



Open Table InSpector

Database Browser & Library

for HMG Extended (minigui)

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Belgium

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(Written while the world was fighting the Corona virus.)



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What is OTIS

Otis stands for 'Open Table InSpector' and is a database table inspection tool for Dbase, Clipper, Harbour, xHarbour, FoxPro, ..., files.

Otis has a integrated **DATASET manager**. This needs some explanations.

A **DATASET** is a set of ONE or MORE tables and index files. You can assign a name to this SET of files, save it and load it back again later on with only one click. You can, anytime you want, add or delete tables and index files to a existing dataset and save it again with the same or another name.

The dataset manager permits you to inspect tables when you are developing and testing a program without cycling through the classic operations like :

- open table, open index file, inspect, modify, update, close
- open another table, open index file, inspect, close
- ...etc.

Create simply a **dataset** with tables and index files that you want to inspect on a regular base, save it, and reload all tables and index files with only one click. I can assure you, you will save a lot of time and many mouse clicks.

Why did i create this tool (or rather rewrote)

This is in reality a implementation of a old clipper tool that i wrote, i think, more than 20 years ago. But with far fewer possibilities as this new tool that i called Otis. We integrated this module (the old tool) in all our programs and protect it, if necessary, with a password.

Otis() helped me a lot of times for many many years already because it permits me, on site, to inspect, modify or repair data in a table at runtime on the fly in a simple and fast way. This without the necessity to install other external dbf viewer programs.

In 'Plugin mode', you can use it also for runtime debugging inspection of a table. Thus see 'almost' live updates from the running program. No 'modal' windows are used. By using this method, it permits you to switch between the running program and this tool when you want. You can even open multiple tables at the same time. Each table has its own dbfviewer, called 'Inspector' and all tools. Special precautions are taken for this mode to prevent data corruption when you try to modify a table at the same time as the running program. More details for the 'Plugin mode' in another chapter.

You ask me "Why rewrite yet another dbfviewer" ?

My answer, i found that there was always a thing missing in all other, very known, existing programs like dbu, dba, dbfview, mgdbu, ...etc. So, i had to use one or more of them to view and or manipulate a dbf file. I don't want to say that those programs were bad, rather the contrary. I used them often, but i tried to regroup and integrate all possibilities of all those separated tools in a single program. It is certainly not perfect for everybody but i am open for suggestions.

I borrowed some code from other dbfviewer programs that are in the sample folders of hmgextended. All concerned parts of the program contain a remark and reference to the original source and author.

Another reason.

I wanted to update / upgrade the visual design to a new level, like the win10 flat design. I don't like toolbars with a lot of pull-down menus. You have to click, click and click endless everywhere to discover what is possible. My opinion is that a userinterface should be clear and eye-catching. At first look all "bells and whistles" should be visible and my experience (>30 years) showed me that the first user experience is very important for a program to be succesfull.

And not to forget, i could always count on the clipper harbour community if i had a question.

So this is my way to contribute. It would be a pleasure if you do give me some feedback.

ENJOY, i hope OTIS is of any use for you. Let me know ...



What can you do with Otis :

Support all Codepages known in Harbour.

Support for the following RDD drivers :

DBFCDX

DBFNTX

DBFNSX

SIXCDX

LETODBF

You can use a mix of rdd drivers in the same dataset.

Dataset manager (main screen) :

- Open tables, multiselect with index AutoOpen (cdx) support.
- Attach index files to a table, multiselect support.
- Save multiple tables and index files in a Dataset.
- Load a Dataset.

Table viewer tool called the 'Inspector' :

- Select a index / order. (Other options see index manager below.)
- Set a filter.
- Show / Hide deleted() records.
- Set / Clear a filelock.
- Lock (freeze) columns on screen.
- Show / Hide columns.
- Search and replace data, file wide or fields only, with **SCOPE**, **FOR** and **WHILE** expressions.
- Seek wizard :
Presents a form with all fields used in the index KEY expression and autofills the seek expression.
Seek first, Seek last and Set Exact on/off.
Copy the 'seek expression' to the 'filter expression' textbox so that you can use the same expression to filter a table. Example, seek the first record and then show only records with the same field contents.
- Copy / paste a record :
Paste a record to another record in the same table or
Paste to another table.
All fields or only a selection of fields in function of their visibility.
- Clear a record.
- Duplicate a record.
Otis keeps into account the visibility of the columns/fields.
- Add / Insert records, one or more records at once.
- Up / Down, moves a record physically.
- Delete / Recall records with **SCOPE**, **FOR** and **WHILE** expressions.
- Pack / Zap a table.
- Append a file.
- Save a table to another table with the possibility to create a sub table.
When a table is saved Otis considers active filters, index/orders and saves only visible fields. This permits to create a sub table with only the fields and data that you want.
- Structure Editor, to modify the structure of the current open table.



Index manager :

- Create a new index, single or compound index files.
- Modify a index, tag.
- Delete a index, tag.
- Reindex all orders.
- View detailed index info with the possibility to copy this info to the clipboard.

Table and index properties viewer :

- Export structure to a .csv file.
- Export structure to a .prg file.
This prg can be used to create a table and all order index files.
- Export structure to the clipboard.
- View table info : filename, date, reccount, used rdd, used codepage, ...etc.
- View index info : list of all index files, tags, filenames, **KEY and FOR** expressions.

Table structure editor :

- Create a new structure.
- Modify a structure in the 'Inspector' of the opened file.
- Import a existing table structure to create a new table.
- Support for all field types included **Extended** field types.

3. How to use Otis :

You can use it in two different ways :

1. Compile it as a STANDALONE executable.

(The executable of Otis is available for download.)

The simplest method to use this program. Start Otis and add tables, indexes, load and save datasets, inspect tables, ...etc.

2. As a PLUGIN in your project.

That's where the magic happens.

Include OTIS.PRG or OTIS.LIB in your project.

First thing to do, attach function **Otis()** to a hotkey or assign it to, by example, a control "ACTION" property.

When you call this function, Otis() scans '**ALL CURRENTLY OPEN TABLES AND INDEX FILES**' opened by your program and creates and present them in a new DATASET.

You can save this dataset. Later, when you reload this dataset in the Otis standalone version. You will find the same situation as if you were in your program to inspect and or modify data.

You will find more specific information on how to use this mode below in another chapter.

4. Main screen of Otis

OTIS - DataSet ManagerFreeware - V1.1 B01 - 17/07/2020

Table Inspector

Recentmixed rdds cdx and leto

Changed

Exclusive

AutoOpen

FRWIN

DBFCDX

Table Properties

Struct. Editor

Load DataSet

Save DataSet

Close DataSet

Add Table(s)

Add Index(es)

Remove Table

Remove Index

Settings

Quit

Alias	Area	S	L	Recno	Reccount	Act.Ind.	Nbr.Ind.	Rdd	Table name
▶ MOVART_1	1	*	F	1	2166236	0	7	LETO	\tps\MOVART.DBF
CATALOG_2	2		F	1	260276	0	1	LETO	\tps\catalog.dbf
CAIMHI_3	3		F	1	162867	0	0	LETO	\tps\CAIMHI.DBF
CAIFHI_4	4		F	1	201113	0	0	LETO	\tps\CAIFHI.DBF
CAIMDHI_5	5		F	1	120461	0	0	LETO	\tps\CAIMDHI.DBF
CAIFDHI_6	6		F	1	106729	0	0	LETO	\tps\CAIFDHI.DBF
CLIENT_7	7		F	1	14729	0	0	LETO	\tps\CLIENT.DBF
MOVART_8	8		F	1	2166236	0	7	DBFCDX	data\MOVART.DBF
CATALOG_9	9		F	1	260276	0	1	DBFCDX	data\catalog.dbf
CAIMHI_10	10		F	1	162867	0	0	DBFCDX	data\CAIMHI.DBF
CAIFHI_11	11		F	1	201113	0	0	DBFCDX	data\CAIFHI.DBF
CAIMDHI_12	12		F	1	120461	0	0	DBFCDX	data\CAIMDHI.DBF
CAIFAZ_13	13		F	1	0	0	0	DBFCDX	D:\pfwin\Data\tps\CAIFAZ.DBF

Left side menus :

• Table Inspector

Select one of the tables in the dataset and click on this menu or double click a entry to open a table.

We open the windows file selector dialogbox if there are no tables in the dataset.

You can open multiple 'Inspectors' at the same time.

• Table Properties

Opens a window with the table structure information and menus to export the structure to a prg, a csv file or copy the structure to the clipboard for documentations purposes. The generated prg file can immediately be used in your own program to create a empty dbf file, index files and there orders.

- **Structure Editor**
Create a new table or modify a imported existing structure.
- **Load, Save, Close Dataset**
Does not need further explanation.
- **Add, Remove Table / Index**, idem.
- **Settings**, global program settings.

Top line options menus :

- **Recent**
5 most recent used datasets.
- **Changed**
Read only flag to indicate if a loaded dataset has been modified or created from empty.
- **Exclusive**
Set this checkbox if you want to load tables in exclusive mode. This is necessary for some functions like, pack, zap, reindex, ...etc. Otis refuse those operations and warns you if a table is not opened exclusive.
- **AutoOpen**
Open index files automaticaly if it has the same name as the table. Not supported by the NTX rdd.
- **Codepage**
Sets the default codepage that you want to use to open the tables. All existing codepages in Harbour are loaded in Otis.
- **Default Rdd**
Sets the default rdd driver to use to open tables. You can change this setting when you want. Thus you can load one or more DBFNTX table, then load one or more DBFCDX tables and so on. The rdd used to open a table is saved in the dataset. You can thus mix rdd drivers in one dataset. When you reload a DATASET the proper rdd driver is used for each table.
Supported drivers are :
 - DBFCXD
 - DBFNTX
 - DBFNSX
 - SIXCDX
 - LETODBF

Table browse control :

- **Alias name**
Is the same as the table name but suffixed with the area number.
Example, the alias for a table with filename 'MOVART' becomes 'MOVART_1'.
- **Area number**,
 - In Standalone mode assigned automatically.
 - In Plugin mode determind by the running program. Remember we scan all areas from 1...65564.
- **S of 'selected'**
Filled with a '*' if this table is the current 'selected' table.
- **L of 'lock'**
Three possibilities :
 - 'F' the file is locked, by a filelock or because the option 'Exclusive' was checked before load.
 - 'R' if there is a only one record locked.
 - 'R+' if multiple records are locked.
- **Recno**
Current record number.
- **Reccount**
Total number of records, unfiltered by a index,set filter or deleted() status.



- **Act.Ind.**
Actif order number.
- **Nbr.Ind.**
Number of orders (not necessary the number of orderbag files, remember compound cdx files.)
- **Rdd**
Rdd driver used to open the file.
- **Table name**
three possibilities :
 - If LetoDbf Rdd, full data pathname of server.

For others Rdd drivers :

- Only the sub path name is saved with the filename if you open a table that is in a sub-folder of the current Otis.exe location. Thus, without the drive letter or upper-level paths. With this method you can move folder\tables to another location. Otis can reload them from the same location as long as they stay a subfolder of the running program.
- Full pathname, drive, path and filename if a table is loaded in another folder and or disk.

5. Table Inspector screen :

Select one of the tables and click menu button 'Table Inspector' or simply double click a entry.

As already mentioned, you can open multiple tables each with their own 'Inspector' screen.

The screenshot shows the 'Open Table InSpector' application window. The title bar indicates the file path is 'D:\pfiwin\data\tps\Data\tps\MOVART.DBF', the alias is 'MOVART', the area is '11000', and the copy is 'FR850C'. The main window has a menu bar with 'Order info (7)', 'Filter -->', 'On/Off', 'F5 Refresh', 'Filelock', and 'Hide Columns'. Below the menu bar is a table with columns: Record, Del, Nrfact, Jnlfact, Link, Status, Repr, Reprcp, Reprcv, Referprod, and Denomprod. The table contains 34 rows of data, each representing an order. The 'Record' column shows order numbers from 645043 to 645074. The 'Del' column shows '0' for all records. The 'Nrfact' column shows '100006' for all records. The 'Jnlfact' column shows 'ACH' for all records. The 'Link' column shows 'BCF100004' for all records. The 'Status' column shows '2' for all records. The 'Repr' column shows 'B' for all records. The 'Reprcp' column shows '0.00' for all records. The 'Reprcv' column shows '0.00' for all records. The 'Referprod' column shows various product codes like 'NRSERIE', 'RECUPEL', 'RUKI_DT100/8GB', 'ADSLDLDLS-26408', 'MSLO_V100', 'MSLO_910-001073', 'BEBAT', 'MSLO_931781', 'MSLO_909671', 'PPP_B_LJ65-DT-02', 'PRHP_Q8444B#BGV', 'PRHP_OFFICB057A', 'INKHP_C9362EE', and 'INKHP_C9364EE'. The 'Denomprod' column shows various product names like 'Nr série :AUS943004171', 'TAXE RECYCLAGE RECUPEL : (LCDPH_190SW9FS)', 'MEMOIRE USB KINGSTON, 8GB, Datatraveler', 'Modem Router 4p, ADSL 26408 (1ant), B/G', 'MOUSE LOGITECH V100 OPTICAL NOTEBOOK', 'Logitech Wireless Mouse M205 Black WER', 'TAXE RECYCLAGE RECUPEL : (MSLO_910-001073)', 'TAXE BEBAT (MSLO_910-001073)', 'PILOT OPTICAL MOUSE SILVER RET PS2 UBS', 'Pilot Optical Mouse Black Retail USB/PS2', 'EasyNote LJ65-DT-027BE/Core2Duo T6600', 'Nr série :94927504516', 'TAXE RECYCLAGE RECUPEL : (PPP_B_LJ65-DT-02)', 'TAXE BEBAT (PPP_B_LJ65-DT-02)', 'HP Photosmart wireless aio/NL FR 30/28pm', 'Nr série :CN9A5751PY', 'TAXE RECYCLAGE RECUPEL : (PRHP_Q8444B#BGW)', 'TAXE BEBAT (PRHP_Q8444B#BGW)', 'HP OffJet Pro 6500, CB057A, p/c/s/f', 'Nr série :SMY98G3X3PZ', 'Nr série :SMY98G3X3M4', 'TAXE RECYCLAGE RECUPEL : (PRHP_OFFICB057A)', 'TAXE RECYCLAGE REPROBEL (PRHP_OFFICB057A)', 'LS1 Laser Mouse/USB Acid Yellow', 'Pack ENCRE T0615 (NCMY) Stylus D88 D68', 'ENCRE HP 364 BLACK XL', 'ENCRE HP 339 BLACK HIGH CAPACITY C8767EE', 'ENCRE HP 336 BLACK C9362EE', 'ENCRE HP 337 BLACK HIGH CAPACITY C9364EE', and 'ENCRE HP 88 CYAN C9386AE'. The bottom of the window has a 'Quit' button.

Record	Del	Nrfact	Jnlfact	Link	Status	Repr	Reprcp	Reprcv	Referprod	Denomprod
645043	0	100006	ACH	BCF100004	2	B	0.00	0.00	NRSERIE	Nr série :AUS943004171
645044	0	100006	ACH	BCF100004	2	B	0.00	0.00	RECUPEL	TAXE RECYCLAGE RECUPEL : (LCDPH_190SW9FS)
645045	0	100006	ACH	BCF100004	3	B	0.00	0.00	RUKI_DT100/8GB	MEMOIRE USB KINGSTON, 8GB, Datatraveler
645046	0	100006	ACH	BCF100004	4	B	0.00	0.00	RUKI_DT100/16GB	MEMOIRE USB KINGSTON, 16gb, Datatravele
645047	0	100006	ACH	BCF100004	6	B	0.00	0.00	ADSLDLDLS-26408	Modem Router 4p, ADSL 26408 (1ant), B/G
645048	0	100006	ACH	BCF100004	7	B	0.00	0.00	RECUPEL	TAXE RECYCLAGE RECUPEL : (ADSLDLDLS-26408)
645049	0	100006	ACH	BCF100004	8	B	0.00	0.00	MSLO_V100	MOUSE LOGITECH V100 OPTICAL NOTEBOOK
645050	0	100006	ACH	BCF100004	10	B	0.00	0.00	MSLO_910-001073	Logitech Wireless Mouse M205 Black WER
645051	0	100006	ACH	BCF100004	11	B	0.00	0.00	RECUPEL	TAXE RECYCLAGE RECUPEL : (MSLO_910-001073)
645052	0	100006	ACH	BCF100004	12	B	0.00	0.00	BEBAT	TAXE BEBAT (MSLO_910-001073)
645053	0	100006	ACH	BCF100004	13	B	0.00	0.00	MSLO_931781	PILOT OPTICAL MOUSE SILVER RET PS2 UBS
645054	0	100006	ACH	BCF100004	15	B	0.00	0.00	MSLO_909671	Pilot Optical Mouse Black Retail USB/PS2
645055	0	100006	ACH	BCF100004	17	B	0.00	0.00	PPP_B_LJ65-DT-02	EasyNote LJ65-DT-027BE/Core2Duo T6600
645056	0	100006	ACH	BCF100004	18	B	0.00	0.00	NRSERIE	Nr série :94927504516
645057	0	100006	ACH	BCF100004	18	B	0.00	0.00	RECUPEL	TAXE RECYCLAGE RECUPEL : (PPP_B_LJ65-DT-02)
645058	0	100006	ACH	BCF100004	19	B	0.00	0.00	BEBAT	TAXE BEBAT (PPP_B_LJ65-DT-02)
645059	0	100006	ACH	BCF100004	20	B	0.00	0.00	PRHP_Q8444B#BGV	HP Photosmart wireless aio/NL FR 30/28pm
645060	0	100006	ACH	BCF100004	21	B	0.00	0.00	NRSERIE	Nr série :CN9A5751PY
645061	0	100006	ACH	BCF100004	21	B	0.00	0.00	RECUPEL	TAXE RECYCLAGE RECUPEL : (PRHP_Q8444B#BGW)
645062	0	100006	ACH	BCF100004	22	B	0.00	0.00	BEBAT	TAXE BEBAT (PRHP_Q8444B#BGW)
645063	0	100006	ACH	BCF100004	23	B	0.00	0.00	PRHP_OFFICB057A	HP OffJet Pro 6500, CB057A, p/c/s/f
645064	0	100006	ACH	BCF100004	23	B	0.00	0.00	NRSERIE	Nr série :SMY98G3X3PZ
645065	0	100006	ACH	BCF100004	24	B	0.00	0.00	NRSERIE	Nr série :SMY98G3X3M4
645066	0	100006	ACH	BCF100004	25	B	0.00	0.00	RECUPEL	TAXE RECYCLAGE RECUPEL : (PRHP_OFFICB057A)
645067	0	100006	ACH	BCF100004	26	B	0.00	0.00	REPROBEL	TAXE RECYCLAGE REPROBEL (PRHP_OFFICB057A)
645068	0	100006	ACH	BCF100004	26	B	0.00	0.00	MSLO_910-001110	LS1 Laser Mouse/USB Acid Yellow
645069	0	100006	ACH	BCF100004	29	B	0.00	0.00	INKHP_T061PACK	Pack ENCRE T0615 (NCMY) Stylus D88 D68
645070	0	100006	ACH	BCF100004	30	B	0.00	0.00	INKHP_364XLBK	ENCRE HP 364 BLACK XL
645071	0	100006	ACH	BCF100004	31	B	0.00	0.00	INKHP_C8767EE	ENCRE HP 339 BLACK HIGH CAPACITY C8767EE
645072	0	100006	ACH	BCF100004	32	B	0.00	0.00	INKHP_C9362EE	ENCRE HP 336 BLACK C9362EE
645073	0	100006	ACH	BCF100004	33	B	0.00	0.00	INKHP_C9364EE	ENCRE HP 337 BLACK HIGH CAPACITY C9364EE
645074	0	100006	ACH	BCF100004	34	B	0.00	0.00	INKHP_C9386AE	ENCRE HP 88 CYAN C9386AE

This is the real table tool center.

Top menu line :

- **Order (x) and combobox**
Display the number of loaded orders for the table. Use the combobox to select one of the orders.
Click on it to open a window with all order info (filenames, tags, key, for) that can be copied to the clipboard.

- **Order scope**
Opens a window where you can set an order TOP and BOTTOM scope. The checkbox permits to switch between scoped and unscoped display of a table.
Each order can have its own scope.
- **Filter**
Filter expression that you can enable/disable with the checkbox just to the right of it.
- **Allow Edit / F2**
Set this checkbox if you want to edit cells with a double click or toggle delete status of a record with the 'delete' key.
Field of type 'memo' needs some extra information. On double click a sub window is opened with the contents of the memo field. You can change the size of this window, edit, delete text.
To save the new contents hit 'Ctrl Enter'. Attention, nothing is saved if you click outside this window.
- **F5 Refresh**
Refresh the tbrowse table. Sometimes necessary because in plugin mode the running program can modify data and Otis is not aware of it. Normally a page up/down is used to refresh the tbrowse buffers but you can also use the F5 key like in most windows programs to refresh the screen.
- **Hide deleted**
Enable/disable display of 'Deleted' records.



**THIS IS A GLOBAL PROGRAM WIDE SETTING IN HARBOUR.
BE VERY CAREFULL TO USE THIS OPTION ESPECIALLY IN PLUGIN MODE.
IF YOU CHANGE THIS SETTING YOU CHANGE IT FOR ALL OPENED TABLES
AT THE SAME TIME.**

- **Filelock**
Set a filelock if you want to prevent that other parts of a program can make changes. It is set automatically if you loaded the table exclusive and in consequence can not be unchecked.
- **Lock columns**
Spinner and checkbox to freeze 'x' columns.
- **Hide columns**
Permits to select the columns to be displayed. Use the checkbox to switch between the two modes.

Left side menus :

- **Seek wizard**
opens a window wherein you can define a seek expression. The wizard creates a form with all the fields used in the expression. You only need to fill in those fields and the wizard will automatically create the full expression in function of the used index key. This wizard is not perfect and some complex key expressions can not (yet) be treated by the wizard. In that case disable the autofill function and enter the expression manually.
You can seek the first record, the last record, set exact on/off and copy the expression to the filter.
- **Search / Repl.**
Two methods.
The first one to search and / or replace data in a table for only one fields or for all fields at the same time.
The second one to replace data in only one field at the time.
Replace field contents with a 'Value' or with the help of a 'Expression'.
Options are available to **set a scope** and set a **FOR** and / or a **WHILE** expression if needed.
- **Goto record**
Goto top, bottom or goto a specific record.
Don't forget that you can also use ctrl-Home/End to go to the top or bottom of a table.
It is obvious that this is always in function of a actif index and or actif filter.

- **Copy, Paste**

The copie / paste buffer is a **global** program buffer.

You can thus copy/paste contents from **one record to another record in the same table** or to **another table**.

Otis even goes further then what is usually possible.

Sometimes it is necessary to copy/paste only some specific fields and not the whole record.

Otis makes it possible. How to proceed. Hide the columns (fields) in the 'Inspector' that contains the database where you want to copy from. Click, copy, only the visible fiields are copied into the copy/paste buffer. Switch to full columns view, goto another record and click paste. Again, only the previous visible columns (fields) are pasted.

And as already mentionned, you can even copy fields from one table to another table. Remember, the copy/paste buffer is a global program buffer. How to proceed. The same as if you copy between records in the same table but before clicking the paste tool, choose another table. Fieldnames that do not exist in the target table or are not of the same type are ignored. Again, only visible columns (fields) are copied / pasted.

- **Clear a record**

Does not need explanations.

- **Duplicate a record**

The selected record is pushed down.

Otis duplicates the record but only duplicates data of the visible columns (fields).

- **Add, Insert**

You can add / insert multiple records in one run.

Insert needs some special attention.

Insert is only possible if the table is opened in **exclusive** mode. We use the recently introduced new low level function **DBINSERT()** that is very very fast. The only inconvenience is that dbinsert() ignores actif orders. Otis recreates all orders after it.

- **Up, Down**

Physically moves a record up or down.

One limitation, this function can only be used if there is no order actif.

- **Delete, Recall**

You can delete / recall a single or multiple records, set a **SCOPE** and if necessary, set a **FOR** and/or **WHILE** expression.

You can also use the 'delete' key to delete/recall a single record if the 'Allow edit' box is checked.

- **Pack, Zap**

Does not need explanations only that the table must be opened in **exclusive** mode.

- **Append file**

Does not need explanations.

- **Index manager**

Order management.

Permits to create, modify and delete order tags and files.

Reindex all orders for a table.

The filename of the index file is automatically proposed by Otis if you create a new order. Sure, you can modify the proposed name.

Single order (ntx) and multi-tag compound cdx files are supported.

- **Table properties**

Show the structure of the table.

Available menus :

- Export the structure to a **prg** file that you can use in your own program to create a new empty table and attached index files.
- Export structure to a **csv** file.
- Export structure to the windows clipboard.
- Table info, show all kind of table info and a menu to copy this info to the clipboard.
- Index info, show index info, filenames, key, for and while clause and a menu to copy this info to the clipboard.



- **Structure Editor**

Modify the structure of the current open table.

Data, index and memo files are recreated If you save the new structure to the **same** name as the one that is currently open. Previous files are renamed to *.bak.

- **Export -> csv**

Export data to a ';' delimited csv file.

Only records and columns (fields) that are visible in the browse table are saved.

Options like a filter, hidden columns, scope, index, set deleted, they all define what is saved.

You can thus easily create a subset of a table.

- **Save as**

Needs some special attention.

Only records and columns (fields) that are visible in the browse table are saved.

Options like a filter, hidden columns, scope, index, set deleted, they all define what is saved.

You can thus easily create a subset of a table.

6. Plugin mode

As explained you can include Otis in your own program by including the LIB file in your project.

Attach the function **Otis()** to a event like a special key or a control action event. No other functions have to be called to initialize, set, reset or whatever else.

Otis knows when it is in 'plugin mode' or running as a 'standalone' executable. How does Otis know that it is running in 'Standalone' mode. Simply by checking if the word 'OTIS' is found in the executable filename. You can thus create your own executable with your own special SET(....)tings as long as the executable name contains 'OTIS'.

Differences between 'Standalone' and 'Plugin mode' ?

In Plugin mode Otis **inherits** from your application :

- All your program settings SET(...).
- Codepages.
- Rdd drivers.
- Deleted status.
- Exclusive open mode.
- AutoOpen mode.
- All Alias() names.
- All area numbers.
- All table record positions are retrieved.
- All table 'Filter' settings are retrieved.

The corresponding checkbox and or combobox in the main screen reflects these current settings.

There is one thing that needs special attention and it is a very, very important issue in 'plugin' mode :

When you call OTIS() it scan all areas for tables and indexes opened by your program and present them in a new dataset. You can open a table in the 'Inspector' window and this is where big problems can arise. You will say, why.

An example will speak for itself.

We are running under windows and as you know all forms can be clicked to give them the focus. Remember there are only a few 'Modal' forms in Otis. You can thus, at any moment, set the focus to a form in your

application and then give focus to a form in Otis. What happens if a table is opened in a form in your program and the record pointer is positioned on a specific record. Remember, this table is also shown in the dataset with the consequence that you can open this table in the 'Inspector' at the same time. When you open this table, the 'Inspector' it will be positioned on the same record. What happens if you, in Otis, change the record position, delete / add a record, change order, set a filter, set a scope ? Your application form completely lose control in this table because Otis is working in the same area. This is a dangerous situation and data integrity is not assured. Data could be corrupted or could be lost.

I have found the following solution to prevent these situations :

As said when you call Otis() it scans all areas. Opened tables and indexes are presented in the dataset table with the alias and area number set by your program. I call this area the 'mother' area. What Otis do is reopen the same table with another alias name and another area number (see Settings menu). The default area number for this reopened table is the 'mother' area number plus a offset of 10000. You will see thus each table in what i call a 'Ghost' table with his own alias and area number and record positioning.

We advise you to open a table opened by your application in this 'Ghost' area because almost all operations like, change order, filter, go to another record, ...etc. are independent of the 'mother' area. Your program form that is positioned on a record will not be influenced by operations in this 'Ghost' area.

Example below :

'Mother' table name is produit.dbf :

The alias name is 'Pro_1' and the area number is '1'.

'Ghost' table :

Alias will be 'Pro_1_1' with area number '10001'.

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Table Inspector

Recent

Changed

Exclusive

AutoOpen

FRWIN

DBFCDX

Table Properties

Struct. Editor

Load DataSet

Save DataSet

Close Dataset

Add Table(s)

Add Index(es)

Remove Table

Remove Index

Settings

Quit

Alias	Area	S	L	Recno	Reccount	Act.Ind.	Nbr.Ind.	Rdd	Table name
PRO_1	1			1	15182	1	9	DBFCDX	DATA\TPS\PRODUIT.dbf
MOVDOC_1	2			645012	2756312	1	7	DBFCDX	DATA\TPS\MOVART.dbf
LSTFMT_1	3			1	388	0	0	DBFCDX	format\FORMAT.dbf
GEN_1	4			892	1331	1	1	DBFCDX	DATA\TPS\COMPGEN.dbf
CLI_1	5	*		1	14768	1	6	DBFCDX	DATA\TPS\CLIENT.dbf
PRO_1_1	10001			1	15182	1	9	DBFCDX	DATA\TPS\PRODUIT.dbf
MOVDOC_1_2	10002			645012	2756312	1	7	DBFCDX	DATA\TPS\MOVART.dbf
LSTFMT_1_3	10003			1	388	0	0	DBFCDX	format\FORMAT.dbf
GEN_1_4	10004			892	1331	1	1	DBFCDX	DATA\TPS\COMPGEN.dbf
CLI_1_5	10005			1	14768	1	6	DBFCDX	DATA\TPS\CLIENT.dbf



Be careful, even with this solution, some tools in Otis can have an impact in the 'mother' area and result in data loss.

This is maybe not the best solution but the only one that came up for the moment.

Last remark, when you are in 'plugin' mode and close a dataset, only the 'Ghost' areas are closed. Otis may not close tables opened by the running program. The difference is made by the area number. All areas with a area number greater than ≥ 10000 are closed because they are 'Ghost' areas.

7. Letodbf

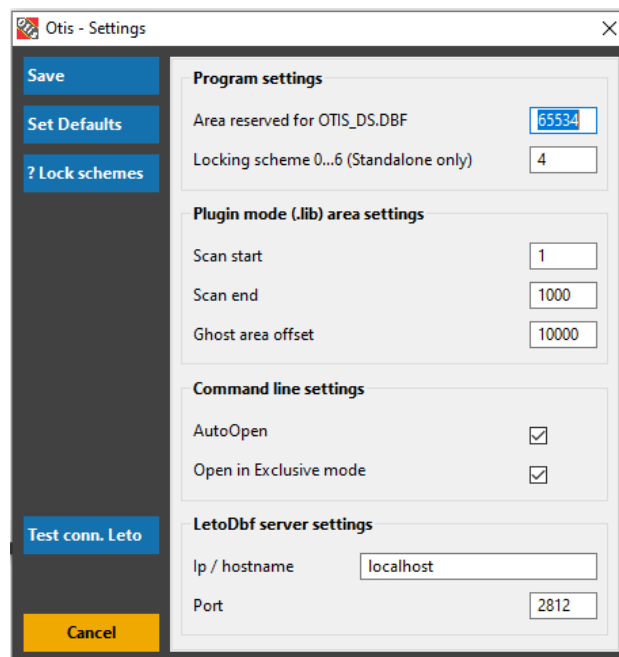
Otis contains all the necessary drivers to open and manage LetoDbf tables. LetoDbf is really a excellent client server driver. Thanks to Elch.

The only thing that you must do is set the servername and port to use for a connexion in the 'Settings' menu.

There is no 'connect' button or whatever else. Otis try to open automatically the connexion when it is not yet established when you load a previous saved dataset that contains tables that use the LetoDbf driver or when you want to add a table to a dataset with the LetoDbf rdd driver selected in the combobox. Otis contains special getfile() and putfile() functions to work with the LetoDbf server 'Data' folder (see letodb.ini).

8. Program settings

There are few program settings.



- Area reserved for OTIS_DS.DBF**
Area number exclusively used for the program dataset table, OTIS_DS.DBF.
Change it if there is a conflict with a area number used by your program when you run in 'plugin' mode.
Attention $(2^{16}) - 1 = 65535$. Harbour excludes this area number, thats why i used by default 65534.
- Locking scheme 0...6.**
`SET(_SET_DBFLOCKSCHEME, 0...6)`
Default value = 4 - HB32 Harbour hyper locking scheme for 32-bit file API, table size max 4GB.
Only used in 'StandAlone' mode. In 'Plugin' mode (.lib) your own program setting will be used.
A menu button is available with info for the different locking scheme methods.



- **Plugin mode area settings :**
Start and end area range scanned when Otis() is called to fill the dataset with the opened tables by your program.
Ghost area offset, offset added to the 'mother' area number for the 'ghost' areas.
- **Command line mode settings :**
AutoOpen mode.
Exclusive open mode.
- **LetoDbf settings**
Ip / Hostname of the LetoDbf server.
Can be :
 - ip address, 192.168.1.253
 - a hostname LETODBF.DDNS.NET
 - localhost
 - ...etc.
Port, port number to use.
Don't forget for your firewall that LetoDbf use 2 ports. The one that you specify here and the next one.
Example, 2812 and 2813.

9. CLI, Command Line Options :

Otis table1.dbf, table2.db, ...etc.

Filename separator can be ',' or ';'.

10. Files used and created by Otis :

Otis.exe or Otis.lib creates automatically the following files if they are not found in the folder from where you launch the program :

Otis.ini	: contains all program settings.
Otis_ds.dbf	: database for dataset storage.

Copy these two files, if you copy Otis.exe from one folder to another folder, if you want to keep the same settings. I choose for this solution because in 'plugin' mode with the lib file some settings, like by example the Letdbf server settings, could be different per application.

11. Some previews :

Field Name	Type	Len	Dec	#
CHAR	C - Character	10	0	1
NUM	N - Numeric	10	0	2
DATE	D - Date	8	0	3
LOGICAL	L - Logical	1	0	4
MEMO	M - Memo	10	0	5
DATE3	D - Date 3 (ext.)	3	0	6
DATE4	D - Date 4 (ext.)	4	0	7
MEMO4	M - Memo 4 (ext.)	4	0	8
AUTO	+ - AutoInc 4 (ext.)	4	0	9
MODTIME8	= - ModTime 8 (ext.)	8	0	10
ROWVER8	^ - RowVers 8 (ext.)	8	0	11
TIME4	T - Time 4 (ext.)	4	0	12
DAYTIME8	@ - DayTime 8 (ext.)	8	0	13
INT1	I - Integer 1 (ext.)	1	0	14
INT2	I - Integer 2 (ext.)	2	0	15
INT3	I - Integer 3 (ext.)	3	0	16
INT4	I - Integer 4 (ext.)	4	0	17
INT8	I - Integer 8 (ext.)	8	0	18
VAR3	V - Variant 3 (ext.)	3	0	19
VAR4	V - Variant 4 (ext.)	4	0	20
VAR6	V - Variant 6 (ext.)	6	0	21
VARX	V - Variant x (ext.)	100	0	22
CURR8	I - Integer 8 (ext.)	8	4	23
DOUBLE8	B - Double 8 (ext.)	8	0	24

Structure Editor with a example of all
standard and extended field types.

Nr	Fieldname	Type	Len	Dec
001	NRFACT	N	6.00	0.00
002	JNLFACT	C	3.00	0.00
003	LINK	C	13.00	0.00
004	STATUS	C	1.00	0.00
005	REPR	C	3.00	0.00
006	REPRCP	N	6.00	2.00
007	REPRCV	N	10.00	2.00
008	REFERPROD	C	15.00	0.00
009	DENOMPROD	C	55.00	0.00
010	REFCLFOU	C	8.00	0.00
011	DATE	D	8.00	0.00
012	DECHEANCE	D	8.00	0.00
013	IMPUT	C	8.00	0.00
014	TTVA	C	5.00	0.00
015	PRIXUNIT	N	15.00	4.00
016	QUANT	N	11.00	3.00
017	QUANT2	N	11.00	3.00
018	QUANTCMD	N	11.00	3.00
019	REMISE	N	6.00	2.00
020	THTVA	N	15.00	4.00
021	ARTEC	C	1.00	0.00
022	VISIB	L	1.00	0.00
023	STOCK	L	1.00	0.00
024	VALOR	L	1.00	0.00
025	REFDOC	C	15.00	0.00
026	PA	N	12.00	4.00
027	PV1	N	12.00	4.00
028	DEVCODE	C	3.00	0.00
029	DEVCOUR	N	16.00	10.00
030	MQ1	N	10.00	4.00
031	MQ2	N	10.00	4.00

Table properties.



```
//
// This code is generated by OTIS()
//
// Otis stands for 'Open Table InSpector'.
//
// Table ; data\CLIENT.DBF
// Date ; 28/01/2021
// Time ; 22:01:31
//
// Index info :
// Orderbags : 1
// Orders : 2
//
// 1 OrderBag name : CLIENT.CDX
// Order nbr : 1
// Order name : REFER
// Key : REFER
// For : !DELETED()
//
// 2 OrderBag name : CLIENT.CDX
// Order nbr : 2
// Order name : NOM1
// Key : NOM1
// For :
//
Function Dbf_Create_CLIENT()
DBCREATE( 'CLIENT', {
{ 'REFER' , 'C' , 8 , 0 } ;
{ 'NOM1' , 'C' , 30 , 0 } ;
{ 'NOM2' , 'C' , 30 , 0 } ;
{ 'ADDRESS' , 'C' , 30 , 0 } ;
{ 'SENDTO' , 'C' , 1 , 0 } ;
{ 'EMAILTV' , 'C' , 50 , 0 } ;
}, 'DBFCDX' )

// Create index files
USE CLIENT.DBF NEW

INDEX ON REFER ;
TAG REFER ;
TO CLIENT ;
FOR !DELETED()

INDEX ON UPPER(SUBSTR(NOM1,1,10)) ;
TAG NOM1 ;
TO CLIENT
USE

Return nil
```

Example 'Export to prg'.

\\tps\MOVART.DBF	
Data file full name & path	: \\tps\MOVART.DBF
Alias for this workarea	: MOVART_1
Area select number	: 1
Dbf driver used	:
Locking scheme used by RDD	: 3
Codepage used	: FRWIN
Last modification date	: 0d20200714
Was the file opened shared?	: .F.
Was the file opened readonly?	: .F.
Data file's header size	: 1218
The size of 1 record in the file	: 338
Number of fields in a record	: 37
Number of records	: 2166236
Current Filter setting	:
Is there a file lock active?	: .F.
Number of record locks	: 0
An array of locked records numbers	: { Array of 0 Items }
Number of child relations set	: 0
Same as Found()	: .F.
Same as Bof()	: .F.
Same as Eof()	: .F.
Type of MEMO file: DBT, SMT, FPT	: 2
The memo file's file extension	: .fpt
Memo File's block size	: 64
To clipboard	
Quit	

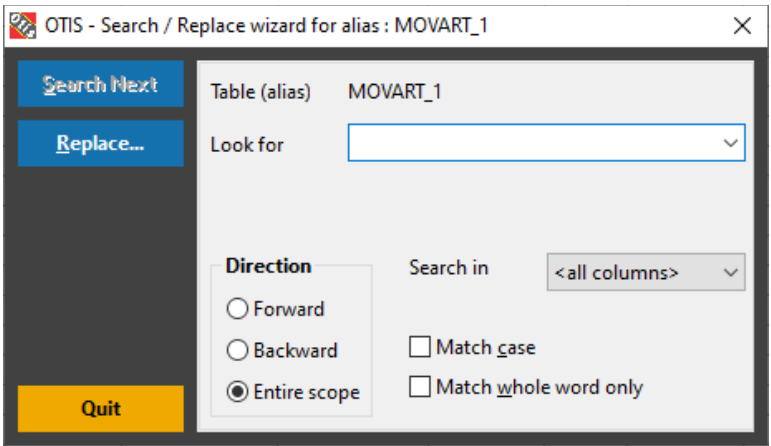
Table info.

Table : \tps\MOVART.DBF	
Index info :	
Orderbags	: 1
Orders	: 7
1 OrderBag name : tps\MOVART.cdx	
Order nbr	: 1
Order name	: IMOVART
Key	: JNLFACT+STR(NRFACT,6)
For	:
Order nbr : 2	
Order name	: IMOVRPR
Key	: REFERPROD+JNLFACT+DTOS(DATE)
For	:
Order nbr : 3	
Order name	: IMOVBO
Key	: JNLFACT+STR(NRFACT,6)+DTOS(DECHEANCE)+REFCLFOU+REFERPROD
For	: STOCK.AND.JNLFACTS"BCC,BCF".AND.STATUS\$"B".AND.QUANT2<>0.AND.!DELETED()
Order nbr : 4	
Order name	: IMOVCF
Key	: REFCLFOU+JNLFACT+DTOS(DATE)+STR(NRFACT,6)
For	: !DELETED()
Order nbr : 5	
Order name	: IMOVPO
Key	: REFERPROD+JNLFACT+DTOS(DECHEANCE)+REFCLFOU
For	: STOCK.AND.JNLFACTS"BCC,BCF".AND.STATUS\$"B".AND.QUANT2<>0.AND.!DELETED()
Order nbr : 6	
Order name	: IMOVTI
Key	: REFCLFOU+JNLFACT+STR(NRFACT,6)+DTOS(DECHEANCE)+REFERPROD
For	: STOCK.AND.JNLFACTS"BCC,BCF".AND.STATUS\$"B".AND.QUANT2<>0.AND.!DELETED()
Order nbr : 7	
Order name	: IMOVCFD
Key	: REFCLFOU+DTOS(DATE)+STR(NRFACT,6)
For	: !DELETED()

Index info.

OTIS - Seek wizard for alias : MOVART_1	
Seek First	Order Key Expr. JNLFACT+STR(NRFACT,6)
Seek Last	Expression by hand <input type="checkbox"/> (Disable autofill of seek expression.)
Exact OFF (=)	Seek expression <input type="text"/>
To Filter	JNLFACT (c) <input type="text"/>
Clear	NRFACT (n) <input type="text"/>
Quit	

Seek wizard.



OTIS - Search / Replace wizard for alias : MOVART_1

Search Next

Replace...

Quit

Table (alias) MOVART_1

Look for

Direction

Forward

Backward

Entire scope

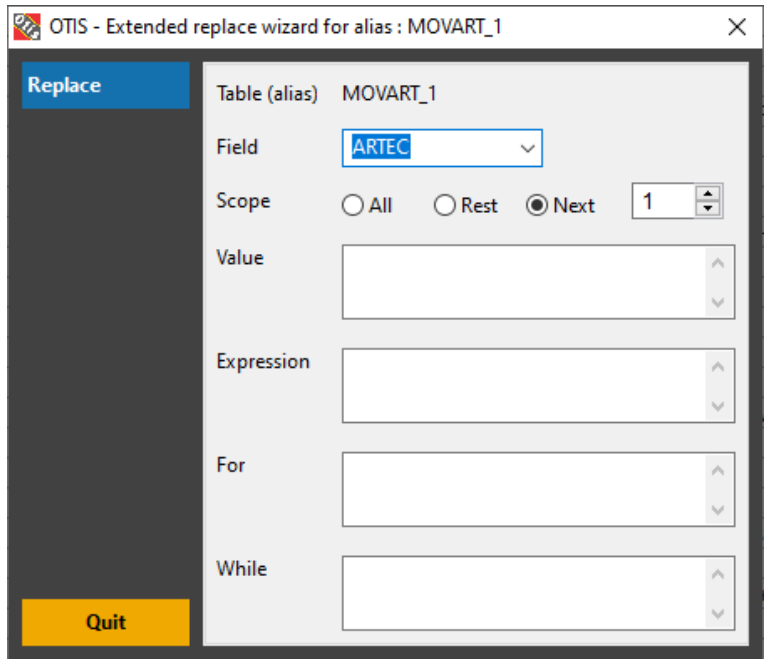
Search in

<all columns>

Match case

Match whole word only

Search / Replace (standard version).



OTIS - Extended replace wizard for alias : MOVART_1

Replace

Quit

Table (alias) MOVART_1

Field

ARTEC

Scope

All

Rest

Next

1

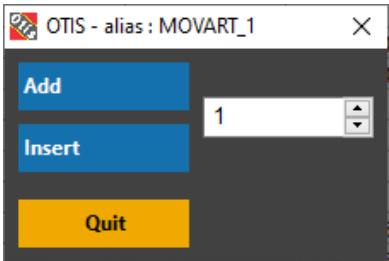
Value

Expression

For

While

Replace wizard (extended version).



OTIS - alias : MOVART_1

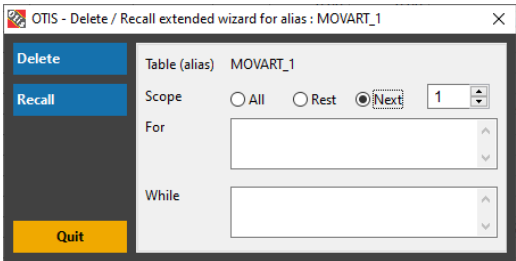
Add

Insert

Quit

1

Add / Insert one or multiple record(s).



OTIS - Delete / Recall extended wizard for alias : MOVART_1

Delete

Recall

Quit

Table (alias) MOVART_1

Scope

All

Rest

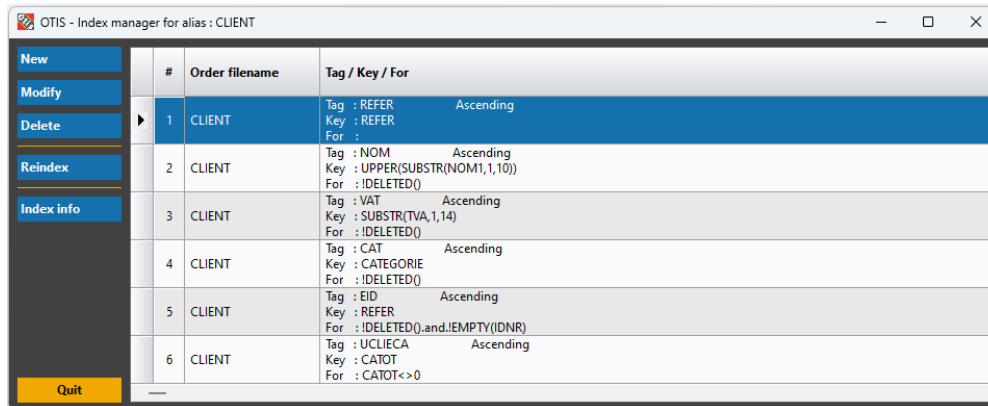
Next

1

For

While

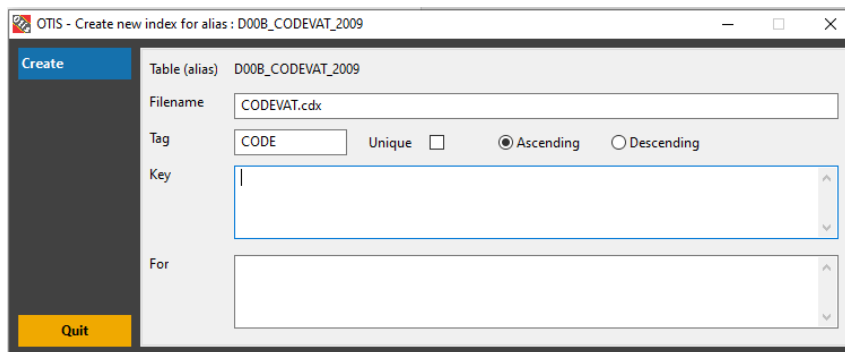
Delete / Recall one or multiple record(s).



OTIS - Index manager for alias : CLIENT

	#	Order filename	Tag / Key / For
New			
Modify			
Delete			
Reindex			
Index info			
Quit			
	1	CLIENT	Tag : REFER Ascending Key : REFER For :
	2	CLIENT	Tag : NOM Ascending Key : UPPER(SUBSTR(NOM1,1,10)) For : !DELETED()
	3	CLIENT	Tag : VAT Ascending Key : SUBSTR(TVA,1,14) For : !DELETED()
	4	CLIENT	Tag : CAT Ascending Key : CATEGORIE For : !DELETED()
	5	CLIENT	Tag : EID Ascending Key : REFER For : !DELETED().and.!EMPTY(IDNR)
	6	CLIENT	Tag : UCLIECA Ascending Key : CATOT For : CATOT<>0

Index manager.



OTIS - Create new index for alias : D00B_CODEVAT_2009

Create

Table (alias) D00B_CODEVAT_2009

Filename CODEVAT.cdx

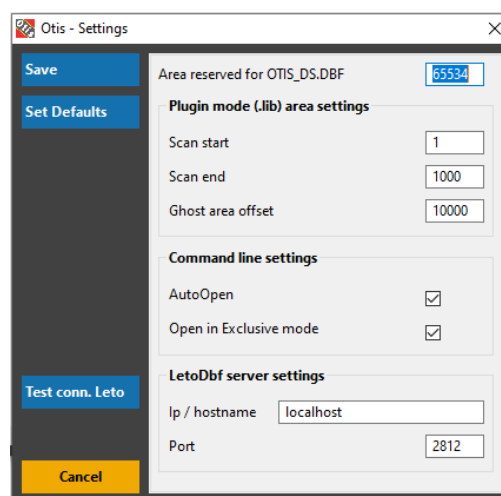
Tag CODE Unique ☐ ☒ Ascending ☐ Descending

Key

For

Quit

Create a new order.



Otis - Settings

Save

Set Defaults

Test conn. Leto

Cancel

Area reserved for OTIS_DS.DBF 65534

Plugin mode (.lib) area settings

Scan start 1

Scan end 1000

Ghost area offset 10000

Command line settings

AutoOpen ☒

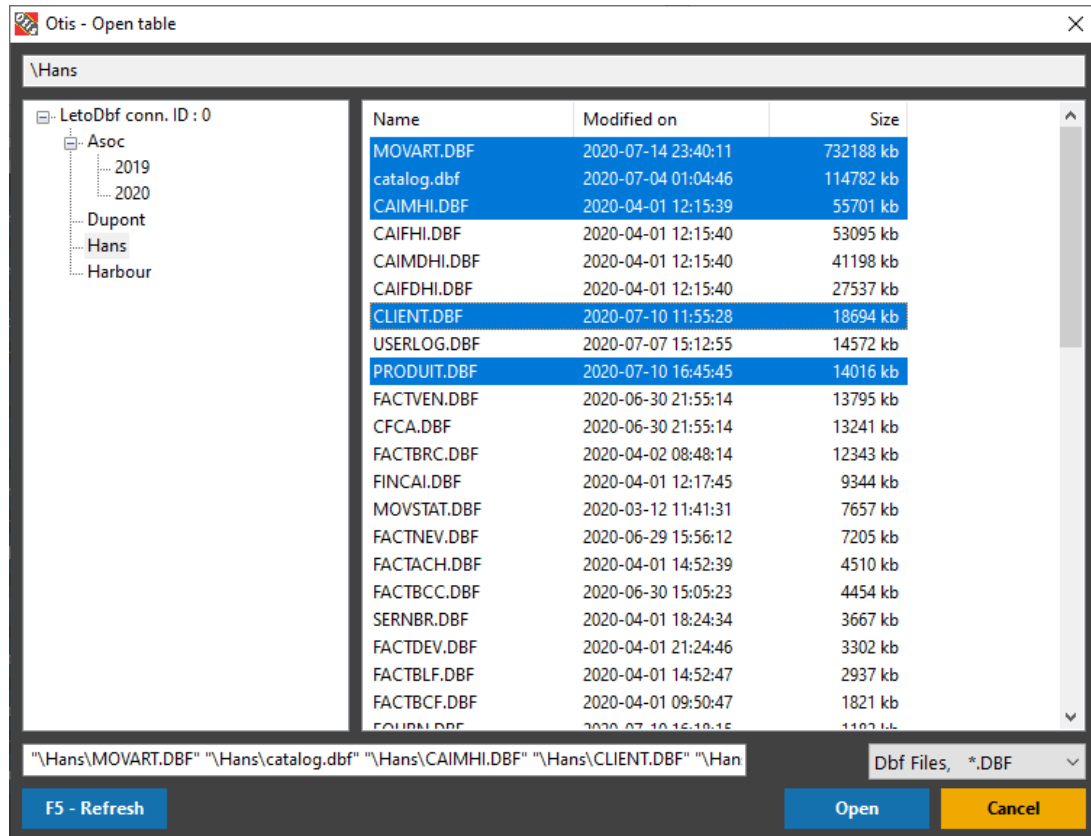
Open in Exclusive mode ☒

LetoDbf server settings

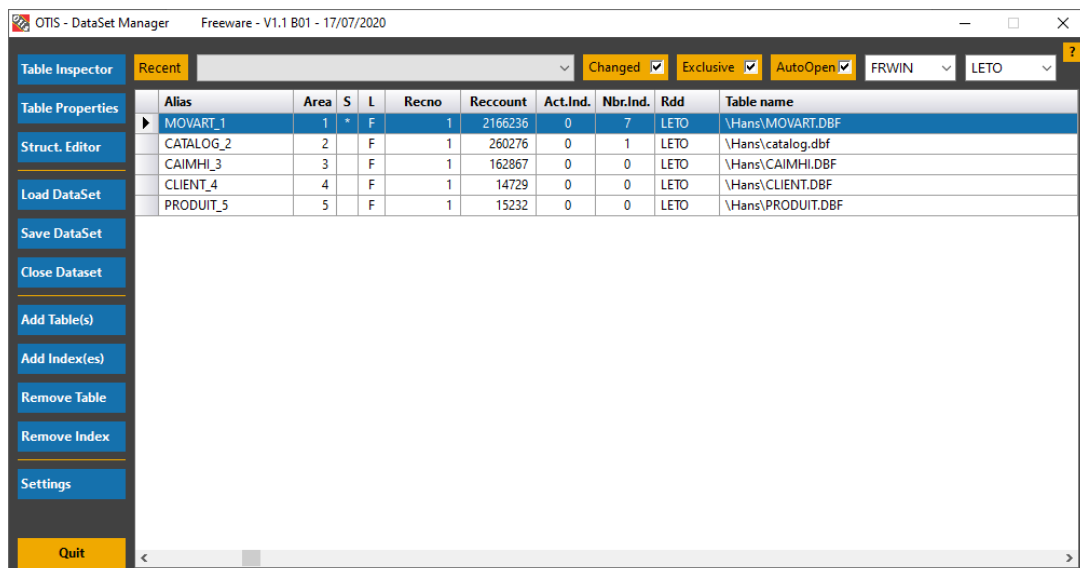
Ip / hostname localhost

Port 2812

Program Settings



Add one or multiple tables with rdd LetoDbf filepicker.



And resulting dataset in Otis.

Remark the first 2 tables, their order files are opened automatically.