

LibreOffice Development

a) Automation with Macros

a.i. Macros for Calc

Although LibreOffice Calc is a spreadsheet program, you can achieve more convenience by applying a macro to your spreadsheet. For example, calculations will be performed on every row in a spreadsheet consisting of over 1000 rows. Implementing a macro, saves time in the long run, as the same task can be performed on every spreadsheet with the same schema multiple times. What's more, implementing a window, i.e. form for entering the necessary data to perform a task, avoids errors. While processing the form, the input will be verified and only if the input is OK, will the macro proceed.

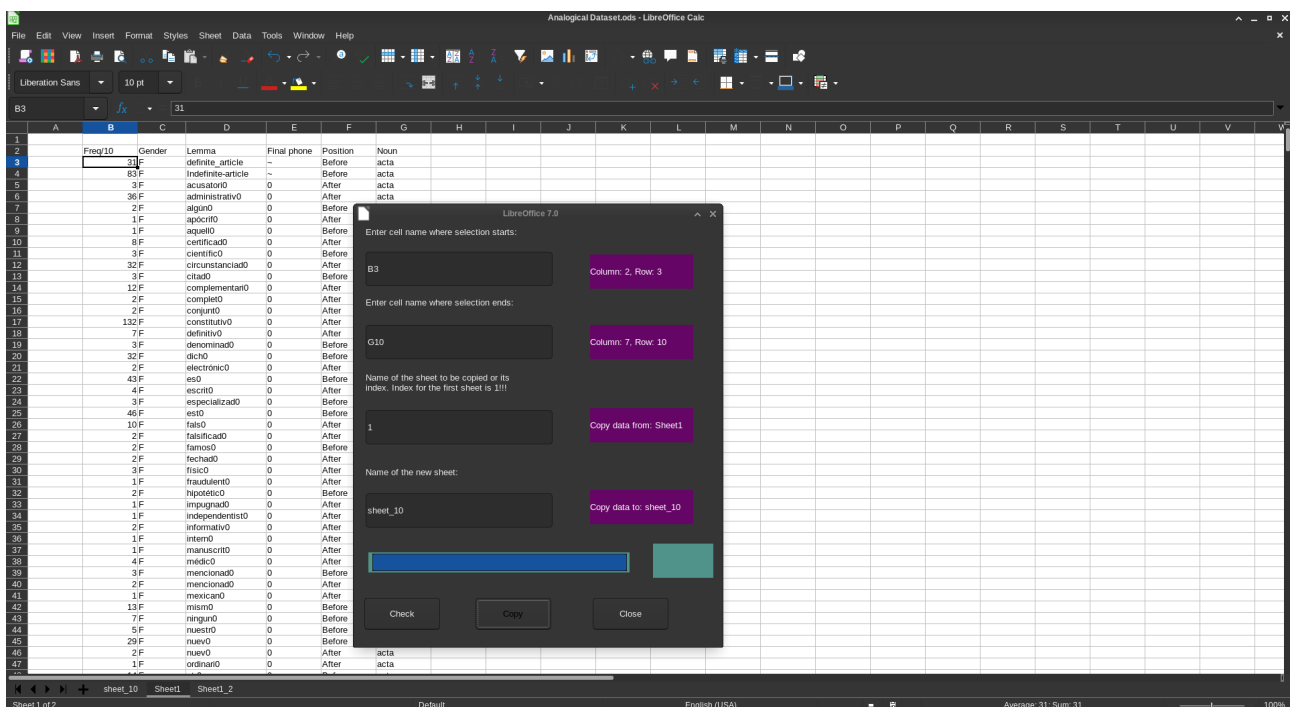


Figure 1: Window with progress bar

Additionally, I can implement macros iterating over a spreadsheet and after processing the data inserting a new spreadsheet in the same file or into a new file.

a.ii. Macros for Writer

Although creating macros for LO writer is more complex, it's nevertheless manageable. Drawing borders around a table could be handled by a macro. What's more, correcting or inserting page numbers as well as page counts is another topic for a macro. Letters can be automated, too. For example writing an acceptance or rejection to applicants for a job. For such a task, I could create a form and place the necessary GUI elements on it.

The screenshot shows the LibreOffice Writer interface with a 'Bewerbertool' dialog box open. The dialog box is titled 'Bewerbertool' and has a sub-header 'Bewerber'. It contains the following fields:

- Vorname: Angela
- Nachname: Missoni
- Anschrift 1: App. 273
- Anschrift 2: Rothenburger Str. 145
- PLZ: 90439
- Stadt: Nürnberg
- Land: Germany
- Stelle: Giftnischerin
- 1. Arbeitstag: 26.01.22
- Arbeitsbeginn: 09:15
- Ansprechpartner: Thomas Schmidt
- Personalnr.: Caroline Caro

At the bottom of the dialog box, there are two radio buttons: 'Zusage' (selected) and 'Absage'. There are also 'OK' and 'Cancel' buttons.

Figure II: Form for writing letter to applicant

Then this macro would parse the input done by the user and print out the letter afterwards. The only thing that needs to be done by the user, is creating a template with LO writer and connecting it with the macro. The responses to applicants will be generated by solely pressing the OK-button.

The screenshot shows the LibreOffice Writer interface with a letter template. The letter is addressed to 'Angela Missoni' and is dated '26.01.22'. The letter text is as follows:

Sehr geehrte Angela Missoni,

an dieser Stelle möchten wir uns für Ihre Bewerbung und Ihr Interesse an unserem Unternehmen bedanken. Wir haben uns sehr gefreut, Sie in einem persönlichen Gespräch kennenzulernen zu können.

Derzeit müssen wir Ihnen leider mitteilen, dass wir aus beruflichen Gründen keine weiteren Stellen in Ihrem Bereich ausstellen können. Wir werden jedoch weiterhin Ihre Bewerbung in Betracht ziehen und Sie über den Fortschritt Ihrer Bewerbung informieren.

Mit freundlichen Grüßen,

Caroline Caro

The letter is signed 'Caroline Caro' and dated '26.01.22'. The letter is also signed 'Caroline Caro' and dated '26.01.22'.

Figure III: The styling of a letter should be done using a template

b) LO Base Projects

b.i. Invoice Database

Invoices can be created by using different kinds of software such as LO Calc, LO writer, etc. By choosing a database project instead, the invoices can be searched through more easily. Many tasks such as generating an invoice number can then be automated. Additionally, the invoice form can be designed like a real form to make it more intuitively for the user to enter the data. Extras such as the total price or the VAT can be done by a macro, too. By implementing a print button, the newly created invoice will be printed out by creating a LO writer document automatically. From there you can store the invoice on your computer or send it to a client.

The screenshot displays the 'FormInvoice - LibreOffice Base: Datenbankformulare' application. The form is titled 'Invoice Form' and is designed with a blue header. It includes the following fields and sections:

- Invoice-ID:** A text field with the value '1'.
- Invoice #:** A text field with the value '22-0101'.
- Client:** A text field with the value 'Vanilla Moom'.
- Date:** A date field with the value '2022/01/10'.
- A/C Reference:** A text field with the value 'VANILLA0122'.
- Invoice Status:** A dropdown menu with the value 'Paid'.
- Invoice Notes:** A dropdown menu with the value 'Payment Terms'.
- Billing Address:** A text field with the value 'Va Co. India LTD'.
- Address:** A text field with the value '1 Lombard Street'.
- City:** A text field with the value 'EC3V 9AA'.
- Country:** A text field with the value 'London'.
- United Kingdom:** A text field with the value 'United Kingdom'.
- Table:** A table with 3 columns: Description, Amount, and Notes. It contains 3 rows of data:

Description	Amount	Notes
Milan Fashionweek	200,00	
London FashionWeek	500,00	
New York Fashionweek	835,00	
- Subtotal:** A text field with the value '0.00'.
- VAT:** A text field with the value '0.00'.
- Total:** A text field with the value '0.00'.

The form also includes a 'New' button, a 'Print' button, and a 'Subtotal' field. The status bar at the bottom indicates 'Seite 1 von 1' and 'Standard'.

Figure IV: Clearly designed invoice form

b.ii. Sales Overview

When looking at the overview for your sales, you know exactly how much you've made within a period. In LO Base this can be achieved by creating another form. Usually such a form consists of a table, i.e. grid and a button which calculates the total amount of sales. The calculation of the total can be done in two ways, either by iterating through all related datasets in the database or by adding the amounts displayed in the grid.

Übersicht

Von: Bis: Rechnung:

Aktualisieren **Σ Total:** 440.94

Firma	Vorname	Nachname	Re-Nr	Re-Datum	Betrag	Währung
ABC	Angie	Missoni	RE-2021-08-0001	08/15/21	283,80	EUR
ABC	Angie	Missoni	RE-2021-08-0002	08/15/21	55,14	EUR
	Dominik	Richter	RE-2021-08-0003	08/24/21	102,00	EUR

Datensatz 1 von 3

Datensatz von 3

Seite 1 von 1 Standard I 64%

Figure V: Sales Overview

b.iii. Places Table

Using a places table can prevent you from having redundant data. This can be realized by deciding how the different entities that deal with places such as country, towns, zip codes, etc., will be stored in the database. It's certainly not a good idea, if two different spellings of Italy, for example Italy vs. the Republic of Italy, exist in the database. To solve this, I can add tables that deal with places in general to the database to prevent redundancy. What's more, I've already created my own csv file containing over 40000 towns together with their provinces or states and the countries, in which these places exist. Consequently, I can import such a csv file into your LO Base project and you don't have to worry about redundancy regarding places any longer.

The screenshot shows the 'Places' form in LibreOffice Base. The form has the following fields:

- Zip-ID: 1
- Place-ID: 36 (highlighted with an orange box)
- Zip Code: E1 6AN
- Town: London
- Country: United Kingdom
- County: London, City of

At the bottom of the form are 'NEW' and 'SAVE' buttons. A modal window is open showing a table of towns:

Town-ID	Town	County	Country
93	Miami	Florida	United States
4593	Miami Gardens	Florida	United States
5105	Miami Beach	Florida	United States
6826	Miami Lakes	Florida	United States
20027	Miamisburg	Ohio	United States

Figure VIV: Form for inserting zip codes to a place stored in the database

b.iv. Further GUI Elements

Apart from the aforementioned use cases, files can be managed using a LO Base form. They can be copied to a specific folder using the upload button and a macro. Additionally, I can write a macro that ticks a checkbox as soon as a specific file has been uploaded. A preview of the uploaded file can be displayed afterwards. What's more, I can make a text area field look like a note, in which you can write down the main points of a phone conversation, for example.

Logo/image

Upload

Contract

Upload

Files

2021/09/04

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Figure VII: GUI elements used for notes and files