

FOSDEM'18



BaseDocumenter

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Jean-Pierre Ledure

Who ?

- **Jean-Pierre LEDURE**

- Belgian
- Wrote 1st program aged 17
- Civil engineer in Applied Mathematics
- Middle & Senior management in IT consultancy companies
- Contributed to LibreOffice since version 4.2
- Access2Base library



What ?

- **BaseDocumenter**

- Extension to be published during 2018H1
- Requires LibreOffice \geq 6.0

or LibreOffice xx + Access2Base 1.8.0 not supported !
or OpenOffice xx + id. id.

- GPLv3
- Basic library (+ Python)

Scans an existing Base application
Stores observations in a repository

- Items
- Links between items

Produces a readable report

Repository

BaseDocumenter process

XXX.odt must be open
Macros NOT activated

BaseDocumenter

... erre/Documents/BaseDocumenter/Hsqldb 1.8/Hobby...

Scanning tables

2/7 STOP

Table [SOCIETE]

10/15

```
2017-12-28 16:41:30 => Start of scan ...
Scanning database file ... (0.5 sec)
Preparing tables scan ... (0.1 sec)
Scanning table AllTypes ... (3.4 sec)
Scanning table ARTICLE ... (3.6 sec)
Scanning table CATEGORIE ... (0.4 sec)
Scanning table DEFAULTVALUES ... (0.1 sec)
Scanning table DEPENSE ... (1.2 sec)
Scanning table FACTURE ... (1.7 sec)
Scanning table INVENTAIRE ... (0.6 sec)
Scanning table LIGNE FACTURE ... (1.9 sec)
Scanning table NoKey ... (0.1 sec)
Scanning table SOCIETE ...
```

Repo

1

No constraint, even headless mode OK

BaseDocumenter

HOBBY

Documenting tables

5/11 STOP

Generating 'Table data (sample)'

6/6


```
2017-12-28 17:03:37 => Start of documentation generation ...
Loading repository data ... (15.2 sec)
Preparing template File ... (0.6 sec)
Preparing the output directory ... (0.1 sec)
Documenting database generalities ... (0.2 sec)
Documenting tables ...
```

2

Set of static HTML pages where relations are represented by hyperlinks


A query « uses » a table
A table is « used by » a query

Relations



 USES	Dialog	Form	Control	Gridcontrol	Table	Query	Field	Module	Procedure	ToolBarControl	SubForm
Dialog			Child						Event		
Form			Child	Child	Source	Source			Event		Child
Control				Child			Source		Event		
Gridcontrol			Child								
Table							Child				
Query					SQL	SQL	Child				
Field							SourceField				
Module									Child		
Procedure	OpenDialog	OpenForm			OpenTable	OpenQuery			Call		
ToolBarControl									Event		
SubForm			Child	Child	Source	Source			Event		

Repository tables

DATABASES

	Field Name	Field Type	Description
	ID	Integer [INTEGER]	Database unique ID
	NAME	Text [VARCHAR]	Database short name
	VERSION	Text [VARCHAR]	BaseDocumenter version used to scan the databadse
	SCANSTATUS	Integer [INTEGER]	1 = Not started, 2 = Ongoing, 3 = Done, 4 = Stopped by user
	SCANLOG	Memo [LONGVARCHAR]	Scan execution report
	DOCSTATUS	Integer [INTEGER]	1 = Not started, 2 = Ongoing, 3 = Done, 4 = Stopped by user
	DOCLOG	Memo [LONGVARCHAR]	Documentation generation execution report
	TOC	Yes/No [BOOLEAN]	True if database to be listed in tabular table of content
	SETTINGS	Memo [LONGVARCHAR]	Settings used to scan the database (JSON)
	PROPERTIES	Memo [LONGVARCHAR]	Scan results (JSON)

OBJECTS

	Field Name	Field Type	Description
	DATABASEID	Integer [INTEGER]	Database unique ID
	INDEX	Integer [INTEGER]	Item unique ID
	TYPE	Integer [INTEGER]	Item type (table, query, field, procedure, ...)
	NAME	Text [VARCHAR]	Item full name
	SHORTNAME	Text [VARCHAR]	Item short name (last component only)
	PARENTTYPE	Integer [INTEGER]	Parent item type (table, query, ...)
	PARENTINDEX	Integer [INTEGER]	Parent unique ID
	MISSING	Yes/No [BOOLEAN]	True if item used somewhere but not found
	USES	Text [VARCHAR]	List of items used by the current item
	USEDDBY	Text [VARCHAR]	List of items using the current item
	PROPERTIES	Memo [LONGVARCHAR]	Scan results (JSON)

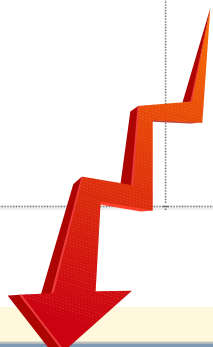
Tables

List of tables

Table name	Used by	Number of records	List of fields	List of keys	Table data (sample)
AllTypes	Requete_AllTypes (Query) AllTypes (Form) DataTypeExample (Procedure) WriteAllTextExample (Procedure) ReadAllBytesExample (Procedure) ReadAllTextExample (Procedure) ChunkExample (Procedure) ImgControl (Procedure) Console (Procedure) ExportBaseToCalc (Procedure)	494	Details		Data

Sample of data stored in table [AllTypes](#)

ID	A	B	C	D	E	F	G	H
1	21		7175142	92980	7175142	àèèçâêôû Memo field very longggggggggggg. Additional line. One more.	abcdefghijklmnop	12345



List of fields by table

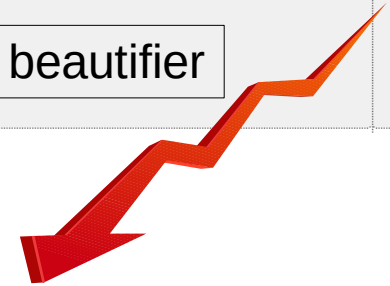
Table name	Field name	Field type	Precision	Primary key	Description	% not Null	Average	Most positive	Most negative	Oldest date	Latest date	Longest string	Default value
AllTypes	A	TINYINT			Tiny integer	0		21					
	B	BIGINT			Big integer	0							
	C	LONGVARBINARY			Image Long var binary	50							
	D	VARBINARY			Var Binary	0							
	E	BINARY			Binary	0							
	F	LONGVARCHAR			Memo Long Var Char	50						140	
	G	CHAR				0						50	
	H	NUMERIC				0	12345	12345					
	I	DECIMAL				0	12	12					
	ID	INTEGER		<input checked="" type="checkbox"/>		100		494					
	J	INTEGER				0			-2147483648				

Queries

List of queries

Query name	Missing	Used by	Query type	Direct SQL	SQL	List of fields
CreateTestTable		ExecuteQueryExample (Procedure) OpenQueryExample (Procedure)	MAKETABLE DDL	<input checked="" type="checkbox"/>	CREATE TABLE TEST_TABLE (COL1 INTEGER NOT NULL, COL2 CHAR(25), COL3 VARCHAR(25), COL4 DECIMAL(10, 2) NOT NULL, COL5 DATE, PRIMARY KEY (COL1))	Details
LISTEFACTURES		Requête_LISTEFACTURES (Query)	SELECT		SELECT "FRAIS", "ID FACTURE", "NUMERO COMMANDE", "PREFIXE FOURNISSEUR", "REFERENCE FACTURE" FROM "FACTURE"	Details

SQL beautifier



List of fields by query

Query name	Field name	Field type	Source table	Source field	Description
Requête_LISTEFACTURES	Facture	INTEGER	LISTEFACTURES (Query)	ID FACTURE	
	Frais	DOUBLE	LISTEFACTURES (Query)	FRAIS	
	Numéro	INTEGER	LISTEFACTURES (Query)	NUMERO COMMANDE	
	Préfixe	VARCHAR	LISTEFACTURES (Query)	PREFIXE FOURNISSEUR	
	Référence	VARCHAR	LISTEFACTURES (Query)	REFERENCE FACTURE	

Forms & Dialogs

List of forms

Form name	Used by	Height	Width	Data source	Controls by form	Form events	Screenshot
AllTypes		1028	1854	AllTypes (Table)	Details		
ARTICLEs		1028	1854	ARTICLE (Table)	Details		
ARTICLEsBis		1028	1854	SELECT * FROM "ARTICLE" WHERE "PREFIXE FOURNISSEUR" = 'AN'	Details	OnLoaded	
ControlsForm		1028	1854	ARTICLE (Table)	Details		
FACTURE		1028	1854	FACTURE (Table)	Details	OnConfirmDelete OnApproveParameter OnLoaded	

Controls by form

Form name	Control name	Control type	Data source	Events by control	Caption	Required	Format
ARTICLEs	Barre de défilement 1	Scroll bar					
	Bouton 1	Command button		OnActionPerformed	Bouton		
	Champ de date 1	Date field				<input checked="" type="checkbox"/>	Standard (short)
	MainForm_Grid	Gridcontrol					
	→ CODE ARTICLE	Text field	CODE ARTICLE		Code article	<input checked="" type="checkbox"/>	
	→ CODE CATEGORIE	Text field	CODE CATEGORIE		Code catégorie	<input checked="" type="checkbox"/>	
	→ CODE TVA	Formatted field	CODE TVA		Code TVA	<input checked="" type="checkbox"/>	General
	→ COMMENTAIRE	Text field	COMMENTAIRE		Commentaires	<input checked="" type="checkbox"/>	
	→ CONDITIONNEMENT ACHAT	Text field	CONDITIONNEMENT ACHAT		Conditionnement achat	<input checked="" type="checkbox"/>	
	→ DENOMINATION	Text field	DENOMINATION		Dénomination	<input checked="" type="checkbox"/>	
	→ EMBALLAGE 1	Formatted field	EMBALLAGE 1		Emballage	<input checked="" type="checkbox"/>	General
	→ ID ARTICLE	Formatted field	ID ARTICLE		ID	<input checked="" type="checkbox"/>	General
	→ PREFIXE FOURNISSEUR	Text field	PREFIXE FOURNISSEUR		Abréviation	<input checked="" type="checkbox"/>	

Modules

List of modules

Location	Library	Module name	Module type	Number of code lines	Procedures by module	Declaratives
Document	Standard	Initialisation	Standard	81	Details	REM ***** BASIC ***** Global lEventsCounter As Long
Document	Standard	Test_CodeExamples	Standard	2678	Details	Option Explicit Public iTest As Integer, iTestNumber As Integer, iStress As Integer, i As Integer, bVerbose As Boolean, bFind As Boolean Public bClose As Boolean, iStart As Integer, iStop As Integer Public lTickStart As Long
Document	Standard	Test_ControlEvent	Standard	121	Details	REM ***** BASIC *****
Document	Standard	Test_DialogControl	Standard	105	Details	Option Explicit
Document	Standard	Test_DialogEvent	Standard	51	Details	
Document	Standard	Test_DocumentEvent	Standard	87	Details	REM ***** BASIC *****
Document	Standard	Test_FindRecord	Standard	54	Details	Option Explicit
Document	Standard	Test_FormEvent	Standard	141	Details	REM ***** BASIC ***** REM Open the form REM ===== REM 14:28:05 INFO Before record change Triggered before the form moves to another record



Procedures by module

Library	Module name	Procedure name	Language	Used by	Line number	Number of code lines	
Standard	Test_FormEvent	When_Loading	Basic	FACTURE (Form)	66	5	Sub When_Loading(oEvent As Object) s="When Loading" TraceEvent(s,oEvent) ' Source : com.sun.star.comp.forms.ODatabaseForm End Sub
Standard	Test_FormEvent	When_Reloading	Basic	FACTURE (Form)	80	5	Sub When_Reloading(oEvent As Object) s="When reloading" TraceEvent(s,oEvent) ' Source : com.sun.star.comp.forms.ODatabaseForm End Sub
Standard	Test_FormEvent	When_Unloading	Basic	FACTURE (Form)	71	5	Sub When_Unloading(oEvent As Object) s="When Unloading" TraceEvent(s,oEvent) ' ??? End Sub

Basic parser

Missing items

Missing items

Name	Type	Used by
BD_START_DOC	Procedure	BASEDOCUMENTER.Btn_0002 (Toolbar control)
BD_START_SCAN	Procedure	BASEDOCUMENTER.Btn_0001 (Toolbar control)
BD_TEST	Procedure	BASEDOCUMENTER.Btn_0003 (Toolbar control)
MoveToRecord	Procedure	ARTICLEs Bouton 1 (Control) ARTICLEsBis Bouton 1 (Control)
Application.BaseTools.RunCmd	Module	
SYSTEM_TABLES	Query	List of Tables (Query)
Application.BaseDocumenter.Test	Module	
Trace	Procedure	BASEDOCFORM.Btn_0001 (Toolbar control)

Templates

```

<!DOCTYPE html>
<html>
<head>
<title><!--Template_Title--></title>
<meta charset="UTF-8">
<link rel="stylesheet" type="text/css" href=" ../BD_Stylesheet.css">
</head>
<body>
<table>
<caption></caption>
<tbody>
<tr>
<td>
%DBTOCTABLE%
</td>
<td>
<table class="templateheader">
<caption></caption>
<thead>
</thead>
<tfoot>
</tfoot>
<tbody>
<tr><td>Name of database</td><td><b>%DBNAME%</b></td></tr>
<tr><td>RDBMS</td><td><b>%DBVERSION%</b></td></tr>
<tr><td>Database file</td><td><b>%DBLOCATION%</b></td></tr>
<tr><td>File actual save date</td><td><b>%DBFILEDATE%</b></td></tr>
<tr><td>Administered by</td><td><b>%USER%</b></td></tr>
<tr><td>Scanning done on</td><td><b>%SCANTIME%</b></td></tr>
<tr><td>Documentation generated on</td><td><b>%NOW%</b></td></tr>
</tbody>
</table>
</td>
</tr>
</tbody>
</table>
<div class="grid-container">
<div class="grid-item">
%DBTOCTREE%
</div>
<div class="grid-item">
%DBDATATABLE%
</div>
</div>
</body>
</html>

```

[HOBBY](#) [Tables \(15\)](#) [Queries \(10\)](#) [Forms \(11\)](#) [Modules \(15\)](#) [Dialogs \(1\)](#) [Toolbars \(4\)](#) [Missing items \(8\)](#) [Index \(791\)](#)

Name of database	HOBBY
RDBMS	HSQL Database Engine 1.8.0
Database file	/home/jean-pierre/Documents/BaseDocument
File actual save date	2017-12-29 15:52:18
Administered by	jean-pierre
Scanning done on	2017-12-29 15:51:30
Documentation generated on	2017-12-29 15:52:36

- HOBBY**
- Tables
 - AllTypes
 - ARTICLE
 - CATEGORIE
 - DEFAULTVALUES
 - DEPENSE
 - FACTURE
 - INVENTAIRE
 - LIGNE FACTURE
 - NoKey
 - SOCIETE
 - SOCIETE_BACKUP
 - STOCK
 - TEST_TABLE
 - TESTMEMO
 - TVA
- Queries
 - CreateTestTable
 - LISTEFACTURES
 - List of Tables
 - MakeTable_NEWARTICLE
 - NewQuery
 - QueryParam
 - Requete_AllTypes
 - Requete_ARTICLE
 - Requête_LISTEFACTURES
 - SYSTEM_TABLES
 - TestQuery
- Forms
 - AllTypes
 - ARTICLES
 - ARTICLESBis
 - ControlsForm

Styles (CSS)

- dbdatatable
 - null, numeric, char, bool, negative
 - firstrow, lastrow, firstcol, lastcol
 - scriptidentifier, scriptkeyword, scriptfunction, scriptcomment, scriptvardef, scriptstring, scriptnumber, scriptconstant, scriptoperator, scripttablename, scriptqueryname, scriptformname, scriptdialogname, scriptprocname
 - sqlquote, sqltablename, sqlqueryname, sqlkeyword, sqlfunction, sqlnumber, sqlword, sqlerror, sqlcomment, sqlvariable
- fulltoctable
- dbtoctree, dbtoctreeheader
- dbtoctable

Settings

- **TABLES**

- ScanTables (True), CollectDataSamples (True), NumberOfSampleRecords (50), CollectDataStatistics (True)

- **QUERIES**

- ScanQueries (True), BeautifySQL (True)

- **FORMS**

- ScanForms (True), IncludeFormScreenshots (True), FormScreenshotTemplate (FORMS/%formname%.png)

- **MODULES**

- ScanBasicModules (True), IncludeGlobalBasicLibraries (False), ParseProcedures (True)

- **TOOLBARS**

- ScanToolbars (True)

- **DIALOGS**

- ScanDialogs (True), IncludeGlobalDialogLibraries (False), IncludeDialogScreenshots (True), DialogScreenshotTemplate (DIALOGS/%dialogname%.png)

- **USED BY, USES**

- TableQuery_FormSubform (True), TableQueryField_FormControl (True), TableQuery_ListCombo (True), TableQuery_SQL (True), Procedure_DBDocumentEvent (True), Procedure_DialogEvent (True), Procedure_FormEvent (True), Procedure_ControlEvent (True), Procedure_Button (True), Procedure_Procedure (True), Form_Procedure (True), TableQuery_Procedure (True)

- **DocumenterOutputDirectory**

- **TOCTemplate, OutputPageTemplate**

Function	Arguments
BD_CreateRepository	FileURL Registered name (if none, not registered)
BD_GeneralSettings	
BD_OpenRepository	URL or registered name User Password
BD_CloseRepository	Compact : if true, run « CHECKPOINT DEFRAG »
BD_ScanThisDatabase	Database short name Settings : 1 = use general settings 2 = use specific settings 3 = open dialog, define and store specific settings TOC : if false, do not include in TOC
BD_ScanAndDocThisDatabase	id.
BD_DocumentDatabase	Database shortname (if absent : all databases)
BD_ForgetDatabase	Database shortname
BD_WithUI	If false, execute in headless mode

Performance

Tables : 15
Queries : 11
Forms : 11
Dialogs : 1
Modules : 17 (4614 locs)
Table fields : 160
Query fields : 80
Controls : 279
Procedures : 213
ToolbarControls : 4
Relations : 178

Scan : 2'13"
HTML gen : 1'30"

Tables : 8
Queries : 6
Forms : 17
Dialogs : 1
Modules : 25 (2456 locs)
Table fields : 77
Query fields : 26
Controls : 240
Procedures : 86
ToolbarControls : 3
Relations : 60

Scan : 1'19"
HTML gen : 0'43"

« Basic is slowww ! » (M. Meeks)

TODO

- **First version**

- UI for settings
- Scan table (secondary) keys
- Tests on odb's collected on forums
- Tests on serious Basic libraries
(xray, access2base, basedocumenter, standard libraries)

- **Later versions tbc**

- Include reports
- Rewrite parsers in Python
- Firebird ?

