April, 2006

Advisor Answers

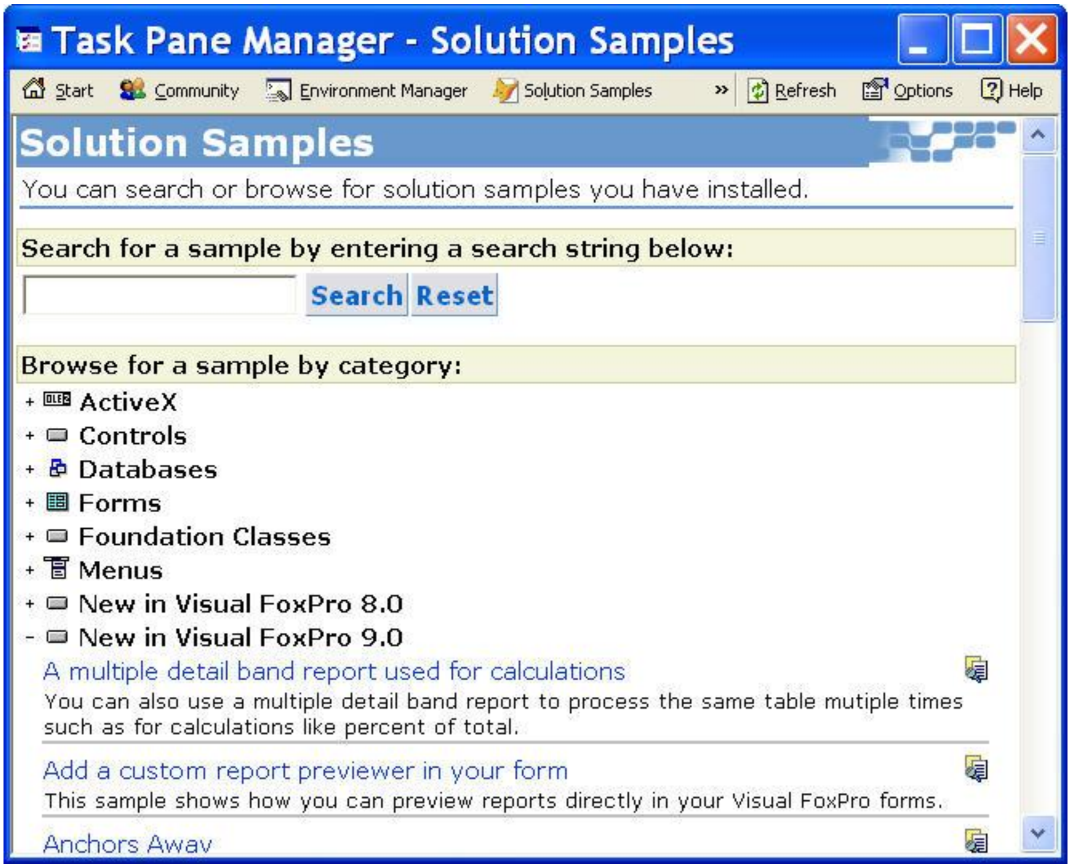
Take Advantage of Tools and Classes

Visual FoxPro 9/8/7

Q: In the March column, Tamar Granor showed the EffectsListener class that comes with VFP. How did she know it was there and how did she figure out how to use it?

A: With each new version of VFP, I do a few things to get up to speed quickly. First, I read the "What's New in Visual FoxPro" Help topic and all its subtopics. In fact, I usually print those out and put them in a binder, then work my way through them, trying each new feature, so I understand it and how it works.

Next, I open the Task Pane Manager and switch to the Solution Samples pane to see examples of the new features. Figure 1 shows the Task Pane Manager open to the Solutions pane.



Solution Samples

You can search or browse for solution samples you have installed.

Search for a sample by entering a search string below:

Browse for a sample by category:

+ ActiveX
+ Controls
+ Databases
+ Forms
+ Foundation Classes
+ Menus
+ New in Visual FoxPro 8.0
- New in Visual FoxPro 9.0

A multiple detail band report used for calculations

You can also use a multiple detail band report to process the same table mutiple times such as for calculations like percent of total.

Add a custom report previewer in your form

This sample shows how you can preview reports directly in your Visual FoxPro forms.

Anchors Awav

Figure 1: Solution Samples—The Task Pane Manager gives you easy access to nearly 200 examples.

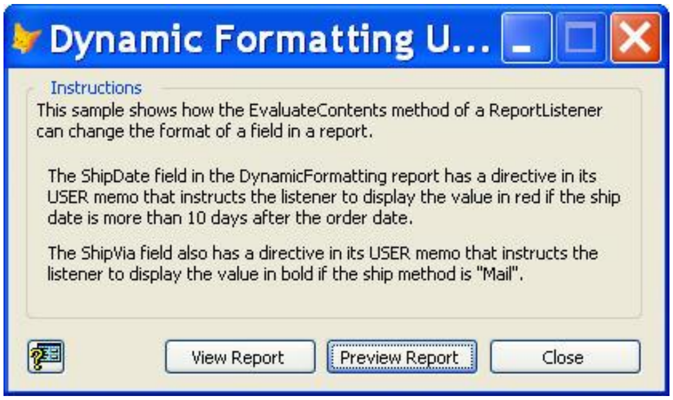
If you prefer, you can run the Solution Samples outside the Task Pane Manager by issuing this command:

```
DO HOME(2)+"Solution\Solution.app"
```

However, the interface is richer in the Task Pane Manager.

I look for the section that says "New in Visual FoxPro <n>," where <n> is the new version number, and try each sample.

The Solution Samples are designed to make it easy for you to both see the capabilities they demonstrate and dig into the code behind them. Figure 2 shows the "Dynamic Formatting using ReportListeners" sample that demonstrates the EffectsListener class. Click on Preview Report to run the sample and see dynamic formatting in action. Click on View Report to open the report in the Report Designer. However, you should note that, if you click on the Help button to open the VFP Help file pointing to the Solution Samples topic, you'll find that Help hasn't been updated to include recent additions to the Solution Samples.



Dynamic Formatting U...

Instructions

This sample shows how the EvaluateContents method of a ReportListener can change the format of a field in a report.

The ShipDate field in the DynamicFormatting report has a directive in its USER memo that instructs the listener to display the value in red if the ship date is more than 10 days after the order date.

The ShipVia field also has a directive in its USER memo that instructs the listener to display the value in bold if the ship method is "Mail".

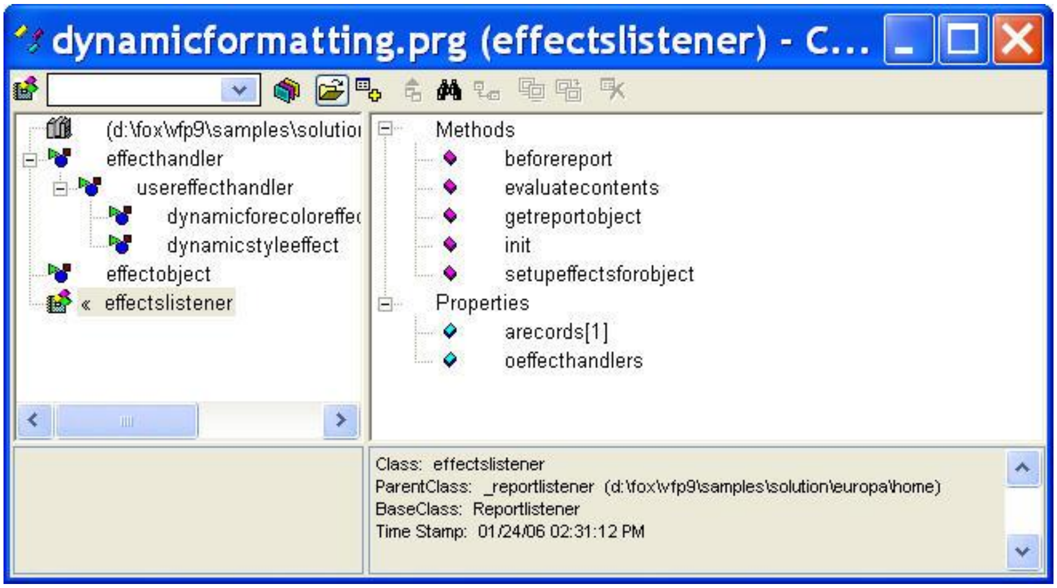
Figure 2. Solution Sample for Dynamic Formatting—The examples in the Solution Samples make it easy to test features and see how they work.

From the Solution Samples Task Pane or the Solutions app, you can click on a button to see the code behind the example. In the Task Pane, use the button all the way to the right of the example's name. In the Solutions app, click on the See Code button. For the Dynamic Formatting example, the form opens in the Form Designer and you can look at the code behind the Preview Report button to see what's involved in running the report.

Having been through the VFP 9 examples, when I needed a way to selectively bold some data in a report, I remembered having seen a report listener that did what I wanted. First, I looked in the FFC (FoxPro Foundation Classes, a set of many useful classes that come with VFP) folder. Although the FFC contains several handy report listeners, the one I wanted wasn't there. Then I thought to look in the Solution Samples and found what I needed. It only took a few minutes to figure out how to use it in the report I was designing.

Sometimes, putting code that comes with VFP to work is a little more complicated. In those cases, I use some combination of the tools that come with the product to figure out what's going on. Between the Class Browser, Document View, Code References, and the Debugger, I can generally figure out how something works and how to adapt it for my own use.

Each of these tools plays a different role in the process. The Class Browser gives me an overview of the class hierarchy and makes it easy to see what properties and methods are provided. In VFP 9, the Class Browser works on PRG files, as well as VCXs, SCXs, and PJXs. Figure 3 shows the EffectsListener class and the other classes in DynamicFormatting.PRG in the Class Browser.



Class: effectslistener
ParentClass: _reportlistener (d:\fox\vfp9\samples\solution\europa\home)
BaseClass: Reportlistener
Time Stamp: 01/24/06 02:31:12 PM

Figure 3: Looking at classes—The Class Browser shows you the class hierarchy for a class library and the members of individual classes.

Document View and Code References, both added in VFP 8, help you find things. Document View makes it easy to jump from one method to another in a class library, or from one procedure to another in a procedure file. Code References lets you search a folder or project for all occurrences of a string. I use it extensively whenever I'm faced with understanding code I didn't write. The View Definition item in the context menu in any code-editing window uses the Code Reference engine to find the definition of a variable, procedure, method, or constant -- another handy way to explore code.

The Class Browser, Document View, and Code References are all helpful when reading code. However, sometimes the only way to really understand code is to run it. That's where the Debugger comes in handy. You can step through code one line at a time, or set breakpoints to stop execution at specified places or under specified conditions, or combine the two. The Debugger's Event Tracker lets you see the sequence of events that fire when code is running. Combine that with judicious use of the DEBUGOUT (especially DEBUGOUT PROGRAM()) command to get a complete picture of the execution order.

Beginning with Service Pack 1 for VFP 9, both the FFC and XSource (the source code for the VFP tools that are built with VFP code) come with the new Microsoft Permissive License (Ms-PL). This license makes it clear that you may distribute the code and your derivatives of it, and clarifies the rules for doing so.

The moral of the story is that VFP comes with a lot of code you can use, as well as great tools for exploring that code. Taking some time to find out what's there will pay off in the long run.

–Tamar