LibreOffice Basic IDE

Integrated development environment

Getting To The IDE

Menu Tools > Macros > Organize macros > LibreOffice Basic. Then select the desired module to edit (Edit button).

Overview

The IDE window is made of 10 tools, most of them are described in this refcard.

Toolbars

The main panels (Catalog, Editor, Watches and Call stack) can be detached.

If not visible: View > Toolbars.

Standard Toolbar

Two toolbuttons are of interest:

Select macro

Calls the macro selection dialog.

Macros Toolbar

Library selector

Selection of the library to use.

Run immediately

Run the subprogram under the cursor.

Stop

Stop the running program.

Step Over

Step by step to the caller.

Breakpoint On/off

(D)eactivate the breakpoint on current line.

Enable Breakpoints

Opens the breakpoints dialog.

Find Parenthesis

Opens the macro source code.

Import Basic

Save the source code (macro or dialog).

Export Basic

Import Dialog

Import a dialog source code.

Dialog Toolbar

This toolbar takes place of the Macros toolbar when editing dialog boxes.

Insert Controls

Same contents as the controls toolbar (below).

Import Dialog

Export a dialog box source code.

Export Dialog

The files have a .xml extension (XML).

Controls Toolbar

This toolbar is shown only in dialog box conception mode. It displays each available control to place on a dialog. These three buttons deserve an explanation:

Get back to selection mode.

Multilingual dialog creation.

Dialog test mode (hit F6 to get back to edition mode).

Object Catalog

Displays the 3 containers types and their contents: libraries, modules and macros.

Containers

My Macros & Dialogs

Specific to the user’s account, for all documents. Can only be used by the user.

LibreOffice Macros & Dialogs

(aka global macros)

These macros are stored within the LibreOffice global container. As such, they can be viewed and used everywhere.

The ones on the capture are part of a standard LibreOffice install.

Untitled 1 (in the example)

In the current document.

Libraries

Loaded (colored) or not (grayed-out).

Standard Library

Apart from global libraries, each container comes with a Standard library.

Standard is always loaded at opening time (of the application or the document):

It can’t be deleted.

It can’t be overwritten through some code import.

It can’t be encrypted.

Modules

Subprograms (macros)

Code Editor

Used for code writing (with syntax highlighting) and debugging (read on).

Useful Items In the Edition Panel

Gutter

A “margin” in which the breakpoints and the execution flag are displayed.

Line numbers

For easier navigation (toggled using View > Line Numbers).

Editor

Helps writing Basic code. Supports syntax highlighting.

(Un)Indenting lines

Press Tab or Shift + Tab to indent/unindent lines of code.

These commands can be used when selecting a set of lines.

Syntax Highlighting

The colors used are specified in LibreOffice options: Tools > Options > LibreOffice > Application Colors. Check the Basic Syntax Highlighting section values.

Displaying/hiding line numbers

Toggle line numbers display with View > Line Numbers.

You may add a button to the Macros toolbar (see Category BASIC).

Breakpoint management and execution control: see Debugging.

Goto Line

Ctrl + L

Watches Panel

Allows checking variable contents at runtime (more in Debugging below).

Three columns (adjustable widths):

• Variable name

• Value

• Type

Adding A Watch

1. In the code, select the variable to observe (you may enter its name in the Watch zone),
2. click the Enable Watch button.

Removing A Watch

1. Select the watch to remove,
2. click Remove Watch (in the Watches panel)

Call Stack Panel

In step-by-step execution mode, allows to know the successive subprograms calls.

Read it top-down. All subprograms are listed along with their parameter values.
Subprogram \( \delta \) is the one in which the execution is currently. The others are numbered subsequently.

**Tab Bar**

Displays the modules names for the current library. Modules names are shown in alphabetical order, left to right.

Right-click on the bar to manage the modules:
- Insert > Basic Module: Create a new code module (defaults to ModuleN).
- Insert > Basic Dialog: Create a new dialog module (defaults to DialogN).
- Delete: Delete the selected module.
- Rename: Rename the selected module.
- Hide: Temporarily hide the selected module.

**Status Bar**

From left to right:
- The subprogram full name in which the cursor currently sits.
- The current code edition mode (switch to Overwrite using Ctrl+Ins).
- The line (Ln) and column (Col) (character) number where the cursor currently is.

**Debugging**

Debugging: checking a program execution.
- This operation is realized executing the program part to be checked in step-by-step mode while watching the execution context variables.
- Debugging uses three panels: code editor \( \oplus \), call stack \( \odot \) and watch pane \( \oplus \). It runs under the control of the three step-by-step buttons ( \( \text{F8} \) ) and breakpoints.

**Execution Modes**

Five buttons define the way the code is run. The execution mark \( \oplus \) displays the execution point.

- **Run** \( \text{Shift} + \text{F5} \): Runs the subprogram where the cursor sits. The execution stops at breakpoints only.
- **Stop** \( \text{F5} \): Stops the execution.
- **Step Over** \( \text{Shift} + \text{F8} \): Step-by-step execution without entering the subprograms.
- **Step Into** \( \text{F8} \): Step in subprograms.
- **Step Out** \( \text{Ctrl} + \text{Shift} + \text{F8} \): Step out to callers.

**Managing Breakpoints**

Breakpoint: a mark where the execution is paused. This allows to examine the execution context at that moment (values Watches).

Execution is paused before executing the marked line.

**Adding A Breakpoint**

Double-click in the gutter on the line to stop at when no breakpoint exists ( \( \text{F8} \)).

**Deleting A Breakpoint**

Double-click in the gutter on an existing breakpoint ( \( \text{F8} \)).

**Disabling/Re-enabling A Breakpoint**

Right-click in the gutter on any existing breakpoint, then disable Active. The icon turns from \( \odot \) (active) to \( \oplus \) (inactive).

**Breakpoints Manager**

Call it by:
- right-clicking the execution mark or any existing breakpoint, option Properties
- clicking the Manage Breakpoints button \( \odot \).

Top to bottom:
- (list and edition area): Line numbers where breakpoints are set.
- Select or create a new one.
- (Un)Check to (de)activate the selected breakpoint.
- Activates a breakpoint after a given number of passes.
- Click to add a new breakpoint on the specified line.
- Deletes the selected breakpoint.

**Options**

LibreOffice offers a set of IDE options:
- Tools > Options > LibreOffice > Basic IDE

**Enable code completion**

The IDE automatically completes the Basic objects methods.

**UseExtended types**

(needed to get code completion)

Allows using UNO object types as valid for Basic.

**Hints**

**Copying A Library Between Containers**

1. Open the source document/container.
2. Open the Macro Organizer ( \( \odot \), Libraries tab.
3. Select the library Location.
4. Export > Export as Basic library.
5. Open the target document/container.
6. Import.

**Copying Modules From A Library To Another**

(in the same document or between documents/containers)

1. Open both source and target documents/containers.
2. Open the Macro Organizer ( \( \odot \), Libraries tab.
3. Drag/drop from source to target.
4. By default, modules are moved. To copy: Ctrl + drag/drop.

**Encrypting Libraries**

Encrypting a library makes a more secure code.

Any library may be encrypted, except Standard.

1. Open the Macro Organizer ( \( \odot \), Libraries tab.
2. Select the Location.
3. Select the library.
4. Click Password.
5. Enter the New password and confirm.
6. Validate.

**Ideally**

The encryption is very strong (AES): password loss is irretrievable!

Always keep a non-encrypted version for yourself.

**IDE Keyboard Shortcuts**

<table>
<thead>
<tr>
<th>Macros dialog</th>
<th>Stop execution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goto line</td>
<td>F7</td>
</tr>
<tr>
<td>Add/remove breakpoint</td>
<td>F9</td>
</tr>
<tr>
<td>Activate a watch</td>
<td>Shift + F8</td>
</tr>
<tr>
<td>Immediate execution</td>
<td>F5</td>
</tr>
</tbody>
</table>

**License**

This refcard is placed under the CreativeCommons BY-SA v4 (intl) license.

More information: https://creativecommons.org/licenses/by-sa/4.0/

**Credits**

Jean-François Nifenecker – jean-francois.nifenecker@laposte.net

We are like dwarves perched on the shoulders of giants, and that we are able to see more and farther than the latter. And this is not at all because of the acuteness of our sight or the stature of our body, but because we are carried aloft and elevated by the magnitude of the giants (Bernard de Chartres [attr.])

**History**

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.02</td>
<td>02/11/2018</td>
<td>First EN version</td>
</tr>
</tbody>
</table>