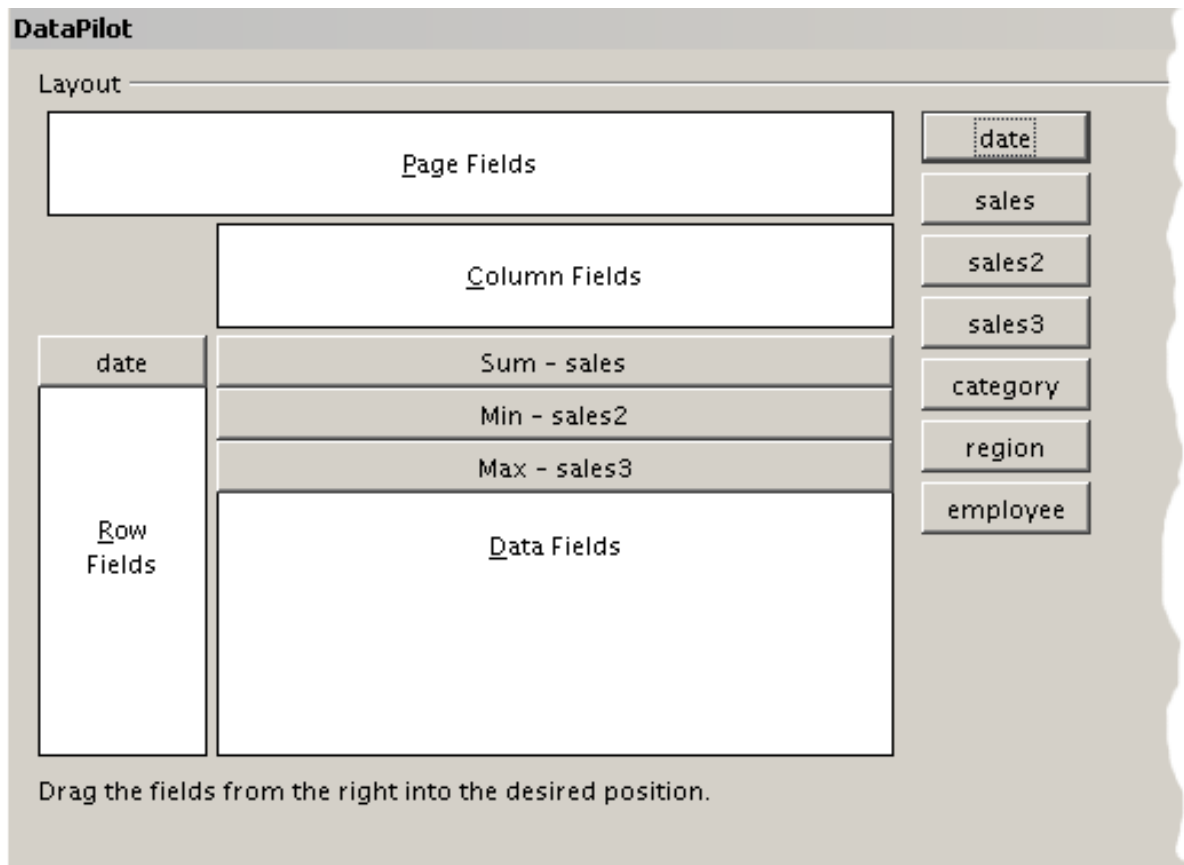
*Figure 68: Disabled column sums*

A frequent use case for multiple data fields is the aggregation of one value according to different aggregate functions at the same time. You can create a DataPilot that shows you the monthly sales values and shows you additionally the smallest and the largest amounts.

date	Sum - sales	Min - sales2	Max - sales3
Jan	\$79,365.00	\$155.00	\$4,872.00
Feb	\$69,779.00	\$204.00	\$4,893.00
Mar	\$61,220.00	\$669.00	\$4,881.00
Apr	\$76,434.00	\$498.00	\$4,873.00
May	\$57,924.00	\$112.00	\$4,655.00
Jun	\$64,043.00	\$454.00	\$4,839.00
<b>Total Result</b>	<b>\$408,765.00</b>	<b>\$112.00</b>	<b>\$4,893.00</b>

*Figure 69: Multiple analyses for the same data field*

Unfortunately, Calc does not allow you to use the same data field multiple times. For such multiple analyses you have to duplicate the respective column in the source. This column is then available within the DataPilot; it just happens to have identical values.



*Figure 70: Multiple identical fields for sales value, that have been created as duplicates within your source.*

## Shortcuts

If you use the DataPilot very often, you might find the frequent use of the menu paths (**Data > DataPilot > Start** and **Data > Group and Outline > Group**) inconvenient.

For grouping, a shortcut is already defined: *F12*. For starting the DataPilot, you can define your own keyboard shortcut. If you prefer to have toolbar icons instead of keyboard shortcuts, you can create a user-defined symbol and add it to either your own custom made toolbar or the Standard toolbar.

For an explanation how to create keyboard shortcuts or add icons to toolbars, see Chapter 14 (Setting Up and Customizing Calc).

# Function GETPIVOTDATA

The function GETPIVOTDATA can be used with formulas in Calc if you want to reuse the results from the DataPilot elsewhere in your spreadsheet.

## Difficulty

Normally you create a reference to a value by entering the address of the cell that contains the value. For example, the formula `=C6*2` creates a reference to cell **C6** and returns the doubled value.

If this cell is located in the results area of the DataPilot, it contains the result that was calculated by referencing specific categories of the row and column fields. In Figure 71, the cell **C6** contains the sum of the sales values of the employee Hans in the category Sailing. The formula in the cell **C12** uses this value.

	A	B	C	D	E
1	Filter				
2					
3	Sum - sales	category			
4	employee	golfing	sailing	tennis	Total Result
5	Brigitte	\$26,961.00	\$24,422.00	\$17,721.00	\$69,104.00
6	Hans	\$17,941.00	\$14,060.00	\$30,467.00	\$62,468.00
7	Kurt	\$28,346.00	\$20,814.00	\$27,675.00	\$76,835.00
8	Ute	\$36,127.00	\$30,580.00	\$28,198.00	\$94,905.00
9	Total Result	\$109,375.00	\$89,876.00	\$104,061.00	\$303,312.00
10					
11					
12			\$28,120.00		

Figure 71: Formula reference to a cell of the DataPilot

If the underlying data or the layout of the DataPilot changes, then you must take into account that the sales value for Hans might appear in a different cell. Your formula still references the cell **C6** and therefore uses a wrong value. The correct value is in a different location. For example, in Figure 72, the location is now **C7**.

	A	B	C	D	E
1	Filter				
2					
3	Sum - sales	category			
4	employee	golfing	sailing	tennis	<b>Total Result</b>
5	Brigitte	\$26,961.00	\$24,422.00	\$17,721.00	<b>\$69,104.00</b>
6	Fritz	\$46,839.00	\$19,976.00	\$38,638.00	<b>\$105,453.00</b>
7	Hans	\$17,941.00	\$14,060.00	\$30,467.00	<b>\$62,468.00</b>
8	Kurt	\$28,346.00	\$20,814.00	\$27,675.00	<b>\$76,835.00</b>
9	Ute	\$36,127.00	\$30,580.00	\$28,198.00	<b>\$94,905.00</b>
10	<b>Total Result</b>	<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>
11					
12			<b>\$39,952.00</b>		

Figure 72: The value that you really want to use can be found now in a different location.

The function GETPIVOTDATA allows you to have a reference to a value inside the DataPilot by using the specific identifying categories for this value.

## Syntax

The syntax has two variations:

GETPIVOTDATA(target field, DataPilot; [ Field name / Element; ... ])

GETPIVOTDATA(DataPilot; specification)

### First syntax variation

The **target field** to specify which data field of the DataPilot is used within the function. If your DataPilot has only one data field, this entry is ignored, but you must enter it anyway.

If your DataPilot has more than one data field, then you have to enter the field name from the underlying data source (for example “sales value”) or the field name of the data field itself (for example “sum - sales value”).

The argument **DataPilot** specifies the DataPilot that you want to use. It is possible that your document contains more than one DataPilot. Enter here a cell reference that is inside the results area of your DataPilot. It might be a good idea to always use the upper left corner cell of your DataPilot, so you can be sure that the cell will always be within your DataPilot even if the layout changes.

Example: GETPIVOTDATA("sales value";A1)

If you enter only the first two arguments, then the function returns the total result of the DataPilot.

You can add more arguments as pairs with **field name** and **element** to retrieve specific partial sums. In the example in Figure 73, where we want to get the partial sum of Hans for sailing, the formula in cell **C12** would look like this:

```
=GETPIVOTDATA("sales value";A1;"employee";"Hans";"category";"sailing")
```

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - sales	category					
4	employee	golfing	sailing	tennis	Total Result		
5	Brigitte	\$26,961.00	\$24,422.00	\$17,721.00	\$69,104.00		
6	Fritz	\$46,839.00	\$19,976.00	\$38,638.00	\$105,453.00		
7	Hans	\$17,941.00	\$14,060.00	\$30,467.00	\$62,468.00		
8	Kurt	\$28,346.00	\$20,814.00	\$27,675.00	\$76,835.00		
9	Ute	\$36,127.00	\$30,580.00	\$28,198.00	\$94,905.00		
10	Total Result	\$156,214.00	\$109,852.00	\$142,699.00	\$408,765.00		
11							
12			14060				

Figure 73: First syntax variation

## Second syntax variation

The argument **DataPilot** has to be given in the same way as for the other syntax variation.

For the **specifications**, enter a list separated by spaces to specify the value you want from the DataPilot. This list must contain the name of the data field, if there is more than one data field, otherwise it is not required. To select a specific partial result, add more entries in the form of **Field name[element]**.

In the example in Figure 74, where we want to get the partial sum of Hans for Sailing, the formula in cell **C12** would look like this:

```
=GETPIVOTDATA(A1;"sales value employee[Hans] category[sailing]")
```

	A	B	C	D	E	F	G
1	Filter						
2							
3	Sum - sales	category					
4	employee	golfing	sailing	tennis	<b>Total Result</b>		
5	Brigitte	\$26,961.00	\$24,422.00	\$17,721.00	<b>\$69,104.00</b>		
6	Fritz	\$46,839.00	\$19,976.00	\$38,638.00	<b>\$105,453.00</b>		
7	Hans	\$17,941.00	\$14,060.00	\$30,467.00	<b>\$62,468.00</b>		
8	Kurt	\$28,346.00	\$20,814.00	\$27,675.00	<b>\$76,835.00</b>		
9	Ute	\$36,127.00	\$30,580.00	\$28,198.00	<b>\$94,905.00</b>		
10	<b>Total Result</b>	<b>\$156,214.00</b>	<b>\$109,852.00</b>	<b>\$142,699.00</b>	<b>\$408,765.00</b>		
11							
12			14060				

Figure 74: Second syntax variation