

How to Build Dashboards with Google Spreadsheet Integration

Browse this tutorial carefully to create custom dashboards in Google Spreadsheet that retrieves data directly from Odoo using spreadsheet formulae. You can use it to create sales commission plans, budgets, project forecasts, etc. Formulae are written in Python. Here is an intuitive tutorial which will help you to make incredible analysis sheets. Programming skills are not required.

1. Retrieve Data: `oe_browse`

Formula	<code>oe_browse(table;columns;filters;orderby;limit)</code>		
Args	<code>table*</code>	Odoo table / model	"crm.lead"
	<code>columns*</code>	Comma-separated list of columns to fetch	"planned_revenue user_id country_id"
	<code>filters*</code>	Filter expression (optional)	"[['create_date', '>=', '2013-01-01'],['create_date', '!=', false]]"
	<code>orderby</code>	Sort order column(s) (optional)	"planned_revenue desc" (from the biggest planned revenue to the lowest) or "country_id user_id asc" (sorted by alphabetical order of countries then of salespersons)
	<code>limit</code>	Max numbers of lines to fetch (optional)	i.e. 150 (default: 80)

*To get a field's technical name, activate the "Developer Mode" in your Odoo personal menu at the right top of the screen, by clicking on "About Odoo". Once done, hover your mouse on field labels. Technical names of objects and fields are displayed in the tooltip.

Example
The following data is loaded from your database, it is updated everytime you open this document. Click on A17 to see the formula.
Here you get the first five customers in the database, amongst all the contacts, sorted by alphabetical order.

Customer	City	Country
Loading...		

2. Retrieve Grouped Sums: `oe_read_group`

Formula	<code>oe_read_group(table;columns;group_by;filters;orderby;limit)</code>		
Args	<code>table</code>	Odoo table / model	"crm.lead"
	<code>columns</code>	Comma-separated list of columns to fetch (or count)	"planned_revenue,user_id,country_id"
	<code>group_by</code>	Comma-separated list of columns to group by (optional)	"country_id"
	<code>filters</code>	Filter expression (optional)	"[['create_date', '>=', '2013-01-01'],['create_date', '!=', false]]"
	<code>orderby</code>	Sort order column(s) (optional)	"create_date desc"
	<code>limit</code>	Max numbers of lines to fetch in each group_by dimension (optional)	i.e. 150 (default: 80)

Exemple 1 (fetch)	Total invoiced amount (except draft & cancelled invoices) computed by month then by salesman (max number of months & salesperson in each month = 2)		Exemple 2 (count)	Number of customers assigned to each salesperson (limit = 5)
Month	Salesperson	Total invoiced	Salesperson	# Customers
Loading...			Loading...	

3. Dynamic Tables & Graphes

You can use other cells as parameters in arguments of your Odoo formulae. This allows to apply nice dynamic formulae.

Salesperson	Fred	<-- Type the name of a user who is registered as a salesman in your invoices
Customer		<-- Type the name of a customer who has been invoiced already
Exemple	The following table depends on the above filters.	
Salesperson	Month	Invoiced total
Loading...		

You can create graphs or pivot tables based on data tables coming from Odoo. The graph below is computed according to the above table. When you change the filters, the graph is updated.

4. Mixing Odoo data with spreadsheet data and traditional formulae

The biggest advantage of Google Spreadsheet is that you can mix data coming from Odoo with manually defined data as well as using traditional spreadsheet formulae.

For sales commissions, the monthly target is defined manually whereas the actual revenue is computed from Odoo. If you have installed Odoo CRM, try to change the selection box to 'Yes' to get a dynamic example. The following computation is based on planned revenues of Opportunities.

Enable Example?	No			Starting date	2014-01-01
Month	Planned	Target	Variance	Variance (%)	Commission
Change Selection to Yes		70000	0	0	0
		70000	-70000	0	0
		70000	-70000	0	0
		70000	-70000	0	0
		70000	-70000	0	0
		70000	-70000	0	0
		40000	-40000	0	0
		40000	-40000	0	0
		70000	-70000	0	0
		70000	-70000	0	0
		70000	-70000	0	0
		60000	-60000	0	0
Total	0	770000	-700000	0	0

5. Tips & Tricks

How to force formula cells to recompute from the Odoo database?

When you apply a formula, the search result is saved in the cache. So if you apply this same formula sometime later without closing the sheet session in between, you will get the same result, even if this data has been updated in Odoo. So how to connect to Odoo again to update the data?

1. Close the sheet and reopen it after a few minutes.
2. Add a trigger cell as argument in the end of the formula. Some examples are given below.

<i>Google Clock formula: automatically refreshed every minute</i>	26/06/2018 17:27:09
<i>Manually change the content of a trigger cell (i.e. 1 2 3 4 etc.)</i>	6

In the following formula, the trigger cell has been added as last argument. Feel free to change its content to force the recomputation. Every time the cell content is updated, Google connects to the Odoo database again.

Product/Service	Quantity sold
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How to be compatible with the Odoo database date format?

In Odoo, dates are registered in the following format in the database: yyyy-mm-dd. In order to be compatible with this format, you can set the Spreadsheet format to *United States* in 'File > Spreadsheet settings...'

If you want to keep your own format, you have to specify this date format in the domain filter as shown here below (thanks to the TEXT formula).

Select a date	01/01/2014			
Salesperson	Invoiced total			
Loading...				

What are the different operators I can use in Python domain filters?

=	equal to (case sensitive)	['user_id','=', 'Fred']		
!=	not equal to	['paid','!=',false]		
>, <	higher/smaller than	['invoiced_total','>',5000']		
>=, <=	higher/smaller than or equal	['date','>=',2014-01-31']		
ilike	contains	['product_id','ilike','Beer']		
not like	does not contain	['name','not ilike','Odoo']		
in	included in	['state','in',['confirmed','done']]		
not in	not included in	['state','not in',['draft','sent','cancel']]		
=ilike	equal to (non case sensitive)	['product_id','=ilike','beer']		
Extra tip:	starts by	['product_id','=ilike','beer%']	All the products starting with "beer"	
	ends by	['product_id','=ilike','%beer']	All the products ending with "beer"	
	starts and/or ends by	['product_id','=ilike','beer%']	All the products starting and/or ending with "beer"	

How to express logical connectors AND & OR?

AND	All the conditions must be verified.	Applied by default without any character		
OR	At least one condition must be verified.	[[' ', ' ', ['user_id','=', 'Fred'], ['user_id','=', 'Jack'], ['user_id','=', 'Julia']]	Add ' ' for each OR you want to add in the formula. Of course you can mix OR & AND.	

And what about the access rights?

Some important items about access rights:

1. A user has to be a Knowledge User in Odoo to have the opportunity to generate and open a Google sheet from Odoo.
2. All the Google Spreadsheet documents generated from Odoo can be directly opened from the Knowledge menu of Odoo. Each user can see the sheets generated from views on which he has access (i.e. if I'm only a Sales user, I cannot retrieve links to spreadsheets generated from the Project application.)
3. All the sheets are stored in the Google Drive repository of the user who has configured the application (generally the admin). If you need to remove a sheet, do this directly from this Google Drive repository. Do not forget to remove shortcuts in Odoo Knowledge afterwards.

How to connect to the Odoo database when opening a link for the first time or in case of connection ERROR?

When you access a Google Spreadsheet link for the first time as a standard user, you need to connect to the Odoo database. How to do it?

1. Log in to Google Drive.
2. Generate/Open the sheet from Odoo;
3. Once in Google Spreadsheet, fill in the following credentials:

User Name: login In Odoo Online, open your user form in Odoo to get it (Email field).

Password:	password	In Odoo Online, open your user form in Odoo, click on the *More* button then on *Change Password* and type the internal password you want. This password is unset by default. You only use it to connect to your database from external applications like Google.
In case of connection ERROR, you have to click on the *Odoo* menu item at the top of the screen, and then on *Settings* to get the connection popups. Before inserting your credentials you must specify:		
URL (with http:// or https://):	database url including port (i.e. 192.168.1.1:8069)	In Odoo Online: https://your-db-name.odoo.com
Database Name:	database name	In Odoo Online: your-db-name