

## Visual Tool Guide

#### COPYRIGHT

#### 1989 - 2000 by **ZUCCHETTI TOOLS** S.r.l.

#### All rights reserved.

This publication contains information protected by copyright. This publication may not be reproduced, stored, or transmitted, in any form or by any means without the prior permission of the publisher.

#### TRADEMARKS

All produced trademarks are ownership of the holder and are acknowledged by this publication.

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

Introduct	tion1
Query Pa	inter3
2.1 Intro	oduction
2.2 The	Tool4
2.3 The	Query Design Toolbar
2.3.1	New
2.3.2	Open
2.3.3	Save
2.3.4	Save As7
2.3.5	Exit
2.3.6	Execute Query
2.3.7	SQL Sentence
2.3.8	Create/Modify Report8
2.3.9	Create/Modify Mailmerge10
2.3.10	Create/Modify Excel Worksheet11
2.3.11	Create/Modify Graph17
2.4 First	t Window - Dictionary

SUMMARY-I

2.4.1	Tables	. 22
2.4.2	Fields Of	. 23
2.4.3	Relations Of.	. 23
2.4.4	Find Relations	. 24
From	n Table	. 24
To	ſable	. 24
The	Find Button	. 25
2.5 Sec	ond Window - Design	.25
2.6 Thi	rd Window - Query	.25
2.6.1	Tables	. 26
Des	cription	. 26
Alia	s	. 26
Tab	le Name	. 26
Dele	ete Button	. 26
Uni	on	. 27
2.6.2	Fields, Group By and Order By	. 27
Des	cription	. 27
Nan	1e	. 28
Alia	S	. 28
Dist	inct Flag	. 28
Ord	er By	. 28
GI0 Dal	up By No Eiold	. 29
Dele	ste Group	. 29
Dele	ste Order	. 29
Pivo	nt	30
2.6.3	Join	. 31
Des	crintion	31
Exp	ression	. 32
Tvp	e	. 32
Tab	le1	. 33
Tab	le2	. 33
Dele	ete	. 33
Add		. 33
2.6.4	Filter	. 33
Fiel	d Name	. 34

SUMMARY-II

Not	
Criteria	34
Example	
Logical	
Having Dalata Filtar	
Add Filter	
2.6.5 Filter Parameters	
Field Name	
Description	
Туре	
Len	
Dec	
Delete Falan.	
Remove Filter On Empty Parameter	
Generate Code	40
2.6.6 Note	40
2.7 SQL Functionality	41
2.7.1 Conversion Functions	42
2.7.2 String Functions	42
2.7.3 Date Functions	42
2.7.4 Other Functions	42
2.8 Using the Query Painter	43
2.9 The Tool's Composition	48
2.10 Integrating A Query In An Application	51
2.11 Multifile Query And Visual Autozoom	51
2.12 Multifile Query And Reporting	55
2.12.1 Selection Dialog Window	55
2.12.2 Creating The Ouery	
2 12 3 Create/Modify Report	60
2.12.4 Creating The MC Word Model	
2.12.4 Creating the MS word Model	

SUMMARY-III

2.12.5	An Example	64
2.13 Mu	Itifile Queries With Interpreted Selection Dialog Windows	s66
2.14 Qu	ery And Routine	70
2.15 Lir	nited Access To The Query Painter	72
Dialog W	indow Painter	73
3.1 Intr	oduction	73
3.2 The	tool	73
3.3 The	Dialog Window Painter Toolbar	74
3.3.1	New	76
3.3.2	Open	76
3.3.3	Save	76
3.3.4	Save As	76
3.3.5	Exit	77
3.3.6	Option	77
Dial	og Window Options	77
3.3.7	String	78
3.3.8	Variable	78
Vari	able Options	78
3.3.9	ComboBox	81
Con	boBox Options	82
3.3.10	CheckBox	83
2 2 1 1	Putton/ Pitman Image	83 84
S.S.11 Butt	on/ Bitman Image Ontions	84
3 3 12	Cut	85
3 3 13	Conv	86
3 3 14	Paste	86
3.4 Des	igning Dialog Windows	86

3.5 Too	l insight	
3.6 Inte	grating The Dialog Window In The Application	90
3.6.1	Dialog Windows and MultiFile Queries	90
3.6.2	Dialog Windows and Routines	91
3.6.3	Dialog Windows Running Programs	92
3.6.4	Default Dialog Windows for Users and Groups	94
3.6.5	Security Access For The Dialog Window Painter	95
Zoom Pa	inter	97
4.1 Intr	oduction	97
4.2 The	Zoom Painter	97
4.3 The	Zoom Painter Toolbar	
4.3.1	New	
4.3.2	Open	
4.3.3	Save	99
4.3.4	Save As	100
4.3.5	Exit	
4.3.6	Table	
4.3.7	Options	101
4.4 Pair	nting A Zoom	
4.4.1	Table Selection	
4.4.2	Painting The Zoom	
4.5 Dis	play Area	
4.5.1	Column Options	
4.5.2	Column Title	
4.6 Cor	figuration Area	
4.6.1	Select	
4.6.2	Order By	106

SUMMARY-V

4.6.3	Fields	
4.6.4	SQL	
4.6.5	File	
4.6.6	User Area	
4.7 Too	l Insight	110
4.8 Inte	grating The Zoom In The Application	112
4.8.1	Visual Zooms And Buttons	
4.8.2	Visual Zoom With Selection	
4.8.3	Visual Zoom From Menu	
4.9 Lin	ited Access To The Zoom Painter	116
Menu Pa	inter	
5.1 Intr	oduction	117
5.2 The	Tool	117
5.3 The	Menu Painter Toolbar	118
5.3.1	New	
5.3.2	Open	
5.3.3	Save	
5.3.4	Save as	
5.3.5	Exit	
5.4 The	Default Menu	120
5.5 The	Menu Item 'Customizations'	121
5.6 The	Custom Menu	122
5.6.1	'Entry Title' And 'Procedure Name'	
5.6.2	The 'Try' Button	
5.7 Sav	ing Visual Menus And Managing Users	

# 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:

QUERY PAINTER 5

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	SQL Sentence	To display the SQL sentence.
<b>B</b>	Create/Modify Report	To create/modify the print out of the query.
<b>®</b>	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.

🚅 SQL Statement	
select customers.clcodcli,customers.clragcli,customers.clco es.vasimval,DocType.TDCODTIP,lis_xart.lacodart,lis_ outer Join customers on currencies.vacodval=custom	dpag,currencies.vacodval,currencies.vadesval,currenci kart.CPROWNUM,lis_xart.lapizart from (currencies Right ers.clcodval),DocType,lis_xart into cursortmp
	Ok

#### 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).

Open					?	×
Look in: 🦷	🖹 Query	- 🖻	<u></u>	r an	<b></b>	
Report1.	frx					
File Name:	REPORT1*.frx				OK	
File Type:	Report		•	Ca	ancel	
					2	
				Cod	e Page	

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).

Open			?×
Look in:	Query	- 🗈 🙍	
₩]REPOR	T1.doc		
File Name:	REPORT1*.doc		ОК
File Type:	*.doc	•	Cancel
			2
			<u>C</u> ode Page

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).

Open						?	×
Look in: 🕒	Query	•	£	2	<del>ri</del>	<b></b>	
			_	_			
File Name:	REPORT1*.xtt					OK	
File Type:	×. xlt			•	C.	ancel	
						2	
					Coo	ie Page	

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:

	licrosoft Excel	- Report1.xlt								_ 🗆 🗵
	<u>File E</u> dit <u>V</u> iew	Insert Format	<u>⊺</u> ools <u>D</u> ata <u>W</u> ind	ow <u>H</u> elp						_ 🗗 🗡
	😂 🖬 🔒 e	🖨 🖪 🚏 👗	🖻 💼 🗠 •	🔮 Σ 🍂	÷ 🛃 🛍	🕐 🐥 Ari	al	▼ 10	• B .	≀⊔ °
	F10 🔻	=								
	A	В	C	D	E	F	G	Н		J
1	ITEM CODE	DESCRIPTIO	PRICE							
2	BODY									
3								•		
4	ENDBODY									
5								••••••••••••••••••••••••••••••••••••••		
6	Total		0							
7										
8										
9					•					
10	1									-
	( ) ) Sheet1	/ Sheet2 / Sheel	t3 /							
Rea	ady							NU	M	

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'.

a prog					_ 8 ×
Items Documents Customers	: <u>F</u> iles <u>U</u> tility				
<u>? -/ -, -) }</u> // //	↓ ) (± ¥)	₩ × 1 ×	xx 10-05-2000		📌 Sal 🎒 🎦 🔀 🛍
💼 Dictionary			🖬 Design		- D ×
Tables	Fields of Items		Items		
Document Types	🔺 Item Number	ARCODART 🔺	Item Nu 🔶		
Documents (Detail)	Descr.	ARDESART	Descr.		
Documents (Master)	Price	ARPRZART	Price 🗸		
Driver	VAT Code	ARIVAART			
Item Price Lists	Purchased Q.	ARACQART			
Items	Sold Q.				
Payments Drice Liste	Ordered Q.     Desked O				
Relations of Items		Find			
VAT Rates(VAT Code)		A			
Documents (Detail)(Item)					
Item Price Lists(Item)					
		<b>V</b>			
🚰 Query					_ 🗆 ×
Tables Fields, Group By	and Order By Join Filte	er Filter Parameters	Note		
Description	Name	Alias	E Disti	inct Order By	
Item Number	Items.ARCODART	ARCODART			A
Descr.	Items.ARDESART	ARDESART	Delete FI		
Price	Items.ARPRZART	ARPRZART	Delete Or	rder	
					¥
			Delete Gr	oup Group By	
			Pivot		<u>^</u>

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.

	licrosoft Excel	- ITEM1	_ 🗆 ×		Microsoft Excel	- ITEM.xlt		_ 🗆 ×
	Eile Edit Yiew	Insert Format Io	ols <u>D</u> ata <u>W</u> indow		〕Eile Edit ⊻iew	Insert Format	<u>T</u> ools <u>D</u> ata	<u>W</u> indow احما √ا
	₽ ~?□\∽					0 » (	vial	
P			· ·	Ľ		* ©0 - ]#   _		Ľ-
		J =					<u> </u>	=
1	Item No.	Description	Price A	1	Item NO.	Description	Price	<u> </u>
2	ltem01	Wheel	1300	2	BODY			
3	ltem02	Breaks	1000	3				
4	ltem03	Steering Wheel	170	4	ENDBODY		1	
5	ltem04	Driving Shaft	450	5	Total			0
6	ltem05	Axle Shaft	600 —	6				
7	ltem06	Door	300	7				
8	ltem07	Rim	200	8				
9	0000000001	TMC Terminal	100	9				
10	Total		4120	10				
11				11				<b>_</b>
	I ▶ ▶I\Sheet1	. 🖌 Sheet2 🤺 Sh 🚺			<ul> <li>▶ ▶ \Sheet1</li> </ul>	l / Sheet2 / Sh	•	
			NUM //				NUM	

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.

	licrosoft Excel - I	TEM.xlt			_ 🗆 ×
	<u>File E</u> dit <u>V</u> iew Ir	isert F <u>o</u> rmat <u>T</u> ool	s <u>D</u> ata <u>W</u> indow	<u>H</u> elp	_ B ×
] 🗅	🖻 🔒 🔒	🗟 🖤 🖻 🛱	ι 🗠 ד 🍓 Σ	f≈ <mark>2</mark> ↓	🗓 📿 🙄
Aria	al	• 10 • <b>B</b> Z	<u></u> <u>∎</u> <u>≡</u> <u></u>	🖽 + 🖄 +	<u>A</u> -
	G3 💌	=			
	A	В	С	D	E
1	Item NO.	Description	Price		
2	BODY				
3					
4	ENDBODY				
5	Total		0		
6					
7					
8					
9				l ,	
	I ▶ ▶ \Sheet1 (	Sheet2 / Sheet3 /	/		
Dra	aw + 🗟 🍪 🛛 A <u>u</u> t	:oShapes 👻 🔨 🍾	🗎 4	🙍 🖄 -	🕤 🕴
Rea	ady		NUN	1	

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.

	licrosoft Excel - I	ITEM1		- 🗆 ×
	<u>File Edit View I</u>	nsert F <u>o</u> rmat <u>T</u> ool	s <u>D</u> ata <u>W</u> indow	Help
				- 8 ×
D	🖻 🖬 🎒 🖻	o - 😰 🍣	Arial	• *
_	A1 💌	= Item NC	).	
	Α	В	С	
1	Item NO.	Description	Price	
2	ltem01	Wheel	1300	
3	ltem02	Breaks	1000	
4	ltem03	Steering Wheel	170	
5	ltem04	Driving Shaft	450	
6	ltem05	Axle Shaft	600	
7	ltem06	Door	300	
8	ltem07	Rim	200	
9	0000000001	TMC Terminal	100	
10	Total		4120	
11				
12	N N Sheet1	Sheet2 / Sheet3	41	
	F F Sheer	Pueces V pueced		

## 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).

Open						?	×
Look in: 🔁	Query	-	È	<u></u>	<del>ri</del>		1
File Name:	REPORT1* .vgr					OK	]
File Type:	*.vgr			•	Ca	ancel	
						2	
					Doc	ie Page	

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.

Open			? ×
Look in: 🧲	Query	- 🗈 🧭	📸 📰
File Name:	REPORT1* .vgr		OK
File Type:	*.vgr	•	Cancel
			2
			<u>C</u> ode Page

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'.

and prog					_ 8 ×
Items Documents Customers	<u>Files U</u> tility				
<u>? -/ -, -, -) 6</u>		₩ × 1 ×	xx 10-05-2000		🜟 Sal 🍜 🎦 🔀 🛍
🗖 🔁 🖗 😰					
🚅 Dictionary			🕻 Design		
Tables	Fields of Items		Items		
Document Types	🔺 Item Number	ARCODART 🔺	Item Nu 🔶		
Documents (Detail)	Descr.	ARDESART	Descr.		
Documents (Master)	Price	ARPRZART	Price 🔽		
Driver	VAT Code	ARIVAART			
Item Price Lists	Purchased Q.	ARACQART			
Items	Sold Q.	ARVENART			
Payments	✓ Ordered Q.	ARORDART			
Relations of Items		Find			
VAT Rates(VAT Code)		A			
Documents (Detail)(Item)					
Item Price Lists(Item)					
		<b>v</b>			
a Query					_ <b>□</b> ×
Tables Fields, Group By	and Order By Join Filte	er Filter Parameters	Note		
Description	Name	Alias	 E Distinct	Order By	
Item Number	Items.ARCODART	ARCODART		1	*
Descr.	Items.ARDESART	ARDESART	Delete Field		
Price	Items.ARPRZART	ARPRZART	Delete Order	1	
			Delete Older	-)	<u>~</u>
			Delete Group	Group By	
			<b>T</b>		A
,			- Pivot		

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' tabstrip.

## 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').

Design D:\DE	MOVFP\QUER	Y\REPORT1.VQR	_ 🗆 🗵
Customers Customer I Company I Payment N	Currencies Symbol A Descriptio	Items	
Document 1 Doc. Type No Descr.	ypes a.	Item A Item A Price	

## 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.

S	Query				
Т	ables	Fields, Group By and Order By	Join Filter	Filter Parameters	Note
	Desc	ription	Alias	Table Name	
	Cust	tomers	customers	customers 🔄 📥	
	Curr	encies	currencies	currencies	Delete
	Docu	ument Types	DocType	DocType	
	Item	Price Lists	lis_xart	lis_xart	Union:
	Item	s	Items	Items	
					☐ All
				_	

## 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.

🚅 Query					_ 🗆
Tables Fields, Group	By and Order By Join Filte	er Filter Parameters	Note		
Description	Name	Alias	I Distinct	Order By	
Customer Key Company Name	customers.clcodcli customers.clragcli	clcodcli clragcli	Delete Field	]	
Payment Method	customers.clcodpag	clcodpag vasimval	Delete Order	1	
Description	currencies.vadesval	vadesval	Delete Group	Group By	
Doc. Type No. Descr.	DocType.TDCODTIP DocType.TDDESTIP	TDCODTIP	Pivot	1	
Item	lis_xart.lacodart lis_xart.laprzart	lacodart lanızart		-	
	Ing_initiabitait	habizan	<b>y</b>	1	

### 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.

🚅 Pivot		_ <b>□</b> ×
Pivot fields		
Item Number Descr. Price	Items.ARCODART ARCODAF	<ul> <li>♥ Value</li> <li>♥ Index</li> <li>♥ Month</li> <li>♥ Day</li> <li>♥ List</li> </ul>
Data fields		
Quantity	Document.DCQTADCATADC	Delete Pivot Delete Data
List/Query:		

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.

🚅 Query					
Tables Fields, Group By a	and Order By Join Filter Filter Parameters	Note			
Description	Expression	Туре	Table 1	Table 2	
Currencies(Currency) Items(item) Items(item)	currencies vacodval=customers.clcodval Items1.ARCODART=Document.DCARTDOC Items1.ARCODART=Iis_xart.lacodart	Right outer Right outer Left outer	currencies Items1 Items1	customers Document Iis_xart	Delete Add

#### 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'.

## Туре

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.

🚅 Query	)							
Tables	Fields, Group By and Order	By Jo	oin Filter	Filter Parameters	Note			
Field	Name	Not	Criteria	Example		Logical		
Item	s.ARCODART		>=	?pARCODART_i		AND	<u> </u>	
Item	s.ARDESART		<>	?pARCODART_f		AND		Delete Filter
								Add Filter

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

QUERY PAINTER 35

## 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 .....
FROM .....
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 .....
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.

🚰 Query	,						
Tables	Fields, Group By and	Order By Join F	ilter Filter Pa	rameters No	te		
Field	l Name	Description	Туре	Len	Dec		
pAR plac	CODART odlis	ltem Number Price List Code	c	10 3	0	َم D ر	Delete Param. ialog:

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.

## Туре

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.

🚅 Query		
Tables Fields, Group By and Order By	Join Filter Filter Parameters Note	
Field Name	Not Criteria Example	Logical
E [[DAY(moverne_m.DATMOV)] ]	Noti = Trippevaldoc	AND T Having Delete Filter

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.

🚰 prog										
Items Documents	<u>C</u> ustomers	<u>Files</u> <u>U</u> tility	y							
? "₂ ₽	78	▲ ▶ µ	) <b>*</b> ¥		xxx 12-	05-2000		I 🖬 🗙	📌 Sql 🧉	3 🎦 🗙 🛍
🗖 🔁 🗟 🔽										
Dictionary Tables		Fiel	ds		🔀 🧱 Desi	gn				_ 🗆 🗵
Currencies Customers Documents (Detail Documents (Maste Driver Item Price Lists Relationships	() 37)	×								
🚰 Query										_ 🗆 ×
Tables Fields, G	roup By an	id Order By	Join Filter	Filter Param	eters Note	1				
Field Name		1	Not Criteria	Example			Logical			
										Delete Filter Add Filter

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.

<b>Fiprog</b>	cumente	Customers	Files	lbibu								_ 🗆 >
<u>8 9</u>		16	<u> </u>		1994 1994	B× [	1	xxx 12-05-2000		× 🚮	3ql 🎒 🌄	X 🛍
👥 Dictio	nary					_		🕵 Design				<u> </u>
tern Price Items Payment: Price List Server Ne Terminal VAT Rate Relations VAT Rate Documer Item Price	e Lists s st TMC s s of Items s(VAT C nts (Deta e Lists(It	s ode) sil)(Item) em)	•	tem Num Descr. Price VAT Code Purchased Sold Q. Ordered Q.	i Q.	ARCODAR ARDESART ARPRZART ARIVAART ARACQART ARVENART ARORDART	nd	Items Item Nu Desc, VAT Co	VAT Rates VAT Cod - Descriptik			
🚰 Query					ļ.							_ 🗆 ×
Tables	Fields,	Group By a	ind Orde	er By 🛛 Joir	Filter	Filter Par	amete	rs Note				
Field	Name			Not C	riteria	Exampl	е		Logical			
										×	Delet	te Filter

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.

💼 prog					_ 🗆 ×
Items Documents Cust	omers <u>F</u> iles <u>U</u> tility				
<b>? . . . .</b>			× 12-05-2000		Sql 🍜 🎦 🔀 🛍
🗖 🔁 🗟 📓					
Dictionary			Design		
Tables	Fields of VAT Ra	tes			
Item Price Lists Items Payments Price Lists Server Net TMC Terminals VAT Rates Relations of VAT Rates Items(VAT Code)	▲ VAT Code Description VAT %	VCODVA IVDESIVA IVDESIVA IVPERIVA Find	Item Na Item Na Var Co	AT Cod ≟ escriptik	
ļ		Y			
🚰 Query					
Tables Fields, Grou	p By and Order By Join Fil	ter Filter Parameters	Note		
Description	Name	Alias		Order By	
Item Number	Items.ARCODART	ARCODART			A
Descr.	Items.ARDESART	ARDESART	Derete Field		
VAT Code	Items.ARIVAART	ARIVAART	Delete Order		-1
- VAI Code		IVCODIVA			<u> </u>
Description	TROWAIVDESIVA	INDESIVA	Delete Group	Group By	
)			Pivot		<u></u>

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 parameters 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.

v	s	U	Α	ь.	<u>T</u>	0	0	L.,	G	U	1	D	E.	
					5	Qu	iery							

a Quer	y .								
Tables	Fields, Group By and	Order By Join	Filter F	Filter Paramete	rs Note	]			
Fiel	d Name	Description		Туре	Len	Dec			
pAF	CODART	ltem Number		C	10	0	<b>A</b>		
pAF	CODART1	ltem Number		C	10	0		Delete Param	
							Dialog:		
							🗆 🗆 Rei	move filter on empt	/ parameter
							7	Generate code	

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 'pARCODART') 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.

Selection parameters	
From Item Number	<u>0</u> k
To Item Number	Cancel

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.

prog											_ 🗆
<u>I</u> tems <u>D</u> ocumer	nts	Customers E	iles <u>U</u> tility T <u>a</u> ble								
? · ·		16	< <u>►</u>		1	xxx 1	2-05-2000			📌 Sql 🎒 🎦	X 🛍
🗖 🔁 🔁 🗖	2										
Dictionary				_		📰 D e	esign D:\C	EMOVE	P\QUERY\REPO	RT2.VQR	>
Tables			Fields of Items	3				-			
Item Price List	5	View Query								_ 🗆 🗙	
Items		Arcodart	Arc	lesart	A	rivaart	lvcodiva		lvdesiva	<u>^</u>	
Payments	Þ	ltem02	Breaks		0	1	01	Internatio	onal Rate		
Price Lists	-	Item03	Steering Wheel		0	1	01	Internatio	onal Rate		
Server Net TM	+	ItemU4	Uriving Shaft		0	1	01	Internatio	onal Hate		
Terminals	H	Itemus	Axie Shart		0	<u>.</u>	01	Internatio	onainate		
VAT Rates	t										
Relations of Ite	T										
VAT Rates(VAT											
Documents (D											
	4										
St Query	÷										
Tables Fie	÷									L	
Descriptio	H.										
+ Itom Nun	T										
Descr		1	1		ł						1
HVAT Code	-	III	ems.ARIVAART	IAR	IVAART				1		
VAT Code	9	т	ABIVA.IVCODIVA	IVO	ODIVA		Delete	e Order			
Descriptio	on	T	ABIVA.IVDESIVA	IVE	DESIVA		Delete	Groun	Group By		
								0.000	C.oop by		4
1						<u>v</u>	J Pi	vot			-

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:

🚅 prog											_ 🗆 ×
Items Documents	<u>C</u> ustomer	rs <u>F</u> iles	<u>U</u> tility T <u>a</u> ble	•							
? "/ "	ì	3		₹		xxx 1	5-05-2000		<u>⊐ 🛛 🖓 ×</u>	📌 Sql 🎒	凹 🐹 🛍
<u> </u>											
🚅 Dictionary					_ <b>D</b> ×	🚅 De	sign D:\DE	MOVF	P\QUERY\REP	ORT2.VQR	
Tables			Fields				li se	1 1			
Currencies					A		Items		AT hates		
Customers					_		Item Nui A	V.	AI Lod A		
Document Types							VAT Co 🔽	ľ	vescriput		
Documents (Deta	il)							<u> </u>			
Documents (Mast	er)										
Driver	-	- 0				1					1
Item Price Lists	24 V	ew que	y .					r	lude de		
Ju		mili	) (hool	AIU	lesan	01	adit IVCUL	n e e e	tomational Data	a _	-
Relationships		m02	Breaks			01	01	Int	ternational Bate		
	lte	m03	Steering V	/heel		01	01	Int	ternational Bate		
	lte	m04	Driving Sh	aft		01	01	Int	ternational Rate		
	Ite	m05	Axle Shaft			01	01	Int	ternational Rate		
ļ	lte	:m06	Door			01	01	Int	ternational Rate		-
	=lte	:m07	Rim			01	01	Int	ternational Rate	<b>_</b>	
Cuery Query										▶ /	
Tables Fields,	Group By	and Ore	der By 🛛 Joir	Filter	Filter Paramet	ers 🛛 Not	e				
Description			Alias		Table Name						
Items			ltems		Items A	-					
VAT Rates			TABIN	Ά	TABIVA	-	Delete	1			
					•		Delete				
								_			
							Onion: J				
							II All				

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).

<b>F</b> prog			_ 🗆 ×
Items Documents Customers Files Utility			
<u>? ¬ ``                              </u>	X 1 xxx 15-05-2000	🗖 🔁 🗟 😰	
📕 Items / Query			_ 🗆 ×
General Info Price Lists Totals List			
ARCODART ARDESART	ARPRZART ARACQART ARV	ENART ARORDART ARIM	PART ARI 🔄
Item01 Wheel	1300.00 0	0 10	0 01
Item02 Breaks	1000.00 0	0 20	0 01
Item03 Steering Wheel	Open		?×_
Item04 Driving Shaft	Cerca in: 🔄 Query	- 🗈 🗹	- 1 📰 🐨
Item05 Axle Shaft	Let have seen		<u></u>
Item06 Door	sel nem.vqr		
0000000081 TMC Terminel			
	report2.vgr		
	+ 1-		
	+		
1			
ARCODART 🛛 👬 🕤 🖉			
	Nome file:		OK
Select Order by Fields			
	ipo hie:	<u> </u>	Annulla
ARIVAART from Items			2
DuaryEllal			Lode Page
<u>Inderty.c.ner</u>	_		

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'.

💒 p	rog										_ 🗆 2
Item:	s <u>D</u> ocuments	<u>C</u> ustomers <u>F</u> ile	is <u>U</u> tility								
?	🖳 🚽	1 🕘 🔳	🕨 🧾 1	<b>⊾ ₹ ∰</b>	×Г	1	xxx 15-05-2	2000		D 😧	
	Items / Query										_ 🗆 ×
G	eneral Info   P	rice Lists To	otals List								
	-		I								
Ļ	ARCODART	ARDESART			ARI	IVDES	IVA				 <u></u>
-	ltem01	Wheel			01 01	Interna	ational Rate				
-	ltem02	Breaks			01 01	Interna	ational Rate				
-	ltem03	Steering Who	Open						?	I×I⊢	
-	ltem04	Driving Shaft						-			
ŀ	ltem05	Axle Shaft	Cerca in:   📛	Uuery			<u> </u>			╝┟	
ŀ	ltem06	Door								-  -	
-	Item07	Rim									
-	0000000000	TMC Termin:									
-											
-											 
	<b>T</b>	1									
	ARCODAF	RT	1								
	Colort	Order	Nome file:					_	OK	1 I.	
	Select			·				_		11	
n.	Name: default		<u>T</u> ipo file:	*.Items_VZM				-	Annulla		
		=							?		
	<ul> <li><u>D</u>efault</li> <li>Bok for porce</li> </ul>	I <u>K</u> ei								-	
1	Ask for parar	neters									
					_			_			

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:

📰 Un	titled - CodePainter Revolution Dialog Window Painter	. 🗆 🗵
<u>F</u> ile <u>F</u>	Edit <u>I</u> tems <u>Pages G</u> lobals <u>A</u> lign	
	📂 🔜 🔛 📔 🛛 🖍 🖓 🛏 🖦 🖦 🗍 🔝 💷 Page 1	
Var		
	E Customer Heport	
A		R
	From Customer: SCLCODCLI SCLRAGCLI	뎍
Btn		F
<b>-</b>	To Customer: eCLCODCLI eCLRAGCLI	БL
*		Ъ
	Print Exit	<b>–</b>
		<b></b>
		A

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).

Variable definition	×
Name:     SELCODELI     2     Character     ▲ Len:     10     Dec:     0     No Key/Index     ▼       Comment:	Editing C <u>H</u> ide C <u>S</u> how C <u>E</u> dit
Uptrons       Evaluate       Checked/Linked       Zoom         © No       © No       © Linked       © User         © Init       © Linked       © Standard       Display picture:         © Default       © Efault       □ Zero filling       □ Diligatory	?
Expressions	
Calc/Init/Def:	2
Checking:	2
Editing:	2
Hiding:	2
Zoom 2 User pro	g. 🔽
Error message:	
Main Linked Table Radio/Check Buttons Special Definitions Notes	Cancel

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.

<u>T</u> ext: Print	<u>B</u> itmap:	
Hel <u>p</u> :		
- Execute	Edit under condition	🗖 Hide under condition
C User program	☐ <u>A</u> lways enabled	
C Event C System function	- Font options	
C Dialog window		
<ul> <li><u>H</u>outine</li> <li><u>U</u>ser tool kit</li> </ul>	J	
	☑ <u>G</u> lobal font	hange <u>F</u> ont
Ealand:		
Hiding:		
lser <u>d</u> ef.:		
ar Prop :		

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'.

đ	🛱 Query	1					
ſ	Fables	Fields, Group	By and Order By Join	Filter Filter Parameters	Note		
	Desi	ription	Name	Alias		Order By	
	Cus Com Addr	tomer Key Ipany Name Iess	customers.clcodcli customers.clragcli customers.clindcli	cicodeli eirageli elindeli	Delete Field		×
	Post Cou E-m	l Code ntry ail Address	customers.clcapcli customers.clprocli customers.clemail	cicapcii ciprocii ciemaii	Delete Group Pivot	Group By	

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.'.

🚰 Query							
Tables Fields, Group By and Order	By Join	Filter F	Filter Parameters	Note			
Field Name	Not Cr	riteria	Example		Logical		
customers.clcodcli	>=	=	?w_sCLCODCLI		AND	<b></b>	
customers.clcodcli	<=	=	?w_eCLCODCLI		AND	D	elete Filter
Empty(culstomers.clemail)	🔽 Not =	. 🔻	.t.		AND 💌 🗖 Having		
							Add Filter
customers.clcodcli customers.clcodcli Empty(culstomers.clemail)	Not =	=	?w_sCLCODCLI ?w_eCLCODCLI .t		AND AND AND T Having		elete Filter Add Filter

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:

Report Designer - qbe_cli.frx				
0,, 1,, 12,, 13,, 14,, 15,, 16,		10 11 12	13 14 15	16 17 18 19 -
CUSTOMERS WITH	E-MAIL A	DDRESS		
▲ Title				
Customer Key Company Name	Address	Town	Zip Code	E-mial Address
A Page Header				
<sup>0</sup> clcodcli clragcli		clcitcli	clcapcli	clemail
_1				
▲ Detail				
DATE()_				Page _
A Page Footer				
	Report Col≭ ∧ A ₪ + □ O ₪ â			
				▶ <i>[i</i> :

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.

₩ QBE_CLI.doc - Microsoft Word							
Eile Edit View Insert Format Iools Table Window Help							
D 🖆 🖬 🚑 🖓 🖪 🖤 🐰 🖻 🛍 🝼 🕬 🖓 🔛 🕲 🖬 🗔 💷 🛷 😡 👖 75% 🕞 🛛 🖕							
Normal 🔹 Times New Roman 🔹 12 🔹 B 🖌 🗓 📰 🗮 🚍 🧮 🗮 🛱 🛱 🔛 🖌 💆 🗸 🗛 🗸							
Insert Merge Field - Insert Word Field - 👷 H 🕢 1 🕨 🖻 📴 🕼 🖓 Merge 🙀 💇 🗸							
clcoddi 2+++++++++++++++++++++++++++++++++++							
chageli							
clindcli							
cloitcli							
clcapcli							
clproci							
	_						
ι. M	1						
	0						
	<b>*</b>						
] Dr_aw + 🖟 🌀   AutoShapes + 🔪 🔪 🗋 📿 🏭 🔩 🕼 🖉 + 💆 + 🧕 + 🚍 🚍 🚍 😭 -							
Page 1         Sec 1         1/1         At 2,5 cm         Ln 1         Col 1         REC         TRK         EXT         OVR         English (U.S)	1						

Format the document as to obtain the desidered letter layout.



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

Mail Merge	e Helper ? 🗙
The main of button to	document and data source are ready to merge. Choose the Merge complete the merge.
1=	Main document
2 🖿	Main document: D:\DEMOVFP\QUERY\QBE_CLI.doc Data source <u>G</u> et Data <u>Edit  </u> Data: C:\windows\TEMP\worddbf
3℡	Merge the data with the document          Merge       Query Options         Options in effect:       Suppress Blank Lines in Addresses         Merge to new document       Cancel
	Cancel

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...'.

62 QUERY PAINTER

Mail Merge	Helper	?				
The main document and data source are ready to merge. Choose the Merge button to complete the merge.						
1 ==	Main document  Form Letters	Edit -				
2 🖻	<u>M</u> ailing Labels Envelopes Catalog Restore to <u>N</u> ormal W	ord Document				
3 ঊ	Merge the data with the d	locument				
	Merge	Query Options				
	Options in effect: Suppress Blank Lines in Merge to new documer	Addresses				
		Cancel				

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

Microsoft Word	×
You can change QBE_CLI.doc from cai main document.	talog to form letters or you can create a new
Change Document Type	New Main Document

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.

Merge	? ×
Merge to:	<u>M</u> erge
New document  Setup	<u>C</u> ancel
Printer To:	Check <u>E</u> rrors
When merging records	Query Options
<ul> <li>Don't print blank lines when data fields are empty.</li> <li>Dinit blank lines when data fields are empty.</li> </ul>	
No query options have been set.	

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 email addresses are defined ('clemail'). You can also add an e-mail heading and decide to send the document as attachment.

Merge To Setup	? ×
Data field with Mail/Fax address:	
clemail	<b>•</b>
Mail message subject line:	
Jweicome letter	
$\square$ Send document as an attachment	
OK Can	cel

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'.
📑 Customer Report		
From Customer:	000000002	Ban Tec
To Customer:	000000011	Zucchetti
		Print Exit

The 'Print System' window is opened.

🚅 Print System	_ 🗆 🗵
Printer	<b>-</b>
Print on file File Name           TXT         DEFA0001.TXT	
📝 🗳 👺 👪 🛛 🕮	×

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.

▼ Mail Merge											×
Insert Merge Field 👻	Insert Word Field $\star$	≪≫ ABC	M	•	1	H	<b>•••</b> •	۹⁄۲	)o \$6	Merge	<b>1</b>

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

<b>X</b> H	icrosoft Excel								_ 8 ×
Eile	<u>E</u> dit ⊻iew Ins	sert Format <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u> elp						
	🖻 🖬 🔒 🤘	🗿 🖪 🖤 👗 🖻 🛍	🖍 τ 🍓 Σ f 🛪 👌	🕴 🛍 😨 🙄	Arial		▼ 10 ▼ B .	<i>I</i> <u>U</u> ≣	≣ ≣ .
	A1 💌	= clcodcli							
	defa0001.xls								_ 🗆 ×
	A	В	С	D	E	F	G	H	Riduci a icona
1	clcodcli	clragoli	clindcli	cleiteli	clcapcli	clprocli	clemail		ĭ
2	0000000001	Zucchetti TAM	Centro Nuova Filanda	Aulla (MS)	54011	IT	z.tam@z.tam.it		1
3	0000000003	Acer Scandinavia A/S	Bomhusvej 13	Kobenhavn O	2100	DK	acer_as@acer.dk		I
4	0000000011	Zucchetti TAM	Centro Nuova Filanda	Aulla	54020	it	m.vizzini@tam.it		
5									l
6									1
7									l
8									
9									
10									
11									I
12									
13									<b></b>
	↓ ▶ \\defa0	001/	:	:		-			

# 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.

a prog					_ 🗆 ×
Items Documents Customers Files	<u>U</u> tility				
<u>?</u>		部 × 1	xxx 15-05-2000		📌 Sal 🎒 🎦 🔀 🛍
🗖 🔁 🗟 🔽					
Dictionary			🚅 Design		
Tables	Fields of Items		Items	VAT Rates	
Item Price Lists	Item Number	ARCODART	ltem Nui ≜	VAT Cod 🔺	
Items	Descr.	ARDESART	Descr.	Descriptic	
Payments	Price	ARPRZART	VAT Co	<u> </u>	
Price Lists	VAT Code	ARIVAART			
Server Net TMC	Purchased Q.	ARACQART			
Terminals	Sold Q.				
VAI Rates	Ordered Q.				
Relations of Items		Find			
VAT Rates(VAT Code)		4			
Documents (Detail)(Item)					
Item Price Lists(Item)					
<u> </u>		7			
a Query					
Tables Fields, Group By and Ord	er By Join Filte	r Filter Parameter	s Note		
Field Name	Not Criteria	Example		Logical	
t Items.ARCODART	>=	?pARCODART	_i	AND	<b></b>
Items.ARCODART	<=	?pARCODART	_f	AND	Delete Filter
					Add Filter

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' tabstrip 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'.

🚰 Variable options				- 🗆 ×
Variable: pARCO Type: Charact Len.: 10	DART_i ter 💌 Dec.: 0	✓ Editable ✓ Eill with zeros		
Picture:				]
Archives: Items				
Fixed key	Values			
<u> </u>	·	_		
	Í –			
ARCODART				
Linked field				
ARDESART	XARDESAR1		<u>O</u> k	<u>C</u> ancel

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'.

Eltem Selection	
From Item No.:	pARCODART_i XARDESART
To Item No.:	pARDESART_f

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.

🚅 prog		
Items Documents Customers Files U	tility	
<u>? □ □ □ □ - ↓</u>		1 xxx 15-05-2000 🗈 🛁 🔛 🗙 💏 Sql 🚭 🕙 🗶 🏨
🗖 🖼 🖗 😰		
🕵 Dictionary	_0	Design D:\DEMOVFP\QUERY\QBE_AR1.VQR
Tables F Currencies	ields	Items VAT Rates     VAT Cod _
Customers Document Types		VAT Co
Documents (Detail)		
Documents (Master) Driver		
Item Price Lists 🗾		
Relationships	Tind Tind	
	a rielli Selection	
	From Item No.: Item	101 Wheel
	To Item No.:	107
💭 Query	,	
Tables Fields, Group By and Orde		
Description		Ok Cancel
Items	Тарки	
VAT Rates		Delete
		Union:

# 2.14 Query And Routine

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

Select From			×
Name: cli_for	O <u>I</u> able		
<u>Comment</u> do something			
<u>F</u> ields:			2
<u>W</u> here:			2
Order by:			2
<u>G</u> roup by:			2
		<u>0</u> k	<u>C</u> ancel

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.

DIALOG WINDOW PAINTER 73



# 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
plan	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.
Opt.	Dialog Window Options	Opens the Options Dialog Window.
A	String	To add strings.
abl	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.
( <b>3+0</b>	Cut	To cut selected elements.
<b>⊡</b> •Û	Сору	Selected elements are saved in a memory buffer.
G+C	Paste	Elements saved in the buffer are pasted.
щ	Align Left	Selected elements are aligned to the left.
Π	Align Right	Selected elemets are align to the right.
π	Align Top	Selected elements are aligned at the top.

ш	Align Bottom	Selected elements are aligned at the bottom.
ж	Same Horizontal Distance	Selected elements are rearranged leaving the same horizontal distance.
۲	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.

💒 Dialog Window options	
Title: Item Selection	
☑ <u>M</u> odal ☑ <u>B</u> ackground	<u>O</u> k <u>C</u> ancel

### 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.

String Options	3	- 🗆 🗵
Text:	From Item Code:	
Alignment:	Left 💌	
	<u>0</u> k	<u>C</u> ancel

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.

E Variable options				_ 🗆 ×
Variable: pARCO	DART_i	<b>⊠</b> <u>E</u> ditable		
Type: Charac	ter 💌	☑ <u>F</u> ill with zeros		
Len.: 10	Dec.: 0			
Picture:				]
Fixed key	Values			
	I			
JARCODART				
JARDESART	JXARDESARI		<u>k</u>	<u>C</u> ancel

### 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.

🚅 Select table		
WORKSTAT	Server Net TMC	<u></u>
customers	Customers	
Document_m	Documents (Master)	
Document	Documents (Detail)	
TABIVA	VAT Rates	
Items	Items	
Payments	Payments	
lis_xart	Item Price Lists	
currencies	Currencies	
PriceLists	Price Lists	
COMMDRVR	Driver	
TERMINAL	Terminals	
DocType	Document Types	

#### 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.

🚰 ComboBox optic	ons		
Variable: TIPOV Type: Chara Len.: 1	AL cter 💌 Dec.: 0	<b>☞</b> <u>E</u> ditable	
Values	Descriptions		
"1"	First Value		
"2"	Second Value		
"3"	Third Value		
			<u>O</u> k <u>C</u> ancel

### 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

82 DIALOG WINDOW PAINTER

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.

E CheckBox options	
Variable: TIPOPAZ	Title: CheckBox
Type: Character 💌	✓ Editable
Len.: 1 Dec.: 0	
Checked value:	
Unchecked value: ["F"	
	<u>O</u> k <u>C</u> ancel

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.

💒 Button/Bitn	nap image options
Execute:	QBE_ART
Type:	Query/Report
Title:	Launch Report
Bitmap:	
<b>□</b> [Invisible]	<u>O</u> k <u>C</u> ancel

### 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.

💒 Dialog Window options	
Title: Item Selection	
₩odal	
i <u>b</u> ackground	<u>O</u> k <u>C</u> ancel

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'.

🚰 Variable options			
Variable: pARCO	DART_i	✓ Editable	
Type: Charact	ter 💌	<u>         F</u> ill with zeros	
Len.: 10	Dec.: 0		
Picture:			
Archives: Items			
Fixed key	Values		
		_	
ARCODART	,		
Linked field			
ARDESART	XARDESART		
			Ok <u>C</u> ancel

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.

EVariable options		- 🗆 ×
Variable: xARDESART Type: Character 💌 Len.: 10 Dec.: 0	☐ Editable ☐ Eill with zeros	
Picture:		]
Archives:		
Linked field		
,,	<u>Q</u> k	<u>C</u> ancel

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:

Eltem Selection		
From Item No.:	pARCODART_i	XARDESART
To Item No.:	pARDESART_f	xARDESART1

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.

🚅 Query						
Tables   Fields, Group By and	Order By Join Filter	Filter Paramet	ers Note	•		
Field Name	Description	Туре	Len	Dec		
parcodart_i parcodart_f	ltem Number Item Number	Char Char	10 10	0	⊢ Dialog ⊢ Re	Delete Param. DLO_ITEMI move filter on empty parameter Generate code

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.

Exec definition	×
Exec: UTK Object	•
1	
Type Argument Description	Advanced     OK     Cancel       Image: Constraint of the second secon

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.

Button/Bitmap image options				
Execute:	QBE_CLI.			
Type:	Program 💌			
Title:	Run Program			
Bitmap:	Program.BMP			
∏ <u>I</u> nvisible	<u>O</u> k <u>C</u> ancel			

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.

🚅 Dialog Window options	
Title: Draw	
☑ <u>M</u> odal ☑ <u>B</u> ackground	<u>Qk</u> <u>C</u> ancel

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'.



Users 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'.

Ş	Us	er and G	roup A	dministration			
Γ		Users		Name		4	New User
	5	1	Max				 Change
$\vdash$	2	2	IMC				<u>D</u> elete
E							
	-						Translate
$\vdash$							Translate
┝							
	 				П	H	
		Groups		Name			
H	æ	1	Admini	strators			New Group
	Z	2	TMC Fr	amework Use	rs		<u>C</u> nange
-							Delete
	, ▲				1	· Ĥ	OK

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.

£٩	prog										_ 8 ×
lten	ns <u>D</u> ocuments	<u>C</u> ustomers	<u>F</u> iles <u>U</u> tility								
?		H 6		★ ₹ 🗄	9 × 🗆	1 xxx	: 16-05-2000	🗈 🔁 🛛	<b></b>	Opt. A	
	🚺 Draw				_						
			Customer R	eport							
	From	Customer:	scloodcli	sRA	GCLI	-		r	ງ] ຊ	n	
						_		1	<u>т</u> с		
	To Cu	stomer:	ecicodeli	eRA	GCLI						
					Procedure	Security V	<sup>r</sup> isualMsk			<u>- 🗆 ×</u>	
				Print	Groups	Nam	e Ente	er Insert	Change	Delete 🔺	
					🔤 21 🙆 17	Administrat	ors 🔽	। घ			
				-							
				_							
				-						÷	
				Ē	•						
				[	⊇elete				<u>0</u> k	<u>C</u> ancel	
											1

# 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'.

<b>E</b> prog		×
Items Documents Customers Files		
? • • • • • •	Database Administration 1 xxx 17-05-2000	
	Dialog Window Painter	
	Zoom Painter	
🚰 Draw	User Administration	
	Autonumbered Variables	
F	Connect Report To Printer	
	Draw X	
	🕒 🗔 🔚 🔛 🗙 Table Opt.	
	👬 🔁 🎒 KOptions Quety	
Select Orde	r by Fields SQL File	
	like 🔺	
	v < v QR	

# 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.
Table	Main Table	To select the main table.
Opt.	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.

💒 Select table 👘		_ 🗆 🗵
WORKSTAT	Server Net TMC	<b>A</b>
customers	Customers	
Document_m	Documents (Master)	
Document	Documents (Detail)	
TABIVA	VAT Rates	
Items	Items	
Payments	Payments	
lis_xart	Item Price Lists	
currencies	Currencies	
PriceLists	Price Lists	
COMMDRVR	Driver	
TERMINAL	Terminals	
DocType	Document Types	
		-

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.

💓 Options		
Title:	Items	_
Program:	GEST_ART	
	☑ <u>O</u> ptions	Ok <u>C</u> ancel

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.

🚰 ltems							_ 🗆 >	
ARCODART	ARDESART		ARI	IVC	IVDESIVA		<b>A</b>	
Item01	Wheel		01	01	Internationa	al Rate		
Item02	Breaks		01	01	Internationa	al Rate		
Item03	Steering Wheel		01	01	Internationa	al Rate		
Item04	Driving Shaft		01	01	Internationa	al Rate		
Item05	Axle Shaft		02	02	Italian Rate			
Item06	Door		01	01	Internationa	al Rate		
Item07	Rim		02	02	Italian Rate			
0000000001	TMC Terminal							
			<u> </u>					
			ļ					
•							<u> </u>	
ARCODAF	रम	🕂 🔁 🛃	3	犝	<<0ptions	Query		
Select	Order by	Fields		8	SQL	File		
select ARCODAR	seleot ARCODART, ARDESART, ARIVAART, IVCODIVA, IVDESIVA from Query-QUERY1QBE_ART							
Query File	JERY\QBE_ART			Г	Edit SQL s	entence		

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).

_							
2	Draw						_ <b>D</b> ×
Γ	Customer Key	Company	Addre	388	<b></b>		
	0000000003	Acer Scandinavia A	'S Bom	husvej 13	-	ε	Supplier Flag: N
-					-	Tov	wn: Kobenhavn 0
-					-		
-					_	E-ma	il Address: acer as@acer.dk
-					-		
	Compan	у 🗌		- ] <b>       </b>	<<0ptions	Query	
C	Select	Order by	Fields		sql	File	
			▲  ike = <> <	▲ ✓ <u>O</u> R	]		

# 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.

🚰 Column title	
Field:	CLCODCLI
Title:	Customer Key
Format:	
Height:	0
Width:	80
Text color:	
Background color:	
	🔽 Editable (in editable zoom)
	<u>O</u> k <u>C</u> ancel

#### 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.

Ş.	Draw									_ <b>D</b> ×
ſ	ARCODART	ARDESART				ARI	IVC	IVDESIVA		
Ī	ltem01	Wheel				01	01	Internationa	al Rate	
Ī	ltem02	Breaks				01	01	Internationa	al Rate	
	Item03	Steering Wheel				01	01	Internationa	al Rate	
	ltem04	Driving Shaft				01	01	Internationa	al Rate	
	Item05	Axle Shaft				02	02	Italian Rate		
	ltem06	Door				01	01	Internationa	al Rate	
	ltem07	Rim				02	02	Italian Rate		<b>T</b>
	•	I				1	I	I		
	ARCODAR	श		<b>≇}</b> +		5	齨	< <options< td=""><td><u>Q</u>uery</td><td></td></options<>	<u>Q</u> uery	
	Select	Order by		Fiel	ds		8	BQL	File	
			A	like = <> <	▲ 		<u>)</u> R	]		

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 parameters 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'.

Select	Order by	Fields	SQL	File
CLRAGCLI like CLCODCLI <> '( CLINDCLI = 'Ce	BanTec A/S%' 000000001' ntro Nuova Filanda'		'BanTec A/S%' <u>O</u> R	

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.

Select	Order by	Fields	SQL	File
CLCODCLI CLCODCLI	De	<u>D</u> elet SC	e	

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.

Select	Order by	Fields	SQL	File
CLCODCLI CLRAGCLI CLINDCLI CLCITCLI		CPCCC	ЭНК	×

# 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.

Select	Order by	Fields	SQL	File
select CLCODCLI, C CLFLAFOR, CLEM/ where CLRAGCLI lik	LRAGCLI, CLINDCLI, CLCI AlL from customers e 'BanTec A/SX' and CLCO CLCODCLIdesc	TCLI, CLCAPCLI, CLPRI IDCLI <> '00000000001' an	OCLI, CLCODPAG, CLI nd CLINDCLI = 'Centro N	CODVAL, 🔺 Nuova Filanda' 💌
Query File			□ <u>E</u> dit SQL	sentence

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.

Select	Order by	Fields	SQL	File	
Name: default			<u>S</u> ave		
□ Default			Modify/Create Report		
I <u>A</u> sk for param	eters		Modify/Create MS	SWORD	

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').

108 ZOOM PAINTER

🚅 prog	_ 8 ×
<u>File Edit View Format R</u> eport	
	1 xxx 17-05-2000
🕫 Draw	
CLCODCLI         CLRAGCLI           0000000001         Zucchetti TAM           000000002         BanTec A/S           000000003         Acer Scandinavia A/S	CLINDCLI — Centro Nuova Filanda Dynamovej 11 Bornhusvej 13
🔚 Report Designer - default_customers.f	
	6 7 8 9 10 11 12 13 14 15 16 E
▲ Page Header	inacii ciciccii cicapcii cipi cicou .
CLC <sup>0</sup> clcodcli clragcli (	lindcli clcitcli clcapcli clp clcod
Select Page Footer	
Name: de	
Default	Layout X Report ConX

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.

Print System	_ 🗆 🗡
Printer	<b>₽</b> + → III
Print on file File Name	
	×

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 parameters 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  $^{\prime}\text{-}ZoomName>^{\prime}$  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.

Button definition			X
<u>I</u> ext:Print	<u>B</u> itmap:		2
Execute C User program C Event C System function C Dialog window C Boutine C User tool kit	Edit under condition Always enabled Eont options	Hide under condition	
Execute: MY ZOOM.VZM	☑ <u>G</u> lobal font	Change <u>F</u> ont	2
E diting:			2
Hiding:			2
User <u>d</u> ef.:			
User. <u>P</u> rop.:			
Main Notes		OK Can	cel

# 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 geries.

📕 Payments / Query 📃 🗖	X
Pag.1 List	
PAC	
N002	
003	
Description: Postal Remittance	
PACODPAG 🔁 🎲 😋 🦉 📶 COptions Query	
Select Order by Fields SQL File	
like ▲	

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'.

# 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:

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

<u>Option</u> 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.

**Seq.+ Seq.-** 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.

Entry title	Procedure name	
		Iry

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.

Les 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'.