See Reports in Your Mind's Eye

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Interested in more flexibility in your reports? Want to output to PDF files? How about graphs? The Mind's Eye Reporting Engine is an incredible new tool that'll make you forget the VFP Report Preview window. In this month's article, Doug explains why.

In her book "The Visual FoxPro Report Writer" (Hentzenwerke Publishing, www.hentzenwerke.com), Cathy Pountney describes many of the limitations of the VFP Report Designer and Report Preview window. Cathy, the queen of VFP reporting, provides workarounds for some of these limitations, including how to fake multiple detail bands in a report, make objects line up properly when they're below stretchable objects, and so forth. However, many of these workarounds are complex, and often still don't give you exactly what you want.

Until recently, the only solutions you had for these issues were to use the workarounds or use a different report writer, such as Crystal Reports. However, now there's a third alternative: the Mind's Eye Report Engine (MERE). MERE is a new tool written by Rich Simpson, president of Mind's Eye, Inc., that provides an ActiveX control and a VFP class library. The ActiveX control, which Rich wrote in Delphi, is a report rendering control that provides properties, events, and methods (PEMs) for outputting text and graphics to a preview window, a printer, and even a PDF file. The VFP class library provides several classes, including one called MindsEyeReportEngine that knows how to output a VFP FRX report to the ActiveX control.

Running an FRX report

Previewing an FRX in the MERE takes just a few lines of code. First, you instantiate the MindsEyeReportEngine class in MindsEyeReportEngine.VCX. This VFP class is responsible for rendering an FRX report in the MERE. You set any properties of the class you wish and then call the ReportFormPreview method to preview the FRX. Here's an example (Orders.PRG in the Subscriber Downloads for this month):

```
#if version(5) >= 700
local loRE as MindsEyeReportEngine of MindsEyeReportEngine
#endif
set classlib to MindsEyeReportEngine
loRE = createobject('MindsEyeReportEngine')
loRE.lDisplayExecutionTime = .F.
loRE.lShowReportPreviewToolbar = .F.
loRE.cReportPreviewFormCaption = 'Customer Orders'
loRE.ReportFormPreview('orders.frx', 2)
```

The #IF statement brackets the LOCAL statement, which provides IntelliSense for the MindsEyeReportEngine class, so this code can run in VFP 6 if necessary. I set the IDisplayExecutionTime property to .F. because I don't want the class to show how long it took to render the report, the IShowReportPreviewToolbar property to .F. because I want the MERE toolbar used rather than a VFP toolbar, and the cReportPreviewFormCaption property to the caption to use for the MERE window. The call to ReportFormPreview passes the name of the FRX to render and the window style (0 for a window in _SCREEN, 2 for a top-level form). You can also optionally pass the left, top, width, and height values for the window. Running this code produces the result shown in Figure 1.

Figure 1. The Mind's Eye Report Control has a lot more features than the VFP Report Preview window.

		Custo	mer Orde	rs		
Customer 4	# ALFKI Alf	reds Futterkiste				
Order #	Date Ordered	Date Required	Order Gross	Disc.	Freight	Order Net
10062	10/15/1993	11/12/1993	900.40	10%	47.22	857.58
10643	09/12/1995	10/10/1995	1,086.00	10%	29.46	1,006.86
10692	10/21/1995	11/18/1995	878.00	10%	61.02	851.22
10702	10/31/1995	12/12/1995	330.00	5%	23.94	337.44
10835	02/02/1996	03/01/1996	851.00	10%	69.53	835.43
10952	04/02/1996	05/14/1996	491.20	5%	40.42	507.06
11011	04/26/1996	05/24/1996	960.00	10%	1.21	865.21
Customer :		reds Futterkiste				
customer i		reas Futterkiste				
Order #	Date Ordered	Date Required	Order Gross	Disc.	Freight	Order Net
10308	10/06/1994	11/03/1994	88.80	0%	1.61	90.41
10625	08/26/1995	09/23/1995	479.75	5%	43.90	499.66
		01/13/1996	320.00	5%	11.99	315.99
10759	12/16/1995	01/13/1990	320.00			

As you can see, the MERE has a lot more features that the VFP Report Preview window, plus it's a lot easier to control since it's an object. Let's look at some of the features of the MERE.

The first thing you'll notice is the various ways you can control how the report is displayed in the window. The third button in the toolbar displays the report at its actual size, as shown in Figure 1. The fourth button reduces the report so the entire page fits in the window. The fifth button adjusts the report so it's about as wide as the window. The next two buttons zoom out or zoom in at 5% increments. The zoom scale combo box allows you to choose from a number of pre-defined zoom scales or type in a specific zoom value. Believe it or not, you can scale a report up to 1,000,000%, a size at which each pixel of each letter takes an entire page. (OK, that's not really practical; I think Rich was just showing off when he decided to allow values that high!)

There are several controls for page navigation. The traditional navigation buttons move you to the first, previous, next, and last pages of the report, and a status control shows the current page out of the total number of pages. There's also a mini-scroll bar to the right of the zoom scale combo box that moves in larger increments than single page at a time (depending on the number of pages in the report). You'll notice a couple of things about these controls when you use them. First, a nice feature is that you can hold down the mouse button to continuously scroll through the pages rather than having to click over and over. Second, the navigation controls are incredibly fast. Clicking on the last page button, for example, instantly displays the last page. In the VFP Report Preview window, there's a noticeable pause before the last page is displayed, and in complex reports with calls to user-defined functions or many pages, it can take a long time to even move from one page to the next (moving backwards through pages seems to be considerably slower than moving forwards). One of the reasons the MERE is so fast is that the report is completely rendered in the engine, as opposed to VFP's window, which only renders one page at a time. The downside of this approach is that it takes longer for the report to initially appear in MERE as the control is fully loaded with report pages, but as of this writing, Rich is working on a way to display the first page as soon as possible and then continue to render pages in the background.

There are several other controls in the MERE toolbar. The first button is sure to get your attention: save to PDF. Click on this button to display a dialog of PDF file options, including the file name, title, and author; when you choose OK, MERE creates a PDF file from your report. Here's the best part: you don't

need to install a PDF writer such as Adobe Acrobat or Amyuni on your system. This feature alone makes MERE well worth the price! It also supports 1, 2, 4, or 8 report pages per PDF page. This is handy if you need a very compact report. Figure 2 shows the PDF file generated from Orders.FRX with 4 pages per sheet selected.

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10133 02/07/1988 02 10032 02/07/1988 03 10111 04/26/1988 03 Customer # ARAT Afree C	No1/1998 813.00 No1/1998 810.20 N24/1998 960.00 ds Futterkiste 960.00 ds Futterkiste 960.00 nin Required Order Gross 9723/1994 N23/1994 88.80 N(23/1994 98.80 N(23/1994 53.40 Artisrikets 100/1/1995 Inte Required Order Gross 970.00 N(13/1993 970.00 V(13/1994 400.30 V(13/1994 400.30 V(13/1994 400.30 V(13/1994 807.50	 10% 5% 10% B Dime. 3 0% 5 5% 3 10% 10% 3 10% 3 10% 3 10% 3 10% 3 3%	09,53 40,42 1,21 Freight 1,61 43,90 11,99 39,92 Freight 40,50	E35.43 507.06 E55.21 Order Net 90.41 409.85 315.09 502.88 Order Net 919.86		11016 Customer # 10045 10159 10171 10233 10279 10284 10544 10524	0-4/12/1998 0-4/27/1998 Date Ordered 09/17/1993 0-3/25/1994 0-4/15/1994 0-6/105/1994 0-6/105/1994 0-6/105/1994 0-3/12/1994 0-3/102/1994 0-3/102/1994	D4/15/1996 D5/23/1996 Frads Putterkis D5/23/1997 Data Require 10/29/1993 D4/22/1994 D5/33/1994 D7/06/1994 D7/06/1994 D5/33/1994 D3/31/1995 D3/31/1995 D3/31/1995	4,675.00 401.50 ato 1,524.00 1,113.00 362.00 2,210.00 511.20 1,495.80 0,13.20 0,13.20 2,222.40 1,031.70 1,74.90	5% Disc. 10% 10% 10% 10% 10% 10% 10% 10%	33.80 Preight 22.42 10.35 3.76 3.76 3.947 92.60 8.98 166.64 3.50 9.30 2.42,73 2.42 3.75 3.76 3.947 3.76 3.947 3.95 3.95	500.72 Order Nat 1,214.56 1,011.59 364.41 1,992.76 562.55 1,432.61 500.86 2,168.80 932.03 175.45 3,118.17 1,525.51
1052 0-402/1998 01 1053 0-402/1998 01 Customer # ARATE Afrec Customer # ARATE Afrec 10225 00/26/1994 01 10225 00/26/1994 01 10225 00/26/1994 01 10226 02/21/1998 01 10226 02/21/1998 01 10226 02/21/1998 01 10226 02/21/1998 01 10227 02/21/1998 01 10228 02/21/1998 01 10214 02/21/1998 01 10215 02/21/1998 01 10214 02/26/1994 01 10215 02/26/1994 01 10216 02/26/1994 01 10217 02/26/1994 01 10218 02/26/1994 01 10219 03/31/1998 01 10219 03/31/1998 01 10219 03/31/1998 <t< td=""><td>%1.4/1996 401.20 %1.4/1996 401.20 de Futtar/kista Ista Required Order Grass 1sta Required Order Grass 502.109 %12.1/1995 479.73 %12.1/1995 514.40 de Futtar/kista Ista Required Order Grass Ista Required Order Grass 970.071 sta Required Order Grass 970.071 100.211993 479.73 110.003 970.071 970.19193 970.071 971.19193 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19104 400.751</td><td> 5% 10% a Disc. 5 5% 5 5% 5 5% 5 5% 5 5% 5 10% a Disc. 5 10% 5 10% 5 10%</td><td>40,42 1,21 Freight 43,90 11,99 39,92 Freight 46,50</td><td>507.05 865.21 Order Net 90.41 409.65 315.90 502.08 Order Net 919.86</td><td> </td><td>Customer # Order # 10045 10150 10170 10213 10223 10220 10384 10445 10524</td><td>BERGS AJ Data Ordered 00/17/1993 03/25/1994 04/05/1994 05/05/1994 03/02/1994 03/02/1994 03/02/1994 03/02/1994</td><td>Trads Patterki Data Require 10/10/1903 04/12/1904 05/13/1904 07/06/1904 07/06/1904 09/12/1904 09/12/1904 03/31/1905 03/30/1905 03/31/1905</td><td>ata ad Order Gross 1,324.00 1,113.00 362.00 2,210.00 511.20 1,455.00 613.20 2,222.40 1,031.70 1,74.90</td><td>Disc. 10% 10% 10% 10% 10% 10% 10% 10% 10%</td><td>Preight 22,42 10,35 10,75 3,76 30,47 92,60 8,90 168,64 3,50 9,30 9,30 9,30</td><td>Crdor Net 1,214.58 1,021.59 304.41 1,992.75 1,432.61 500.86 2,168.80 932.03 175.45 3,118.17 1,535.51</td></t<>	%1.4/1996 401.20 %1.4/1996 401.20 de Futtar/kista Ista Required Order Grass 1sta Required Order Grass 502.109 %12.1/1995 479.73 %12.1/1995 514.40 de Futtar/kista Ista Required Order Grass Ista Required Order Grass 970.071 sta Required Order Grass 970.071 100.211993 479.73 110.003 970.071 970.19193 970.071 971.19193 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19103 970.071 971.19104 400.751	 5% 10% a Disc. 5 5% 5 5% 5 5% 5 5% 5 5% 5 10% a Disc. 5 10% 5 10% 5 10%	40,42 1,21 Freight 43,90 11,99 39,92 Freight 46,50	507.05 865.21 Order Net 90.41 409.65 315.90 502.08 Order Net 919.86	 	Customer # Order # 10045 10150 10170 10213 10223 10220 10384 10445 10524	BERGS AJ Data Ordered 00/17/1993 03/25/1994 04/05/1994 05/05/1994 03/02/1994 03/02/1994 03/02/1994 03/02/1994	Trads Patterki Data Require 10/10/1903 04/12/1904 05/13/1904 07/06/1904 07/06/1904 09/12/1904 09/12/1904 03/31/1905 03/30/1905 03/31/1905	ata ad Order Gross 1,324.00 1,113.00 362.00 2,210.00 511.20 1,455.00 613.20 2,222.40 1,031.70 1,74.90	Disc. 10% 10% 10% 10% 10% 10% 10% 10% 10%	Preight 22,42 10,35 10,75 3,76 30,47 92,60 8,90 168,64 3,50 9,30 9,30 9,30	Crdor Net 1,214.58 1,021.59 304.41 1,992.75 1,432.61 500.86 2,168.80 932.03 175.45 3,118.17 1,535.51
11011 04/26/1998 05 Castamar # AMART Affred Order # Data Orderaf D 10/30 10/06/1994 11 10/22 06/26/1994 11 10/25 07/26/1985 01 10/26 07/21/1996 02 Castamar # ANTON Affred Data Orderaf Data Orderaf D 10/26 07/21/1996 02 Order # Data Orderaf D 10/28 00/15/1993 01 10/27 12/21/1996 01 10/27 07/31/1993 01 10/28 00/15/1993 01 10/27 07/31/1994 01 10/27 07/31/1995 01 10/28 00/15/1993 01 10/27 07/26/1944 01 10/27 07/26/1944 01 10/28 00/15/1993 01 10/29 01 01/27/1994 01 10/27/27/2944 01 </td <td>N24/1996 900.00 de Futterkiste Inter Required Order Gross 1/05/1994 80.80 N/23/1994 80.80 N/23/1995 479.73 A/28/1995 534.40 A/28/1996 514.40 Inter Required Order Gross 9700.00 N/16/1993 9700.00 V/21/1993 11/79.20 V/21/1993 9700.00 V/21/1994 400.30 V/21/1994 400.30</td> <td> 10% 10% 0% 0% 0% 0% 10% 10% 10% 10% 10% 10% 10% </td> <td>1.21 Freight 1.61 43.90 11.99 39.92 Freight 46.85</td> <td>005.21 0rder Net 90.41 409.86 315.00 502.88 0rder Net 919.86</td> <td> [</td> <td>0rder # 10045 10158 10171 10213 10233 10233 10230 10384 10444 10444 10445 10524</td> <td>Date Ordered 06/17/1993 03/25/1994 04/15/1994 06/08/1994 07/02/1994 06/03/1994 06/03/1995 03/02/1995 03/02/1995 03/02/1995</td> <td>Data Require 10/20/1993 04/22/1994 05/13/1994 07/30/1994 09/27/1994 09/27/1994 09/27/1995 03/31/1995 03/30/1995</td> <td>ad Order Gross 1,324.80 1,113.80 362.80 581.20 1,488.80 613.20 2,222.40 1,031.70 1,74.90</td> <td>10% 10% 5% 10% 10% 10% 10% 10% 10% 10%</td> <td>22,42 19,35 19,75 3,76 8,98 168,64 3,50 9,30 9,30 2,44,79</td> <td>1,214.56 1,021.59 364.41 1,992.76 562.55 1,432.61 560.86 932.03 175.45 3,168.67 3,151.17 1,525.51</td>	N24/1996 900.00 de Futterkiste Inter Required Order Gross 1/05/1994 80.80 N/23/1994 80.80 N/23/1995 479.73 A/28/1995 534.40 A/28/1996 514.40 Inter Required Order Gross 9700.00 N/16/1993 9700.00 V/21/1993 11/79.20 V/21/1993 9700.00 V/21/1994 400.30 V/21/1994 400.30	 10% 10% 0% 0% 0% 0% 10% 10% 10% 10% 10% 10% 10% 	1.21 Freight 1.61 43.90 11.99 39.92 Freight 46.85	005.21 0rder Net 90.41 409.86 315.00 502.88 0rder Net 919.86	 [0rder # 10045 10158 10171 10213 10233 10233 10230 10384 10444 10444 10445 10524	Date Ordered 06/17/1993 03/25/1994 04/15/1994 06/08/1994 07/02/1994 06/03/1994 06/03/1995 03/02/1995 03/02/1995 03/02/1995	Data Require 10/20/1993 04/22/1994 05/13/1994 07/30/1994 09/27/1994 09/27/1994 09/27/1995 03/31/1995 03/30/1995	ad Order Gross 1,324.80 1,113.80 362.80 581.20 1,488.80 613.20 2,222.40 1,031.70 1,74.90	10% 10% 5% 10% 10% 10% 10% 10% 10% 10%	22,42 19,35 19,75 3,76 8,98 168,64 3,50 9,30 9,30 2,44,79	1,214.56 1,021.59 364.41 1,992.76 562.55 1,432.61 560.86 932.03 175.45 3,168.67 3,151.17 1,525.51
Order # Date Ordered Dit 10.308 10(Mr/1964 11 10.23 0(/Ar/1964 11 10.23 0(/Ar/1964 11 10.755 12/Zr/1965 01 10.926 0//Zr/1964 01 10.927 02/Zr/1969 04 Order # Date Ordered Dit 10.014 2/Zr/1969 01 10.014 2/Zr/1969 01 10.014 2/Zr/1969 01 10.014 2/Zr/1969 01 10.015 2/Zr/1969 01 10.014 2/Zr/1969 01 10.015 2/Zr/1969 01 10.016 3/Zr/1969 01 10.017 02/Zr/1964 01 10.018 01/Xr/1969 01 10.019 00/Xr/1964	Into Required Order Gross 1/03/1994 88.88 9/32/1995 879.73 9/32/1996 320.06 4/18/1996 320.06 4/18/1996 324.06 sta Required Order Gross 970.0(93) 9/16/1993 970.00 9/16/1994 460.33 1/18/1994 460.30	D D 10 % D 10 %	1.61 43.90 11.99 39.92 Freight 40.00	90.41 499.85 315.90 502.88 Order Net 919.86	. []	0rder # 10045 10158 10171 10213 10233 10233 10230 10384 10444 10444 10445 10524	Date Ordered 06/17/1993 03/25/1994 04/15/1994 06/08/1994 07/02/1994 06/03/1994 06/03/1995 03/02/1995 03/02/1995 03/02/1995	Data Require 10/20/1993 04/22/1994 05/13/1994 07/30/1994 09/27/1994 09/27/1994 09/27/1995 03/31/1995 03/30/1995	ad Order Gross 1,324.80 1,113.80 362.80 581.20 1,488.80 613.20 2,222.40 1,031.70 1,74.90	10% 10% 5% 10% 10% 10% 10% 10% 10% 10%	22,42 19,35 19,75 3,76 8,98 168,64 3,50 9,30 9,30 2,44,79	1,214.56 1,021.59 364.41 1,992.76 562.55 1,432.61 560.86 932.03 175.45 3,168.67 3,151.17 1,525.51
Order # Date Ordered Dit 10.308 10(Mr/1964 11 10.23 0(/Ar/1964 11 10.23 0(/Ar/1964 11 10.755 12/Zr/1965 01 10.926 0//Zr/1964 01 10.927 02/Zr/1969 04 Order # Date Ordered Dit 10.014 2/Zr/1969 01 10.014 2/Zr/1969 01 10.014 2/Zr/1969 01 10.014 2/Zr/1969 01 10.015 2/Zr/1969 01 10.014 2/Zr/1969 01 10.015 2/Zr/1969 01 10.016 3/Zr/1969 01 10.017 02/Zr/1964 01 10.018 01/Xr/1969 01 10.019 00/Xr/1964	Into Required Order Gross 1/03/1994 88.88 9/32/1995 879.73 9/32/1996 320.06 4/18/1996 320.06 4/18/1996 514.46 ds Futterkists 100.0748 Ints Required Order Gross 970.00 9/16/1993 970.00 1/18/1994 460.33 1/18/1994 807.55	D D 10 % D 10 %	1.61 43.90 11.99 39.92 Freight 40.00	90.41 499.85 315.90 502.88 Order Net 919.86	 	10045 10158 10171 10213 10223 10220 10280 10384 10444 10444 10524	09/17/1993 03/25/1994 04/15/1994 06/03/1994 06/03/1994 09/01/1994 09/01/1994 03/02/1995 03/02/1995 03/02/1995	10/29/1993 04/22/1994 05/13/1994 07/06/1994 07/30/1994 09/29/1994 01/31/1995 03/30/1995 03/31/1995 05/18/1995	1,324.60 1,113.60 362.80 2,210.00 581.20 1,488.80 613.20 2,222.40 1,031.70 1,74.90	10% 10% 5% 10% 10% 10% 10% 10% 10% 10%	22,42 19,35 19,75 3,76 8,98 168,64 3,50 9,30 9,30 2,44,79	1,214.56 1,021.59 364.41 1,992.76 562.55 1,432.61 560.86 932.03 175.45 3,168.67 3,151.17 1,525.51
10.508 10/167/1994 11 10.528 00/26/1994 11 10.525 00/26/1994 11 10.525 00/26/1998 01 10.526 03/21/1996 04 Customer # ANTON Afrec Order # Data Ordered Data 10.028 00/15/1993 01 10.014 20/21/1993 01 10.014 20/21/1993 01 10.127 02/26/1994 01 10.127 02/26/2	1/03/1994 80.80 9/03/1995 479-73 9/03/1995 230-00 4/18/1996 514.40 ds Futterkists with Required Order Gross 9/16/1993 970-00 9/16/1993 970-00 1/18/1994 460-33 1/18/1994 807-35	D D 10 % D 10 %	1.61 43.90 11.99 39.92 Freight 40.00	90.41 499.85 315.90 502.88 Order Net 919.86	 	10158 10171 10213 10233 10278 10280 10384 10444 10444 10445 10524	03/25/1994 04/15/1994 06/03/1994 06/03/1994 06/30/1994 06/30/1994 01/03/1995 03/02/1995 03/02/1995	04/22/1964 05/13/1964 07/30/1964 09/27/1964 09/25/1964 09/25/1964 01/31/1965 03/30/1965 03/31/1965 05/16/1965	1,113.80 362.80 2,210.00 581.20 1,488.80 613.20 2,222.40 1,031.70 174.90	10% 5% 10% 10% 10% 10% 10% 5%	19.35 19.75 3.76 39.47 92.69 8.98 168.64 3.50 9.30 244.79	1,021.39 364.41 1,992.76 562.55 1,432.61 560.86 2,168.80 932.03 175.45 3,110.17 1,525.51
1022 00/24/093 00 10750 12/24/1983 00 10750 12/24/1983 00 00/24/1998 04 Customer # ANTON AFree 00/25/1993 00 10022 00/25/1993 01 10010 12/21/21993 00 10142 02/26/1994 00 10123 00/25/1993 10 10142 02/26/1994 00 10123 00/35/1993 01 10123 00/35/1993 01 10125 00/35/1993 01	9(23)(995 479-75 1/13)(1996 320-00 4/18/1996 514.40 de Futterkiste Inte Required Order Grass 9(16)(1993 97-00 0(13)(1993 1,179.30 1/18/1994 400-55 3/18/1994 807-55	5 5% 5 5% 5 5% 5 10% 5 10% 5 10% 5 10% 5 5%	43.90 11.99 39.92 Freight 40.00	499.85 315.99 502.88 Order Net 919.86	•	10171 10213 10233 10276 10280 10384 10444 10445 10524	04/15/1994 06/08/1994 07/02/1994 08/30/1994 09/01/1994 01/03/1995 03/02/1995 03/02/1995	05/13/1994 07/06/1994 09/27/1994 09/29/1994 01/31/1995 03/30/1995 03/30/1995 05/16/1995	362.00 2,210.00 581.20 1,488.80 613.20 2,222.40 1,031.70 174.90	5% 10% 10% 10% 10% 10% 5%	19.75 3.76 39.47 92.69 8.98 168.64 3.50 9.30 244.79	364.41 1,992.76 562.55 1,432.61 560.86 2,168.80 932.03 175.45 3,110.17 1,525.51
1022 00/24/093 00 10750 12/24/1983 00 10750 12/24/1983 00 00/24/1998 04 Customer # ANTON AFree 00/25/1993 00 10022 00/25/1993 01 10010 12/21/21993 00 10142 02/26/1994 00 10123 00/25/1993 10 10142 02/26/1994 00 10123 00/35/1993 01 10123 00/35/1993 01 10125 00/35/1993 01	9(23)(995 479-75 1/13)(1996 320-00 4/18/1996 514.40 de Futterkiste Inte Required Order Grass 9(16)(1993 97-00 0(13)(1993 1,179.30 1/18/1994 400-55 3/18/1994 807-55	5 5% 5 5% 5 5% 5 10% 5 10% 5 10% 5 10% 5 5%	43.90 11.99 39.92 Freight 40.00	499.85 315.99 502.88 Order Net 919.86		10213 10233 10276 10280 10384 10444 10445 10524	06/08/1994 07/02/1994 08/30/1994 09/01/1994 01/03/1995 03/02/1995 03/02/1995	07/06/1904 07/30/1904 09/27/1904 09/29/1904 01/31/1905 03/30/1905 03/31/1905 06/16/1905	2,210.00 581.20 613.20 2,222.40 1,031.70 174.90	10% 10% 10% 10% 10% 5%	3.76 39.47 92.69 8.98 168.64 3.50 9.30 244.79	1,992.76 562.55 1,432.61 560.86 2,168.80 932.03 175.45 3,118.17 1,525.51
10730 12/16/1948 01 10730 02/11/1998 01 Customer # ANTON Afree Order # Data Ordered D 10028 00/15/1949 01 10024 00/15/1949 01 10127 00/15/1949 01 10127 00/15/1949 01 10127 00/15/1949 01 10127 00/15/1949 01 10127 00/15/1949 01 10127 00/15/1949 01 10257 00/15/1949 01 10309 01/15/1949 01	1/13/1996 330.00 4/18/1996 514.40 ds Futtorkists ista Raquirad Order Gross 9/16/1993 970.10 0/13/1993 1.179.10 1/18/1994 607.53	Disc. 10% 10% 10% 10% 10% 5%	11.99 39.92 Freight 40.00	315.99 502.88 Order Net 919.86		10233 10278 10280 10384 10444 10445 10524	07/02/1994 08/30/1994 09/01/1994 01/03/1995 03/02/1995 03/02/1995 05/19/1995	07/30/1994 09/27/1994 09/29/1994 01/31/1995 03/30/1995 03/31/1995 08/16/1995	581.20 1,488.80 613.20 2,222.40 1,031.70 174.90	10% 10% 10% 10% 5%	39.47 92.60 8.98 168.64 3.50 9.30 244.79	582.55 1,432.61 580.86 2,168.80 932.03 175.45 3,118.17 1,525.51
Customer # ANTON Afree Inder # Date Ordered D 1002# 00/15/1969 01 10014 00/15/1969 01 10014 02/25/1969 01 10014 02/26/1964 01 10137 02/26/1964 01 10144 02/26/1964 01 10159 02/26/1964 01 10150 12/21/1964 01 10150 02/26/1964 01 10150 02/26/1964 01 10150 00/13/1963 01 10050 00/03/1968 01 10050 00/03/1968 01 10050 00/03/1968 01	de Futtorkiste Iste Required Order Gross 9/16/1993 9/0-00 0/13/1993 1,179.30 1/18/1994 60.50 3/18/1994 807.30	 Disc. 10% 10% 5% 	Freight 40.50	Order Net		10278 10280 10384 10444 10445 10524	06/30/1994 09/01/1994 01/03/1995 03/02/1995 03/03/1995 05/19/1995	D9/27/1904 D9/29/1904 D1/31/1995 D3/3D/1995 D3/31/1995 D5/15/1995	1,488.80 613.20 2,222.40 1,031.70 174.90	10% 10% 10% 10% 5%	92.69 8.98 168.64 3.50 9.30 244.79	1,432,61 580,86 2,168,80 932,03 175,45 3,118,17 1,525,51
Order # Date Ordered Div 10028 C6(19/1963 C1 10104 C6(19/1963 C1 10117 C0(19/1964 C1 10128 C0(20/1964 C1 10129 C0(20/1964 C1 10120 C0(20/1964 C1 101210 C0(20/1964 C1 102200 C0(20/1964 C1 103050 C0(31/1964 C1 103057 C0(31/1965 C6	Into Required Order Gram 9/16/1993 970.00 0/13/1993 1,179.30 1/18/1994 460.30 3/18/1994 807.30	0 10% 0 10% 0 5%	46.86	919.86]	10384 10444 10445 10524	01/03/1995 03/02/1995 03/03/1995 05/19/1995	01/31/1995 03/30/1995 03/31/1995 05/15/1995	2,222.40 1,031.70 174.90	10% 10% 5%	168.64 3.50 9.30 244.79	2,168.80 932.03 175.45 3,118.17 1,525.51
Order # Date Ordered Div 10028 C6(19/1963 C1 10104 C6(19/1963 C1 10117 C0(19/1964 C1 10128 C0(20/1964 C1 10129 C0(20/1964 C1 10120 C0(20/1964 C1 101210 C0(20/1964 C1 102200 C0(20/1964 C1 103050 C0(31/1964 C1 103057 C0(31/1965 C6	Into Required Order Gram 9/16/1993 970.00 0/13/1993 1,179.30 1/18/1994 460.30 3/18/1994 807.30	0 10% 0 10% 0 5%	46.86	919.86]	10444 10445 10524	03/02/1995 03/03/1995 05/19/1995	03/30/1995 03/31/1995 06/16/1995	1,031.70 174.90	10% 5% 10%	3.50 9.30 244.79	932.03 175.45 3,118.17 1,525.51
Order # Date Ordered Div 10028 C6(19/1963 C1 10104 C6(19/1963 C1 10117 C0(19/1964 C1 10128 C0(20/1964 C1 10129 C0(20/1964 C1 10120 C0(20/1964 C1 101210 C0(20/1964 C1 102200 C0(20/1964 C1 103050 C0(31/1964 C1 103057 C0(31/1965 C6	Into Required Order Gram 9/16/1993 970.00 0/13/1993 1,179.30 1/18/1994 460.30 3/18/1994 807.30	0 10% 0 10% 0 5%	46.86	919.86]	10445	03/03/1995 05/19/1995	03/31/1995 D6/16/1995	174.90	5% 1.0%	9.30 244.79	175.45 3,118.17 1,525.51
10028 08/19/1903 05 10044 08/13/1903 10 10101 12/21/1903 01 10137 02/18/1904 03 10218 08/15/1904 03 10218 08/15/1904 03 10355 12/13/1904 03 10355 05/31/1905 05	9/18/1993 970.00 0/13/1993 1,179.30 1/18/1994 460.50 3/18/1994 807.50	0 10% 0 10% 0 5%	46.86	919.86			05/19/1995	D6/16/1995	3,192.65	10%	244.79 116.43	1,525.51
1002B 08/19/1903 01 10044 09/13/1903 12 10101 12/21/1903 02 10117 02/18/1904 03 10218 09/15/1904 03 10218 09/15/1904 03 10355 12/13/1904 03 10355 05/31/1905 05	9/18/1993 970.00 0/13/1993 1,179.30 1/18/1994 460.50 3/18/1994 807.50	0 10% 0 10% 0 5%	46.86	919.86	1	10572					116.43	
10044 09/15/1993 10 10101 12/31/1993 01 10137 02/18/1994 03 10142 02/36/1994 03 10218 06/15/1994 03 10365 12/15/1994 03 10365 03/31/1994 03 10307 03/03/1995 05 10373 05/31/1995 05	0/13/1993 1,179.30 1/18/1994 460.50 3/18/1994 807.50	1 10% 5 5%				105.25	07/06/1995	08/03/1995	1,505.05	10%	1 38 69	1,491.93
10101 12/21/1903 01 10137 02/18/1904 03 10142 02/26/1904 03 10218 06/15/1904 03 10265 12/15/1904 03 10565 12/15/1904 03 10557 05/03/1905 05	1/18/1994 460.50 3/18/1994 807.50	5%	67.61			10525	08/29/1995	D9/26/1995 10/18/1995	1,503.60 668.70	10%	138.69	657.09
10137 02/18/1994 03 10142 02/26/1994 03 10218 06/15/1994 03 10365 12/15/1994 03 10365 03/03/1995 05 10355 03/03/1995 05	3/18/1994 807.50		1.34	438.81		106.72	10/05/1995	10/19/1995	4,210.50	10%	95.75	3,885.20
10142 02/26/1994 03 10218 08/15/1994 03 10385 12/15/1994 03 10307 05/03/1995 05 10535 03/31/1995 05	3/25/1994 330.00	10%	51.50	430.01		10589	10/19/1995	11/16/1995	6 30.00	10%	13.42	580.42
10365 12/15/1994 01 10507 05/03/1995 05 10535 05/31/1995 06			7.97	321.47		10733	11/25/1995	12/23/1995	1,459.00 96.50	10%	110.11 6.79	1,423.21 103.29
10507 05/03/1995 05 10535 05/31/1995 06	7/13/1994 820.00		77.55	815.55		10778	02/03/1996	01/31/1996 03/02/1996	1,254.00	10%	13.32	1,141.92
10535 05/31/1995 06	1/12/1995 403.20 5/31/1995 001.25		22.00	405.04		10857	02/15/1996	03/14/1996	2,630.95	10%	108.05	2,555.70
	6/28/1995 2,156.50		15.64	1,958.49		10566	02/21/1996	03/20/1996	1,461.60	10%	109.11	1,424.55
	8/04/1995 2,082.00	10%	84.84	1,958.64		10875	02/24/1996 03/21/1996	03/23/1996 D4/18/1996	729.50 2,034.50	10%	32.37 151.52	688.92 1,982.57
	1/07/1995 956.90		4.03	865.24	-				2,22 0.00			
	1/10/1995 375.50 3/14/1996 660.00		36.13 58.43	392.85 652.43	-	Customer #		frede Futterki				
					· ,							
	de Futtorkisto				ן ו ו	Order #	12/22/1993	01/19/1994	1.500.00	Disc.	Freight	Order Net
Order # Date Ordered De	inte Required Order Gran	a Diac.	Freight	Order Net	I	10501	04/27/1995	05/25/1995	149.00	5%	0.05	150.40
10144 03/02/1994 03	3/30/1994 1.211.50	1 10%	31.37	1.121.72		10509	05/05/1995	06/02/1995	1 36.80	5%	0.15	130.11
				-,/-		10.582	07/15/1995	08/12/1995	3 30.00	5%	27.71	341.21
21/16/2003				Page 1	01/1	15/2003						Page 1
	Customer Ord	ders						Cust	omer Ord	ers		
							-					
	9/13/1995 464.00 3/13/1996 625.00		1.93	442.73		10663	09/28/1995	10/12/1995 11/24/1995	2,032.00	10%	113.15	1,941.95
	3/13/1996 625.00 5/15/1996 677.00		53.83	010.33		10715	11/10/1995	11/24/1995	1,296.00	10%	63.2D 20.12	470.09
	6/13/1996 858.00		31.14	803.34		10732	11/24/1995	12/22/1995	360.00	5%	15.97	358.97
						10755	12/14/1995	01/11/1996	2,598.00	10%	15.71	2,354.91
Customer # SLONP Alfred						10827	01/30/1996 02/23/1996	02/13/1996 03/22/1996	843.00 2,083.40	10%	63.54 112.27	822.24

Figure 2. The Save To PDF button creates a PDF file from the report without requiring a PDF writer on your system.

The print button prints the report, first displaying a dialog in which you can select the printer and options such as number of copies and pages per sheet. The find button is very cool—it highlights in yellow instances of text you specify in a search dialog. The grid button shows or hides a background grid on the report. The help button currently does nothing, but Rich is adding properties in which you can specify the name of a help file and the context ID to use for the MERE.

More Control

You have a lot of control over how the MERE displays a report. There are dozens of properties controlling things like the background color of the window and which buttons are visible in the toolbar. You can even add a watermark or a calendar overlay to a report. Table 1 shows a few of the properties; the MERE help file lists all of them.

Table 1. Some of the MERE properties that control how a report is displayed.

Property	Description
DisplayGridButton	.T. to display the grid button in the toolbar.
DisplayHelpButton	.T. to display the help button in the toolbar.
PDFEncrypt	.T. to encrypt the PDF file when it's created.
PDFPassword	The password to use for an encrypted PDF file.
WatermarkText	The text for a watermark on a page (each page can have a different watermark).
WatermarkFontName	The font to use for a watermark.
CalendarShow	.T. to display an overlay calendar.
CalendarHeight	The height of the calendar (there are also CalendarWidth, CalendarTop, and CalendarLeft properties).

As of this writing, most of these properties aren't exposed in the MindsEyeReportEngine VFP class, so you have to address the oCanvas member of the class, which contains a reference to the MERE control, directly. (Rich is planning on adding properties to the class which will simply pass them through to the MERE control). One complication is that the MERE isn't instantiated until you call the ReportFormPreview method, so you can't set MERE properties before running a report. Fortunately, since this is a VFP class, we can easily subclass it to provide the behavior we want.

I created a subclass of MindsEyeReportEngine called SFMEReportEngine (in SFMERE.VCX). I added a custom method called SetupEngine with the following code:

```
lparameters tnLeft, ;
  tnTop, ;
  tnWidth, ;
  tnHeight
local lnLeft, ;
 lnTop, ;
  lnWidth, ;
 lnHeight
if vartype(tnLeft) = 'N'
 lnLeft = tnLeft
else
 lnLeft = 0
endif vartype(tnLeft) = 'N'
if vartype(tnTop) = 'N'
 lnTop = tnTop
else
 lnTop = 0
endif vartype(tnTop) = 'N'
if vartype(tnWidth) = 'N'
 lnWidth = tnWidth
else
lnWidth = screen.Width - 7
endif vartype(tnWidth) = 'N'
if vartype(tnHeight) = 'N'
 lnHeight = tnHeight
else
 lnHeight = _screen.Height - 7
endif vartype(tnHeight) = 'N'
if vartype (This.oReportPreviewForm) <> '0'
  This.oReportPreviewForm = ;
    newobject('SFMEReportForm', 'SFMERE.VCX', '', This)
 with This.oReportPreviewForm
    if not empty(This.cReportPreviewFormCaption)
      .Caption = This.cReportPreviewFormCaption
    endif not empty (This.cReportPreviewFormCaption)
    .Left
           = lnLeft
    . Top
           = lnTop
    .Width = lnWidth
    .Height = lnHeight
    .Resize()
 endwith
endif vartype (This.oReportPreviewForm) <> '0'
This.oCanvas = This.oReportPreviewForm.oReportEngine
```

This code instantiates another class in SFMERE.VCX called SFMEReportForm that's a simplified version of the MindsEyeReportPreviewForm class MindsEyeReportEngine uses to host the MERE. It then

sets the size and position of the form to either the passed values or default values if none are passed, and sets the oCanvas property to the MERE object on the form.

I also changed the values of a few properties. ICloseTablesAfterReport is .T. so any tables opened by the report are closed after the report is run. IDisplayExecutionTime and IShowReportPreviewToolbar are .F. so I don't have to set these in code every time I use the class.

Using SFMEReportEngine, you can set properties of the MERE before calling the ReportFormPreview method. Here's an example, taken from Orders2.PRG, which removes the grid button, help button, and page size control from the toolbar and asks you for the background color of the MERE before displaying the report:

```
#if version(5) >= 700
local loRE as SFMEReportEngine of SFMERE
#endif
set classlib to SFMERE
loRE = createobject('SFMEReportEngine')
loRE.cReportPreviewFormCaption = 'Customer Orders'
loRE.oCanvas.DisplayGridButton = .F.
loRE.oCanvas.DisplayHelpButton = .F.
loRE.oCanvas.DisplayPageSize = .F.
loRE.oCanvas.nBackgroundColor = getcolor()
loRE.ReportFormPreview('orders.frx', 2)
```

There are a few other methods you may want to call besides ReportFormPreview. ReportToPrinterPrompt prints the specified report (although there's not much advantage to doing that over just using REPORT FORM TO PRINT). SaveToPDF does what its name implies: creating a PDF file from the report without having to display it first and click on a button. The following code (OrdersPDF.PRG) creates Orders.PDF without displaying any UI:

```
#if version(5) >= 700
local loRE as SFMEReportEngine of SFMERE
#endif
set classlib to SFMERE
loRE = createobject('SFMEReportEngine')
loRE.SetupEngine()
loRE.oCanvas.PDFDisplayConfirmationAfterCreate = .F.
loRE.ReportToPDF('orders.frx', 'orders.pdf', .T.)
```

AppendReport is an interesting method: it adds another report to the MERE. This allows you to combine two or more reports in the same preview window, printed report, or PDF file. The reports can even use different orientations; one could use portrait while the other uses landscape. Here's some code, taken from TwoReports.PRG, which displays both Orders.FRX and Customers.FRX in the same preview window.

```
#if version(5) >= 700
local loRE as SFMEReportEngine of SFMERE
#endif
set classlib to SFMERE
loRE = createobject('SFMEReportEngine')
loRE.cReportPreviewFormCaption = 'Customer Orders'
loRE.SetupEngine()
loRE.ReportFormPreview('orders.frx', 2)
loRE.AppendReport('customers.frx')
```

Using the Rendering Engine

Although the most common use for the MERE is to print FRX reports, because it's actually a generic rendering engine, you can do a lot more with it if you're willing to write some code. For example, the AddLine, AddPicture, AddShape, and AddText methods add line, picture, shape, and text objects to a page, respectively. Calling these and other methods allow you to build your own output without using an FRX. Of course, you're responsible for positioning the objects correctly, so it can be a fair bit of work, but in exchange, you have complete control over how the report looks. Some of the things you can do with MERE used this way are:

- Create reports with multiple detail bands. Crystal Reports has a "subreport" feature that allows you to embed one report within another. This is often used to create reports with multiple detail bands, such as showing both credit notes and invoices for a customer. You can fake this in VFP (see Cathy Pountney's book for details) but it's very cumbersome to do. With the MERE, you can output whatever you want, including different types of details.
- Support two-pass reporting. Because VFP's report writer only does a single-pass through the data and report layout, it doesn't support things that require two or more passes, such as printing percentages of totals or even printing "Page x of y". Again, you can fake it in VFP by calculating totals in advance or running the report twice (even VFP 8, which provides a _PAGETOTAL system variable to support "Page x of y" output, determines the total page count by running the report twice). However, since you can address each page in the MERE in a similar manner to addressing elements in an array, after rendering a report, you can go back to earlier pages and add additional content like percentages.
- Include graphs in a report. Adding a graph to a report requires using the MSGraph ActiveX control, a cursor with a General field the MSGraph control is bound to, and some fancy data manipulation. The MERE, on the other hand, has built-in charting properties and methods.

Render.PRG results in the customer listing shown in Figure 3. We won't look at all of the code for space reasons, but here is some representative code:

```
with loRE.oCanvas
  scan
* If we're at the bottom of a page, create a new page and
* print the fixed information.
    if lnVPos > 9.5
      if lnPages > 1
         .NewPage()
      endif lnPages > 1
      lnPages = lnPages + 1
* Page header and "sidebar" text.
* AddText parameters: cName, cText, nHPos, nVPos,
     [nWidth], [nHeight], [cFontName], [nFontSize],
     [nFontForeColor], [nFontBackColor], [cFontStyle],
*
*
     [nRotationAngle], [nBackStyle], [nAlignment],
     [cSubType]
      .AddText('', 'Customer Listing',
                                              2.90, 0.50, ;
      4.00, 0.50, , 24, , , 'BI')
.AddText('', 'This is rotated text', 0.25, 7.50, ;
        4.00, 0.50, , 24, cnCOLOR RED, , 'B', 900)
* Footer.
      .AddText('', 'Page', 6.00, 10.50, 4.00, 0.25, , , ;
        , ,'B')
* AddReportField parameters: cName, cExpression, nHPos,
     nVPos, [nWidth], [nHeight], [cPicture], [cDataType],
*
     [cFontName], [nFontSize], [nFontForeColor],
*
     [nFontBackColor], [cFontStyle], [nRotationAngle],
     [nBackStyle], [nAlignment], [cSubType]
      .AddReportField('', '_PAGENO', 6.50, 10.50, 0.50, ;
        0.25, '99', 'N', , , , , 'B', , , ;
        CnALIGNMENT RIGHT)
      .AddText('', 'of', 7.00, 10.50, 0.50,.25, , , , ;
        ,'B')
      .AddReportField('', '_PAGETOTAL', 7.25, 10.50, ;
0.50, 0.25, '99', 'N', , , , 'B', , , ;
        cnALIGNMENT RIGHT)
      lnLines = 1
    endif lnVPos > 9.5
```

* Print the columns we want for each record.

```
InVPos = InTopMargin + InLines * 0.25
.AddText('', alltrim(COMPANY), 1.00, InVPos, 3.00, ;
0.25)
.AddText('', alltrim(CONTACT), 4.10, InVPos, 2.00, ;
0.25)
.AddText('', alltrim(CITY), 6.20, InVPos, 2.00, ;
0.25, , , iif(COUNTRY = 'Brazil', cnCOLOR_RED, ;
cnCOLOR_BLACK))
InLines = InLines + 1
endscan
endwith
```

Figure 3. This report was generated manually by calling methods of the MERE.

🗑 Custome	r Ord	ers			
	P 🔍	Q 8.5 x 11 in ∢ ∢	1 of 6 🕨 🕨	56% 🗸 🖌	► 🚧 🏼 💡
		•)			
_					<u> </u>
		0			
		Cust	omer Listing		
		Company	Contact	City	-
		Alfreds Futterkiste	Maria Anders	Berlin	
		Ana Trujillo Emparedados y helados	Ana Trujillo	México D.F.	
		Antonio Moreno Taquería	Antonio Moreno	México D.F.	
		Around the Horn	Thomas Hardy	London	
		B's Beverages	Victoria Ashworth	London	
		Berglunds snabbköp	Christina Berglund	Lulea	
		Blauer See Delikatessen	Hanna Moos	Mannheim	
		Biondel père et fils	Frédérique Citeaux	Strasbourg	
		Bon app'	Laurence Lebihan	Marsellle	
		Bottom-Dollar Markets	Elizabeth Lincoln	Tsawassen	
		Bólido Comidas preparadas	Martin Sommer	Madrid	
		Cactus Comidas para llevar	Patricio Simpson	Buenos Alres	
		Centro comercial Moctezuma	Francisco Chang	México D.F.	
		Chop-suey Chinese	Yang Wang	Bern	
	ä	Comércio Mineiro	Pedro Afonso	Sao Paulo	
	÷.	Consolidated Holdings	Elizabeth Brown	London	
	D D	Die Wandernde Kuh	Rita Müller	Stuttgart	
	L L	Drachenblut Delikatessen	Sven Ottlieb	Aachen	
	ta L	Du monde entier	Janine Labrune	Nantes	
	ò	Eastern Connection	Ann Devon	London	
	~	Ernst Handel	Roland Mendel	Graz	
		FISSA Fabrica Inter. Salchichas S.A.	Diego Roel	Madrid	
	S	Familia Arquibaido	Arla Cruz	Sao Paulo	
	This is rotated text	Folles gourmandes	Martine Rancé	Lille	
	-	Folk och fä HB	Maria Larsson	Bräcke	
		France restauration	Carine Schmitt	Nantes	
		Franchi S.p.A.	Paolo Accorti	Torino	
		Frankenversand	Peter Franken	München	
		Furla Bacalhau e Frutos do Mar	Lino Rodriguez	Lisboa	
		GROSELLA-Restaurante	Manuel Pereira	Caracas	
		Galería del gastrónomo	Eduardo Saavedra	Barcelona	
		Godos Cocina Típica	José Pedro Freyre	Sevilla	
		Gourmet Lanchonetes	André Fonseca	Campinas	
		Great Lakes Food Market	Howard Snyder	Eugene	
		HILARION-Abastos	Carlos Hernández	San Cristóbal	
				Page 1 of 6	

As you can see, every object has to be placed on the page manually, and you're responsible for pagination. However, there are several interesting things to note about this report. First, MERE supports rotated text. Second, note that certain cities appear in red. That's because of the IIF() statement near the end of the code. This acts like a Print When clause in the VFP Report Designer, but has a lot more flexibility, because you can control more than just whether a field prints or not. In this case, the city for Brazilian customers appears in red and in black for other countries.

Render.PRG has additional code that adds five different graphs of total sales by customer country to the last few pages of the report. Figure 4 shows two of the graphs. Here is some of the code that generated these graphs:

```
with loRE.oCanvas
* AddChart parameters: cName, nChartType, nHPos, nVPos,
    nHeight, nWidth
  .AddChart('', cnCHART_TYPE_BAR, 0.50, 0.50, 7.00, 4.00)
  .ChartXAxisTitle = 'Sales'
  .ChartYAxisTitle = 'Country'
  .ChartTitle = 'Sales by Country'
  scan
   lnRedPen = rand() * 255
    lnGreenPen = rand() * 255
    lnBluePen = rand() * 255
    .ChartAddXYData(TOTSALES, 0, trim(COUNTRY), ;
      rgb(lnRedPen, lnGreenPen, lnBluePen))
  endscan
  .AddChart('', cnCHART_TYPE_COLUMN, 0.50, 5.00, 7.00, ;
    4.00)
  .ChartXAxisTitle
.ChartYAxisTitle
                           = 'Sales'
                          = 'Country'
  .ChartTitle
                          = 'Sales by Country'
  .ChartTitleFontColor = cnCOLOR_WHITE
.ChartGradientVisible = .T.
  .ChartGradientStartColor = cnCOLOR_WHITE
  .ChartGradientEndColor = cnCOLOR BLUE
  scan
    lnRedPen
              = rand() * 255
    lnGreenPen = rand() * 255
    lnBluePen = rand() * 255
    .ChartAddXYData(TOTSALES, 0, trim(COUNTRY), ;
      rgb(lnRedPen, lnGreenPen, lnBluePen))
 endscan
endwith
```

Figure 4. You can easily create graphs using methods of the MERE.



Pricing and Licensing

MERE is available in two versions: Standard and Professional. The Standard version, which doesn't include PDF output or support for charts or barcodes, is \$295, while the Professional version is \$695. You can distribute it royalty-free with your application, with only one restriction: you cannot distribute it as part of a product sold to other software developers (for obvious reasons). A demo version is available for download at http://mindseyeinc.com/ReportEngine/. It's a full-working version but adds a "demo version" watermark to every page of the report. Download and install the demo version if you want to try out the sample code included in this article.

Summary

MERE is an incredible new tool that will make you forget the VFP Report Preview window. It provides more features than VFP, is more flexible and easier to control, and even produces PDF output without requiring any other components. MERE is a work-in-progress; Rich seems to add new features every day. It

also has some relatively minor bugs and a few rough spots (including the help file, which doesn't currently document all PEMs and needs considerable more work). However, even with these issues, it's still a solid product, and I highly recommend it.

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