Visual Tool Guide

ZUCCHETTI TOOLS S.r.l. SOFTWARE TECHNOLOGY
PADOVA - BELLARIA - RIMINI
E-mail: clabrn@codelab.it
Web Address:
http:\\www.zucchettitools.com
http:\\www.codepainter.com
http:\\www.codelab.it

Summary

Chapter 1

Introduction

Business/Commercial software applications usually have a set of programs that allow the user to input, process, query and output data. These programs typically require a high level of customization, depending on the type of business, and on clients' requirements. It is therefore crucial to have powerful tools, that allow to perform these customizations easily and quickly, thus not adding code within the procedures.

CODE**PAINTER REVOLUTION** delivers a set of Visual Tools that allow creating and configuring sections of applications that are likely to be changed often. These tools are: 'Query Painter', 'Zoom Painter', 'Dialog Window Painter', 'Report Painter' (integrated in the 'Query Painter'), and 'Menu Painter'.

Chapter 2

Query Painter

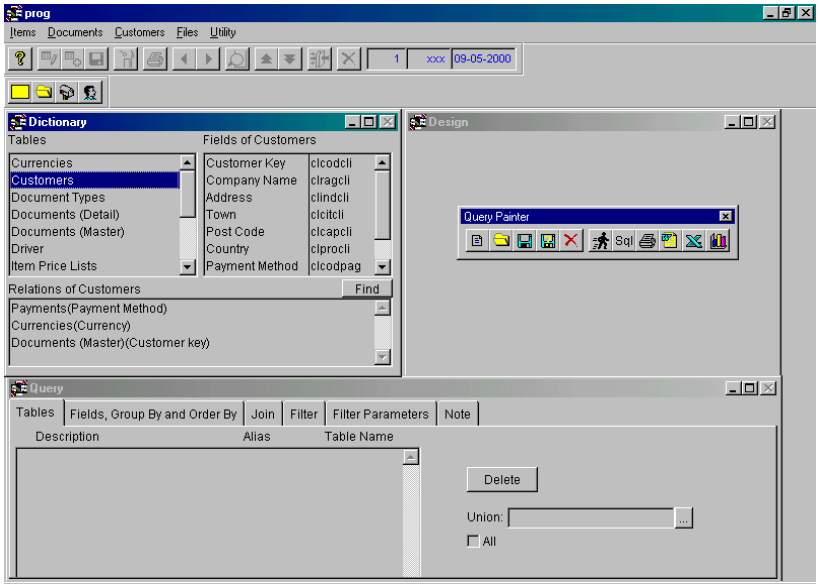
2.1 Introduction

The Query Painter is a powerful query and multifile reporting tool that deeply exploits the SQL language and works in a Client/Server environment. It replaces all tools that have been used so far guaranteeing independence and versatility. Using the Query Painter you can define multifile queries that can be called from within the application. Data can be extracted (routine procedures), displayed (Visual Zoom), or processed through advanced reporting functionalities. The end result is not code to be compiled, but complex SQL sentences that are components of the host application. These sentences can be changed or implemented as required, delivering a high level of flexibility.

The Query Painter is highly integrated with the application's Data Dictionary to guide the experienced user through complex queries without the need of deeply knowing the application's structure. This renders this powerful tool ease to use.

2.2 The Tool

To open the Query Painter run your application, open the 'Utility' menu, and select 'Query Painter'. The 'Query Painter' window is divided into three different sections, namely 'Dictionary', 'Design', and 'Query'. The tool has also a dedicated toolbar (Query Painter).



The 'Dictionary' section details the list of available files, fields and relationships, that build the 'Data Dictionary'.

The 'Design' section details the relationships between selected files, showing a graphic picture of the query allowing to display files and relationships.

In the 'Query' section you can define advanced SQL sentences for the query. This section is subdivided in tab-strips to define both, SQL options and filter parameters.

2.3 The Query Design Toolbar

The 'Query Design' Toolbar has a set of buttons that help you interacting with the tool:

Button	Name	Action
	New	To open a new query (.VQR).
	Open	To open an existing query (.VQR).
	Save	To save the opened query.
	Save As	Saves the opened query with a different file name (max. 8 characters)
	Exit	To Exit the query and go back to the application.
	Execute Query	To execute the query.
	SQL Sentence	To display the SQL sentence.
	Create/Modify Report	To create/modify the print out of the query.
	Create/Modify Mailmerge	To create/modify the MS Word Mailmerge documents.
	Create/Modify Excel Worksheet	To create/modify the MS Word Excel worksheet.
	Create/Modify Graph	To create/modify the MS Graph worksheet.

2.3.1 New

The 'New' button clears memory and opens a new query.

2.3.2 Open

The 'Open' button opens an existing query. Clicking this button the 'Open' dialog window is opened defaulting the working directory and detailing all existing queries (.VQR extention).

2.3.3 Save

The 'Save' button saves the current query. The name of the query can be maximum eight characters long.

2.3.4 Save As

The 'Save As' button saves the current query with a different name. The name of the query can be maximum eight characters long.

N.B.
Queries can be saved under a subdirectory named 'Query'. During the 'Design' phase the system will always search for .VQR files under this directory. Before launching a query from a procedure you have to define the correct path. For example, if you launch the query named 'prova' that you saved under the subdirectory 'Query', you need to define the path 'Query\prova.VQR'.

2.3.5 Exit

The 'Exit' button exits the 'Query Painter' to go back to the application.

2.3.6 Execute Query

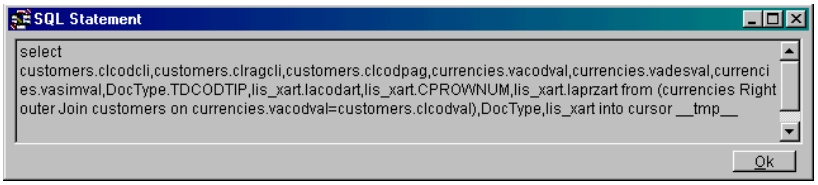
The 'Execute Query' button Executes the query. The query result is downloaded in a temporary cursor (_TMP_) and can be viewed using the 'View Query' browser.

N.B.

The query should always be created using the incremental method, i.e. select a table, define selection parameters and test the query using the 'Execute' button; Add another table, define other selection parameters and test it again. Doing so you can monitor the query and be sure of the result you are getting.

2.3.7 SQL Sentence

The 'SQL Sentence' button displays the SQL sentence. Through this function you can check the SQL syntax.



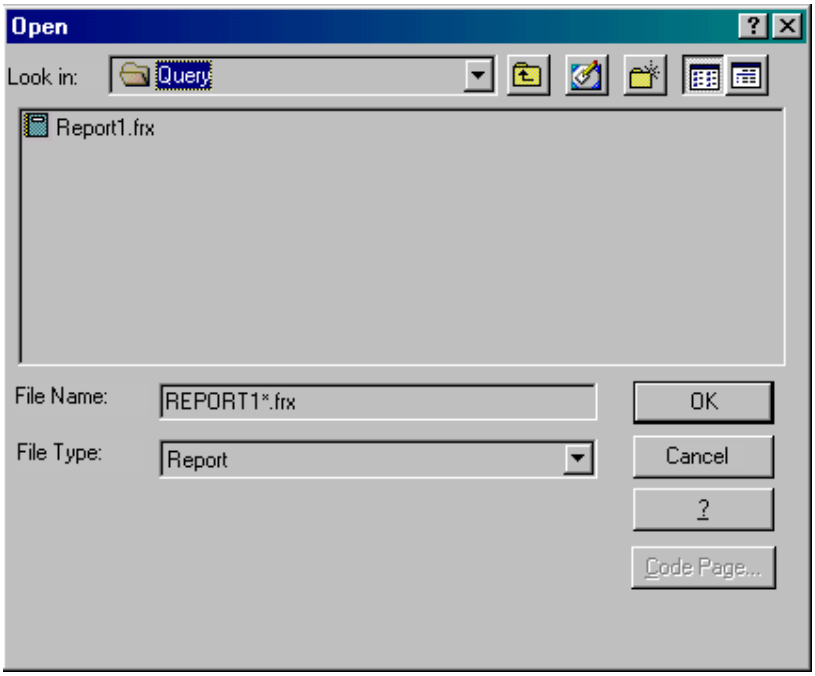
N.B.

Warning: you can only check the sentence's syntax. You can not control the semantics, which is strictly related to the type of data extraction you want to obtain.

2.3.8 Create/Modify Report

The 'Create/Modify Report' button creates or modifies the print out of the query. The report tool can be launched using the selected language in two different ways:

If there is no associated report to the query, the first time the report is launched, the report prototype is shown. The prototype can be changed and saved under the same name. The next time you launch the report (when both files 'QueryName'.FRX and 'QueryName'.FRT exist) the report tool is recalled opening the report having the same name as the query. Right clicking the button the 'Open' dialog window is opened and you can select/create other reports (*.FRX).



If you digit a file name, which is different from the query name, a new report prototype will be created. You can therefore associate more reports to the same query.

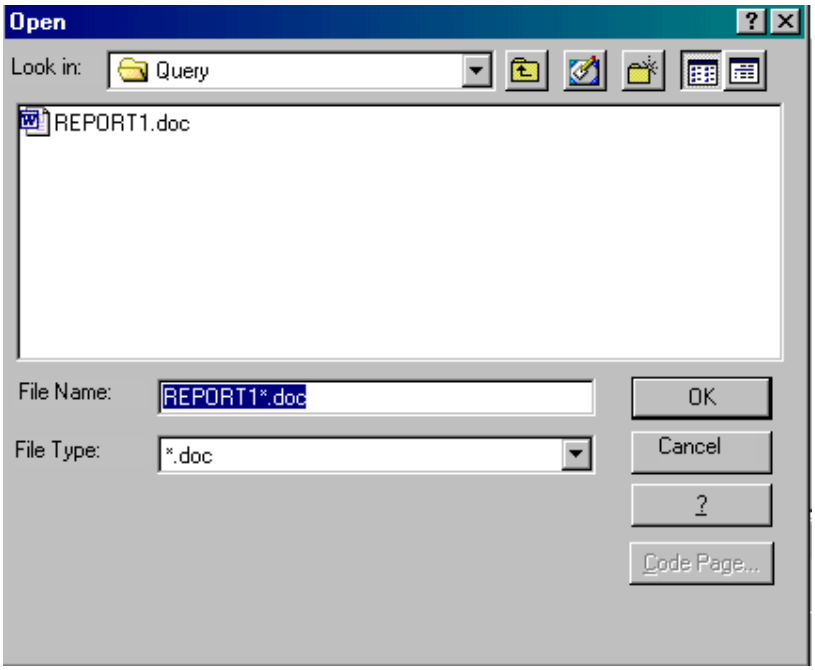
N.B.

If you associate more reports to the same query you need to recall the query using the following syntax:

```
VX_EXEC with<QueryName>.VQR,[<ReportName>.FRX][PREVIEW]
```

2.3.9 Create/Modify Mailmerge

The 'Create/Modify Mailmerge' button creates or modifies the MS Word Mailmerge documents. Selecting this button MS Word is opened, a mailmerge model created and saved with the extention .DOC having the same name given to the query. Right clicking the button the 'Open' dialog window is opened and you can select/create files (*.DOC).



If you digit a file name, which is different from the query name, a new MS Word document will be created. You can therefore associate more documents to the same query.

N.B.
If you associate more documents to the same query, you need to recall the query using the following syntax:

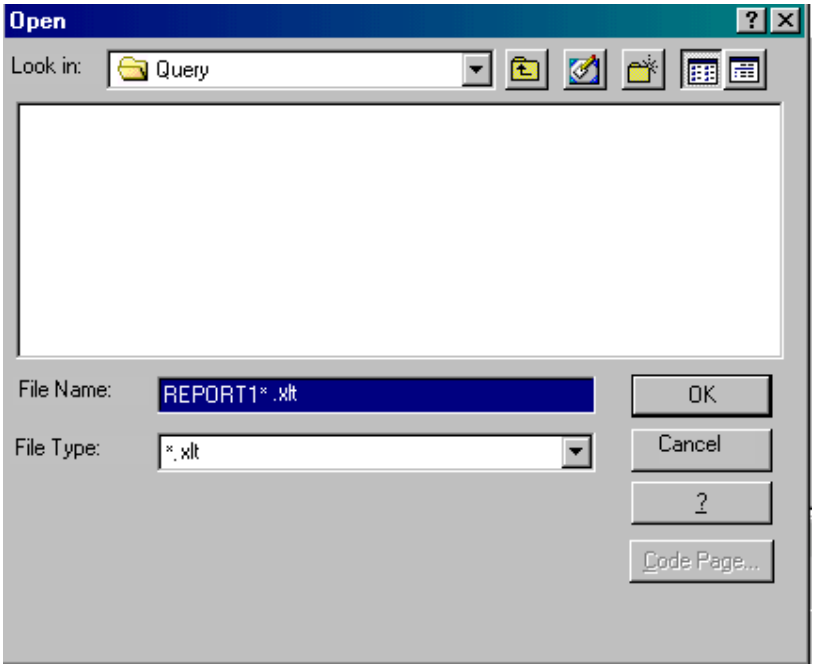
```
VX_EXEC with<QueryName>.VQR,[<DocumentName>.DOC]
```

The document's format can be changed to match clients' requirements (envelops and labels, pre formatted models, etc.). The mailmerge support databases (_WORD_.DBF and FPT) is saved in the MS Windows temporary directory (usually C:\WINDOWS\TEMP).

During execution the <QueryName>.DOC file is opened and data is 'mailmerged' creating the default file CATHALOG1.DOC, which can be printed and saved. When you define the document you can apply the various MS Word mailmerge types, e.g. you can execute the mailmerge functionality directly on e-mail documents opening the 'Mail Merge' window (in MS Word) and selecting the 'E-mail' option.

2.3.10 Create/Modify Excel Worksheet

The 'Create/Modify Excel Worksheet' button creates or modifies the MS Word Excel worksheet. When you select this button MS Excel is opened, a worksheet created and saved with the extention .XLT having the same name given to the query. Right clicking the button the 'Open' dialog window is opened and you can select/create files (*.XLT).



If you digit a file name, which is different from the query name, a new MS Excel document will be created. You can therefore associate more documents to the same query.

N.B.

If you associate more documents to the same query, you need to recall the query using the following syntax:

```
VX_EXEC with<QueryName>.VQR,[<DocumentName>.XLT]
```

or

```
VE_EXEC with<DocumentName>.XLT,<CallingObjectpointer>,<QueryName>.VQR
```

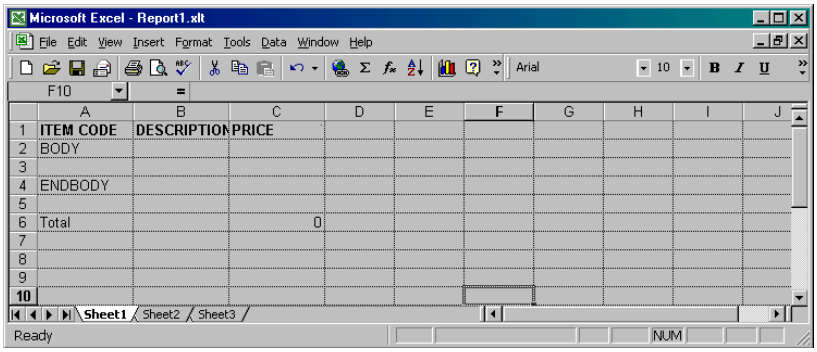
Where the Calling Object Pointer refers to the document where you want to display the graph, e.g. 'This' or 'This.oParentObject, etc.).

N.B.

Never use field names that equal a MS Excel cell (e.g. A1, A2, ..., N10, Z99, etc.) in order to avoid errors in MS Excel.

Once MS Excel is opened two documents are created: the prototype document and a sort of preview file, that uses the documents format and contains the query data. You must work on the file with the extention .XLT. All changes will be automatically saved with the extention .XLS.

Let us now analyze the document's structure:

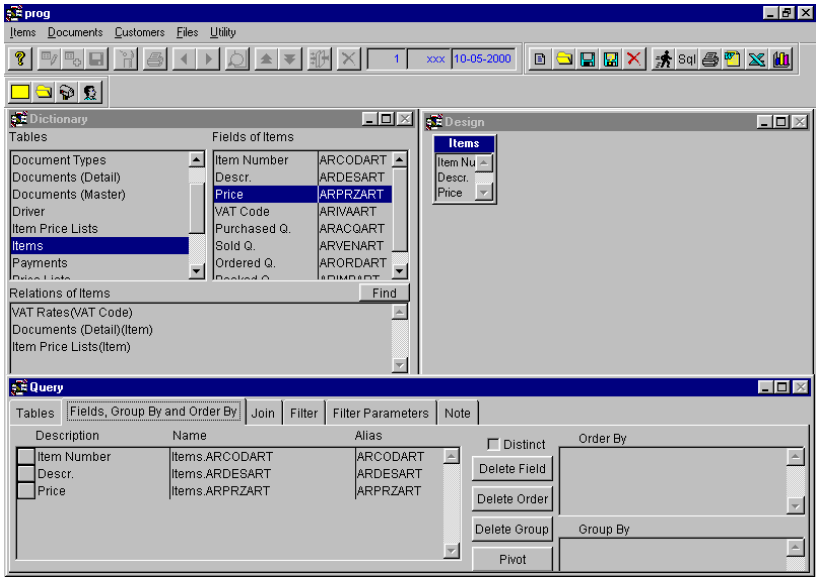


In the first row you can see the field names. Following there is an area, which is limited by two captions, namely 'BODY' and 'ENDBODY'. The system will add single tuples, i.e. the query result, within these two captions. You can now change the file as required as to obtain the wanted result. Be aware that only rows between the two captions are taken into account and are repeated for each extracted value.

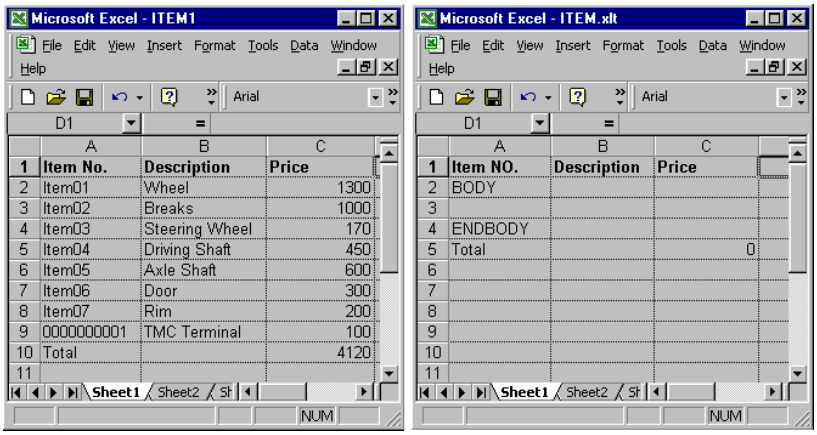
Saving the 'XLT' format, every time you will launch the MS Excel Worksheet from the corresponding query, a new worksheet, which uses the XLT document's style, will be created.

Exercise

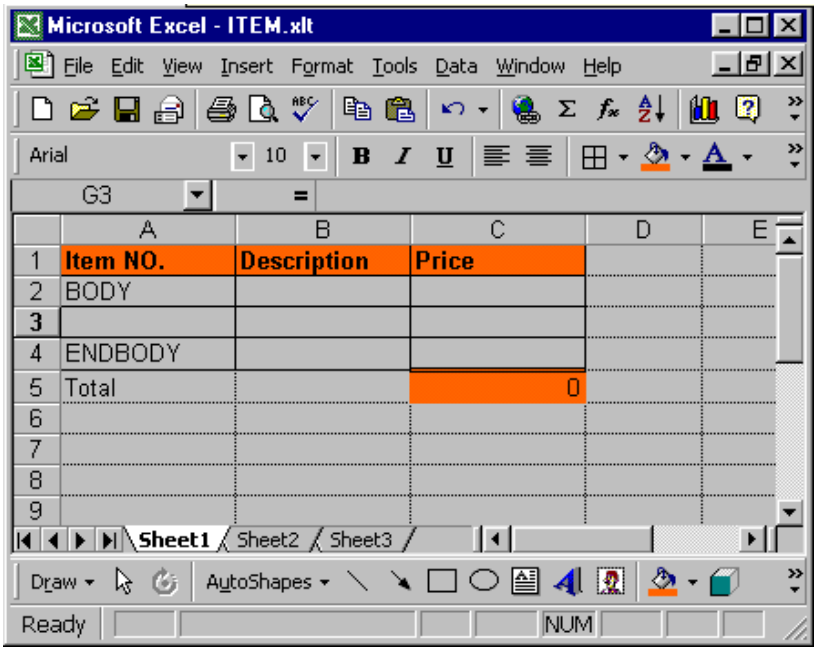
Let us now create an item list containing the following three fields: 'Item No.', 'Description', and ' Price'. Create a query to extract all values saved in the file. Select all fields and change the field names into 'Item No.', 'Description' and 'Price'.



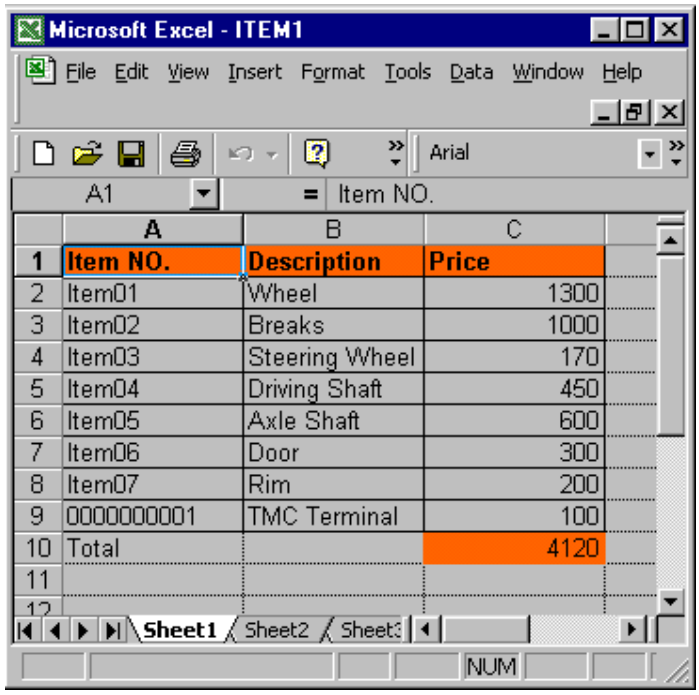
Save the query, then click the 'Create/Modify Excel Worksheet' button to launch the generation of the prototype sheet. After a few seconds MS Excel is opened and two files created, the model and the document. The latter will be filled with the values resulting from the query.



You can now improve the model's layout (.XLT). Changes will be applied for the queries that will follow. Improve the column size so that the description fit in the cells. Change the font color for the first row to highlight the titles. Go to the cell containing the 'Total' and add a double line on the cell's top. Add borders to the cells forming the table's header and body.

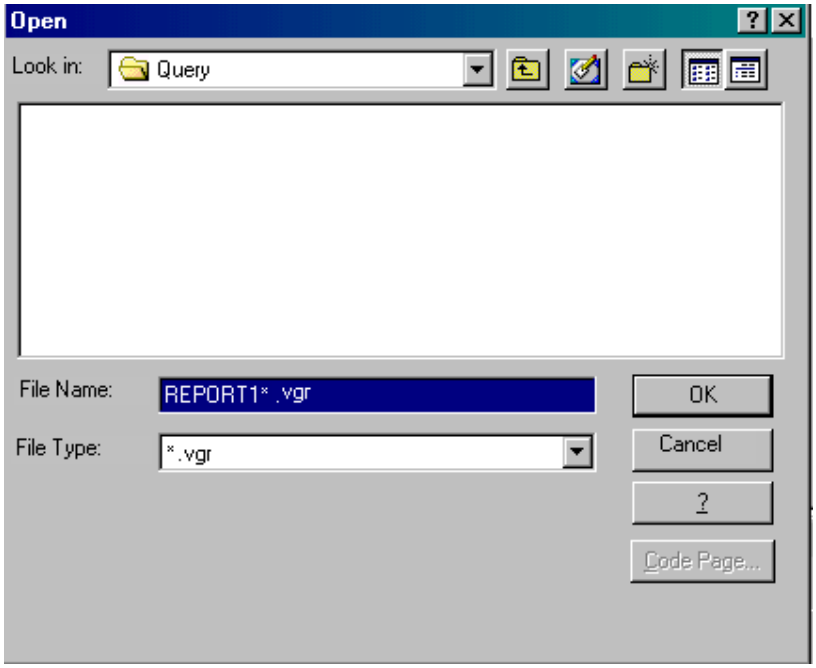


Save the .XLT file and click the 'Create/Modify Excel Worksheet' button again. As you can see in the next picture, the changes you made to the .XLT file have been applied to the .XLS file.



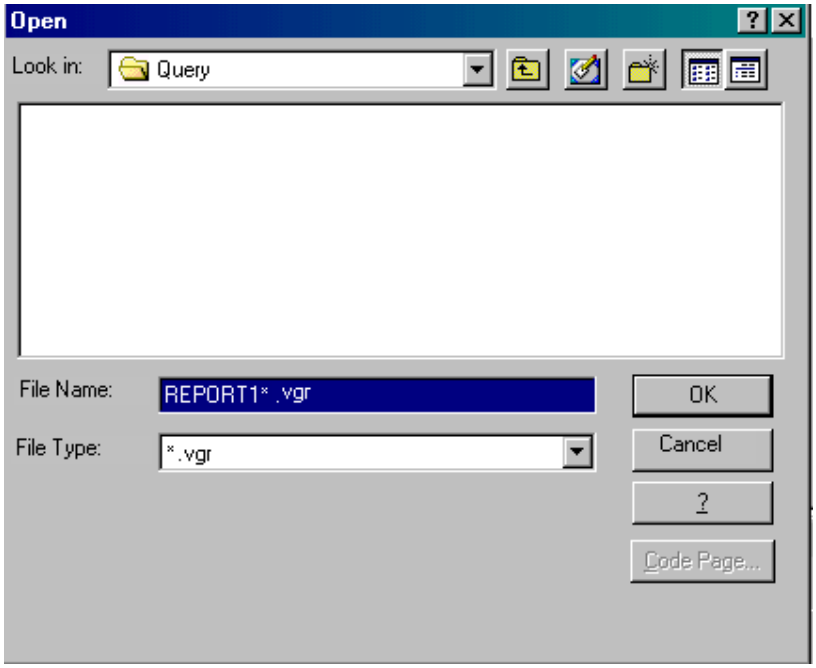
2.3.11 Create/Modify Graph

The 'Create/Modify Graph' button creates or modifies the MS Graph worksheet. When you select this button MS Graph is opened, a worksheet created and saved with the extention .VGR having the same name given to the query. Right clicking the button the 'Open' dialog window is opened and you can select/create files (*.VGR).



If you digit a file name, which is different from the query name, a new MS Graph will be created. You can therefore associate more graphs to the same query.

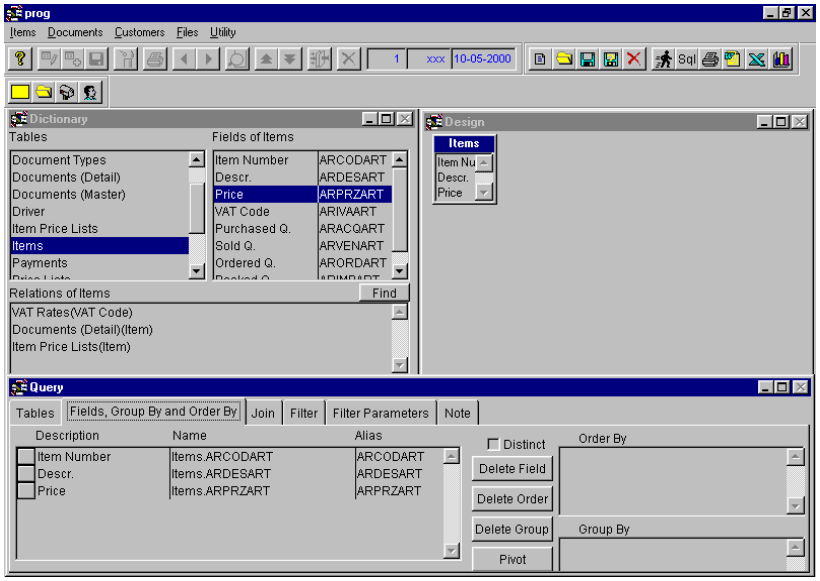
Once MS Graph is opened a graph prototype will be created and the corresponding toolbar opened so that you can change the graph's structure and the 'Datasheet', where the selected fields are displayed.



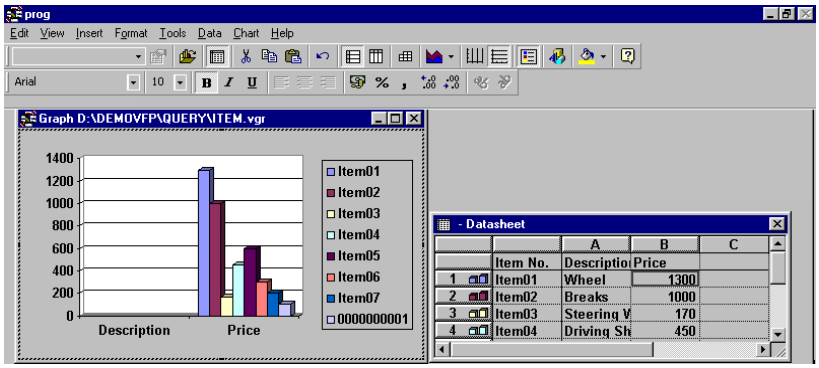
The graph's format can be changed to match clients' requirements. Each time values change the graph will consider these changes. Changes saved on the .VGR model will be applied every time when the 'Create/modify MS Graph' functionality is launched.

Exercise

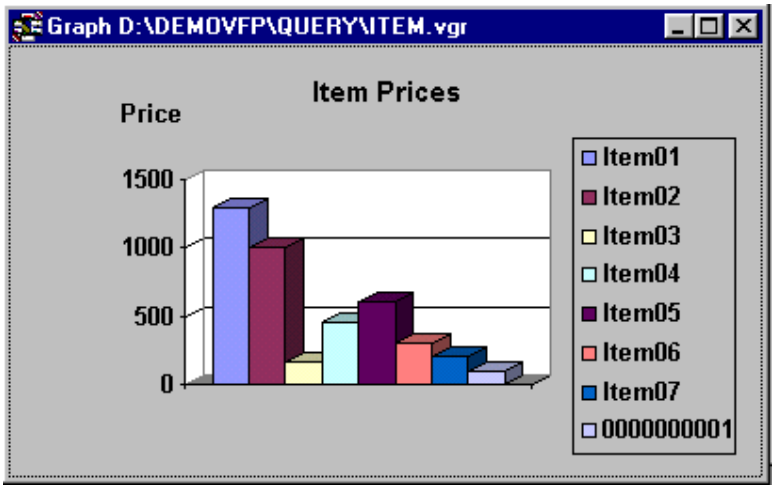
Let us now create an item list containing the following three fields: 'Item No.', 'Description', and ' Price'. Create a query to extract all values saved in the file. Select all fields and change the field names into 'Item No.', 'Description' and 'Price'.



 Save the query, then click 'Create/Modify MS Graph' button to launch the generation of the prototype graph. After a few seconds MS Graph is opened showing the graph's prototype and the datasheet containing data.



You can now improve the graph prototype layout. The first field selected in the query is used to identify the values within the graph and the other fields are the corresponding values on the axis. Using the MS Graph toolbar you can now change the graph's type, column colours, add strings and/or images.

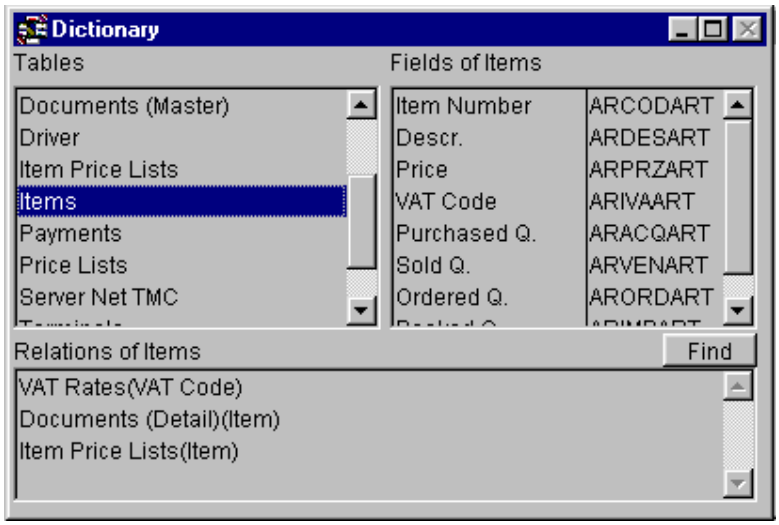


Changing values in the 'Datasheet' window, the values in the graph will be changed accordingly, but these changes will not be saved. Future queries will always use the actual data stored in the tables.

Double clicking the column header you can show or hide the columns' data. Similarly you can show or hide the rows' data. After having implemented all required changes, save the graph's layout so that it will be used in future queries. To save simply close the graph and click 'Yes' on the dialog window that follows.

2.4 First Window - Dictionary

This window shows the list of files on the left and the corresponding fields on the right. At the bottom of the window the files' relationships are displayed.



2.4.1 Tables

The 'Tables' section details all tables defined for the application. Highlighting one of the tables you can view its fields on the right ('Files of') and its relationships at the bottom ('Relations Of'). There are two ways for selecting a table:

Drag&Drop

Right click the desired table and drag it to the 'Design' window. Selected tables will be displayed also in the 'Query' window in the 'Tables' tab-strip, and vice versa.

Double Click

Double clicking the desired table, it is carried over to the 'Design' window. When you select a file, which is related to one or more files the 'Relations' window is activated, detailing all relationships, the fields used for the relationship, and the kind of Joins used.

2.4.2 Fields Of ...

The 'Fields Of..' section details the list of fields defined for the highlighted table. There are two ways for selecting a field:

Drag&Drop

Right click the desired field and drag it to the 'Design' window. The field is added in the corresponding table. Selected fields are also displayed in the 'Query' window in the 'Fields, Group By and Order By' tab-strip and vice versa. If you select the same field twice a warning message appears asking you if you want to proceed anyway.

Double Click

Double clicking the desired field, it IS carried over to the 'Design' window and added to the corresponding window. Selected fields are also displayed in the 'Query' window in the 'Fields, Group By and Order By' tab-strip and vice versa. If you select the same field twice a warning message appears asking you if you want to proceed anyway.

2.4.3 Relations Of..

The 'Relations Of..' section details all relationships of the selected table. Connecting fields are displayed in brackets next to the file's name. There are two ways for selecting a field:

Drag&Drop

Right click the desired relationship and drag it to the 'Design' window. The two files will be linked by a yellow line. Similarly the link will be displayed in the 'Query' window in the 'Tables' tab-strip and the kind of relationship in the 'Join' tab-strip.

Double Click

Double clicking the desired relationship, it is carried over to the 'Design' window The two files will be linked by a yellow line. Similarly the link will be displayed in the 'Query' window in the "Tables' tab-strip and the kind of relationship in the 'Join' tab-strip.

2.4.4 Find Relations

Selecting a table and clicking the 'Find' button all linked tables are displayed in a new dialog window. Let's analyse this functionality through an exercise.

Exercise

You need to retrieve all Agents working in area A. The tables involved in the query therefore are the 'Agents' table and the 'Areas' table. You do not know whether the two tables are directly linked or whether you need to consider links to other tables to retrieve Agents information. Clicking the 'Find' button you can display all existing links between the 'Areas' and the 'Agents' tables. This functionality analyzes the links defined in the 'Design' phase starting from the first selected table making concentric circles. The result is subdivided in levels: the first level implies a direct connection between the two tables. The second level means that in order to reach the destination table you need to go through a third table; the third level requires going trough a third and a fourth table, and so forth.

From Table

The 'From Table' field in the 'Find Relations' window is required to define the table from which the link search will start.

To Table

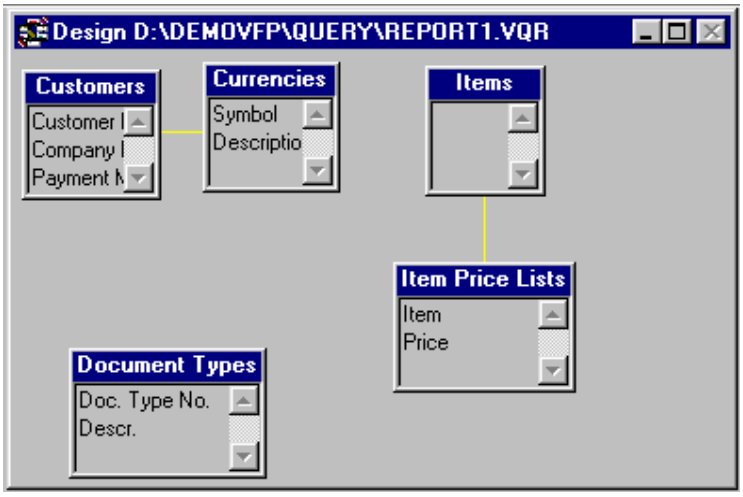
The "To Table' field in the 'Find Relations' window is required to define the target table for the link search.

The Find Button

Clicking the Find button within the 'Find Relations' window starts the search.

2.5 Second Window - Design

This window graphically show the selected tables, their fields and their links. Clicking on one of the tables you can display it in the first window ('Dictionary').

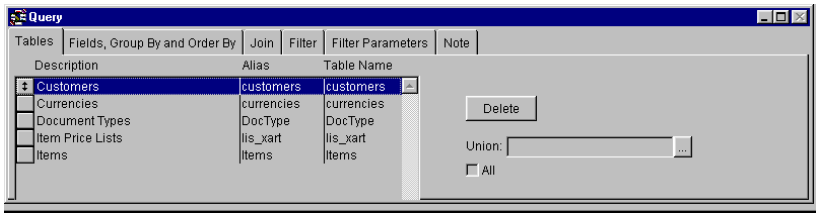


2.6 Third Window - Query

In the 'Query' window you can define advanced SQL options that form the query. This window is subdivided in six tab-strips:

2.6.1 Tables

The 'Tables' tab-strip list all tables selected for the query. You can scroll the list using the scroll bar on the side. You can change the tables' order simply moving them up or down. Right click the button on the left side of the table, keep the mouse pressed and drag the table in the desired position.



Description

The 'Description' column contains the tables' name. The names used are the ones defined during the 'Design' phase. Should the same table be selected twice, a repetition number will be added to the table.

Alias

The 'Alias' column contains the tables' alias names. These names are the ones defined during the 'Design' phase. Should the same table be selected twice, a repetition number will be added to the table.

Table Name

The 'Table Name' column contains the physical name of the tables. These names are the ones defined during the 'Design' phase.

Delete Button

Clicking the 'Delete Button' the selected table is deleted from the list, consequently also from the query and from the 'Design' window.

Union

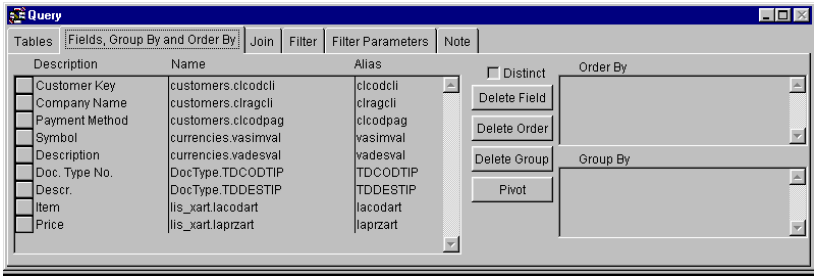
The 'Union' field allows combining the result of two different 'SELECT', comparing data and deleting duplicated rows.

This clause cannot be used to combine Subqueries. Both SELECT commands must have the same number of output columns. Further, all columns must have the same data dimension and the same corresponding column name. The 'ORDER BY' command can be set only after the last SELECT and will have a major impact on the result. The 'UNION' clause may be useful to simulate an outer join.

The '...' button next to the text-box allows opening an existing query.

2.6.2 Fields, Group By and Order By

The tab-strip 'Fields, Group by and Order By' in the 'Query' window displays the list of fields used to show the result. You can scroll the list using the scroll bar on the side. You can change the fields' order simply moving them up or down. Right click the button on the left side of the field, keep the mouse pressed and drag the field in the desired position. The fields order influences the result's layout. You can manage up to 256 fields.



Description

The 'Description' column contains the fields' description. The descriptions are those defined during the 'Design' phase.

Name

The 'Name' column contains the fields' name. These name are the ones defined during the 'Design' phase as alias of the corresponding file.

N.B.
You can add an expression, which is congruent with the kind of field.

Alias

The 'Alias' column contains alias names of fields, which will be used for the query result. It defaults the fields names defined during the 'Design' phase. You can change these names to better identify the fields (maximum 10 characters; no blanks allowed).

Distinct Flag

When this flag is set it excludes rows duplications from the query result. This flag equals the 'Distinct' clause of SQL-SELECT.

Order By

The 'Order By' area contains the list of fields that form the 'Order By' clause. Drag the fields from the list of selected fields on the left to the 'Order By' area. You can change the fields' order simply moving them up or down. Right click the button on the left side of the field, keep the mouse pressed and drag the field in the desired position. The fields order influences the query result. The query result can be ordered basing on one or more columns. By default values are in ascendent order. Double clicking the desired field in the 'Order By' area, values are displayed in descendent order.

Exercise

You now need to create a query to extract 'Item No.' and 'Price' from the 'Items' table. The 'Price' will be displayed in ascendent order and the 'Item No.' in descendent order. Drag in the 'Order By' area 'Price' first and 'Item No.' afterwards. Double click 'Item No.' to change the order in descendent.

Group By

The 'Group By' area contains the list of fields that form the 'Group By' clause. You can change the fields' order simply moving them up or down. Right click the button on the left side of the field, keep the mouse pressed and drag the field to the desired position. The fields order influences the query result. The query result can be grouped basing on one or more columns.

Exercise

You need to create a query to extract 'Item No.' and 'Price' from the 'Invoice' table. The query result must be grouped by 'Item No.' and 'Price'. Drag in the 'Group By' area 'Price' first and 'Item No.' afterwards. To group the query result by 'Price' first, simply move the 'Price field' at the top of the 'Group By' area.

Delete Field

The 'Delete Field' button deletes the selected field from the 'Fields, Group By or Order By' area.

Delete Group

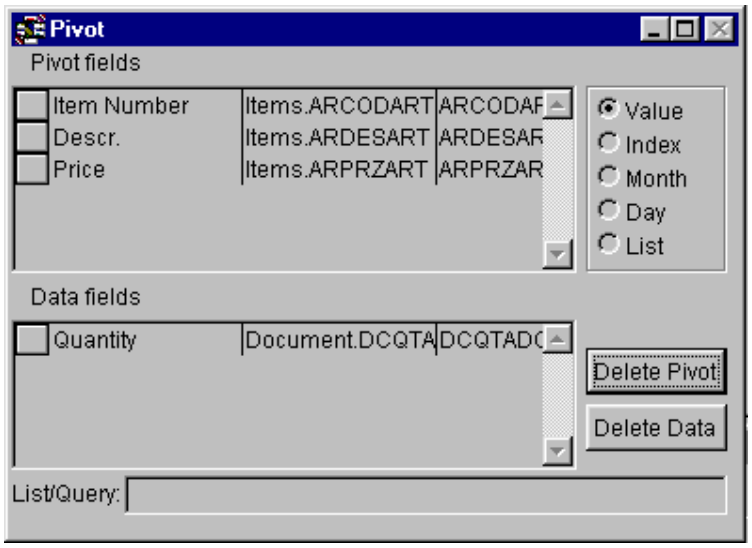
The 'Delete Group' button deletes the selected field from the 'Group By' area.

Delete Order

The 'Delete Order' button deletes the selected field from the 'Order By' area.

Pivot

Clicking the 'Pivot' button a new dialog window is opened, in which you can define a Pivot on the Visual Query result.



In the 'Pivot Fields' area add the fields required for the Pivot. The horizontal overturning will be executed on the last field of the list. The field sequence is therefore important. The flags next to the 'Pivot Fields' area allow you to define the Pivot scale.

The 'Values' flag considers single values of the last field in the 'Pivot Fields' list; a column is created for each value.

The 'Index' flag creates a list of indexed values, starting from 1 and basing on the last pivoting field.

The 'Month' and 'Day' flags create respectively 12 and 31 columns. Pivoting field values having daily or monthly information feed these columns.

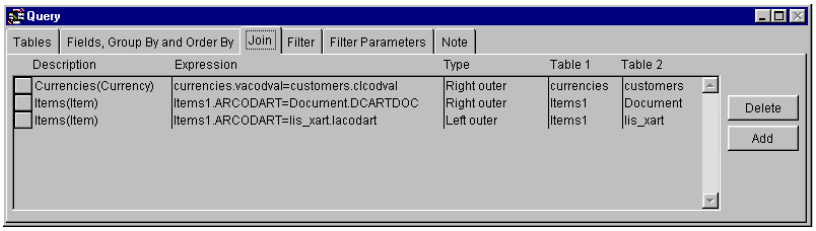
The 'List' flag combined with the 'List/Query' area allows defining a list of values that will form the column headers. Defining a list of allowable fields in the 'List/Query' area, columns are created according to this latter list.

The 'Data Fields' area contains the fields that are displayed in the Pivot result. Each column will be named according to the field alias name plus the extention '_XXX' detailing the column number.

The 'Delete Pivot' and the 'Delete Data' buttons delete the selected field from the 'Pivot' or 'Data Fields' areas.

2.6.3 Join

The 'Join' tab-strip within the 'Query' window detail the Join Relationships that form the 'From' clause in the SQL sentence. You can change the order of the Join Relationships simply moving them up or down. Right click the button on the left side of the row, keep the mouse pressed and move the relation to the desired position. The Join Relationships order influences the execution sequence within the 'From' clause. If no link exists between the two selected tables, you can add it manually. Click the 'Add' button and digit the name of the tables, their fields and their values in the columns.



N.B.

The Join execution order is fundamental to query response times.

Description

The 'Description' column shows the relationship name and in brackets the name of the description of the linked fields.

Expression

The 'Expression' column shows the Join expression of the fields defined in the columns "Table1' and "Table2'.

N.B.
In the 'Expression' area you can add an expression, which is congruent with the kind of field. For the use of the various SQL functionalities please refer to 'SQL functionalities'.

Type

The "Type' column shows the kind of Join used to link the tables defined in the columns "Table1' and "Table2'. There are four types of Join: 'Left Outer', 'Right Outer', 'Full' and 'Inner'.

LEFT OUTER JOIN

When the 'Left Outer' Join is used the query result displays all rows of "Table1' on the left and on the right only the rows of "Table2' fulfilling the Join condition defined in the 'Expression' column.

RIGHT OUTER JOIN

When the 'Right Outer' Join is used the query result displays all rows of "Table2' on the right and on the left only the rows of "Table1' fulfilling the Join condition defined in the 'Expression' column.

INNER JOIN

When the 'Inner Join' is used the query result displays only those rows fulfilling the Join condition defined in the 'Expression' column.

FULL JOIN

When the 'Full' Join is used the query result displays all rows of both tables no matter if they fulfill the Join condition defined in the 'Expression' column or not.

WHERE

Using 'Where' you can add a Join condition defined in the 'Expression' column in the WHERE clause of the SQL sentence.

Table1

The "Table1' column shows the name of the first selected table, from which data is read. Clicking the combo-box the list of tables that can be used in the Join relationship is displayed.

Table2

The "Table2' column shows the name of the second table, in which read data is stored. Clicking the combo-box the list of tables that can be used in the Join relationship is displayed.

N.B.
The creation of the query always bases on the Data Dictionary created during the 'Design' phase. No matter the order in which tables are selected, the tool will always recognize the read and the receiving one.

Delete

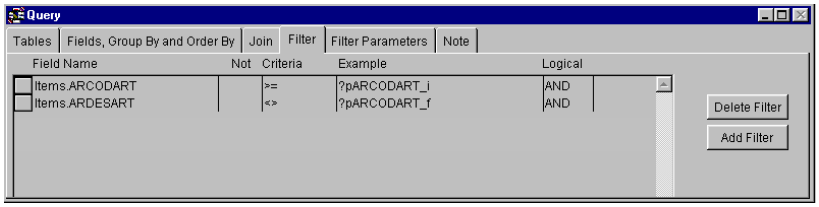
The 'Delete' button deletes the selected Join relationship.

Add

The 'Add' button adds a blank row in which a further Join condition can be defined

2.6.4 Filter

The tab-strip 'Filter' in the 'Query' window shows filter parameters. Expressions created in this area will be part of the 'Where' clause in the SQL sentence. Fields are selected by dragging them from the 'Design' window to the 'Filter' tab-strip of the 'Query' window. Filter variables must be added in the 'Filter Parameters' tab-strip.



You can change the expression order simply moving them up or down. Right click the button on the left side of the row, keep the mouse pressed and move the expression to the desired position. The expression order influences the checking sequence within the 'Where' clause.

N.B.

The expression order is fundamental to the logic applied for validation. It must consider that 'AND' conditions always come before 'OR' conditions.

Field Name

The 'Field Name' column contains the name of the field used as filter.

N.B.

In the 'Expression' area you can add an expression, which is congruent with the kind of field. For the use of the various SQL functionalities please refer to 'SQL functionalities'.

Not

The 'Not' column inverts the condition defined in 'Criteria'.

Criteria

In the 'Criteria' column you can specify the operator that must be used to compare the 'Field Name' and the 'Example' columns.

Operator	Meaning
=	Equals
Like	SQL LIKE
>	Greater Than
> =	More Than or Equal To
<	Less Than
< =	Less Than or Equal To
< >	Different From
in	Included
not in	Not Included
exists	Exists
not exists	Does Not Exist
between	Between (Two)
not between	Not Between (Two)
is null	Equals null
is not null	It is not null
> all	More Than All
> any	More Than Some
< all	Less Than All
< any	Less Than Some
> = all	More Than or Equal To All
> = any	More Than or Equal To Some
< = all	Less or Equal To All
< = any	Less or Equal To Some
< > all	Different From All
< > any	Different From Some

Example

The 'Example' column contains values that must be compared with the 'Field Name' column. The value can be constant, or taken from a Routine, or from the 'Filter Parameters' tab-strip having the prefix '?', or clicking the '...' button you can define a Sub-Query that outputs a logical value according to the defined logical operator ('in', 'exists', 'between', 'is null', 'all', 'any', etc.).

The 'Example' area will be activated only if at least one parameter has been defined in the 'File Parameters' tab-strip.

Exercise

In the 'Filter Parameters' tab-strip define the parameter 'COD_INI' as selection starting code. Go to the 'Filter' tab-strip and digit 'COD_INI' in the 'Example' column. If you check the SQL sentence you can notice that the filter expression in the 'WHERE' clause is:

```
SELECT .....


FROM .....


WHERE <FieldName> = COD_INI and ....


GROUP BY ....


ORDER BY ....


INTO CURSOR __TMP__
```

Go back to the 'Example' column and add the prefix '?' in front of 'COD_INI'. If you check the SQL sentence you can notice that the filter expression in the WHERE clause has now changed:

```
SELECT .....


FROM .....
```

```
WHERE <FildName> = <Take On Value from COD_INI> and ....

GROUP BY ....

ORDER BY ....

INTO CURSOR __TMP__
```

In the WHERE clause 'COD_INI' has been replaced by the 'Taken On Value'.

Logical

The 'Logical' column contains the logical value of filter expressions. You can select one of the two following options:

Value	Meaning
AND	Logical connection between expressions
OR	Distinguishes the logic between the expressions

N.B.
'AND' logically binds expressions whereas using 'OR' you obtain logically separate expressions.

Having

The 'HAVING' flag is used for aggregation functions. It specifies filter condition s that groups of data must have in order to be included in the query result. The 'HAVING' clause must be used together with the 'GROUP BY' clause.

Delete Filter

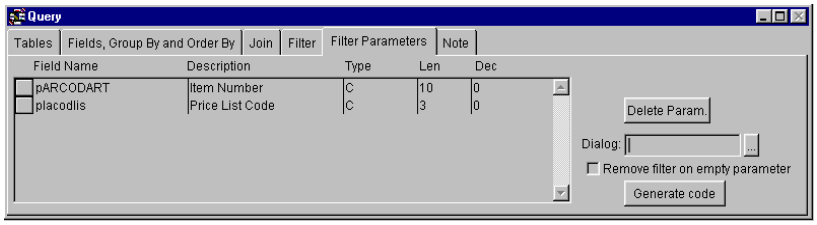
The 'Delete Filter' button deletes the selected filter expression. Removing the filter expression does not delete the parameters used in the expression.

Add Filter

The 'Add Filter' button adds a blank row to the filter.

2.6.5 Filter Parameters

The 'Filter Parameters' tab-strip in the 'Query' window contains filter parameters. Filter parameters must be created basing on fields that have been selected for the query.



To select fields drag them from the 'Design' window and drop them into the 'Filter Parameters' tab-strip of the 'Query' window. Should the same parameters be selected twice (e.g. 'pCODART'), a repetition number will be added to the parameter (e.g. 'pCODART1'). You can change the parameters order simply moving them up or down. Right click the button on the left side of the row, keep the mouse pressed and move the parameters to the desired position. The parameters order influences the sequence of how parameters will be called in the dialog window, indeed parameters will be called from the top to the bottom of the list.

Parameters defined in the 'Filter Parameters tab-strip will be used in the 'Example' column of the 'Filter' tab-strip as part of the WHERE clause. You can also add parameters manually clicking on the desired row and digiting the parameter.

Field Name

The 'Field Name' column contains the parameters name. Fields are selected by dragging them from the 'Design' window and dropping them into the 'Filter Name' column. Dragged fields are automatically changed into parameters taking on the prefix 'p'. Parameters are used in the 'Example' column of the 'Filter' tab-strip as part of the WHERE clause.

N.B.
In the 'Filter' tab-strip no expressions can be defined.

Description

The 'Description' column contains the parameters description. These descriptions are used in the dialog window. Descriptions defined during the 'Design' phase are defaulted, but can be changed.

Type

The 'Type' column contains the parameters type (characters, numeric, date, logic). The parameter type must be the same as the field type selected in the 'Field Name' column in the 'Filter' tab-strip.

Len

The 'Len' column contains the parameters lengths.

Dec

The 'Dec' column contains the decimal number of parameters.

Delete Param.

The 'Delete Param.' button deletes selected filter parameters. Deleting a parameter does not affect the 'Example' column in the 'Filter' tab-strip.

Dialog

The 'Dialog' field contains the name of the dialog window that is associated to the query. Clicking the '...' button the 'Open' the list of dialog widows is displayed, i.e. files with the extention .VFM.

Remove Filter On Empty Parameter

The 'Remove Filter On Empty Parameter' flag allows excluding selected parameters, when no value is defined. When the flag is activated and the query is run all conditions relating to blank parameters are excluded from the WHERE clause.

Exercise

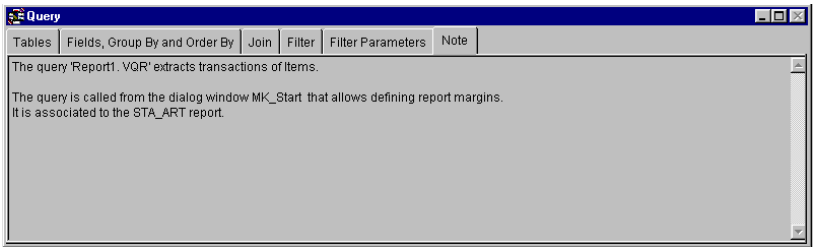
Create a query having a dialog window that allows inputting two parameters, e.g. from 'Code' to 'Code'. If you confirm the dialog window without having defined parameters the WHERE clause is excluded from the SQL sentence. If you define only one of the two parameters, the WHERE clause will have only the condition for the defined parameter (and nothing concerning the blank parameter).

Generate Code

The 'Generate Code' button allows generating the file required for the Static Query. Static Queries can be used in routines and cannot be changed by the user. Selecting this option a static copy of the query is created, changing the file extention from .VQR to .INC. During generation the .INC file is included in the routine. The static copy can be changed by the user only reselecting this option and codifying the routine to which it is linked.

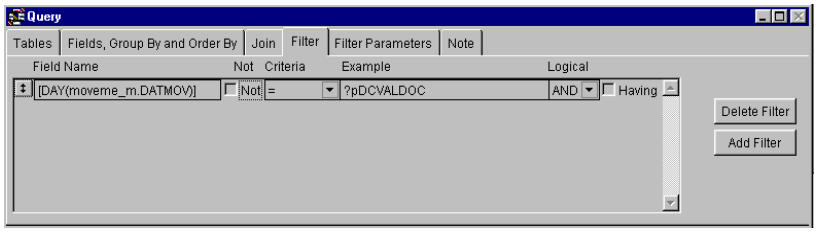
2.6.6 Note

The 'Note' tab-strip in the 'Query' window contains dedicated areas and comments on the query. You can add description strings to explain query functionalities, to detail related reports, MS Word documents, etc.



2.7 SQL Functionality

CodePainter makes a set of SQL functionalities available, which can be used in the areas where fields or fields and variables are compared. The most typical example is the 'Join Expression' area where join conditions between tables are defined. The 'Filter/Field Name' area is another example, where comparison fields for data extraction are defined.




```
SQL functionalities must be digited according to the following
syntax:'['<FunctionName>'('<Param>{','<Param>}')' ']'
```

Function names are not case sensitive. Functions cannot be nested. Allowed functions are detailed in the following tables:

2.7.1 Conversion Functions

VAL(cExp)	Returns the cEXP numeric value as float
STR(nExp)	Converts nExp in string
DATE(cExp)	Converts cExp in a constant data; cExp must be a string between apexes: cExp = '(D)D-(M)M-(YY)YY'. Values in brackets are optional. Minus signes (-) are both compulsary and cannot be replaced by other symbols (eg. '/' or '.').

2.7.2 String Functions

LTRIM(cExp)	Deletes blanks in front of cEXP
RTRIM(cExp)	Deletes blanks after cExp
TRIM(cExp)	Deletes blanks in front of and after cExp
SUBSTR(cExp, nS [, nL])	Extract from cExp nL characters starting from nS; if nL is omitted all characters are extracted strating from nS to the end of cExp.

2.7.3 Date Functions

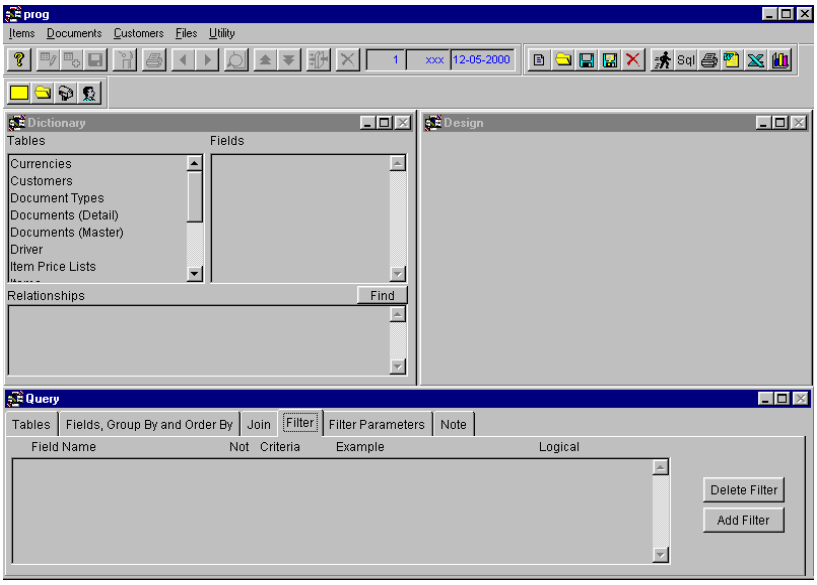
YEAR(dExp)	Returns the numeric value of the year expressed in dExp.
MONTH(dExp)	Returns the numeric valie of the month expressed in dExp.
DAY(dExp)	Returns the numeric value of the day expressed in dExp.

2.7.4 Other Functions

NVL(Exp1,Exp2)	Returns the first argument, which is not NULL (from left to right); only two arguments are admitted

2.8 Using the Query Painter

The 'Query Painter' is fully integrated with the Data Dictionary and allows creating queries easily and quickly. The list of tables and their relationships are readily accessible.



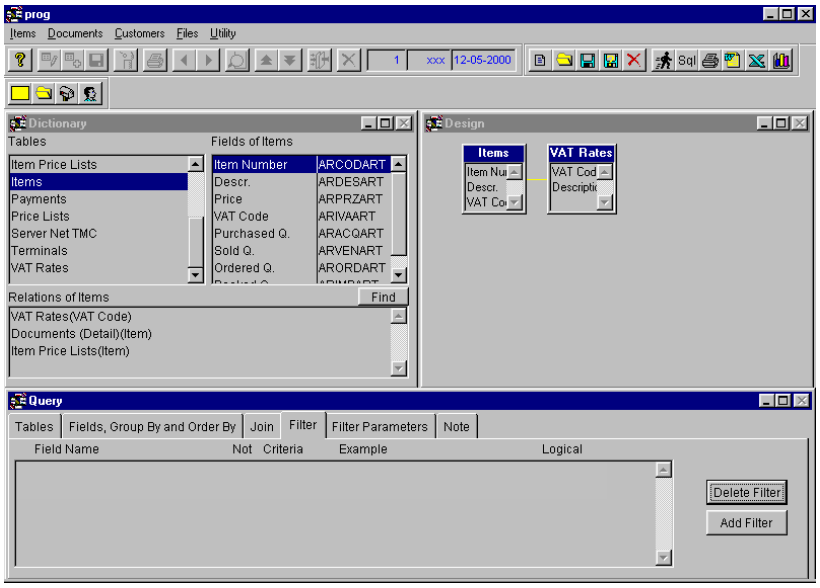
To select tables double click the desidered one in the 'Table' area of the 'Dictionary' window. You can also drag&drop it in the 'Design' window or in the 'Tables' tab-strip of the 'Query' window.

If you drag&drop the 'Items' table in the 'Design' window you can notice that an object with the same name appears in the 'Table' tab-strip in the 'Query' window. This object takes on the table's alias and its physiscal name. If the selected table is linked to one or more tables, the 'Relationships' window is opened detailing realtionships, linked fields and type of Join. If you click on one relationship in the last column the description 'Exclude' appears on the right. This means that the table will be added to the query as Natural Join.

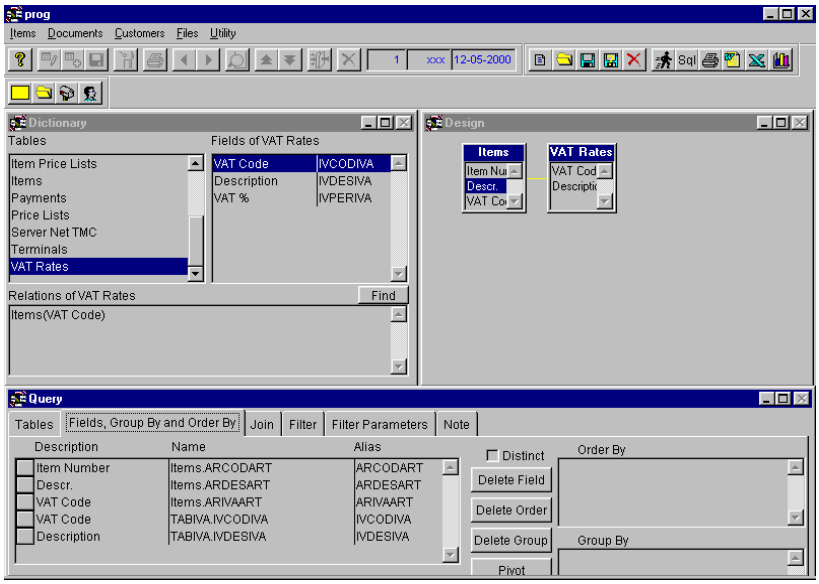
Add the 'VAT Rates' table in the 'Design' window. Again the 'Tables' tab-strip in the 'Query' window is filled in. If you want to delete a selected table, go to the 'Tables' tab-strip in the 'Query' window, select the desidered table and click the 'Delete' button. The table is deleted also from the 'Design' window. Similarly you can delete fields and joins.

N.B.

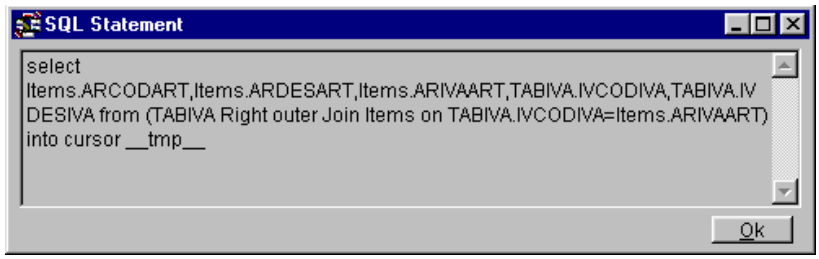
Deleting a Join deletes the Join but not the involved tables.



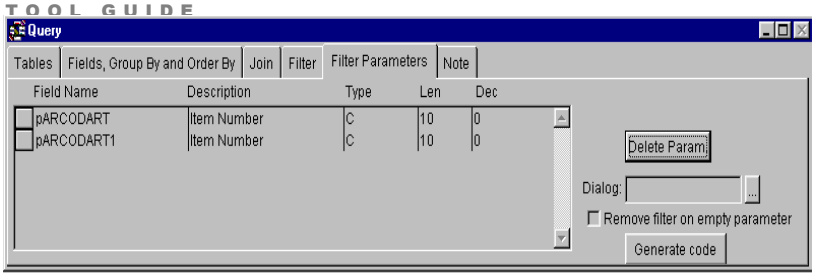
Fields for queries are selected double clicking the desidered one in the 'Fields' area of the 'Dictionary' window or by drag&drop. Selected fields are automatically displayed in the 'Design' window as well as in the 'Fields, Group By or Order By' tab-strip of the 'Query' window.



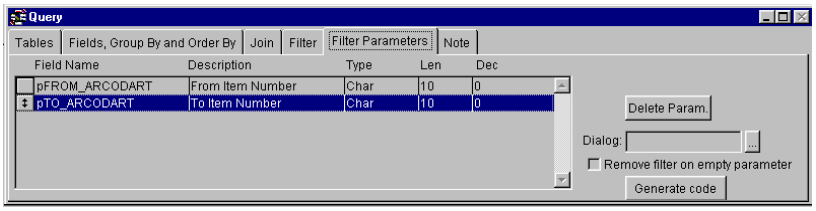
From the 'Items' table select the fields 'Item No.', 'Description' and 'VAT Rates'. From the 'VAT Rates' table select 'VAT Code' and 'Description'. Clilck the 'SQL Sentence' button on the toolbar. With only a few clicks you have just written the following SQL sentence:



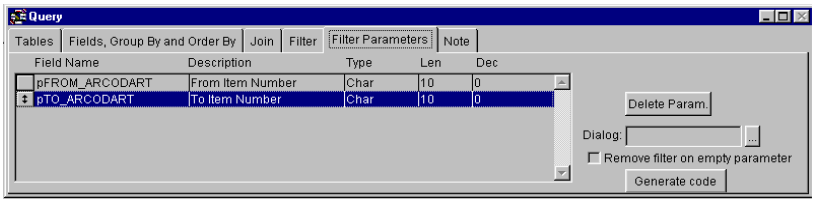
You now need to define filter parameters for the query. Filter paramenters are defined basing on fields selected for the query. Go to the 'Filter Parameters' tab-strip in the 'Query' window. Adding parameters in this area involves the automatic generation of a dialog window for inputting parameters and filter expressions. Go to the 'Fields of' area in the 'Tables' window and drag&drop the desired fields in the 'Field Parameters' tabstrip of the 'Query' window.



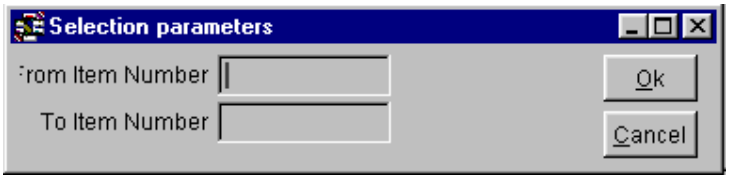
To define a 'from - to' selection, the same field in selected twice (as shown in the picture above). You now need to distinguish the field that will contain the starting parameter, from the field that will contain the final parameter. In the 'Field Name' column change the defaulted names ('pARCODART" and 'pARCODART1') into 'pFROM_ARCODART" and 'pTO_ARCODART". Following the same principle change the descriptions.



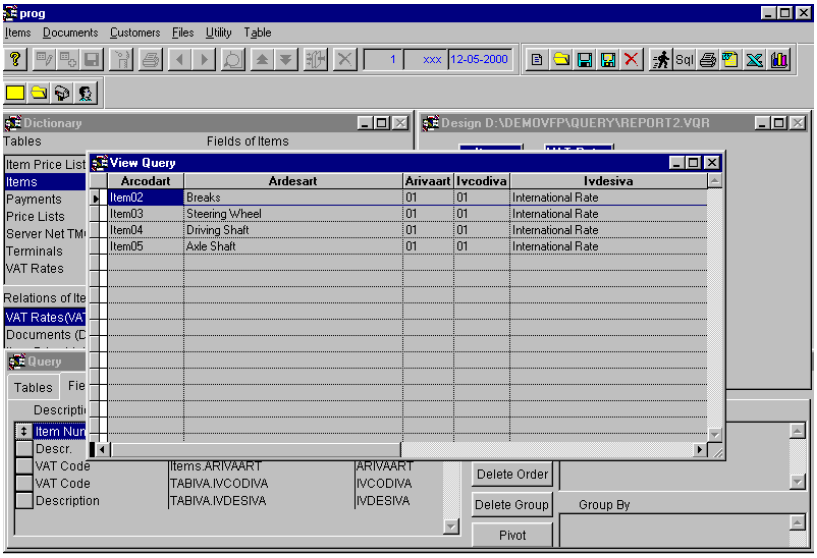
Now go to the 'Filter' tab-strip. Values have been automatically defaulted. Notice the prefix '?' in the 'Example' column. In the 'Criteria' column select '>=' in the first row and '<=' in the second row. The filter definition is completed.



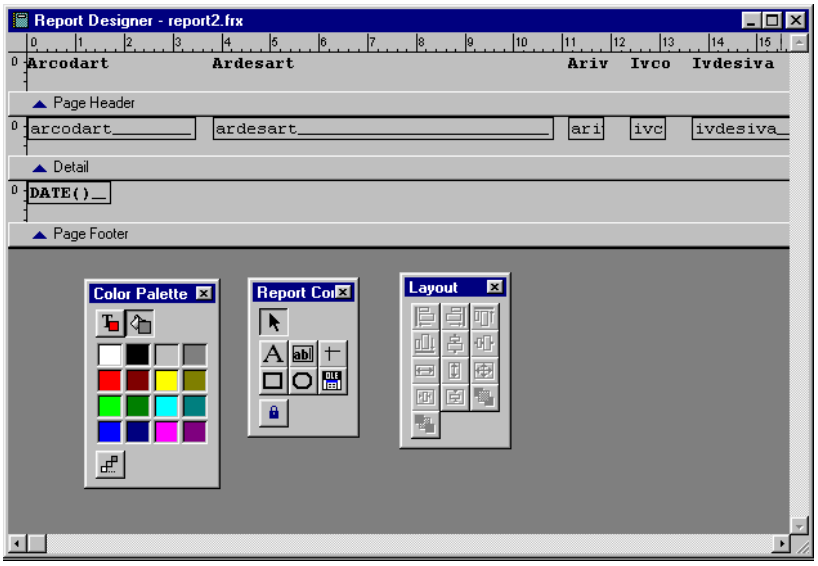
Variables and strings defined in the 'Filter Parameters' tab-strip are used to automatically create the selection dialog window that is opend when you click the 'Execute Query' button in the toolbar.



Enter parameters in the 'Selection parameters' window (e.g. Item02 and Item05). Your query result should look like the one shown in the following picture.



You can create reports that involve more files basing on the same SQL Sentence structure. To change the report click the 'Create/Modify Report' button. The report prototype is opened.



This button executes the report in the defined source language. Using this button you can create a new report and save it with the extention .FRT or open an existing one.

2.9 The Tool's Composition

The Query Painter has the following routines.

Program	Function
VQ_BUILD.PRG	To paint the query.
VQ_EXEC.PRG	To execute the query.
VQ_LIB.PRG	Class libraries for the tool.
VE_BUILD.PRG	To interface the tool with MS Excel.
VG_BUILD.PRG	To interface the tool with MS Graph.
VG_EXEC.PRG	To execute and manage graphs

The VQ_BUILD.PRG procedure allows painting and building the query. The created file is saved in .VQR format, the same extention used by the query structure. The procedure is automatically integrated in the application's 'Utility' menu under the option 'Query Painter'. The query can be executed directly from the tool ('Execute Query' button) or in interactive mode launching the procedure VQ_EXEC. This latter way requires to write the query name between apexes. The VQ_EXEC can also be executed from CP_LIB, which depending on the file extention executes the correct translator.

N.B.

If the query name is left empty the 'Open' dialog window is opened and you can select the desidered query.

The VE_BUILD.PRG routine allows interacting with MS Excel passing on extracted values to a MS Excel worksheet.

The VG_BUILD.PRG and the VG_EXEC.PRG manage graphs created in MS Graph. Graphs are executed with the VG_EXEC routine and has the following syntax:

```
VG_EXEC ;<GraphModelName.VGR> ,<SPACE> <calling object
pointer>,<SPACE> <QueryName.VQR>
```

N.B.

If the graph model name is left empty a new graph will be opened using the MS Graph default graph.

Exercise

```
do vq_exec with ='prova'
```

Executes the query 'prova'.

```
do vq_exec
```

Opens the 'Open' dialog window in which the desidered query (extention .VQR) can be selected.

```
VX_EXEC with "<QueryName>".VQR
```

Executing the query from the menu, the translator is launched, which executes the <QueryName> basing on the file extention .VQR.

N.B.

If a report is associated to the query the Print Manager is launched. If you want the query preview, you need to add the 'PREVIEW' parameter in the procedure:

```
VX_EXEC with "<QueryName>".VQRPREVIEW
```

N.B.

If more than one report is associated to the query you need to define which report must be printed when the query is executed. You therefore need to digit the report name and its extention next to the query name:

```
VX_EXECwith"<QueryName>.VQR,<ReportName>"
```

The preview option can also be attached.

2.10 Integrating A Query In An Application

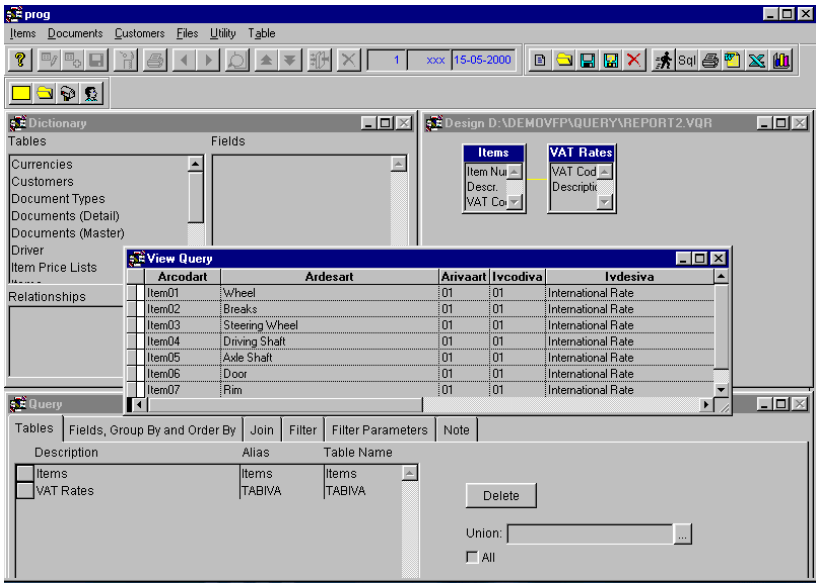
Created queries can be integrated in any CodePainter entity, no matter if it is interpreted or compiled. This means that queries can be called from within Master Files, Detail Files, Mater/Detail Files, interpreted or compiled Dialog Windows, etc.

Queries can be used within the 'Select' instruction of a Routine in order to obtain a cursor for specific data processing; or a query result can be used to produce a MS Word and/or MS Excel report or mailmerge; or a query can be associated to a Visual Zoom in order to have powerful multifile zooms. Let us now see some examples.

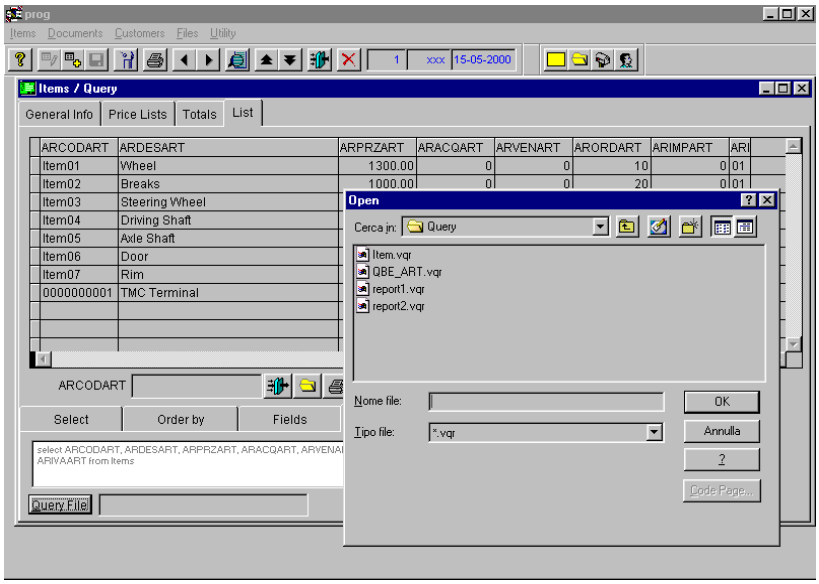
2.11 Multifile Query And Visual Autozoom

You are now required to use the 'Query Painter' to define a SQL sentence that extracts all items, its descriptions, and prices with and without VAT.

Open a new query, select the 'Items' table and the fields 'Item No.', 'Description', 'VAT Code'. Select the 'VAT Rates' table and the fields 'VAT Code' and 'Decription'. Running the query you should obtain the following result:



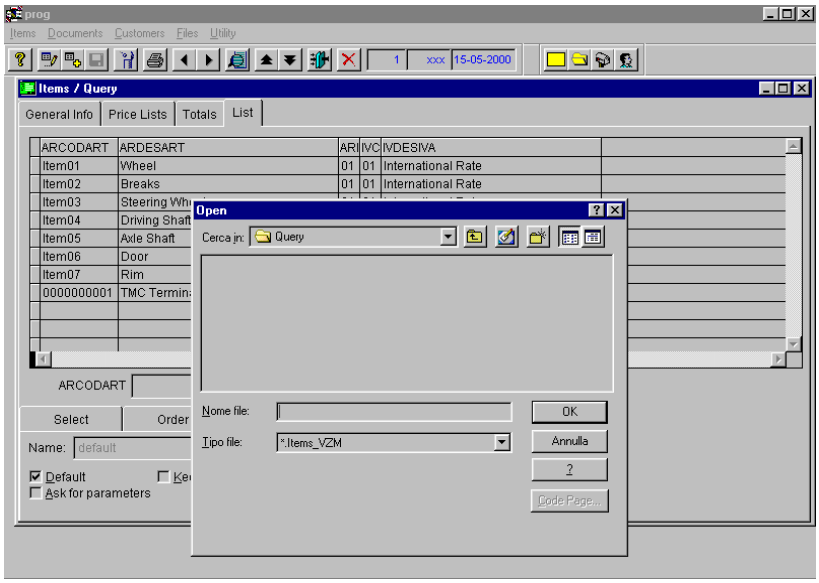
Save the query as QBE_ART. Exit the 'Query Painter', open the 'Items' menu and select 'List' to associate the query to the zoom. Click the 'Options' button and go to the SQL tab-strip. Click the 'Query File' button. In the 'Open' dialog window select the created query (QBE_ART.VQR).



Click 'OK' to confirm. The query is executed and the zoom displayes only those fields you selected for the query. You can now change and integrate other Visual Zoom options. Once you have customized the zoom you need to save it. Go to the 'Field' tab-strip, activate the 'Default' flag and save. You have just created the following configuration file:

```
<ConfigurationName>.<FileName>_VZM
```

where <ConfigurationName> is the name you used to save the custom configuration ('default') and <FileName> is the name of the table used. If you click the 'Settings' button you will find a file named 'Default.Items_VZM'.



If you go back to the 'Items' 'List' you can notice that items are displayed basing on the associated query.

N.B.

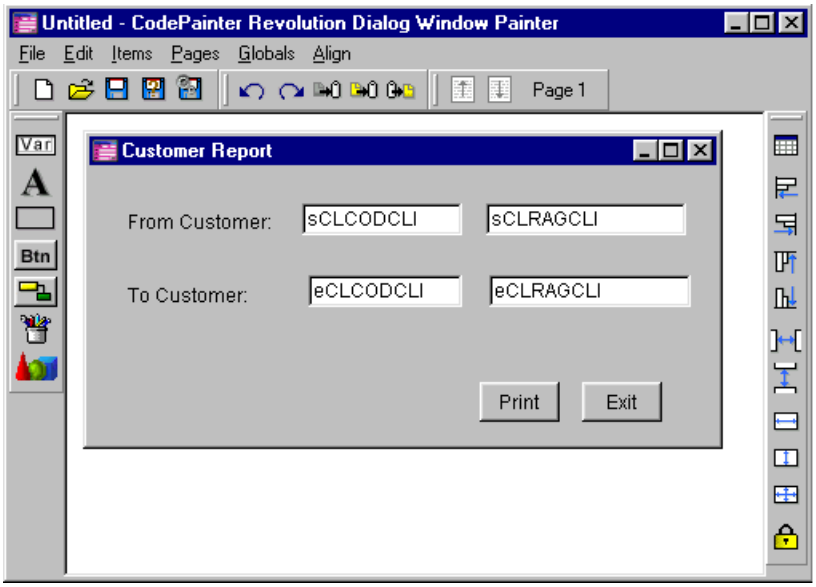
You can create a dedicated subdirectory named 'Default' under which you save default queries. During the 'Design' Phase the system will always search for .VQR files under this directory. Before launching a query from a procedure you have to define the correct path. For example, if you launch the query named 'prova' saved under the subdirectory 'Default', you need to define the path 'Default\prova.VQR'.

2.12 Multifile Query And Reporting

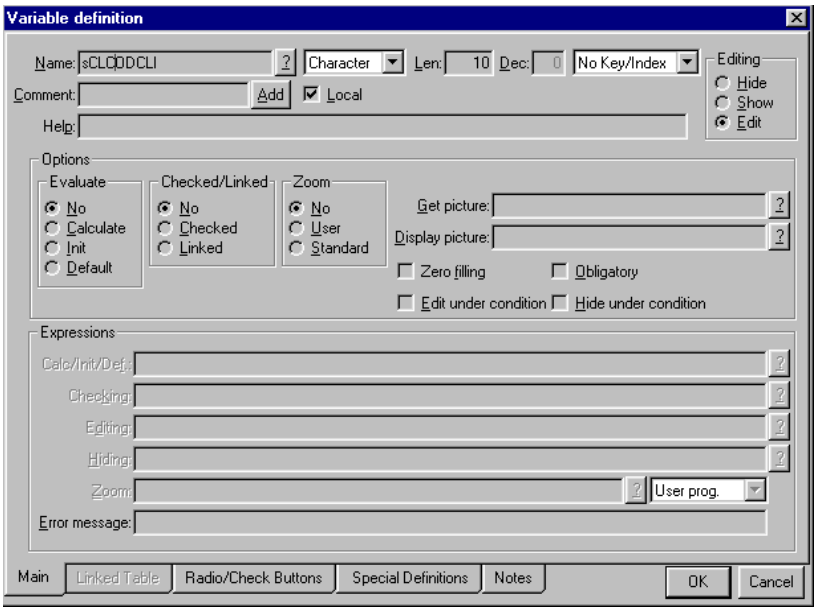
In this section we will see how the 'Query Painter' can be used to create a report of customers having an e-mail address. Further we will create a letter to be sent via e-mail. First of all you are required to create a dialog window containing the required selection variables, and two buttons to print or exit the window. The 'Print' button will launch the extraction query to which the customers' list report is associated. Further you will associate an MS Word model that executes the mailmerge to send the e-mails.

2.12.1 Selection Dialog Window

Go to CodePainter Front End, add a new Dialog Window entity in your design plan and generate the Design. Open the 'Painter' menu, select 'Dialog Window Painter' and open the added dialog window. Define the following selection dialog window:

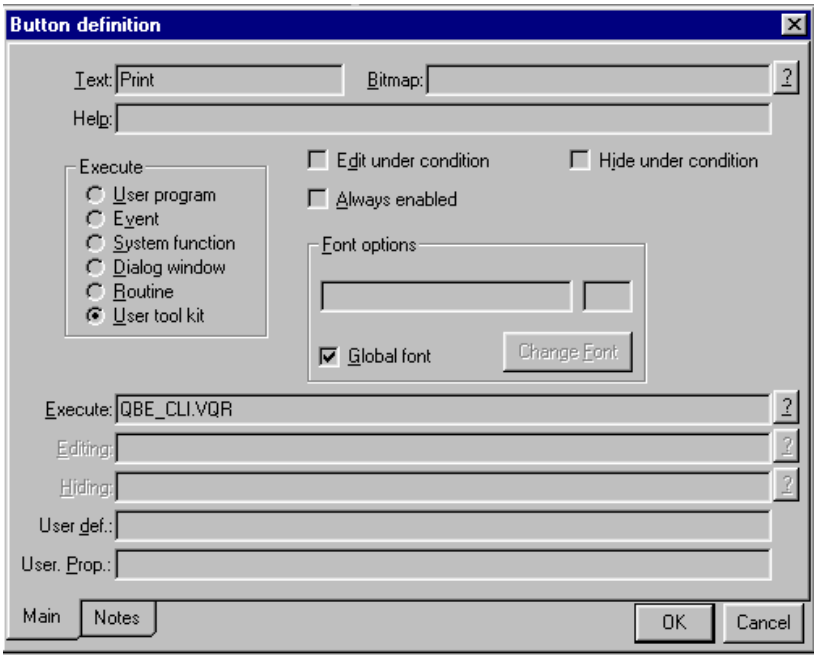


Add four variables: two for entering the 'from' and 'to' customer key (sCLCODCLI and eCLCODCLI) and two to display the corresponding company name (sCLRAGCLI and eCLRAGCLI).



These variables are linked to the 'Customers' table and are passed on to the query for data extraction. Add the strings 'From customer:' and 'To customer:'.

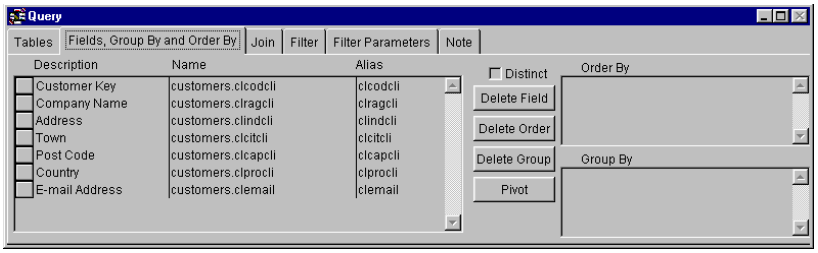
Add two buttons: one to print and one to exit the dialog window. The 'Exit' button uses the 'Quit' System Function. The 'Print' button uses the 'User Tool Kit' option. In the 'Execute' field digit the query name QBE_CLI.VQR that you are about to create.



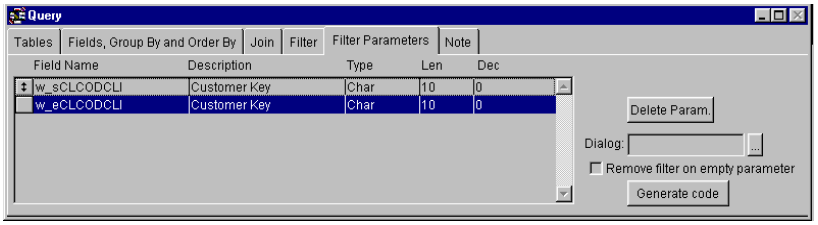
Complete the dialog window adding the title and the table that must be used. Save the dialog window exit the 'Dialog Window Painter' and re-generate your application. Run the application and you will find a new menu item, e.g. 'Customer Report'

2.12.2 Creating The Query

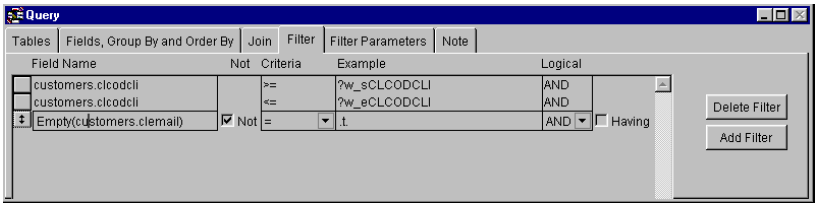
Open the 'Utility' menu and select the 'Query Painter'. Select the 'Customers' file and drag the following fields in the 'Field, Group By and Order By' tab-strip: 'Customer key', 'Company Name', 'Address', and 'E-mail Address'.



Drag the 'Customer Key' field to the 'Filter Parameters' tab-strip. In the 'Field Name' column write the first variable defined in the Selection Dialog Window, namely 'w_sCLCODCLI'. Do the same for the second variable 'w_eCLCODCLI'. These parameters are also defaulted in the 'Example' column in the 'Filter' tab-strip.



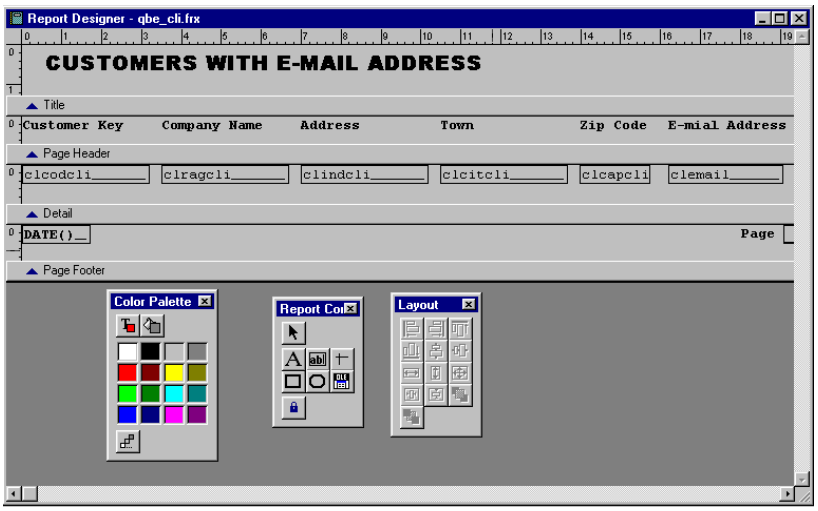
To select only customers having an e-mail address, click the 'Add Filter' button in the 'Filter Parameters' tab-strip. In the 'Field Name' column digit 'Empty(cli_enti.CLEMAIL), set the 'NOT' flag, in the 'Criteria' column select the '=' operator, and in the 'Example' column digit '.t.'.



Save the query as 'QBE_CLI.VQR' and test it.

2.12.3 Create/Modify Report

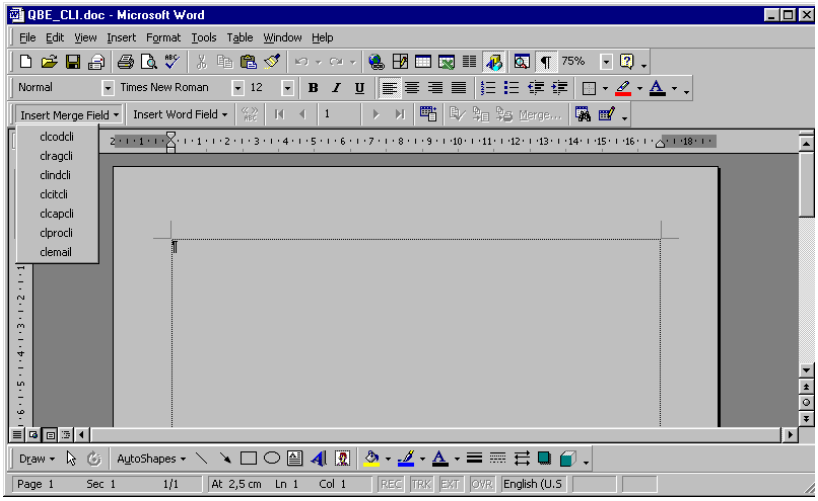
You can now modify the customers list. Click the 'Create/Modify Report' button on the 'Query Painter' toolbar. The report prototype is opened. Using MS Visual FoxPro report tool functionalites change the report until it looks similar to the following picture:



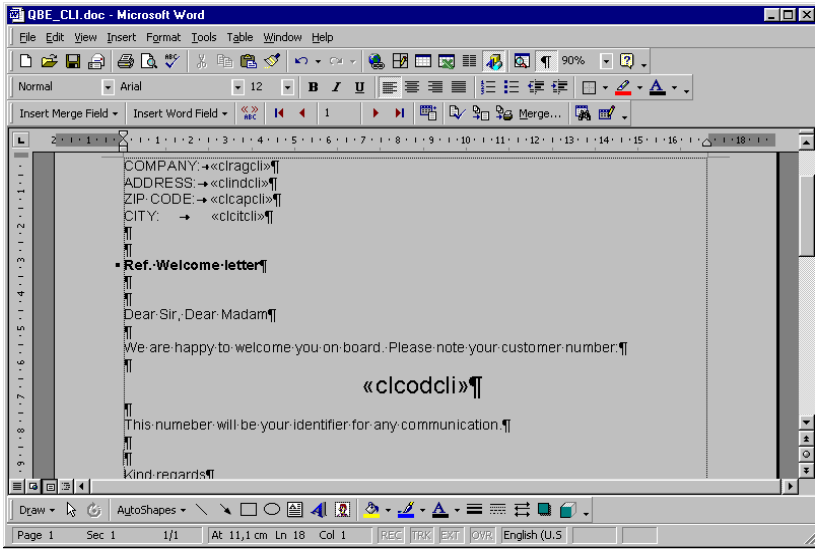
Check your report using the 'Preview' functionality (right clcik the mouse), save and close it.

2.12.4 Creating The MS Word Model

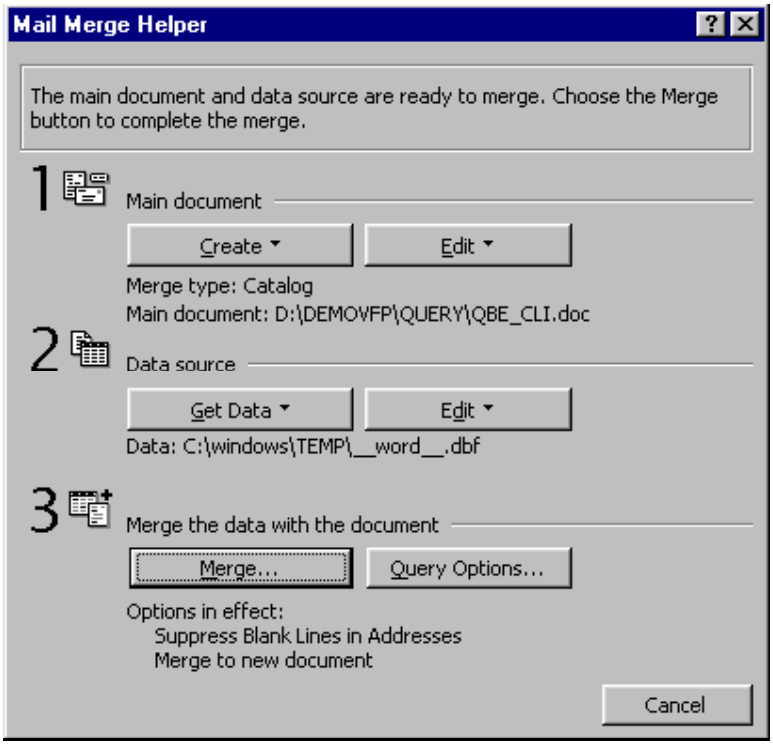
Click the 'Create/Modify Mailmerge button' on the 'Query Painter' toolbar. The .DOC model having the same name as the query is opened (QBE_CLI.DOC). Write a letter and integrate database fields selecting them from the 'Insert Merge Field' combobox.



Format the document as to obtain the desidered letter layout.



To check the model open the MS Word 'Tools' menu and select 'Mail Merge'.



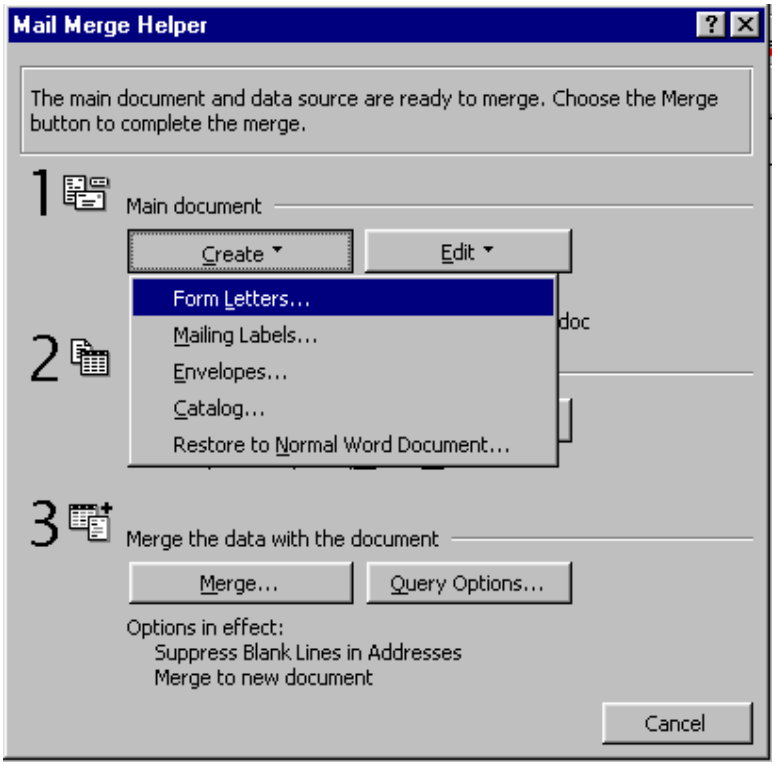
The 'Mail Merge Helper' has different options.

The first concerns the main document, i.e. the created model, and the kind of merge that must be done (please refer to MS Word manuals for more information).

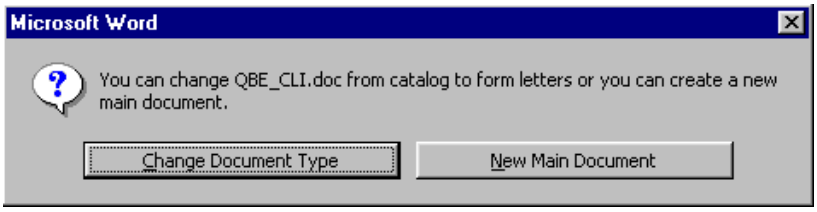
In the second option the source of data is selected. In this exercise data is stored in the _WORD_.DBF file under the temporary Windows directory (C:\WINDOWS\TEMP).

From the third option the mail merge of data with the model is launched (please refer to MS Word manuals for more information).

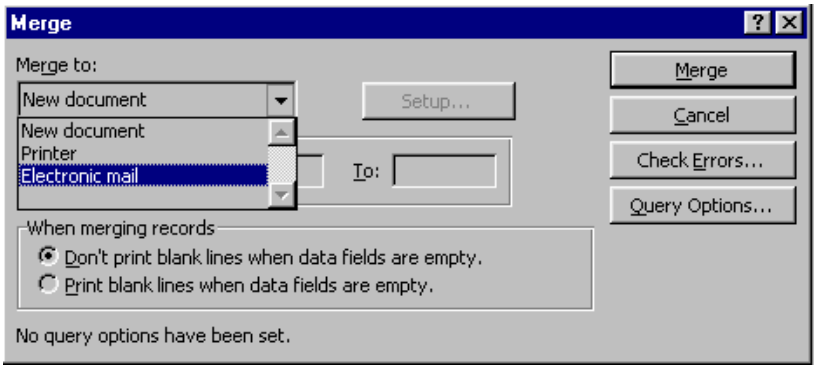
In the first option click the 'Create' button and select 'From Letters...'.



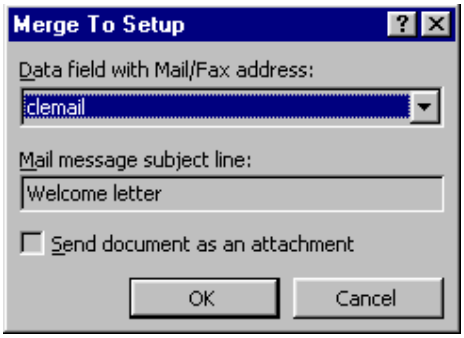
A message asks you if you want to change the document or create a new main document. Click on the 'Change Document Type' button.



In the third option click the 'Merge' button. The 'Merge' dialog window is opened. In the 'Merge to' select 'Electronic Mail'. You are merging the document to MS Outlook.



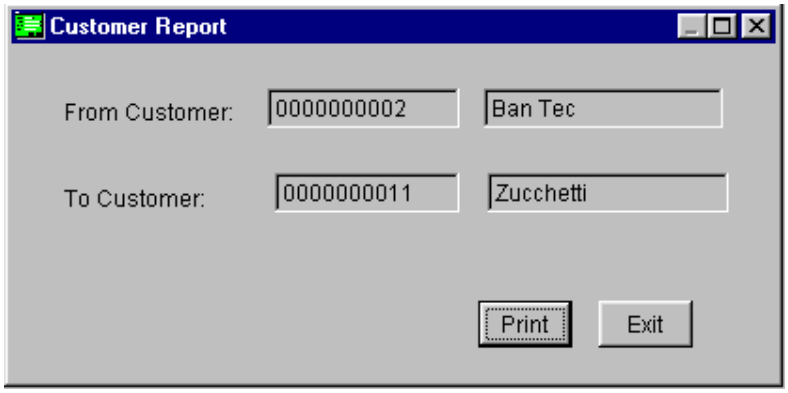
Click the 'Setup' button to open the 'Merge to Setup' window. Click the combobox under the 'Data Field with Mail/Fax address' to select the field in which customers e-mail addresses are defined ('clemail'). You can also add an e-mail heading and decide to send the document as attachment.



Confirm with 'OK' to go back to the 'Merge' window and click the 'Merge' button to confirm. After a few seconds you can check in your Mail Outbox that e-mail messages are sent to all customers selected by the query. Save the created Word model and close the Query Painter.

2.12.5 An Example

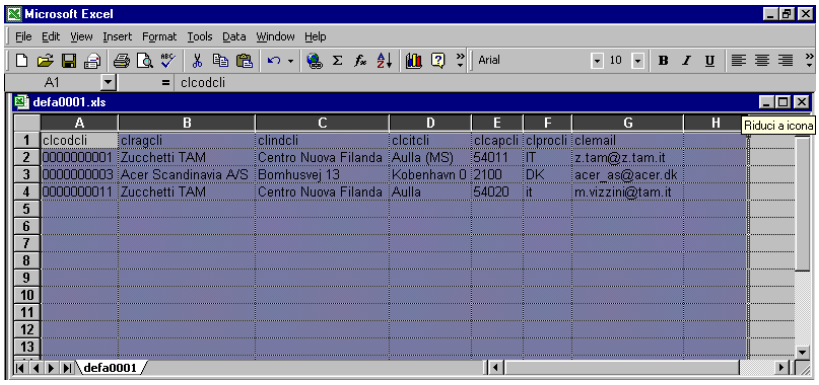
Open the 'Customer Report' menu you created at the beginning of this chapter. The 'Customer Report' window is opened. Fill in the window and click 'Print'.



The 'Print System' window is opened.

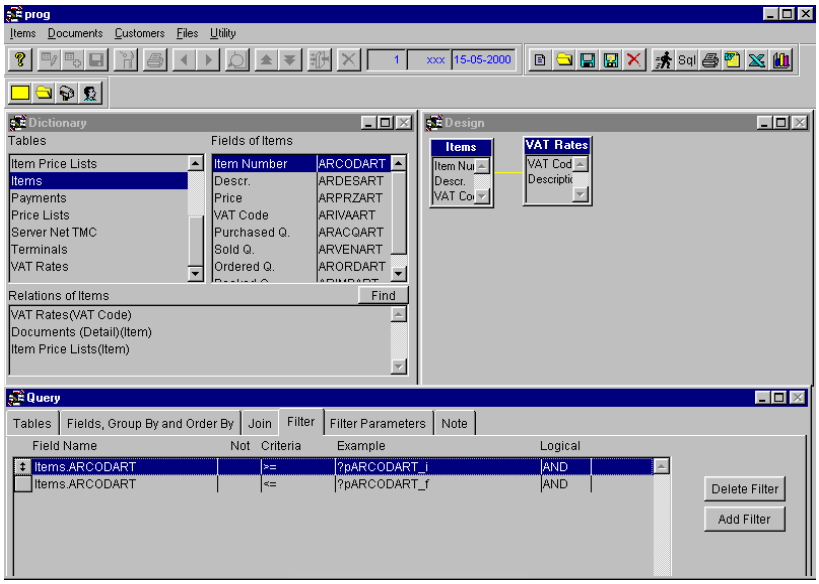
Click the 'Print Preview' icon on the bottom left of the window to view the result on the screen. Click the 'Microsoft Word Document' button to merge the data and produce the QBE_CLI.DOC document. Simply clicking the 'Merge' button on the 'Mail Merge' toolbar e-mails will be automatically sent.

Clicking the 'MS Excel Document' you can extract data into an Excel worksheet. The first row contains the field names.



2.13 Multifile Queries With Interpreted Selection Dialog Windows

You are now required to extract 'Items' that fall under a given range. Create a query to extract 'Item No.', 'Description', and 'VAT Rate' from the 'Items' file and 'VAT Rate' and 'Description' from the 'VAT Rate' file. To associate a filter and a selection dialog window to the query, add the 'Item No.' field twice in the 'Filter Parameters' tab-strip of the 'Query' window. Change the field names into 'pARCODART_i' and 'pARCODART_f'. Go to the 'Filter' tab-strip and define the criteria for the filter expression.



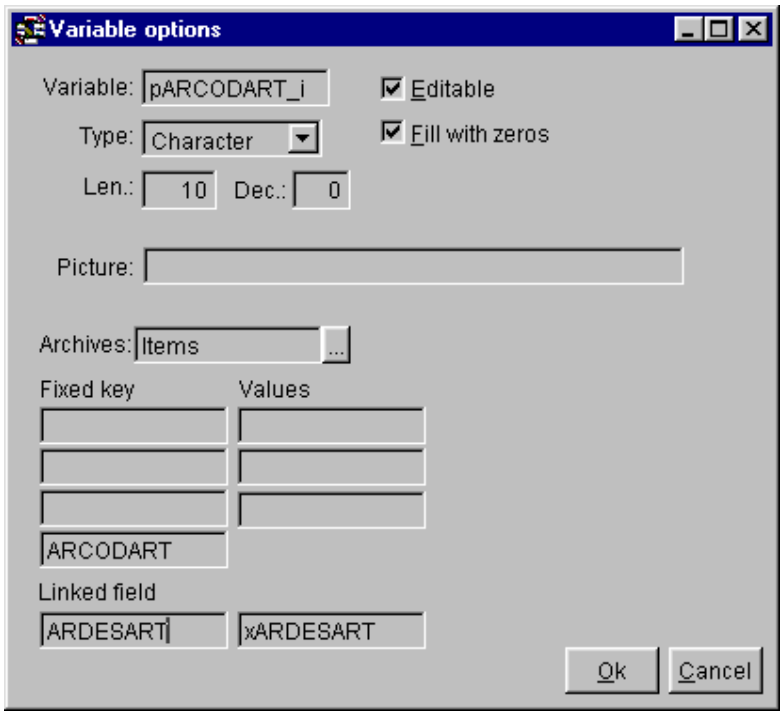
Execute the query to check that it works. The selection dialog window has been automatically created by the tool. You are required to associate a filter and the corresponding interpreted dialog window to the query. Association are made simply clicking the '...' button next to 'Dialog' in the 'Filter Parameter' tab-strip and selecting the desired dialog window. You still need to create the Dialog Window that must be associated. Save the query as 'QBE_AR1'. Exit the 'Query Painter' tool, open the 'Utility' menu and select 'Dialog Window Painter'.

Click the 'Opt.' button on the 'Dialog Window Painter' toolbar to define the window's title, namely 'Item Selection'. Confirm with 'OK'. Add the 'starting item' clicking the 'Variable' button. Double click the added variable. In the 'Variable Options' window digit the variable's name (pARCODART_i) and activate the 'Fill With Zeros' flag.

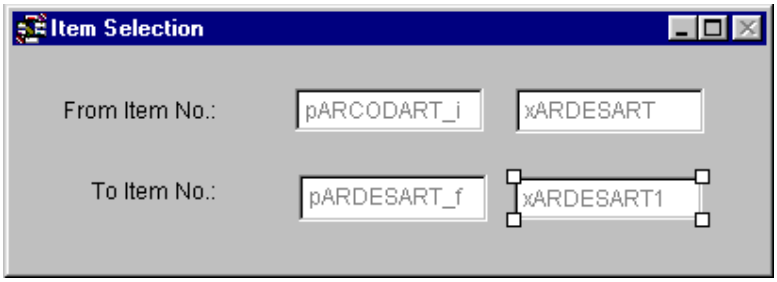
N.B.

The variable name must be same as the one defined in the 'Example' column of the 'Filter' tab-strip in the'Query' window ('Query Painter').

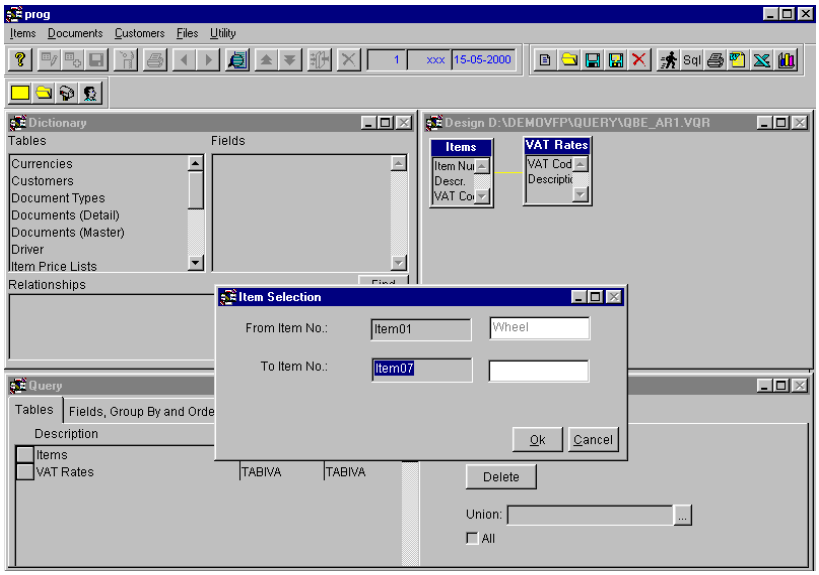
Click the '...' button next to 'Archives' and select 'Items', i.e. the file from which data must be read. The 'Items' primary key is defaulted in the 'Fixed Key' area. In the two fields under the heading 'Linked Field' digit 'ARDESART" and 'xARDESART'.



Add another variable for the 'Item Description'. Define the variable name as 'xARDESART' and deactivate the 'Editable' flag, so that the variable is display only. Following the same steps create the 'To Item' fields, adding a variable named 'pARDESART_f' and a second variable named 'xARDESART1' as display only. Add two strings 'From Item Code' and 'To Item Code'.

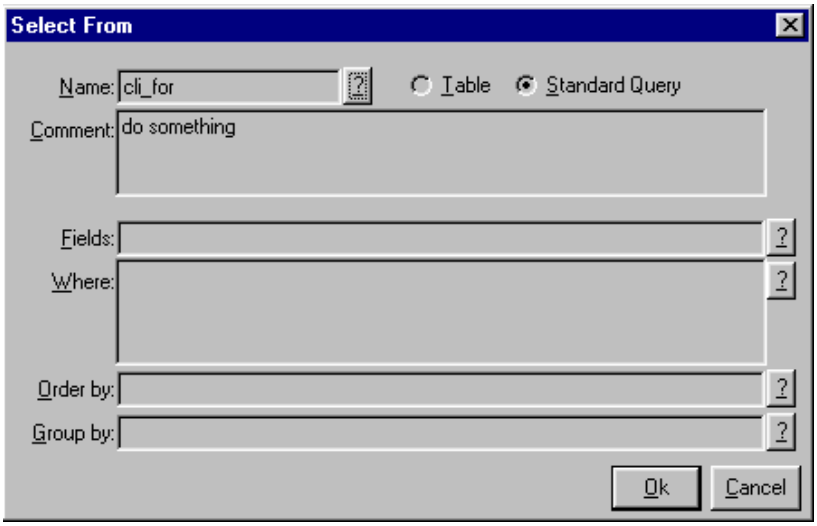


Save the dialog window as 'DGW_AR1' and go back to the 'Query Painter'. Open the 'QBE_AR1' query, go to the 'Filter Parameters' tab-strip in the 'Query Window' and click the '...' button next to 'Dialog'. Select the 'DWG_AR1.VFM' file and save. Running the query you can notice that the query displays the created Dialog Window.



2.14 Query And Routine

Within 'Routine' procedures you can integrate 'painted' queries in the 'Select From' instruction.

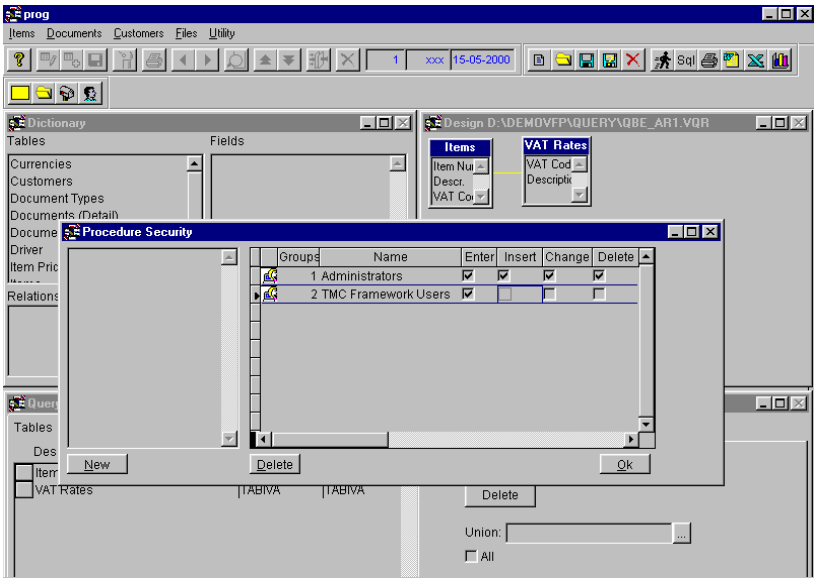


Go to CoodePainter Front End and open the 'Routine Painter'. Add a 'Select' command to your routine. The 'Select From' window is opened. Select the 'Standard Query' flag and click the '?' button next to 'Field Name'. The 'Queries' window is opened detailing all available queries. Select the desidered query and confirm with 'OK'. This allows you obtaining complex data extractions. During the routine execution the query result is a cursor (temporary support file) that can be used by the instruction to perform defined actions. You can so make complex routines that are easy to use and to maintain.

To obtain 'Static Queries' you need to start from the query and click the 'Generate Code' button. Its use is basically the same as 'Standard Queries' with the difference that during the Codify Phase they are codified within 'Routines'. 'Static Queries' can be changed only by changing the query and re-generating the code for the Routine entity.

2.15 Limited Access To The Query Painter

To limit or deny access to the Query Painter open 'Utility' menu and select 'Procedure Security' when the 'Query Painter is opened in the background. For further information please refer to the 'Programming and Utilities Guide'.



Chapter 3

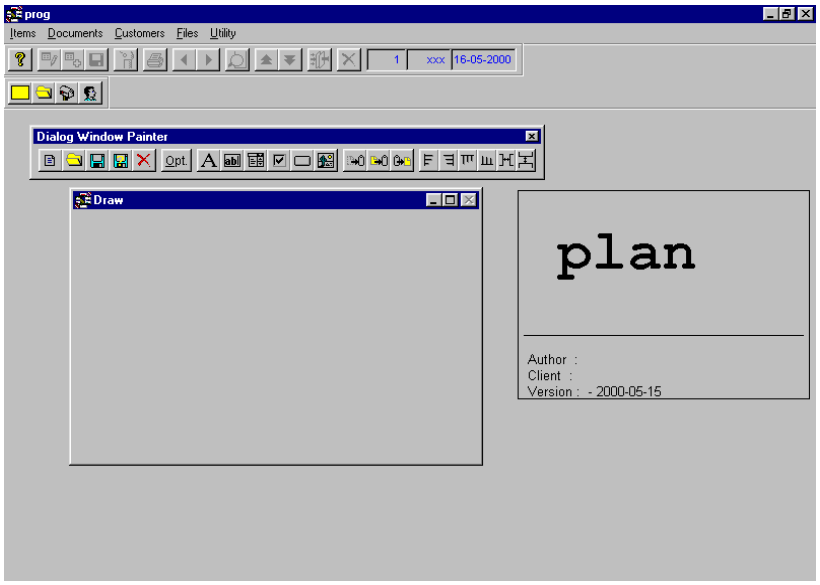
Dialog Window Painter

3.1 Introduction

The Dialog Window Painter deeply exploits Object-Oriented Programming, integrating the Query Painter and allowing to create interpreted dialog windows, i.e selection windows that are not hard coded.

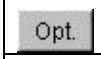
3.2 The tool

Run your application open the 'Utility' menu and select the 'Dialog Window Painter'. An empty dialog window and a dedicated toolbar are opened.



3.3 The Dialog Window Painter Toolbar

The 'Dialog Window Painter' Toolbar has a set of buttons that help you interacting with the tool:

Button	Name	Action
	New	Opens a new Dialog Window (.VFM).
	Open	Opens an existing Dialog Window (.VFM).
	Save	Saves the opened Dialog Window.
	Save As	Saves the opened Dialog Window with a different file name.
	Exit	Exits the Dialog Window Painter and goes back to the application.
	Dialog Window Options	Opens the Options Dialog Window.
	String	To add strings.
	Variable	To add variables.
	ComboBox	To add comboboxes.
	CheckBox	To add checkboxes.
	Button	To add buttons.
	Bitmap Image	To add bitmaps from which procedures can be executed.
	Cut	To cut selected elements.
	Copy	Selected elements are saved in a memory buffer.
	Paste	Elements saved in the buffer are pasted.
	Align Left	Selected elements are aligned to the left.
	Align Right	Selected elemets are align to the right.
	Align Top	Selected elements are aligned at the top.

	Align Bottom	Selected elements are aligned at the bottom.
	Same Horizontal Distance	Selected elements are rearranged leaving the same horizontal distance.
	Same Vertical Distance	Selected elements are rearranged leaving the same vertical distance

3.3.1 New

The 'New' button clears the memory and opens a new Dialog Window.

3.3.2 Open

The 'Open' button opens an existing dialog window.

3.3.3 Save

The 'Save' button saves the current dialog window.

3.3.4 Save As

The 'Save As' button saves the current dialog window with a different name.

3.3.5 Exit

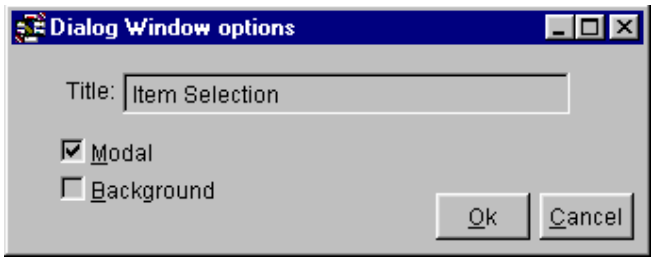
The 'Exit' button exits the Dialog Window Painter and goes back to the running application.

3.3.6 Option

The 'Opt.' button opens the 'Dialog Window Options' window.

Dialog Window Options

In the 'Dialog Window Options' window you can define the dialow window's title, and set the 'Modal' and the 'Background' flags.



Title

In the 'Title' field you can define the Dialog Window's title.

Modal Flag

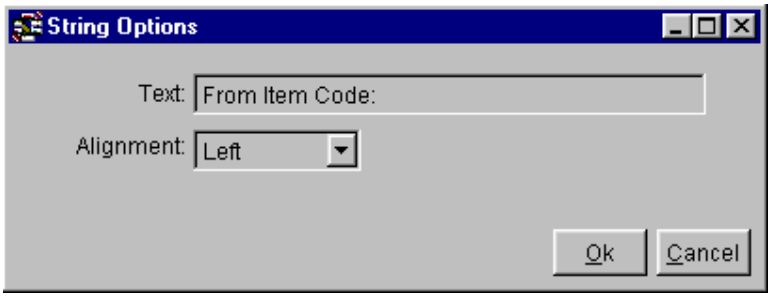
Activating the 'Modal' flag the windows becomes modal (for more information refer to the MS Windows Manuals).

Background

Activating the 'Background' flag allows defining the current Dialog Window as the standard application background.

3.3.7 String

The 'String' button allows adding a string to the dialog window. Double clicking the added string the 'String Option' dialog window is opened.



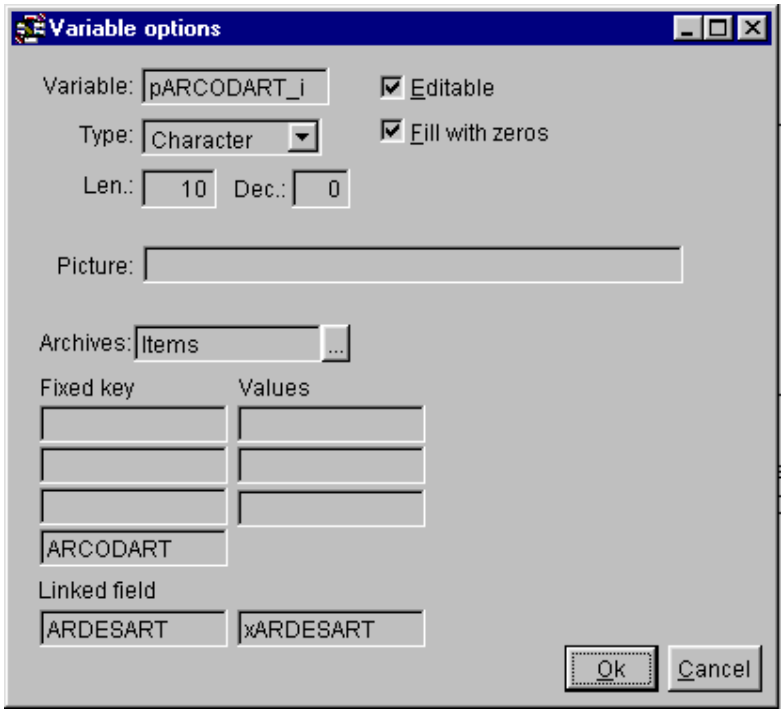
You can define the string text and the text alignment within the string cell (left, right or centred alignment).

3.3.8 Variable

The 'Variable' button allows adding a variable to the dialog window. Double clicking the added string the 'Variable Option' dialog window is opened.

Variable Options

In the 'Variable Options' window you can define the variable's options.



Variable

In the 'Variable' field the field name must be entered.

Type

The field 'Type' can be selected from the combobox (Character, Numeric, Date).

Lenght

The field 'Length' is defined in the 'Len.' field.

Decimals

Field 'Decimals' can be defined in the 'Dec.' field for numeric fields only.

Editable Flag

The 'Editable Flag determines whether the field can be edited or not. Non editable fields are for example field descriptions.

Fill With Zeros Flag

When the 'Fill With Zeros Flag' is selected and a value is entered in the variable, the value will be automatically filled with zeros (in front of the entered value). This flag can be used only when the variable is a character type. The zero filling is not performed when the entered value starts with a letter or a zero.

Exercise

Define a variable as 'Character' and lenght '10' and set the 'Fill With Zeros' flag.

Enter the value A12B. The value is not changed, because the value starts with a letter.

Enter the value 0112. The value is not changed, because the value starts with a zero.

Enter the value 1462. The value is changed to 0000001462.

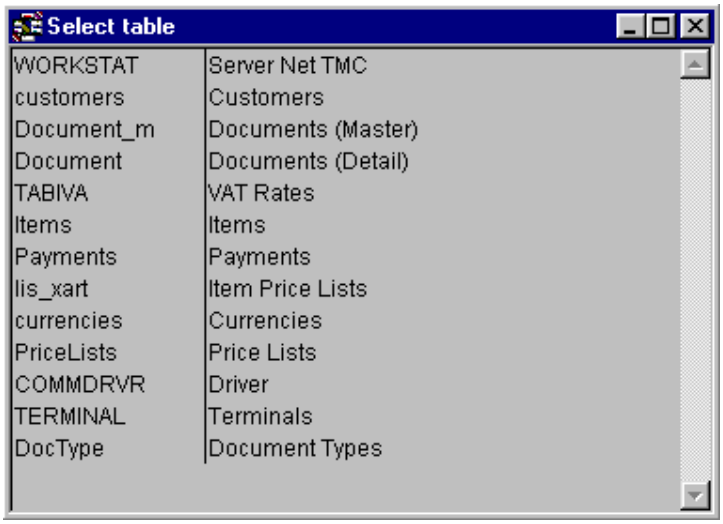
Enter the value 1TE22. The value is changed to 000001TE22.

Picture

In the 'Picture' field you can define a picture for the variable.

Archives

Clciking the '...' button next to 'Archive' you can browse and select the database table to which the database table must be linked.



Fixed Key

The three empty fields in the 'Fixed Key' area are the fixed part of the key linking the variable to a database table having a composite key. The fourth field must contain the name of the last field composing the key. This latter field is automatically filled when the database table is selected.

Values

The three empty fields in the 'Values' area are the values of the fixed part of the key linking the variable to a database table having a composite key. The fields are empty if the table primary key is not composite.

Linked Field

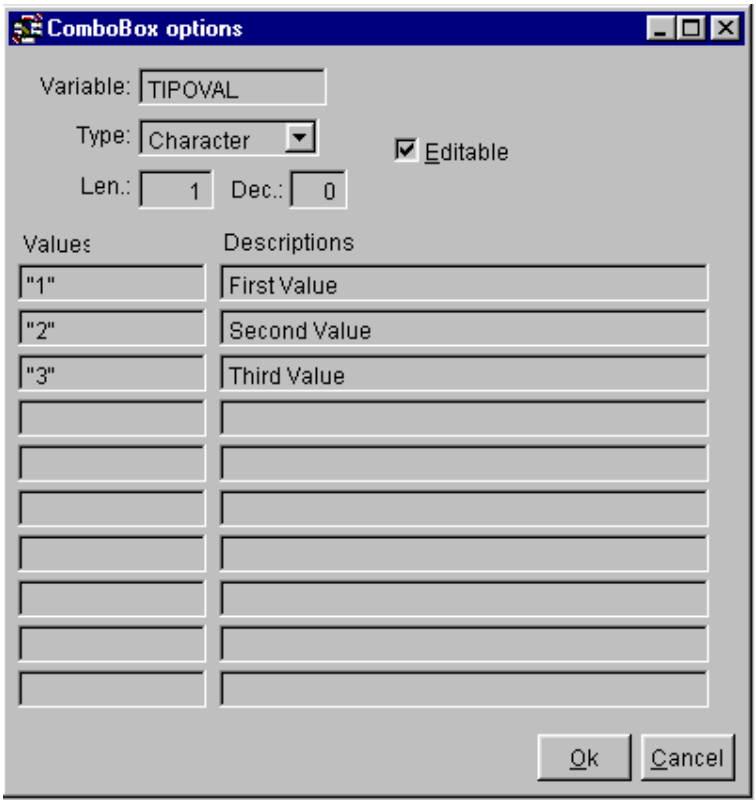
In the 'Linked Field' you can define the name of the field you want to download from the link. Next to this field the name of the variable containing the retrieved value must be defined.

3.3.9 ComboBox

The 'ComboBox' button allows adding a combobox to the dialog window. Double clicking the added combobox the 'ComboBox Options' window is opened.

ComboBox Options

In the 'ComboBox Options' window you can define the combobox options.



Variable

In the 'Variable' field the combobox name must be entered.

Type

The field 'Type' can be selected from the combobox (Character, Numeric, Date).

Lenght

The combobox 'Lenght' is defined in the 'Len.' field.

Decimals

Combobox 'Decimals' can be defined in the 'Dec.' field for numeric fields only.

Editable Flag

The 'Editable Flag' determines whether the combobox must be edited or not.

Values

In the 'Values' column you can define up to 10 combobox values.

Descriptions

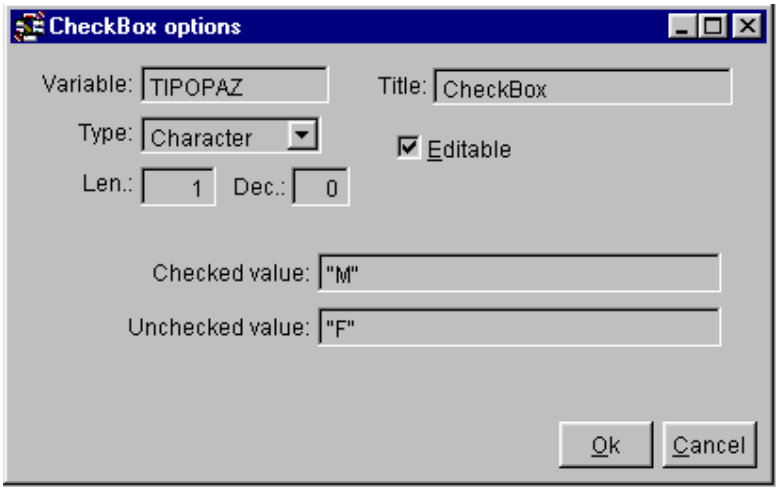
In the 'Description' column you can define the combobox value descriptions.

3.3.10 CheckBox

The 'CheckBox' button allows adding a checkbox to the dialog window. Double clicking the added checkbox the 'CheckBox Options' window is opened.

CheckBox Options

In the 'CheckBox Options' window you can define the checkbox options.



Variable

In the 'Variable' field the checkbox name must be entered.

Type

The field 'Type' can be selected from the combobox (Character, Numeric, Date).

Lenght

The checkbox 'Lenght' is defined in the 'Leng.' field.

Decimals

Checkbox 'Decimals' can be defined in the 'Dec.' field for numeric fields only .

Editable Flag

The 'Editable Flag' determines whether the checkbox must be edited or not.

Title

The title defined in the 'Title' field is displayed next to the checkbox.

Checked Value

In the 'Checked Value' field you can define the value that the variable must contain when the checkbox is checked.

Unchecked Value

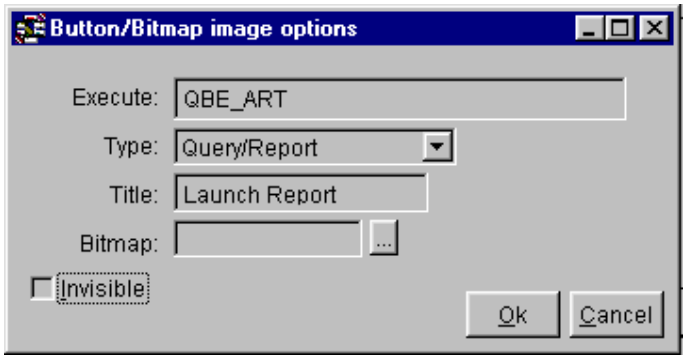
In the 'Unchecked Value' field you can write the value that the variable must contain when the checkbox is unchecked.

3.3.11 Button/ Bitmap Image

The 'Button' and the 'Bitmap Image' buttons allow adding a button/ bitmap image to the dialog window. Double clicking the added object the 'Button/ Bitmap Image Options' window is opened.

Button/ Bitmap Image Options

In the 'Button/ Bitmap Image Options' window you can define the button options.



Execute

In the 'Execute' field you need to define the name of the program you want to execute when the button/ bitmap image is clicked.

Type

The 'Type' of object you want to execute is selected from the combobox. You can select Program, Dialog Window, Query/Report, and Zoom.

Title

The button/bitmap image description is defined in the 'Title' field.

Bitmap

Clicking the '...' button next to the 'Bitmap' field you can select a bitmap image for the button.

Invisible

Activating the 'Invisible' flag the button is not shown. Using this option you can create bitmap images that can run programs through invisible buttons.

3.3.12 Cut

The 'Cut' button cuts selected areas from the working window. You can retrieve the deleted objects clicking the Paste button.

3.3.13 Copy

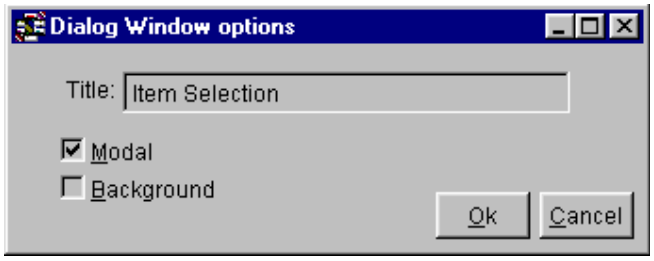
The 'Copy' button saves the selected area in a temporary memory buffer. To paste the copied area click the Paste button.

3.3.14 Paste

The 'Paste' button pastes the objects contained in the temporary memory buffer.

3.4 Designing Dialog Windows

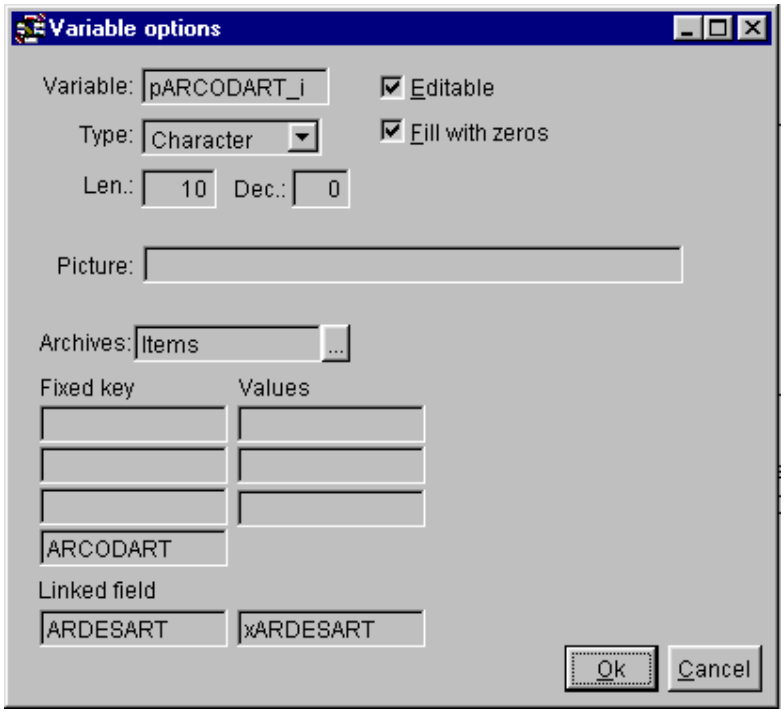
Let us now analyze how Dialog Windows can be designed using the Dialog Window Painter. You are required to create a Dialog Window named 'Items Selection' that fills the filter parameters of a given query. Click the "Opt." button on the toolbar, digit the title 'Items Selection' and click 'OK' to confirm.



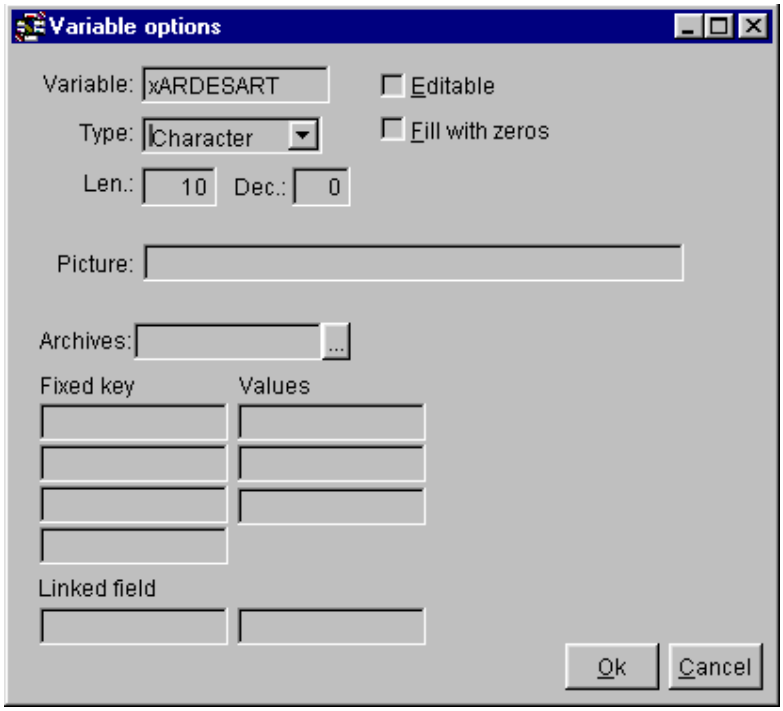
Click the variable button to add the 'From Item No.' variable. Double click the added variable and digit 'pARCODART_I' next to the 'Variable' field. Leave the variable 'Type' as Character and activate the 'Fill With Zeros' flag.

N.B.
The variable name must be the same as the one defined in the query, i.e. the one defined in the 'Filter Parameters' tab-strib.

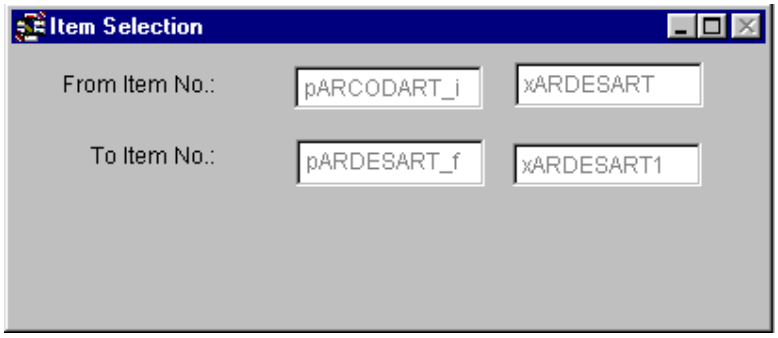
Double click the '...' button next to 'Archives' and select the 'Items' table. The primary key field is defaulted in the 'Fixed Key' area. To display the item description digit 'ARDESART' and 'xARDESART' in the two fields under the 'Linked field' heading. Confirm with 'OK'.



Add another variable for the 'Item Description', digit 'xARDESART' in the 'Variable' field and deselect the 'Editable' flag, because the item description must be display only.



Similarly, define the 'To Item No.' variables, namely 'pARCODART_f' and 'xARDESART1'. Add two strings ('From Item No.' and 'To Item No.') next to the variables. Align all objects to obtain the result shown in the following picture:



Save the Dialog Window as "DLG_ITEM1". The Dialog Window is ready to be integrated in the query.

3.5 Tool insight

First of all let us see how many routines build the Dialog Window Painter.

Procedure	Function
VM_BUILD.PRG	To design the dialog window.
VM_EXEC.PRG	To execute the dialog window.
VM_LIB.PRG	Class library for the tool.

The VM_BUILD.PRG procedure allows drawing and building Dialog Windows. It creates .VFM files containing the dialog window structure. The created Dialog Window is automatically added to the 'Utility' menu.

The VM_EXEC.PRG procedure has as defined parameter the dialog window name in apexes. A dialog window can be executed using this procedure directly from the menu or simply calling the 'VX_EXEC' procedure, which identifies the correct translator basing on the file extention.

N.B.

If the 'Execution' field is left empty a selection window is opened, from which .VFM files can be selected.

Exercise

```
wm_exec with 'prova'
```

Executes the 'prova' dialog window.

```
wm_exec
```

Opens the 'Open' window from which the dialog window is selected (.VMF extention).

```
VX_EXEC with '<WindowName>.VFM'
```

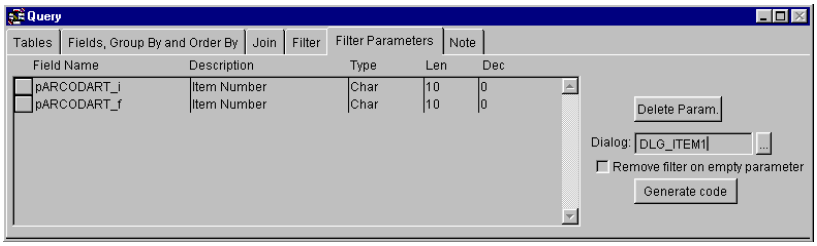
Basing on the file extention .VFM the translator executes the dialog window '<WindowName>' from the menu.

3.6 Integrating The Dialog Window In The Application

Objects created with the Dialog Window Painter can be easily integrated in queries, routines or used to substitute/integrate the application's menu. Designed dialog windows can be executed from within any entity. Let us now see some examples.

3.6.1 Dialog Windows and MultiFile Queries

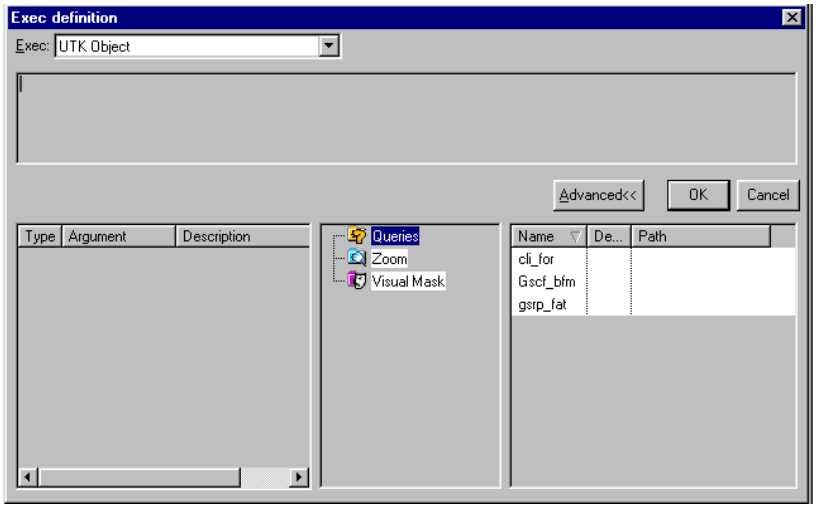
To integrate a dialog window in a query open the 'Query Painter' go to the 'Filter Parameters' tab-strip and digit the dialog window name in the 'Dialog' field.



When the dialog window is executed you can define selection parameters that will be used for extracting data.

3.6.2 Dialog Windows and Routines

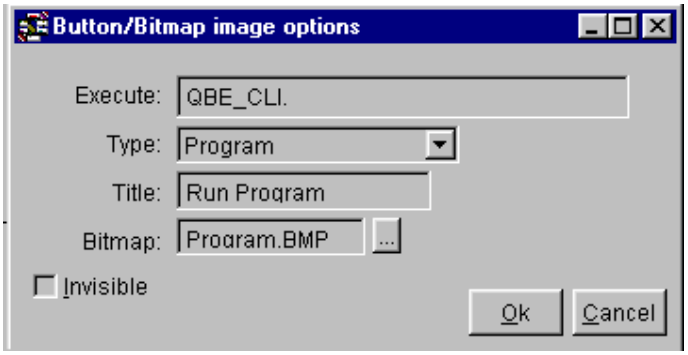
To integrate dialog windows in routine entities you need to open CodePainter Front End and use the 'Exec' command in the Routine Painter. In the 'Exec Definition' window select 'UTK Object' from the combobox next to 'Exec:' and click the 'Advanced' button. The window is enlarged and you can select the predefined dialog window from a treeview.



Variables used in the dialog window must be defined in the calling routine. If you execute a routine from a button in a dialog window, you need to declare all variables as non local in the routine definition (deselect the 'Local' flag in the 'Variable definition' window of the Routine Painter).

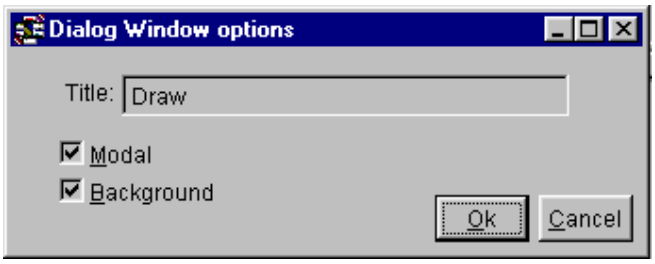
3.6.3 Dialog Windows Running Programs

Dialog windows can be also used to create alternative interfaces to the standard application menu used for executing procedures. Using the 'Button' or 'Bitmap Image' button a new dialog window can be created that executes other dialog windows or programs belonging to the application.

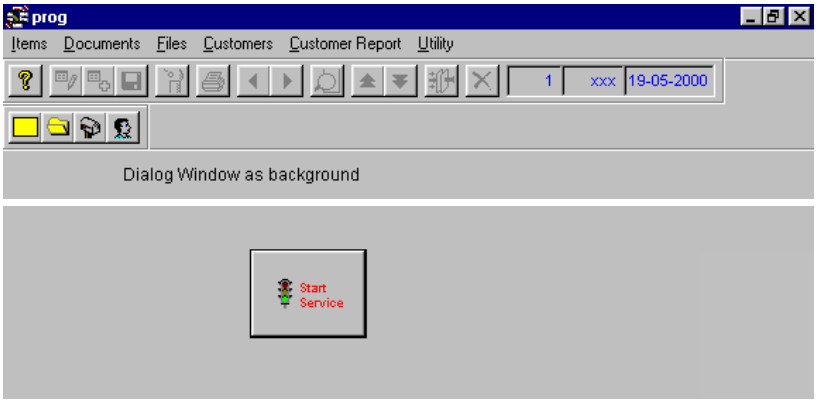


When the 'Button' or 'Bitmap Image' button is clicked the integrated dialog window, program, or query/report defined in the 'Execute' field is executed. Digiting e.g. 'GEST_ART' in the 'Execute' field the managing items procedure is executed.

Dialog windows can be also created as application background. Bitmap images (.BMP files) are used as hyperlinks for program executions, when the 'Background' flag in the 'Dialog Window Options' window ('Opt.' button) is active.



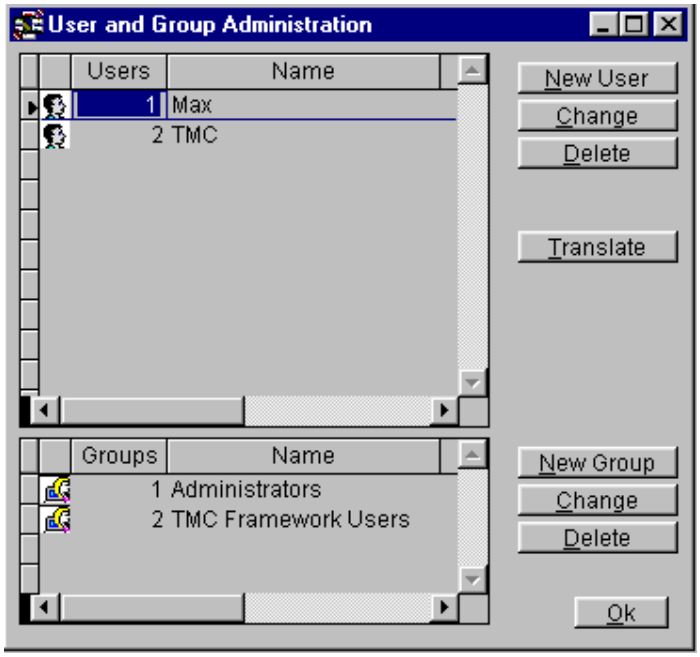
Hyperlink areas are defined activating the 'Invisible' flag. The following picture shows an example.



3.6.4 Default Dialog Windows for Users and Groups

 Dialog Windows used by potentially all users are saved simply clicking the 'Save' or 'Save as' button on the 'Dialog Window Painter' toolbar. If the dialog window must be displayed at the application's start-up, save it as 'Default'.

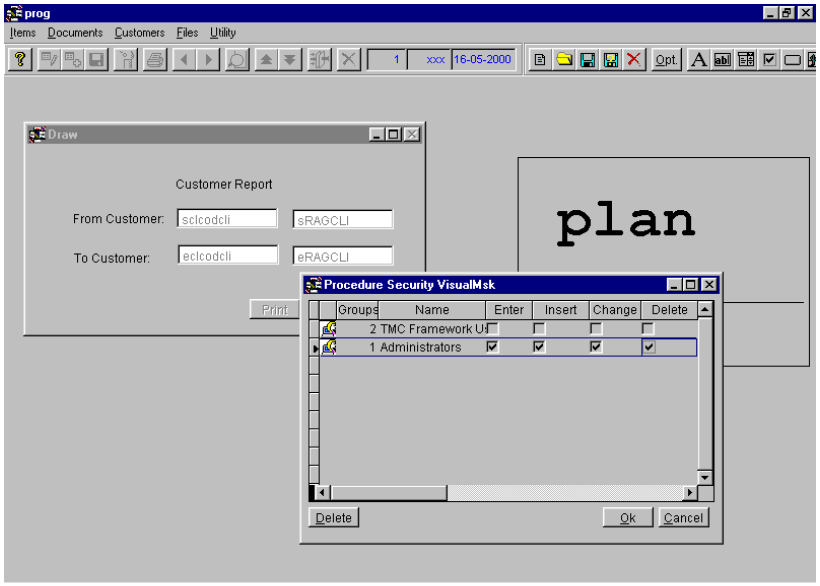
To restrict the use of dialog windows to only specific users or groups, open the 'Utility' menu and select 'User Administration', or click the 'Users' button on the Application bar'.



To assign a dialog window to a group just drag&drop the desidered group on the Dialog Painter working window. The dialog window is saved as default for that group (default_g<group_no>.vfm). Similarly you can assign a dialog window to a specific user (default_<user_no>.vfm). Close the application and log-in as the selected user. The defined dialog window is displayed.

3.6.5 Security Access For The Dialog Window Painter

To avoid users and groups accessing the 'Dialow Window Painter' open the 'Utility' menu and select 'Procedure Security' or press <ALT>&<F12> while the 'Dialog Window Painter' is running.


prog
Items Documents Customers Files Utility
1
xxx
16-05-2000
Opt
Draw
Customer Report
From Customer:
sclcodcli
sRAGCLI
To Customer:
eclcodcli
eRAGCLI
Print
plan
Procedure Security VisualMsk
Groups
Name
Enter
Insert
Change
Delete
2 TMC Framework Us
1 Administrators
Delete
Ok
Cancel

Chapter 4

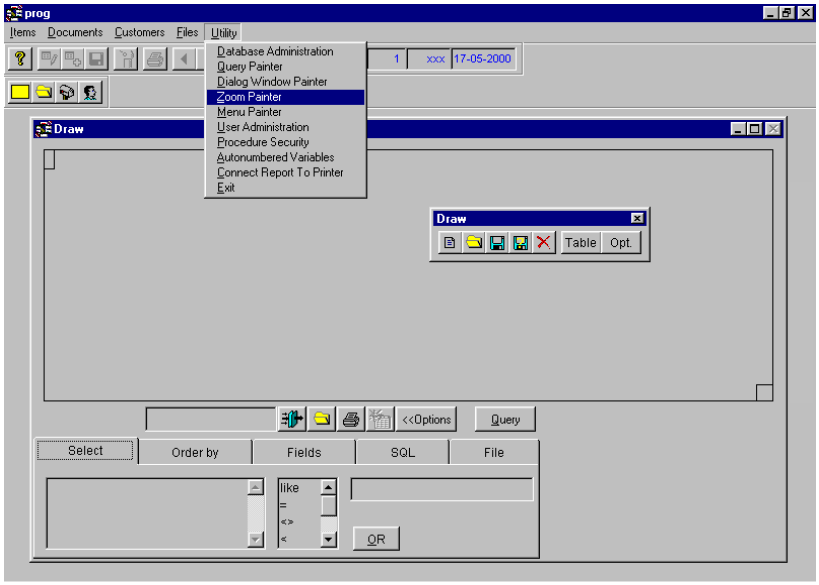
Zoom Painter

4.1 Introduction

The 'Zoom Painter' deeply exploits object oriented technology. It integrates the 'Query Painter' allowing to create interpreted zooms on multifile queries.

4.2 The Zoom Painter

To activate the Zoom Painter open the 'Utility' menu in your application and select 'Zoom Painter'. An empty and resizable zoom window is opened. This window is divided in two areas: in the first area you can define the display layout of the query; in the second area you can defined the query configuration. To open the configuration area press the 'Opt.' button on the 'Zoom Painter Toolbar'.



4.3 The Zoom Painter Toolbar

The 'Zoom Painter' Toolbar has a set of buttons that help you interacting with the tool:

Button	Name	Action
	New	Opens a new Zoom (.VZM).
	Open	Opens an existing Zoom (.VZM).
	Save	Saves the opened Zoom.
	Save as	Saves the opened Zoom with a different name.
	Exit	Exits the Zoom Painter to go back to the application.
	Main Table	To select the main table.
	Options	To add Zoom options.

4.3.1 New

The 'New' button clears up the memory and opens a new Zoom.

4.3.2 Open

The 'Open' button opens an existing Zoom. Clicking this button the 'Open' window is opened and all files in the working directory having the extention .VZM are displayed.

4.3.3 Save

The 'Save' button saves the current Zoom. The Zoom name must be of maximum eight characters.

4.3.4 Save As

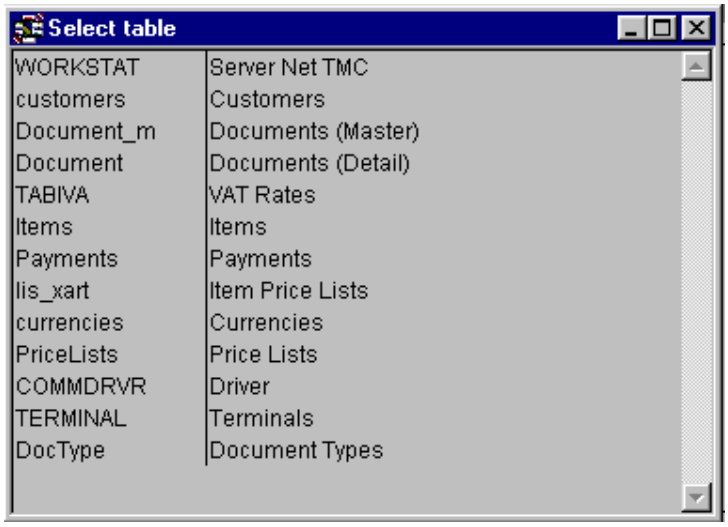
The 'Save As' button saves the current Zoom with a different name.

4.3.5 Exit

The 'Exit' button exits the Zoom Painter to go back to the application.

4.3.6 Table

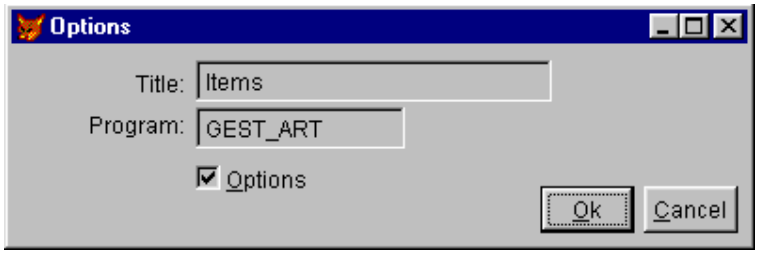
The 'Table' button allows selecting the main table. Clicking the button the 'Table Selection' window is opened and application tables displayed.



Selecting a table its fields and records are defaulted in the zoom dispaly area.

4.3.7 Options

Clicking the 'Opt.' button the 'Options' window is opened, in which zoom options can be defined.



In the 'Options' window you need to define the zoom title and the procedure that must be launched when the record is selected.

4.4 Painting A Zoom

Let us now analyze some simple examples for painting a Zoom.

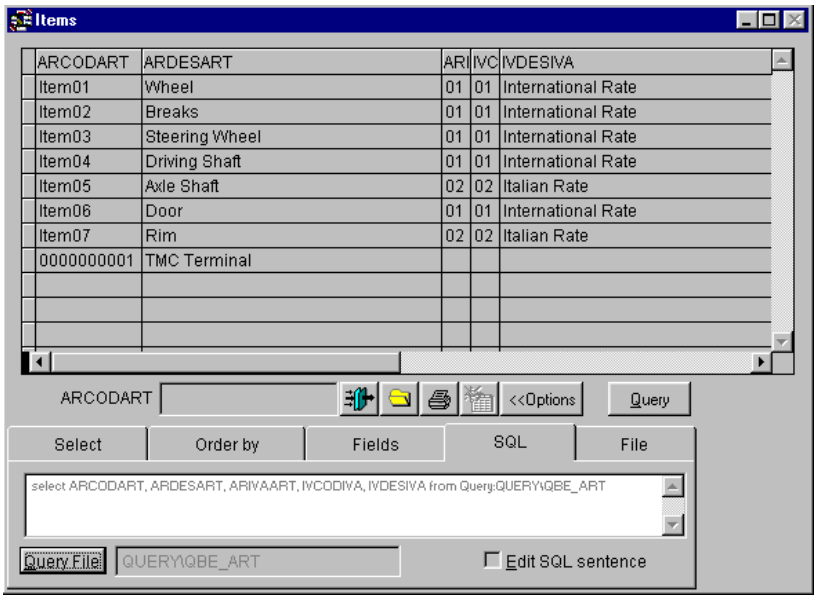
4.4.1 Table Selection

The Zoom main function is to display a record of a given table; hence the first thing you need to do is to select a table. Click the 'Table' button and select a table from the list.

N.B.
Before adding a zoom, which has been designed with the Zoom Painter, you need to define the reference table.

4.4.2 Painting The Zoom

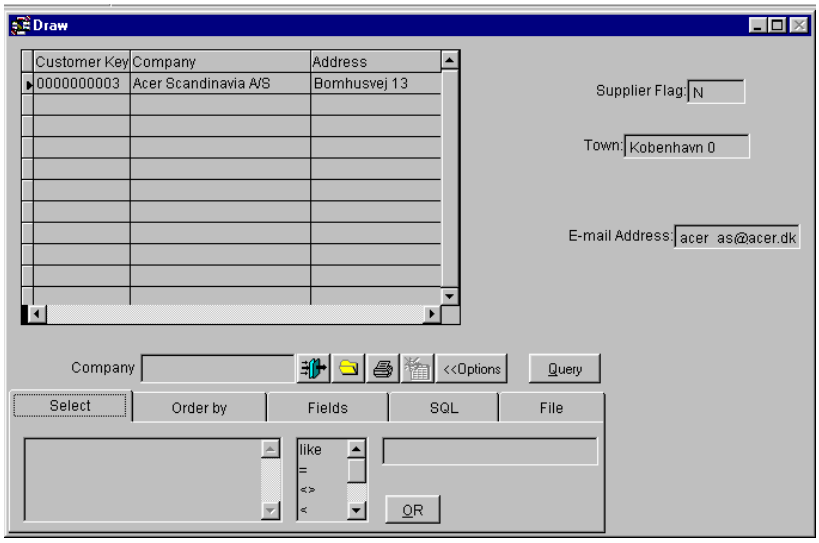
The fields and records of the selected table are defaulted in the zoom display area. You can now select a Visual Query (previously created with the Query Painter) to be associated to the zoom in order to define the way extracted data is displayed. Click the 'Options' button and go to the 'Query File' field in the 'SQL' tab-strip.



Let us now analyze the various zoom areas.

4.5 Display Area

The 'Display' area is highly customizable and can be configured easily. Defaulted records are organized in titled columns. You can change the size of this area so that you can display variable fields and add fixed fields ('Opt.' button).

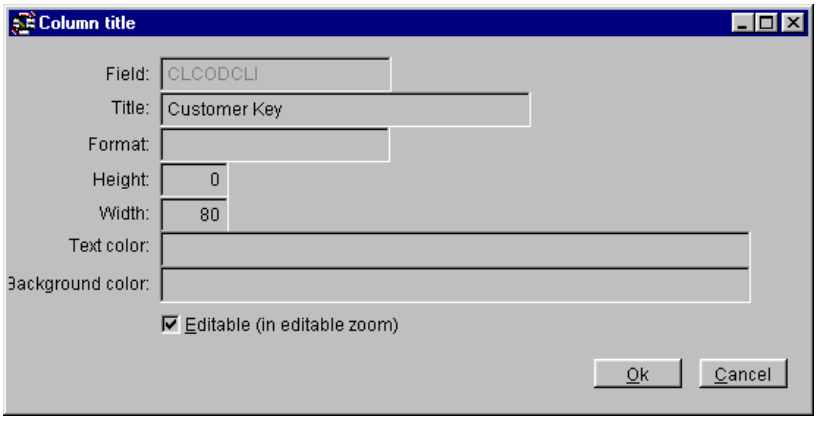


4.5.1 Column Options

Right click the column title to open the 'Column Title' window.

4.5.2 Column Title

In the 'Column Title' window you can define properties of the displayed field.



Field

This field contains the field name.

Title

The 'Title' field contains the column title. The defined string will be used if the field is in a fixed position.

Format

The 'Format' field contains the picture of the field. Please refer to Visual FoxPro manuals for the list of pictures available.

Height

The 'Height' field defines the field height in pixel. The defined height will be used if the field is in a fixed position.

Width

The 'Width' field defines the field width in pixel. The defined width will be used if the field is in a fixed position.

Text Color

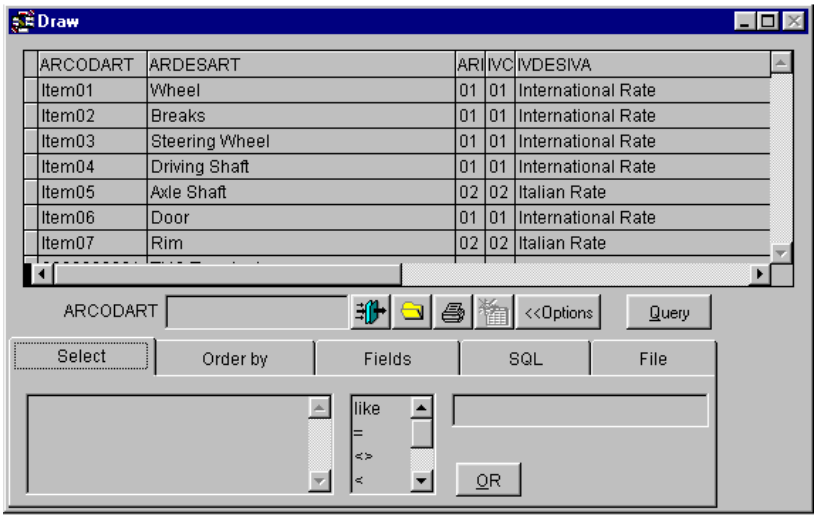
The 'Color' field defines the field color. Colors must be defined using the Visual FoxPro RGB() functionality. You can also add logical conditions or expressions accepted by the Visual FoxPro language.

Background Color

The 'Background Color' field defines the field background color. Colors must be defined using the Visual FoxPro RGB() functionality. You can also add logical conditions or expressions accepted by the Visual FoxPro language.

4.6 Configuration Area

The 'Configuration' area is activated clicking the 'Options' button. In this area you can define zoom parameters.

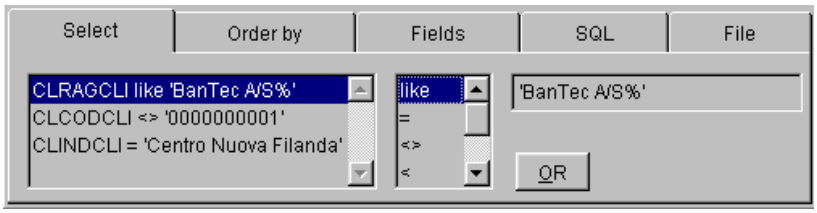


The 'Configuration' area is divided in five tab-strips, namely 'Selection', 'Order By', 'Fields', 'SQL', and 'File'. In the first three you can define charcteristics of the SQL sentence. In the 'SQL' tab-strip you can check the SQL sentence you are building. Clicking the 'Query File' button you can select an existing query to be associated to the zoom. In the 'File' tab-strip you can save the defined paramenters in the zoom or create/ modify a report.

Changes to the zoom can be checked immediately. Clicking the 'Query' button (next to the 'Options' button) the query is executed basing on current parameters.

4.6.1 Select

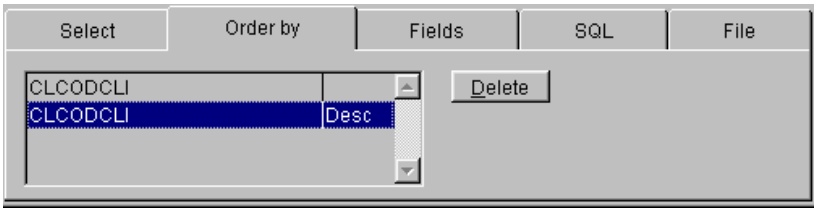
In the 'Select' tab-strip you can define query expressions and/or further record selection parameters. Complex multiparameter query expressions can be defined using the operators in the second column, or the boolean operator 'OR'.



Fields are dragged&dropped from the selection columns in the 'Display' area. The comparison operator is selected double clicking the desidered one in the second column, or dragging it on the selected field. To select the boolean operator click the 'OR' button.

4.6.2 Order By

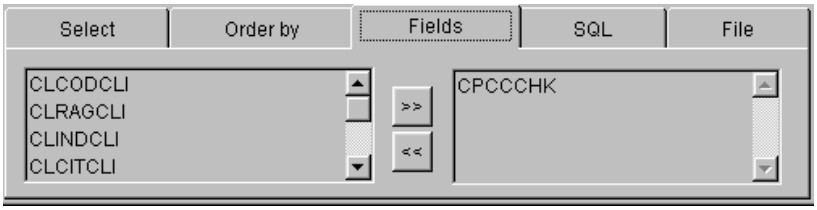
In the 'Order By' tab-strip you can define the field order simply dragging&dropping fields from the selection columns in the 'Display' area. By default fields are ordered in ascending order. Double clicking the field the order changes to descending.



The 'Delete' button allows deleting fields from the 'Order By' list.

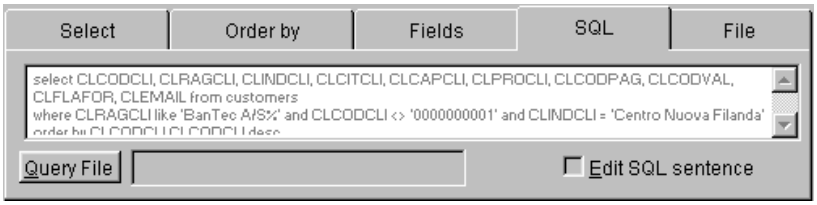
4.6.3 Fields

The 'Fields' tab-strip displays the list of fields that are displayed in the 'Display' area. The right column displays excluded fields. Fields can be moved clicking the '<<' or '>>' buttons.



4.6.4 SQL

The 'SQL' tab-strip contains the SQL sentence defined for displaying extracted data. Associating a Visual Query to the zoom you can notice that the 'WHERE' clause is replaced by the query name.



Clicking the 'Query File' button you can select an existing Visual Query (*.VQR). You can also edit the SQL sentence activating the 'Edit SQL Sentence' flag and make manual changes.

4.6.5 File

In the 'File' tab-strip you can save the parameters defined in the zoom or create/ modify a report.

When the 'Default' flag is active, the current configuration is used as default. When the 'Ask For Parameters' flag is active, and the zoom is executed, a selection parameters window is opened. When the 'Keep Dimensions' flag is active the dialog window dimensions are saved in the configuration file.

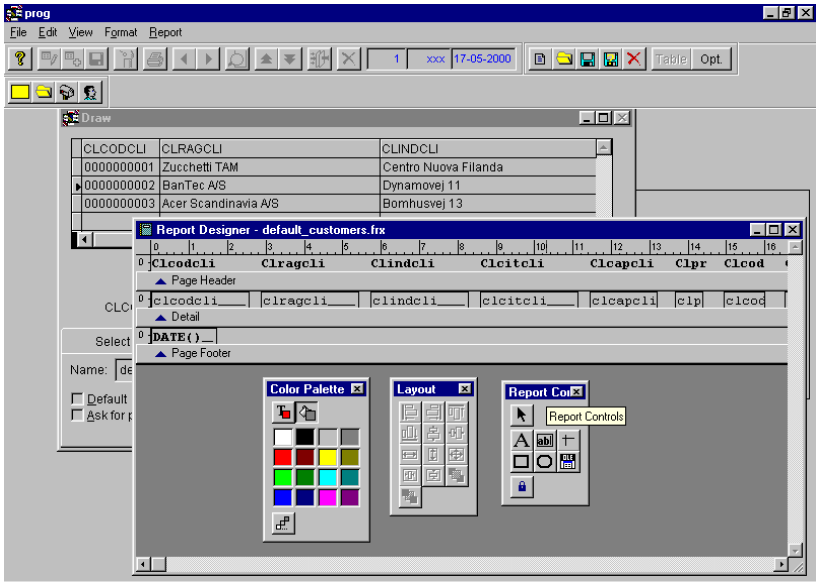
Clicking the 'Save' button the configuration is saved using the following syntax:

```
<ConfigurationName>.<TableName>_VZM
```

Clicking the 'Modify/Create Report' button the MS Visual FoxPro Report tool is launched. The report can thus be associated to the zoom. The configuration is saved with the following syntax:

```
<ConfigurationName>_<TableName>.FRX
```

The associated report can be called clicking the 'Execute Report' button in the 'User' area (for more information please refer to 'User Area').



Clicking the 'Create/Modify MS Word' button MS Word is opened and a model is created (<ConfigurationName>_<TableName>.DOC) on which extracted data is merged. For more information please refer back to Chapter 2 - 'Query And Reporting Tool'.

4.6.6 User Area

The 'User Area' on top of the tab-strips has a set of buttons that help you interacting with the zoom.

Ask For Parameters

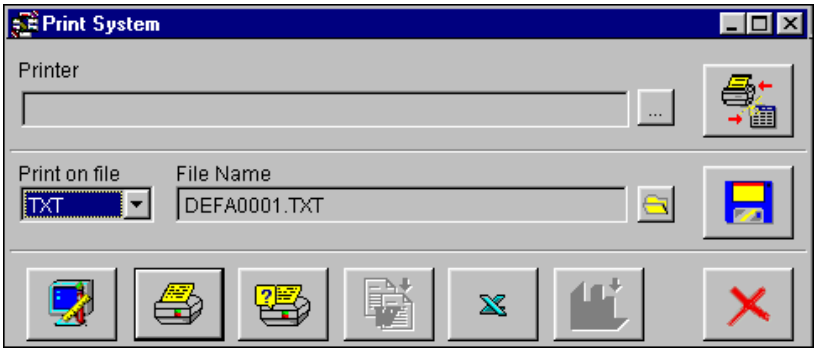
The 'Ask For Parameters' button launches a selection dialog window. This window is created basing on parameters defined in the 'Selection' tab-strip. If no parameters have been defined a warning message appears.

Settings

Clicking the 'Settings' button you can select an existing configuration file.

Execute Report

Clicking the 'Execute Report' button a dialog window is opened in order to select the device on which the report must be run.



For further information please refer to the 'Programming And Utilities Guide'.

Recalculate Report

Left clicking the 'Recalculate Report' button the last query is re-executed. Right clicking the button, configuration paramenters are cleared.

4.7 Tool Insight

First of all let us see how many routines build the 'Zoom Painter'.

Procedure	Function
VZ_BUILD.PRG	To design the query.
VZ_EXEC.PRG	To execute the zoom functionality.
STD.VCX and .VCT	Class libraries for the tool.

The VZ_BUILD.PRG procedure allows drawing and building Zooms. It creates .VZM files containing the zoom structure. The created Zoom is automatically added to the 'Utility' menu.

Zoom can be executed directly from the tool clicking the 'Query' button in the configuration area, or directly from the menu or simply calling the 'VZ_EXEC' procedure, defining the zoom name between apexes. The tool identifies the correct translator basing on the file extention.

N.B.

If the 'Name' field is left empty a selection window is opened, from which zoom files can be selected.

Exercise

```
do vz_exec with 'prova'
```

Executes the 'prova' zoom.

```
do vz_exec
```

Opens the 'Open' window from which the zoom is selected (.VZM extention).

```
VX_EXEC with '<ZoomName>.VZM'
```

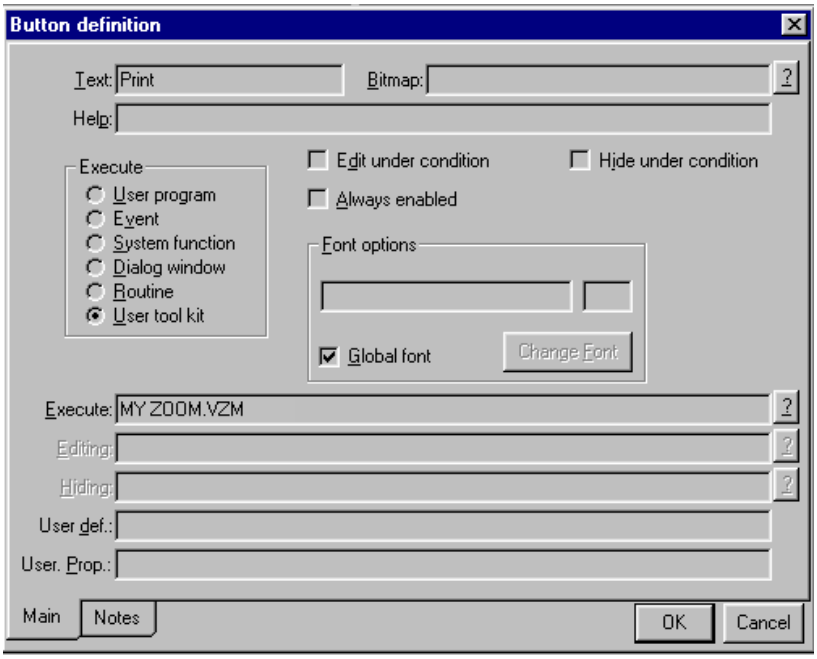
Basing on the file extention .VZM the translator executes the zoom '<ZoomName>' from the menu.

4.8 Integrating The Zoom In The Application

Visual Zooms can be integrated in the application. They can be executed clicking a button or directly from the menu. Let us now see some examples.

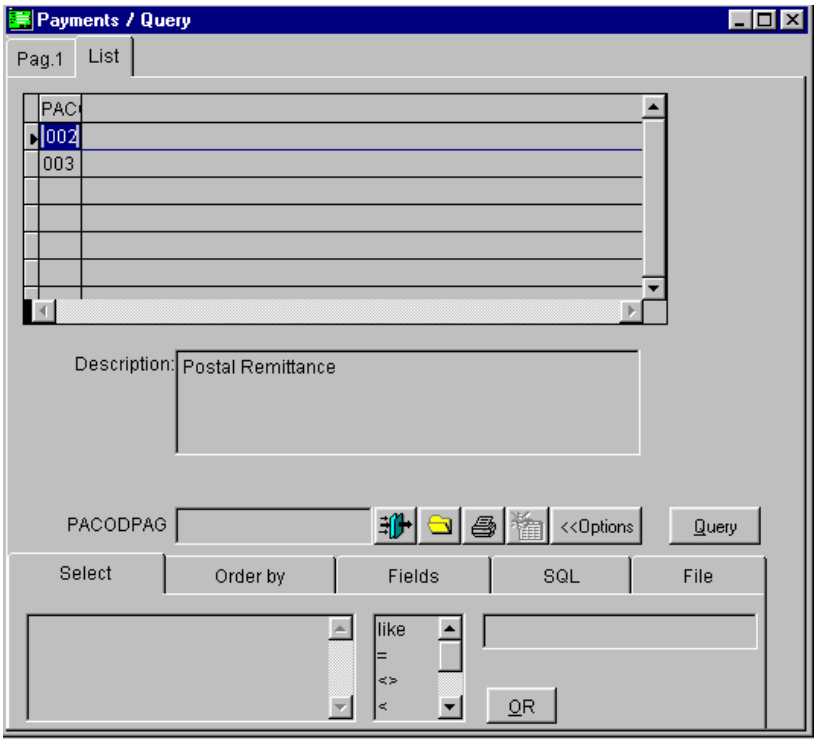
4.8.1 Visual Zooms And Buttons

Buttons can be added to any applications' entity. Visual Zooms can be executed from a button simply going into the 'Button Options' window, setting the ' User Tool Kit' flag and digiting the zoom name in the 'Execute' field.



4.8.2 Visual Zoom With Selection

Visual Zooms can be also used to select records that will be the basis for subsequent data extractions. This is achieved through the use of the routine **CP_SZOOM.PRG**. This routine can be called from the 'Routine Painter' only. Required parameters are: name of the cursor that is created with the extracted records, name of the table on which the zoom is pointed, the zoom title and, if desidered, a configuration file name. The same applies for multifile qeries.



A selection zoom can be called from within a routine simply defining the following 'Execute Statement':

```
Cp_szoom (<i_cCursor>,<i_cFileName>,<i_cZoomTitle>,<i_cZoomFile>)


Or


do Cp_szoom with
<i_cCursor>,<i_cFilename>,<i_cZoomTitle>,<i_cZoomFile>
```

where

<i_cCursor>

Is the cursor name created with selected records.

<i_CFileName>

Is the table name in which the zoom works.

<i_CZoomTitle>

Is the zoom window title.

<i_CZoomFile>

Is the configuration file name.

The file**<i_cZoomFile>.<i_cFileName>_vzm.** is opened by default. If the parameter is not defined it searches:**default.<i_cFileName>_vzm**. If no configuration file is found, all table fields are displayed.

4.8.3 Visual Zoom From Menu

Visual Zooms can be executed from the menu adding the call command to VZ_EXEC and defining as parameter the zoom's name between apexes.

The procedure VX_EXEC can also be executed from the menu. Basing on the extention the correct translator is launched.

N.B.
If the zoom name is not specified the 'Open' window is opened and the desidered zoom can be selected.

Exercise

```
do vz_exec with 'MyZoom'
```

Executes the 'MyZoom' zoom.

```
do vz_exec
```

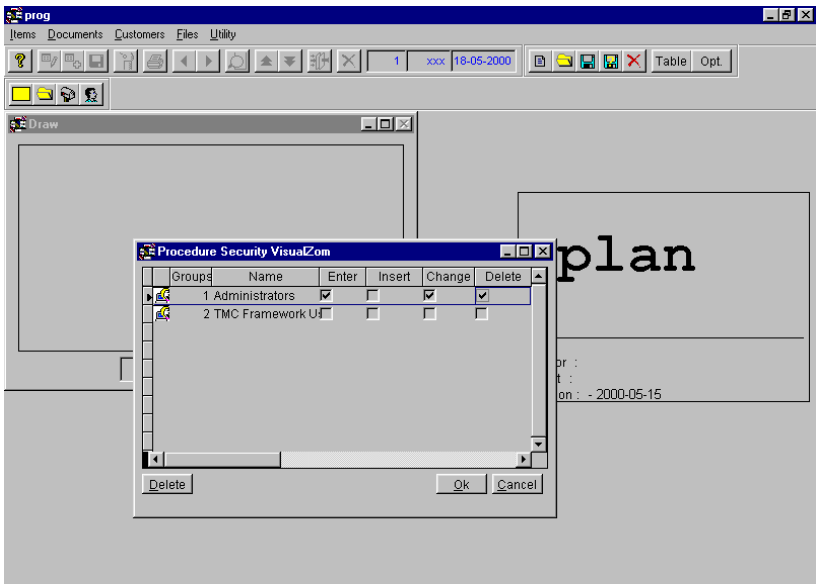
Opens the 'Open' window and the zoom that must be executed can be selected (.VZM extention).

```
VX_EXEC with "<ZoomName>.VZM"
```

If the call command is added to the menu the translator executes <ZoomName> basing on the extention .VZM

4.9 Limited Access To The Zoom Painter

To limit or deny access to the Zoom Painter open the 'Utility' menu in your application and select 'Procedure Security' or press <ALT> <F12> when the 'Zoom Painter'is opened. For further information please refer to the 'Programming and Utilities Guide'.



Chapter 5

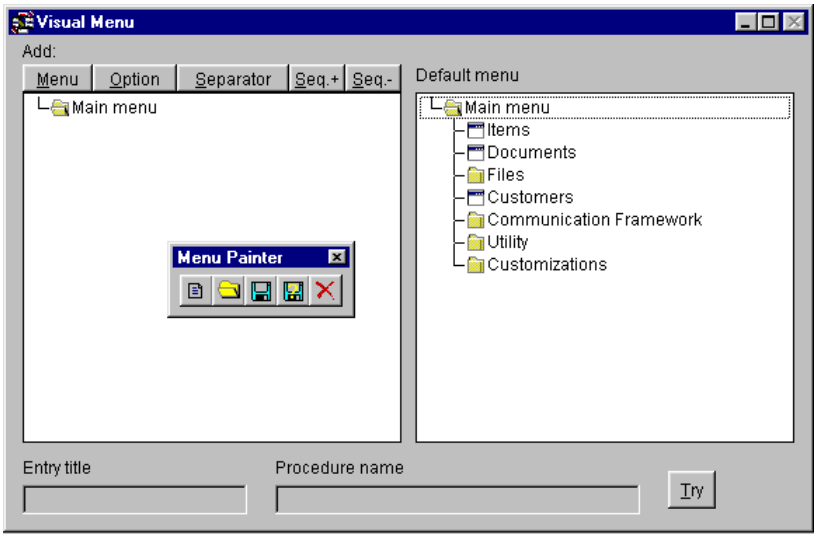
Menu Painter

5.1 Introduction

Using the 'Menu Painter' you can customize menus at user level by simply designing the menu structure. Basing on the default menu you can change the menu order, limit or deny access to certain functionalities, or create custom configurations.

5.2 The Tool

Run your application, open the 'Utility' menu and select the 'Menu Painter'. The 'Visual Menu' window that is opened is divided in three sections: the 'Default Menu' is displayed on the right and the menu you are about to create on the left. Under these two sections you can change the procedure name and test the menu while you create it.



5.3 The Menu Painter Toolbar

The 'Menu Painter' Toolbar has a set of buttons that help you interacting with the tool:

Button	Name	Action
	New	Opens a new menu (.VMN).
	Open	Opens an existing menu (.VMN).
	Save	Saves the current menu.
	Save as	Saves the current menu with a different name.
	Exit	Exits the Menu Painter to go back to the application.

5.3.1 New

The 'New' button clears the memory and opens a new menu.

5.3.2 Open

The 'Open' button opens an existing menu.

5.3.3 Save

The 'Save' button saves the current menu.

5.3.4 Save as

The 'Save As' button saves the current menu with a different name.

N.B.

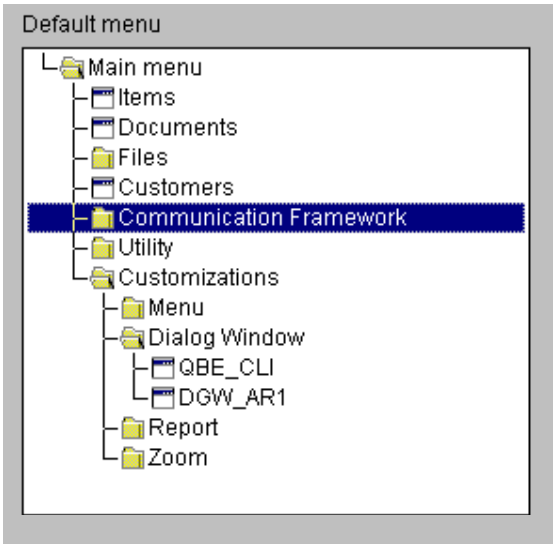
You can save created menus in the subdirectory 'Menu'. During the Design Phase the tool will search for .VMN files under this subdirectory. Before launching a menu from a procedure you need to define the correct path.

5.3.5 Exit

The 'Exit' button exits the Menu Painter going back to the running application.

5.4 The Default Menu

The 'Default' menu is displayed in the 'Default' area. The menu structure reflects the project design. The 'Default' menu can be changed using the 'Menu Painter'. These changes are then always displayed in the 'Default' area. Menus are organized in directories (menu items), subdirectories (submenus) and 'files' (procedures).



 Submenus are opened double clicking the folder in the treeview. Similarly submenus are closed double clicking the folder.

The custom menu is build simply double clicking the desired procedures or menu items in the 'Default' area. The selected menu item or procedure is copied in the area on the left.

N.B.

Selected items are always copied under tha last highlighted item on the left.

N.B.

Custom menus can be saved under the directory 'Defaults'. During the 'Design' phase the system will search for .VMN files under this directory. Before launching the menu from a procedure you need to define the correct path.

Exercise

```
The 'Default' menu has three items, namely 'Items', 'Transactions' and
'Reports'. You are required to build a custom menu containing the items
'Items' and 'Transactions'. Access to 'Reports' must be denied. From the
'Default Menu' double click 'Items'. Go to the 'Custom' area and select
'Menu'. Go back to the 'Default Menu' and double click 'Transactions'.
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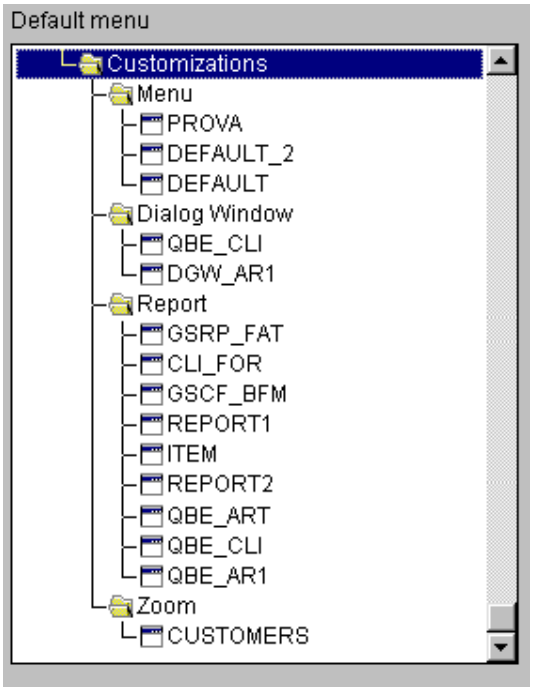
5.5 The Menu Item 'Customizations'

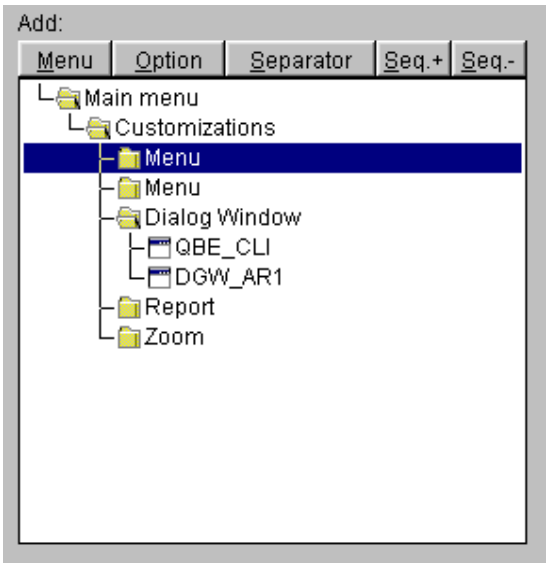
One of the items of the 'Default Menu' is 'Customizations'. This menu has four submenus, namely Menu, Dialog Window, Report, and Zoom.



Each submenu item contains the files created with Visual Tools available in the application. These files can be launched directly from the application's menu. Custom queries and reports can thus be associated to specific users.

5.6 The Custom Menu

When you open the 'Menu Painter' the 'Custom' menu contains the 'Main Menu' item only, which is the basis for building menu customizations.

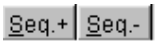


On top of the 'Custom' menu there are five buttons that help you building your menu customization:

Menu Clicking the 'Menu' button you can add a new folder to the menu structure. The default name of added folders is 'New Menu'.

Option Clicking the 'Option' button you can add options to a folder, i.e. commands or procedures. The default name of added options is 'New Option'.

Separator Clicking the 'Separator' button you can add dividing rows between submenus. This improves the menu's layout and groups submenu items that are logically linked together.



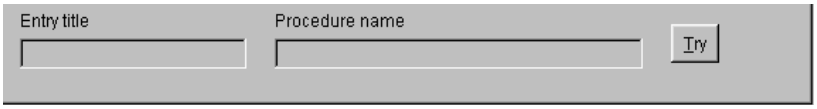
The 'Seq.+' and 'Seq.-' buttons allow you changing the menu items' order. If you select a menu item and click the 'Seq.+' button the item is moved downwards. If you select a menu item and click the 'Seq.-' button the item is moved upwards.

Exercise

Your menu has three items: 'Items', 'Transactions' and 'Reports'. The 'Report' menu must be moved between the other two. Select the 'Report' in the 'Custom' area and click the 'Seq.-' button. The 'Report' item is moved upwards between 'Items' and 'Transations'.

5.6.1 'Entry Title' And 'Procedure Name'

In the area under the two menus there are two text boxes: 'Entry Title' and 'Procedure Name'. These allow changing the menus and procedures descriptions as well as the names of functions/ procedures in the menu.



Select any menu item in the 'Custom' area. Its description is defaulted in the 'Title Name' text box. You can now change the description string. Similarly you can select a menu option and change its name in the 'Procedure Name' string and its description in the 'Title Name' string.

Exercise

Your menu has three items: 'Items', 'Transactions' and 'Reports'. You are required to rename 'Reports' in 'Reporting'. Select the 'Report' menu in the 'Custom' area. In the 'Title Name' text box digit 'Reporting' and in the 'Procedure Name' digit 'VISREP'.

5.6.2 The 'Try' Button

Next to the two text boxes there is the 'Try' button that allows testing the created menu. Clicking it temporarely creates the defined menu. The button changes to 'Recover'.

Clicking the 'Recover' button the default menu is recovered and the button changes again to 'Try'.

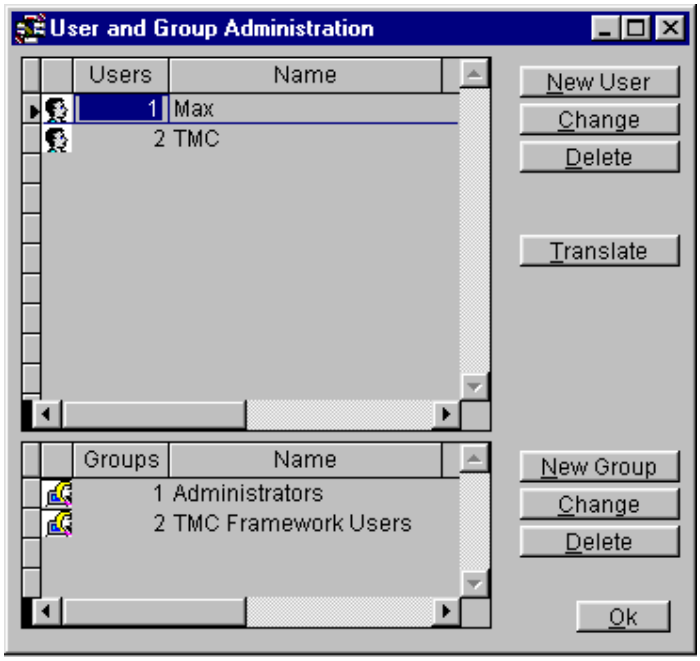
5.7 Saving Visual Menus And Managing Users

'Custom Menus' can be saved as default or can be restricted to specific users only.


Clicking the 'Save' or 'Save As' buttons you can save the customized menu. If the menu must become the default menu digit 'DEFAULT' in the file name. The menu is saved as DEFAULT.VMN and is the defaulted menu for each user.

To associate the menu to a group of users open the 'Utility' menu and select 'User Administration' or click the 'Users' button on the 'Application' bar.

The 'User And Group Administration' window is opened detailing all users and all groups.



To associate a menu to a group of users drag&drop the group's name on the opened 'Custom' menu. The system will automatically save the menu as the default menu for that particular group (Default_G<usergroup number>.VMN). When one of the users belonging to the group log-in the application the system will determin which menu must be used. The system will first check whether a personal menu exists for that user (Default_<user number>.VMN). If no personal menu is found the system checks if the user belongs to a group that has a customized menu (Default_G<usergroup number>.VMN). If no group menu is found the default menu is displayed (Default.VMN).

Only the System Administrator can associate menus to users and groups.

N.B.

Menus can be saved under the directory 'Default' (for large applications the subdirectory must be created under the EXE directory). The system will search for .VMN files under the main directory first and in the 'Default' subdirectory afterwards. The Customization menu displayes both, menu configurations under the main directory and under the subdirectory 'Default'.