

# (Cool Tool, October '95) CASE Tools for Visual FoxPro

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**Behold, the Brave New World of Object-Oriented Design, where you're eventually going to spend around 70% of your development time. If you want to do this right, you need even better tools than Visual FoxPro provides. Whil Hentzen provides a first look at a couple of the first ones available.**

Pardon me, but I'm going to be a bit of an alarmist this month. I've just finished Ed Yourden's *Decline and Fall of the American Programmer* (come on, be honest: how many of you have been meaning to pick this book up one day, or already have it, but just haven't gotten around to cracking it open?). I'm really concerned. In his book, Yourden postulates that the average American programmer is about to have their lunch taken away by competition in an increasingly global marketplace, much like what happened to the auto industry since 1970. Are you scoffing? So did all of the executives at the Big Four (there used to be four major auto manufacturers in the U.S., in case you forgot) 25 years ago. They thought they were invincible, too.

Anyway, Yourden makes an exceedingly strong case that there is a crying need to improve our software development shops to become "world-class"—those shops, that is, that won't be out of business within a decade. (50% unemployment in the "programmer" job category by 2001? Many of the thousands of engineers at Boeing thought they were too well educated and sophisticated—and in demand—to be walking the streets 25 years ago, but an awful lot were driving taxicabs a few short years later.)

I'm aware that quite a number of *FoxTalk's* readers are outside the U.S. and you may be dismissing this article because it doesn't apply to you. Not yet, please!

Let's assume (yes, I know how to spell it too) that Yourden's hypothesis has some truth to it, and let's further assume that, regardless of whether or not you're in the U.S., you're *not* part of a world class software development organization. Quick quiz: Do you have an independent QC group to test your software? Do you track defects? Do you do so from the initial requirements and analysis phase—not just from the day that coding starts? Do you have a clearly articulated method for the software development process, and do you have a formal procedures in place for improving that process? Are you SEI certified? While world class organizations (all seven of them) can answer yes to each of these questions, I'll bet that 99% of *FoxTalk's* readers don't even understand some of these questions.

Now, I'm not copping some "holier than thou" attitude; I certainly rank in that 99% as well. I'm just ruefully admitting that I learned a few buzzwords lately. But I'm convinced that becoming a world-class organization is going to be a critical component of software development, just as it has been with every other industry. Oh sure, there are plenty of manufacturers who don't give a hoot about quality, and they'll get by, some longer than others. But world class quality is a distinct competitive advantage. Furthermore, I don't think that it's only within the reach of large companies.

I don't have the numbers to show me how *FoxTalk's* readership breaks down into "one man shops" (either independents or those loners working for a company) vs. large teams (again, either in software development companies or as MIS departments), and obviously, being a small shop, I have a bias and a specific interest, but that's all to the good, since what I'm about to harp on will most certainly apply to larger shops as well. The details (implementation, mechanisms, etc.) may differ, but the concepts and intent will not.

The bottom line is that we need to become world class regardless of where we're located—Des Moines, Iowa, Sydney, Australia, or Baden Baden, Germany. And while this column has focused primarily on tools that you can install and use within a couple hours for immediate productivity or functionality gains, in the long run, that approach is going to shortchange us. Sure, we'll continue to talk about these things. I can hardly wait until some of you come up with your versions of "The Ultimate Visual FoxPro Class Library." But as the high end, advanced technical publication for FoxPro developers, I feel we need to reach beyond the *trinket du jour*.

Many FoxPro developers approach development with a few, if any, Computer Aided Assisted Software Engineering (CASE) tools. Now that Visual FoxPro has a data dictionary, that's a good first step, but the DBC really doesn't take us very far in terms of having professional design and engineering tools. Of course, just *having* the tools doesn't mean we'll develop better applications, but I'm betting that the availability of these tools is going to nudge (or force) us to learn more about developing quality, usable, world-class applications. My mission this month is to bring the issue out into the open and to make you aware of a couple of contenders for your attention. In the future, we'll look at more tools and provide some guidance on how you might use these tools to improve your organization and get started on the road to become world-class.

So what's out there now? Sure, there are a number of CASE tools like EasyCASE and Erwin. But they've been twice removed from our world, in that the FoxPro link has usually seemed to be an afterthought, or tenuous at best. They simply weren't sufficiently integrated with the product to be useful in a day to day environment unless you had enormous amounts of discipline. Imagine if you had to exit FoxPro each time you wanted to edit a code snippet or form method, because the text editor wasn't integrated with FoxPro?

As I've been poking around, looking for advanced tools that will help us in our approach, I've come across two CASE-related tools that I'd just like to briefly mention. Bill Bates from Minneapolis introduced me to the first one, With Class 2.4 from MicroGold Software, and I've been working on the beta for the other, RESolution's FoxCase.

## MicroGold's With Class

With Class is a Windows object-oriented CASE tool that allows a software developer to graphically model a system using one of four object-oriented methodologies: Rumbaugh, Booch, Shlaer-Mellor or Coad-Yourden. You can take a system and create class diagrams, graphically display the classes, attributes (we call them properties) and operations (methods). You can then print the diagrams, or format this information in reports, and generate code for various languages, including C++, Eiffel, Pascal and Ada, using a simple script language. (Gold is reputedly working on a script for Visual FoxPro.)

At first blush, the class diagram that With Class generates seems like a simple drawing tool. However, clicking on a class will bring forward an editing dialog that allows you to maintain information about attributes and operations. Double clicking on a specific attribute or operation allows you to edit that entity. The class diagrams for TasTraders shown in figures 1 and 2 are based on a version done by Bill Bates midway through the beta; they are included to demonstrate what With Class looks like, not to teach you how TasTraders is put together.

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**Figure 1.** Double-clicking on a class brings forward the Class Maintenance dialog.

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**Figure 2.** Double-clicking on an attribute or operation in the Class Maintenance dialog brings forward the appropriate dialog.

As your class hierarchies grow past what will fit on the back of an envelope, With Class provides a mechanism through which you can manage the complexity.

## RESolutions's FoxCase

The other product should be ready about the time you read this - RESolution Ltd.'s FoxCase. It's a commercial CASE tool that offers the tightest integration with an Xbase tool that I've ever seen. It's a stand-alone Windows database design and maintenance tool for database designers and programmers, and it comes with tools that let you update Visual FoxPro's DBC from the data model and vice versa. In other words, you can think of it as the CASE tool that should have come with Visual FoxPro. Just as With Class can handle graphical modeling for Visual FoxPro's class hierarchies, FoxCase does the same thing for the data (see Figure 3).

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**Figure 3.** The ERD produced by FoxCase is much more flexible than the Database Designer in Visual FoxPro, but changes made in one can be transported to the other without fuss.

The key to FoxCase is that you can run it alongside of Visual FoxPro and move back and forth as your desires, needs and personality demands. One of the most common questions asked about the Database Designer in Visual FoxPro deals with printing. With FoxCase, not only can you build a complete Entity-Relationship Diagram (ERD) with full control of presentation-quality attributes like fonts, color, zoom and graphical objects, but you'll be able to print those diagrams and report on the data in the diagrams. Furthermore, you can determine what the ERD looks like - names, description, keys, all fields, indexes, or any combination thereof. And it has a number of other capabilities that the Database Designer doesn't have, including the ability to break down a complex database into multiple diagrams, allow developers on a team to simultaneously view a model across a network, and create relations between tables in different databases (DBC's) in the same data model.

FoxCase doesn't stop at fancy ERDs, however. You can define domains, logical, redundant and enumerated fields, define and maintain keys and indexes, inherit attributes from parent fields, and maintain and View SQL code as tables, keys, and relations are modified. The folks at RESolution are also working on allowing access to the FoxCase Data Dictionary through the DBCX and EDC database container extension mechanisms.

## Where do we go from here?

Are you scared yet? I know I'm a little intimidated. The object-oriented gurus have been arguing *for a decade* about the best way to document class structures *for a decade*, so if you've been sweating it for the last few months, don't feel bad that you haven't come up with a solution. And while tools to produce Xbase-compatible ERDs have been around for a while, it was a whole other program to learn and master, and how many of us felt we had time? Now we've got two more (at least) to learn—as well as coming up the Visual FoxPro learning curve. Working the night shift at the malt shop might sound pretty attractive right about now!

However, I'm not saying that you *must* buy and learn these tools right now. They are only a couple of suggestions of things to look at and consider. Just having a full set of left-handed depopulation tools isn't going to make you a master mechanic, and thus, popping a couple hundred bucks for a couple CASE tools isn't going to turn your shop into a world-class organization overnight. Indeed, Yourden suggests that a five to ten year plan is a reasonable time frame. However, no matter how long the journey is, you'll never reach your destination if you don't at least get out the door. My intent in bringing these tools to your attention is to help motivate you to get out the door and down the street.

Once you've made those first steps, there's still a long way to go. I'm heading that way myself, and I'll share what I learn as I go. I'd like to hear from you as well—what you doing, and what are you using, in order to improve the quality of the software you or your firm produces.

## Where to find them

Neither program is included on this month's companion disk, for different reasons. With Class is a shareware program, but it runs nearly a megabyte, and there wasn't room for the whole thing. You can find it in library 2 of CASEFORUM under the name WCLASS24.ZIP. You can also contact the author, Michael Gold, at 71543,1172, 908.772.6438. The Educational version is \$59 and the Professional version is \$149.

FoxCase, on the other hand, is a commercial product and I've been using the beta versions to write this article. You can contact RESolution (Elie Moyal) at 70312,1766.