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Twenty Tools
to Make Your Life
Easier and More Productive

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I admit it: I'm a sucker for a good utility. Any tool that can save me time or make it easier to do things I need to do regularly is a worthwhile investment. You've heard the expression "a penny saved is a penny earned"? Well, in software development it's equally true that a minute saved is a dollar earned. This session explores twenty of the tools and utilities that help me work more quickly and effectively on a daily basis. Come to this session and learn how they can help you, too.

Introduction

The most difficult part of preparing this session was not in deciding which tools to include—it was deciding which ones to omit.

To paraphrase Craig Ferguson, it's a great day for software developers. There are so many excellent and useful utilities available that you can find one for almost any need or desire. The twenty tools presented in this paper are among the ones I use virtually every day. Some are old friends I've relied on for years while others are relative newcomers, but all of them help me get my work done more quickly and more efficiently.

Some of these tools are free while others require you to pay for a license. Among the free ones, some are donation-ware, meaning users are encouraged although not required to make a donation to support the tool's ongoing development. I'm still amazed at how much great software is available under this model. There is a pretty wide range of prices among the tools that require a paid license, but for me each one has proven to be worth its cost.

In some places I've given "honorable mention" to additional tools I don't have space or time to discuss more fully. These tools are no less useful and no less important than the rest. I can heartily recommend all of them and encourage you to investigate them on your own.

Finally, some of these tools could easily fall within two or more categories. I've placed them where I think they fit best, but the decision was arbitrary. Regardless of how they're classified in this paper, all of these tools are an important part of my developer's toolbox. Perhaps they will become part of yours, too.

Tools for making your core VFP development work easier

ViewEditor Pro and HackCX Pro

White Light Computing, Inc. – www.whitelightcomputing.com

I'm listing ViewEditor Professional and HackCX Professional together because they're both from Rick Schummer's White Light Computing, Inc. and because both are an indispensable part of my Visual FoxPro developer's toolkit. Although they can be purchased separately, they are also available as a bundle for a reduced price.

ViewEditor Professional v3 is a tool for working with views in Visual FoxPro. It was created to overcome some of the limitations of the native VFP View Designer. Its well designed, multi-tab user interface affords convenient access to the view's SQL code and properties as well as to the tool's own configuration settings.

Figure 1 illustrates the user interface with the SQL tab selected. You can view and make changes to the SQL code directly in this window, or you can double-click to open the Visual FoxPro code editor and make changes there. Although in this example both are in the same

database, the tool accommodates solution designs where the views are in one database and the tables are in another.

Figure 1: ViewEditor Professional makes it much easier to work with VFP views.

ViewEditor Pro comes with an extensive Help file. The Help file can be downloaded separately from the product itself, so you can fully explore everything ViewEditor Pro has to offer before buying it. Once you start using this fine tool I doubt you'll ever go back to the native VFP View Designer again.

An older version of ViewEditor with fewer features is also available as a free download.

HackCX Pro is a tool for exploring and hacking (in the good sense of that word) VFP visual class libraries and forms. In case it's not obvious, the name HackCX derives from the file name extensions for these types of files – .vcx and .scx.

With a visual class library or VFP form open in HackCX Pro, the tool's VCR–style navigation buttons enable you to easily browse through the rows in the .vcx or .scx table and to see

their contents in a formatted display. Figure 2 illustrates how HackCX Pro displays the information for a command button object named cmdClose in a VFP form named frmTimer.scx. With the Class Information tab selected, you can see the base class, class, and class location on which this particular command button is based.
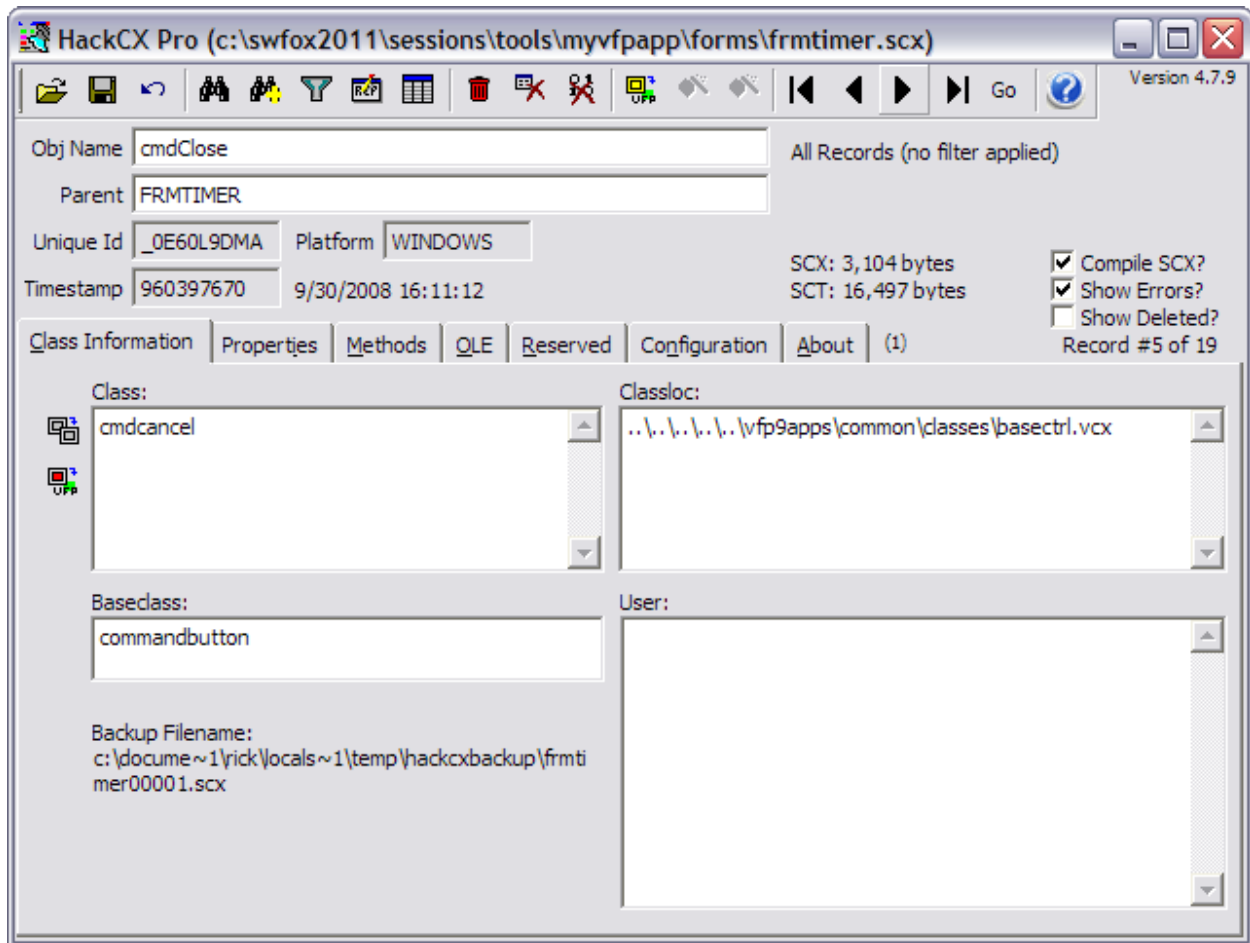

Figure 2: HackCX Pro enables you to view and edit the properties of objects contained within forms and visual class libraries.

The real power of HackCX Pro comes from its ability to search for and make changes to the objects in the form or visual class library. In figure 2, you can see that the cmdClose command button is derived from a class named cmdCancel located in a class library name basectrl.vcx, which is shown with its path relative to the location of the .scx itself. In this example, in fact, all of the control objects in the form are derived from classes in that same basectrl.vcx class library.

Suppose you need or want to change the parent class or the parent class library of all those controls. Without HackCX Pro, you'd need to hack the .scx file manually, perhaps using a Browse window, to find all of the occurrences of basectrl.vcx in the classloc memo column, and then to change them. HackCX Pro's Search feature, on the other hand, let's you specify

the desired criteria and then use the Find Again button to navigate through the table and display only those rows that match.

Figure 3 shows how you'd use the Search window to find all rows containing a reference to basectrl.vcx in the ClassLoc field. Once found, you can easily edit the content to point to a different class library and/or parent class.
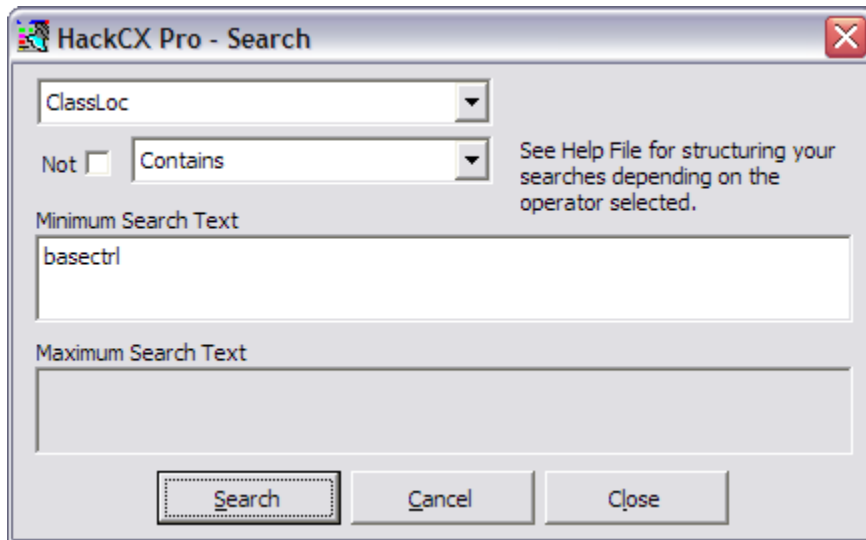

Figure 3: The HackCX Search feature lets you easily find rows meeting the desired criteria.

The HackCX toolbar provides access to many other useful functions, and the main HackCX screen has several other tabs for viewing and editing different kinds of information. Like ViewEditor Pro, HackCX Pro comes with an extensive Help file that can be downloaded separately from the product. This is the best source of information about the full capabilities of this excellent tool.
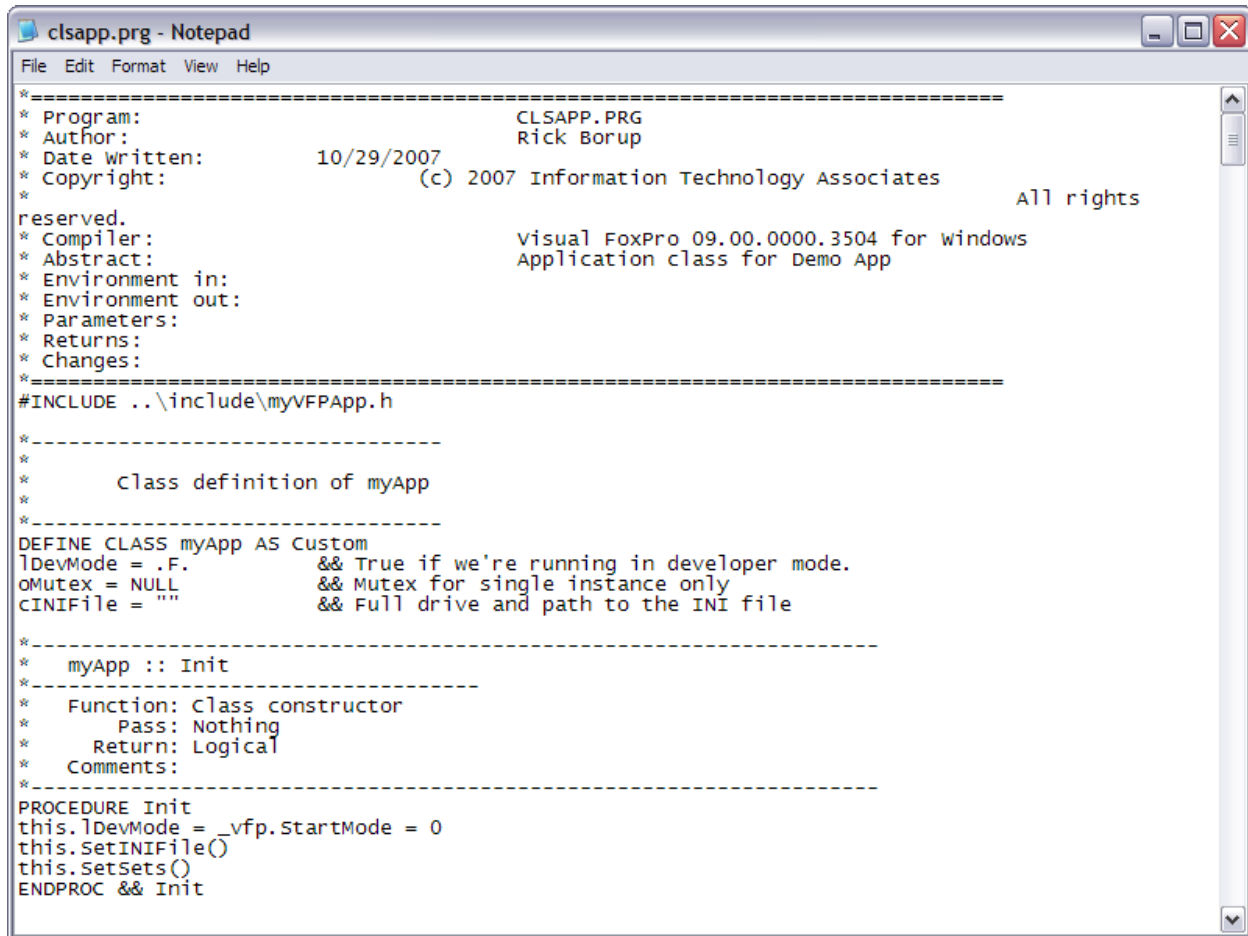
I use both of these tools regularly and can't begin to estimate how much time and aggravation they've saved me over the years.

TextPad

Helios Software Solutions – www.textpad.com

While doing VFP development work I often find it useful to capture a chunk of code, say for reference or for comparison, and to temporarily store it in a separate location. An external text editor can be useful for this purpose, but many of them—Notepad being a good example—don't know anything about Visual FoxPro syntax, so you end up viewing your code with no syntax coloring and probably with different tab settings, too.

Figure 4 illustrates the first few lines of a VFP program as it appears in Notepad.

```
clsapp.prg - Notepad                                                    _ □ ✕
File  Edit  Format  View  Help
*================================================================
* Program:                        CLSAPP.PRG
* Author:                         Rick Borup
* Date Written:       10/29/2007
* Copyright:                      (c) 2007 Information Technology Associates
*                                                              All rights
reserved.
* Compiler:                       Visual FoxPro 09.00.0000.3504 for Windows
* Abstract:                       Application class for Demo App
* Environment in:
* Environment out:
* Parameters:
* Returns:
* Changes:
*================================================================
#INCLUDE ..\include\myVFPApp.h

*--------------------------------
*
*        Class definition of myApp
*
*--------------------------------
DEFINE CLASS myApp AS Custom
lDevMode = .F.           && True if we're running in developer mode.
oMutex = NULL            && Mutex for single instance only
cINIFile = ""            && Full drive and path to the INI file


*------------------------------------------------------------------
*    myApp :: Init
*--------------------------------
*    Function: Class constructor
*        Pass: Nothing
*      Return: Logical
*    Comments:
*------------------------------------------------------------------
PROCEDURE Init
this.lDevMode = _vfp.StartMode = 0
this.SetINIFile()
this.SetSets()
ENDPROC && Init
```

Figure 4: Notepad and many other text editors don't know anything about Visual FoxPro syntax, and are therefore less than ideal for use with VFP code files.

Fortunately, there are at least a couple of text editors with add-ons for Visual FoxPro syntax. Of these, the one I use most often is TextPad from Helios Software Solutions. While useful as a general text editor, what makes TextPad so useful for software developers is the availability of syntax definition files for many languages including Visual FoxPro.

These syntax definition files are provided by third parties, so you're likely to find more than one for any given language. The last time I looked there were four for FoxPro, the most recently published one being the one for VFP 9 from Robert R. Stone on May 17, 2007. You can find it on the Syntax Definitions page under add-ons on the TextPad website at www.textpad.com/add-ons/syna2g.html.

TextPad uses the concept of document classes to apply certain settings to selected groups of documents based on their file name extensions. TextPad comes with a few document classes of its own, such as the Default class and the Text class, but you can create and add document classes of your own. Adding a document class for Visual FoxPro enables you to apply your preferred settings, including syntax definitions, to all files in that class.

To set up my Visual FoxPro document class, I first downloaded the VFP9.SYN file from the TextPad website and saved it in the C:\Program Files\TextPad 5\system folder, where some of the default .syn files are also located. I then created a Visual FoxPro document class and hooked it up with the VFP syntax definition file, as shown in Figure 5.
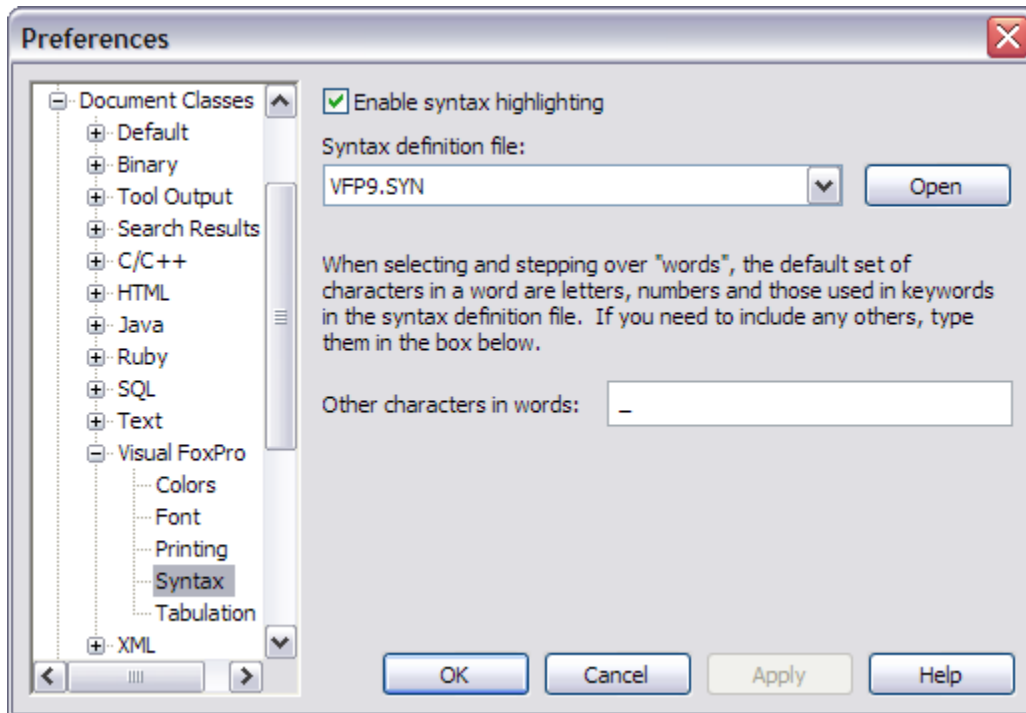

Figure 5: TextPad enables you to create your own document classes, which can be hooked up to a syntax definition file.

With the VFP syntax definition file in place, and with other settings such as my preferred tab indentation of 3 for VFP files, TextPad now displays .prg files and the other types of files I specified in a nicely formatted manner with syntax coloring. Figure 6 shows the same snippet of code from Figure 5 as it's displayed in TextPad.
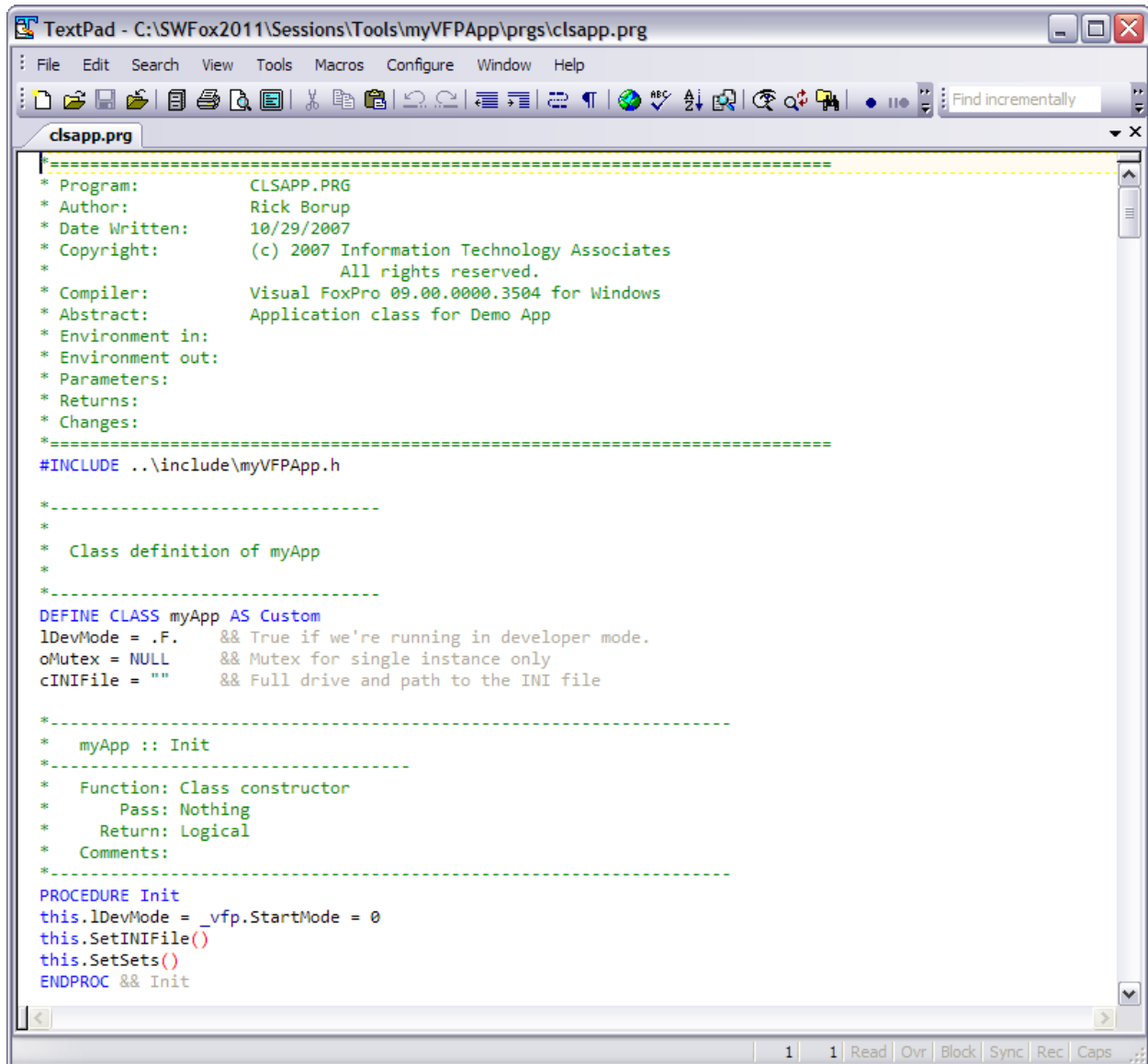
Figure 6: With the appropriate syntax definition file and other document class settings, TextPad display Visual FoxPro code files with syntax coloring and the same tab settings you use in the VFP IDE.

Another reason I like TextPad is its ability to work with very large files. A lot of the work I do involves converting data from other systems. The lowest common denominator when exchanging data between disparate systems is often a plain text file, for example in CSV or tab-delimited format. It's usually helpful to take a good look at the data before writing a program to convert it, a job for which a good text editor is really essential.

In the past I've needed to do this kind of work on very large text files in the several hundred megabyte to gigabyte range. Not all text editors can handle files this large, but according to its Help file TextPad can handle files "up to the largest contiguous chunk of 32-bit virtual memory." I've used it with files over 500MB with no problems.

Honorable mention in the category of external editors goes to EditPlus, another fine text editor with add-ons for Visual FoxPro syntax coloring. EditPlus is available from ES-Computing at www.editplus.com. I use both it and TextPad regularly in my daily work.

HTML Help Builder

West Wind Technologies – www.west-wind.com

When it comes to creating HTML Help files, you can't beat the HTML Help Builder from West Wind Technologies. Not only can you use it to create conventional Help files from scratch, but it also offers a set of features for software developers including the ability to create database documentation by importing information directly from the database.

Although it appeals to a much wider audience of developers these days, including of course those working with .NET, the HTML Help Builder maintains its VFP roots and can still import information from a variety of VFP project components including visual class libraries, program files, and database containers.
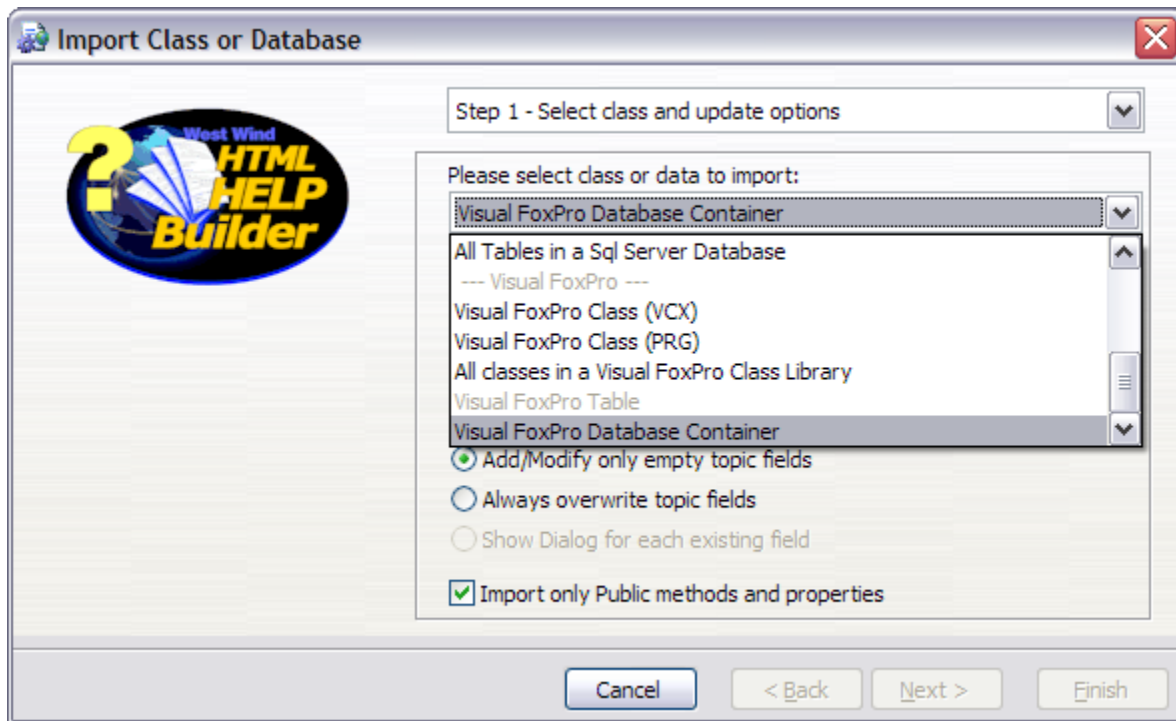

Figure 7: The HTML Help Builder can import information directly from a variety of sources including VFP visual class libraries, program files, and database containers.

Upon completing the steps in the import wizard, the HTML Help Builder creates the documentation for the specified database, as illustrated in Figure 8 for the sample project I'm using for this conference session. From there, a simple click on the Build Help button creates the HTML files and builds the final .chm Help file.
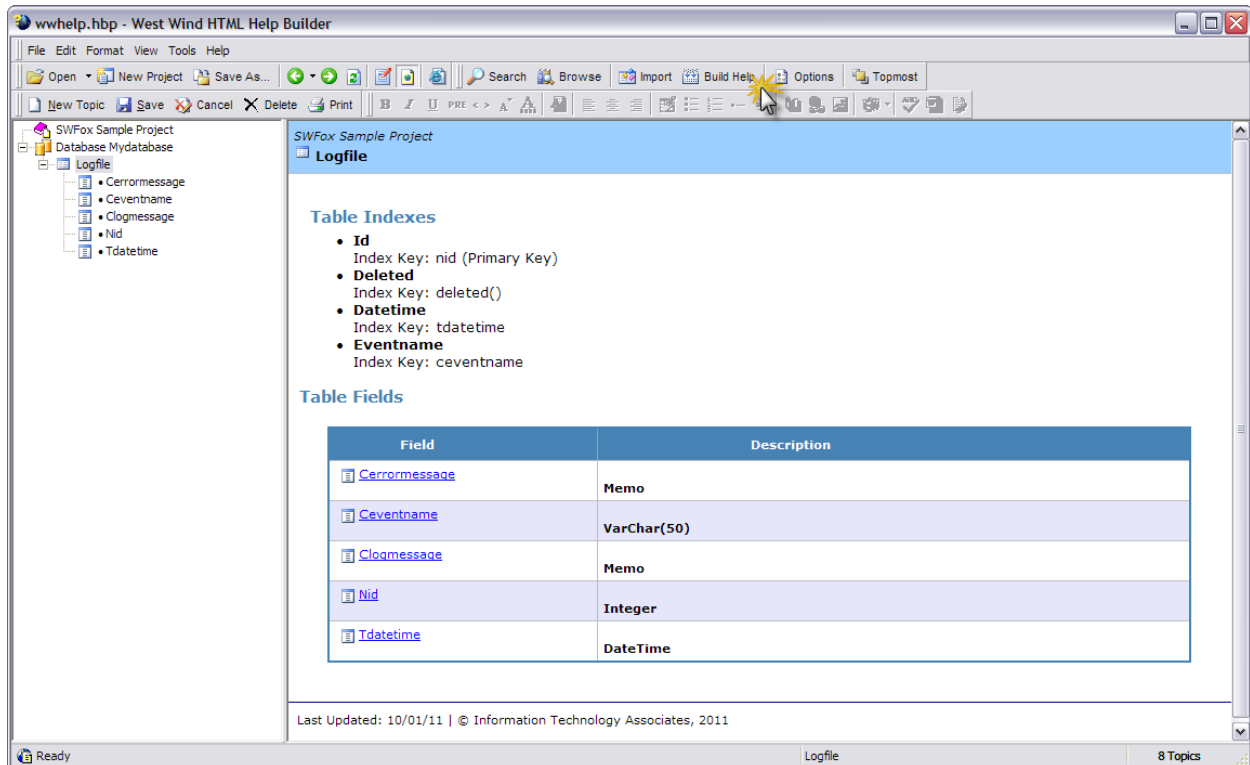
Figure 8: After importing the database information into an HTML Help Builder project, the final HTML Help file can be built by clicking on the Build Help button.

Like all of Rick Strahl's tools, HTML Help Builder comes with an excellent Help file of its own along with Rick's top-notch support via the West Wind website. For your own internal systems documentation as well as for creating Help files for your customers, HTML Help Builder is a great choice.

Inno Setup

Jordan Russell – www.jrsoftware.org

A long time ago, when things were simpler than they are today, deploying an app to your customers didn't require a lot of thought. Deploying Visual FoxPro solutions — Hey, isn't there a book by that name?! — may never have been as simple as deploying DOS apps was, but with the benefit of hindsight the original VFP Setup Wizard seems to have been a lot simpler than what we all ran into when it was removed in favor of the Windows Installer technology and the InstallShield Express Visual FoxPro Limited Edition in VFP 7.0.

Back in the day, I got heavily invested in the Windows Installer technology and in the Windows Installer-based setup tools from InstallShield and other vendors. Windows Installer is a complex but powerful technology and those were complex but powerful tools, but I always had the sense things were a lot more complicated, not to mention expensive, than they needed to be for the typical Visual FoxPro application.

Then I discovered Inno Setup, and never looked back.

I honestly can't remember when I first found out about Inno Setup, but I may have been among first to begin touting its benefits within the Visual FoxPro community. Since then I've spoken and written a lot about Inno Setup, as have several other developers, so there's no lack of information available about using it with VFP. For that reason, I'll simply give a brief introduction here and then provide references to some of the existing resources.

Inno Setup is a script-based installation setup tool that creates a single EXE to install your application. It's very powerful, easy to learn, easy to work with, fully featured, widely used, frequently updated, and on top of that it's free even for commercial use. Does it get any better than that?

Inno Setup scripts are simple text files, so if comes down to it you can view or even edit them with any text editor. Compare that to the complexity of a Windows Installer .msi file, for which you need specialized tools.

When working with Inno Setup you'll typically use the editor that comes with the Inno Setup compiler, or you may prefer to use one of the other available editors such as IS Tool or the newer Inno IDE. Regardless of how you work with your script files, however, the process seems quite simple and straightforward. In essence all you need to do is to provide a few setup options, specify the files (if any) that you want to install along with your application's EXE file, specify where they should be written on the target machine, and compile the script into a single EXE setup program that you can deploy to your clients.

One minor caveat about using Inno Setup is that there is no direct support for Windows Installer merge modules. This may seem like a disadvantage to VFP developers because the VFP runtime files are packaged as merge modules. However, it's quite simple to install the runtime files individually as part of the setup script. In fact, it's actually better to do it that way given the sensible trend towards installing the runtimes in the application's home folder instead of the Windows system folder or the shared common files folder, primarily so that VFP 9.0 SP1 apps can coexist on the same machine as VFP 9.0 SP2 apps.

As a starting point for further information, let me suggest a pair of papers I wrote for FoxTalk back in 2004. They're available in the white papers section of the FoxPro Developers' page on my website at www.ita-software.com/foxpage.aspx. Among other people, Doug Hennig has contributed a great deal to the body of knowledge about using Inno Setup with Visual FoxPro including published articles, conference presentations, and blog posts. To the extent that Doug has made these public, they should be easily discoverable with a Web search.

I have yet to hear of a VFP developer who switched to Inno Setup and didn't stick with it if not actually rave about it. If you haven't tried it yet, I believe you owe it to yourself to do so.

FinalBuilder

VSoft Technologies Pty Ltd – www.finalbuilder.com

The final step in the development process is putting everything together for deployment. Part of that process is creating the setup package, but that's by no means the only part. Before building an application's setup.exe, developers typically run though a series of steps to be sure everything is ready and nothing gets left out or forgotten. That's where a tool like FinalBuilder comes in.

I first introduced FinalBuilder to the VFP community in a presentation entitled Automating the Build at Southwest Fox 2006.[1] Since then the product has continued to evolve and grow with new features and functionality, and is now at version 7.

FinalBuilder provides a graphical interface from which you can construct and coordinate whatever series of steps is necessary for your build process. Its integrated flow control features enable you to do looping and conditional execution of build steps depending on the results of previous steps or in response to the answers you provide to questions presented at build time. Its integrated debugging tools allow you to create localized try...catch error handling, much as you would do in Visual FoxPro or other languages.

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[1] If you're interested, the white paper from that presentation is available on the FoxPro developers' page of my website at www.ita-software.com/foxpage.aspx.
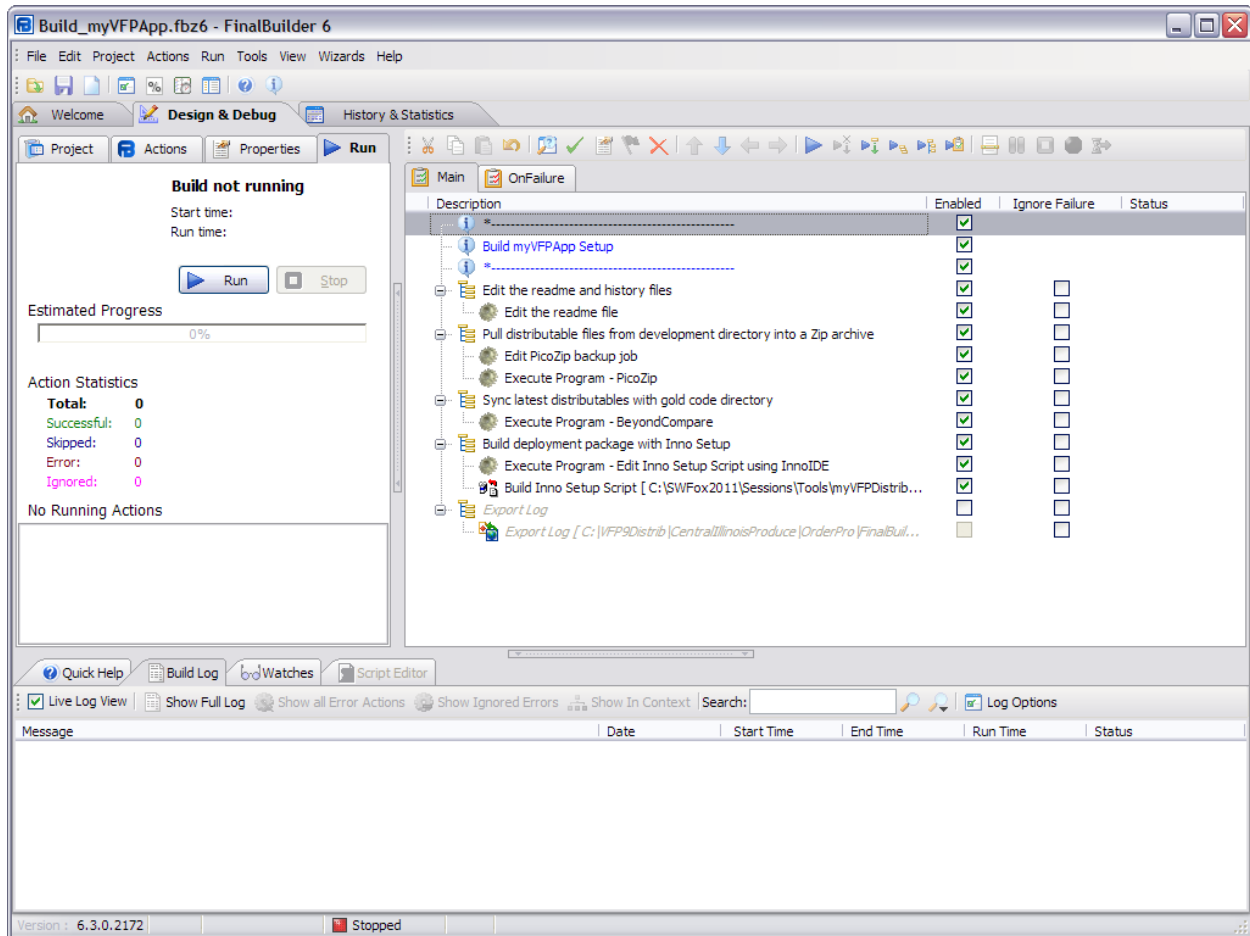
Figure 9: FinalBuilder provides a graphical interface where you can construct, organize, and coordinate the steps in your build process.

Together, these features make it possible for you to automate your build process in a highly structured and reliable manner. FinalBuilder also provides for detailed logging of the build process; this can serve both as documentation as well as being useful for debugging.

One of the coolest things about FinalBuilder is that it's integrated with a wide range of other tools with which you may typically want your build process to interact. FinalBuilder refers to these actions, and there are over 600 of them. The list includes actions for integrating with compilers, version control tools, and external tools among many others. Each action can be configured via a FinalBuilder dialog specific to that action, making them easy to set up.

If you're interested in additional information about FinalBuilder, the white paper from my Southwest Fox 2006 presentation is still available on the FoxPro developers' page of my website at www.ita-software.com/foxpage.aspx. Also of course be sure to visit the vendor's site for the latest version and information.

Honorable mention in the Tools for Core VFP Development category goes to the PEM Editor, Thor, SCCTextX, and the rest of the community based projects on **VFPX**. Check them all out at vfpx.codeplex.com.

Tools to help you fix things when they go wrong

Hex Workshop

BreakPoint Software, Inc. – www.hexworkshop.com

It's a fact of life that disk files sometimes get corrupted, and Visual FoxPro database files are no exception. A hard drive failure can corrupt any type of file, for example if a drive develops bad disk sectors in the middle of the file. VFP database files in particular are subject other types of corruption, frequently resulting from a sudden loss of power to the machine or other cause of abrupt program termination while a database table is open and especially if it's in the process of being updated.

In some situations you may be able to recover by simply rebuilding the index files, while in others you may need to restore the files from a backup. However, sometimes a VFP table file can become corrupted to the extent that it cannot be recovered by normal methods, and if no backup is available the only alternative may be to repair the file manually. This is a job for a hex editor.

Before you ask, the answer is yes: I have had to do this on more than one occasion when a client's critical data file was at stake.

I would be remiss not to mention that Visual FoxPro comes with a simple hex editor of its own. You can launch it from the command line with DO tools\hexedit\hexedit.app. While it's great that this tool is included for free with VFP, it's a fairly basic tool and leaves a few things to be desired when you're faced with a really challenging byte-level file repair job. My long-time favorite tool for serious file inspection and repair work is Hex Workshop from BreakPoint Software.

Figure 10 shows a database table file named logfile.dbf open the VFP hex editor, while figure 11 shows the same file open in Hex Workshop. In both cases the portion of the file that's visible is the first part of the VFP table header record. The structure of the table header record is documented in the Table File Structure topic in the VFP Help file. It's good to become familiar with this structure because it's an area where a repair can often be made to salvage a damaged database table file.

Table 1 shows a portion of the structure of the table header record. The first eleven bytes are of particular interest because they contain, among other things, the size of the data record and the number of data records VFP thinks currently exist in the file. A common source of corruption occurs when the latter value is at odds with the actual size of the file. This can happen for example if an updated record count has been written to the header record and the program terminates abnormally before the file is actually closed, resulting

in a truncated file. In this situation the file can often be repaired by using a hex editor to insert the correct record count in the header record.
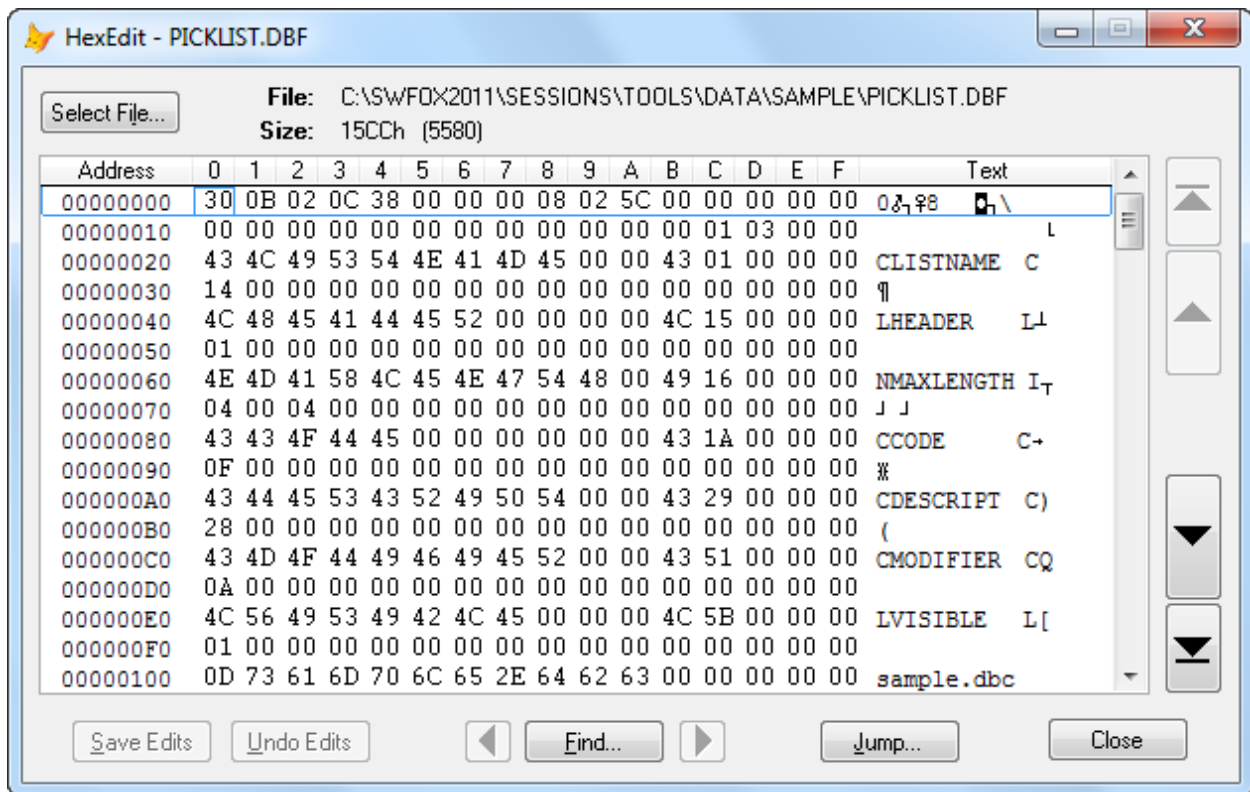

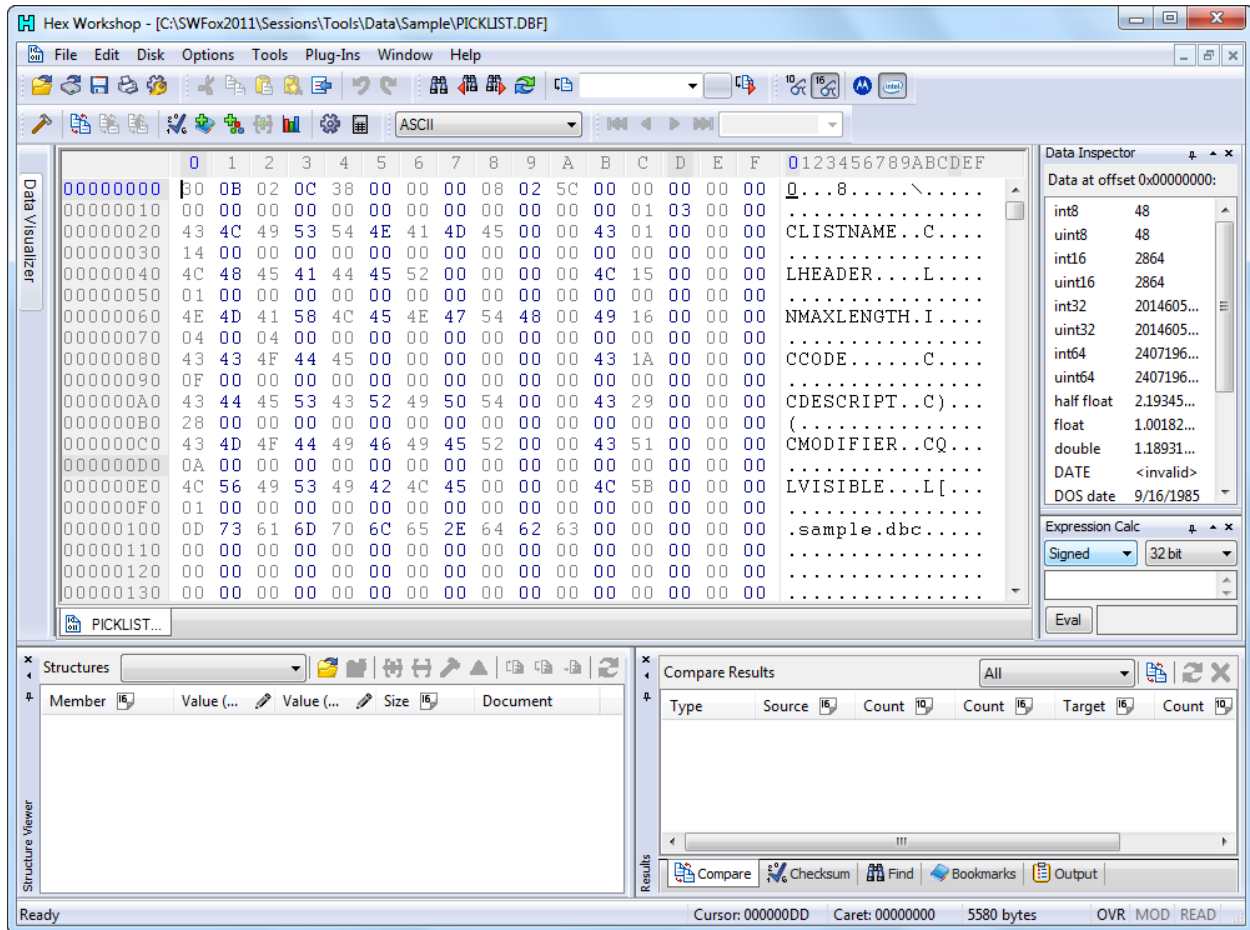Figure 10: Visual FoxPro comes with a basic hex editor called HexEdit.

Figure 11: Hex Workshop is a fully featured hex editor with many tools that make it easier to work with files at the byte-level.

Table 1: The structure of the VFP table header record.

Byte Offset	Description
0	File type: 0x30 = Visual FoxPro other values omitted – see the VFP Help file for details
1 – 3	Last update as YYMMDD
4 – 7	Number of records in the file
8 – 9	Position of first data record in the file
10 – 11	Length of one data record, including the delete flag
12 – 27	Reserved
28 – n	The rest of the record header – see the VFP Help file for details

The number of row in the table is stored as a hexadecimal value in bytes 4 – 7. Looking at Figure 11, you can see that the number of records in this file is stored as 38 00 00 00. The byte order in this field is reversed, so byte 7 contains the most significant (highest) value and byte 3 the least significant. Converting from hexadecimal to decimal, the header record indicates this file contains 0x38 = 56 data records (rows).

However, this file has become corrupted and the number of records stored in the table header record does not match the physical size of the file. If you try to open this table in VFP you get the dreaded "Table <name> has become corrupted" error, illustrated in Figure 12.
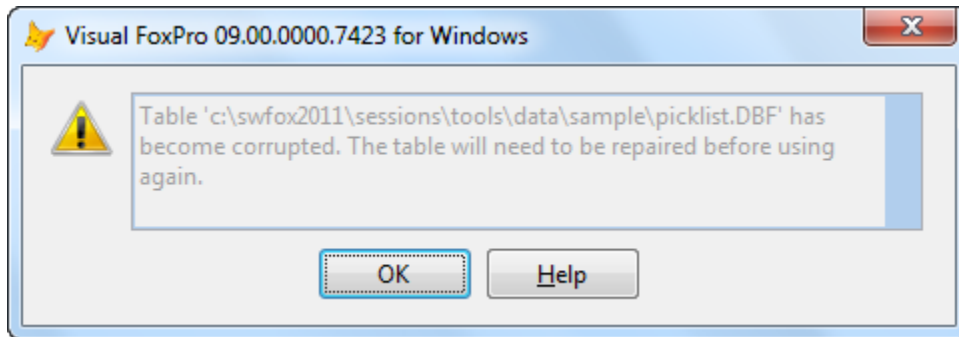

Figure 12: If VFP detects a structural problem with a table file it displays error number 2091, "Table <name> has become corrupted".

To resolve this, first determine what the physical size of the file should be based on the data in the table header record. This is calculated as the size of the header record plus the number of records times the length of each data record. The header record occupies the space from byte offset 0 and up to the position of the first data record. In this example, the calculated size is 0x0208 plus (0x38 times 0x5C) = 520 + (56 x 92) = 5672 = 0x1628.[2]

Scrolling to the bottom of the file in Hex Workshop shows that the actual size of this file is 0x15CC bytes (see Figure 13). Reversing the previous calculation and using the physical file size, the actual number of data records in the file is (0x15CC – 0x0208) / 0x5C = (5580 – 520) / 92 = 55.

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[2] Workshop comes with a couple of nice tools include a hex calculator and a base converter that help make this kind of calculation much easier.

```
              0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F    0123456789ABCDEF
000014B0     20   20   20   20   20   20   20   54   20   42   55   49   4C   44   49   4E          T BUILDIN
000014C0     47   47   52   4F   55   50   20   20   20   20   20   20   20   46   1E   00   GGROUP       F..
000014D0     00   00   31   20   20   20   20   20   20   20   20   20   20   20   20   20   ..1
000014E0     20   42   55   53   45   59   20   43   4F   55   52   54   20   20   20   20
000014F0     20   20   20   20   20   20   20   20   20   20   20   20   20   20   20   20
00001500     20   20   20   20   20   20   20   20   20   20   20   20   20   20   20   20
00001510     20   20   20   54   20   42   55   49   4C   44   49   4E   47   47   52   4F       T BUILDINGGRO
00001520     55   50   20   20   20   20   20   20   20   46   1E   00   00   00   32   20   UP       F....2
00001530     20   20   20   20   20   20   20   20   20   20   20   20   20   54   48   45
00001540     20   56   49   4C   4C   41   47   45   20   20   20   20   20   20   20   20
00001550     20   20   20   20   20   20   20   20   20   20   20   20   20   20   20   20
00001560     20   20   20   20   20   20   20   20   20   20   20   20   20   20   20   54                  T
00001570     20   42   55   49   4C   44   49   4E   47   47   52   4F   55   50   20   20   BUILDINGGROUP
00001580     20   20   20   20   20   46   1E   00   00   00   33   20   20   20   20   20        F.....3
00001590     20   20   20   20   20   20   20   20   20   36   30   31   20   26   20   36
000015A0     30   33   20   43   4C   41   52   4B   20   20   20   20   20   20   20   20
000015B0     20   20   20   20   20   20   20   20   20   20   20   20   20   20   20   20
000015C0     20   20   20   20   20   20   20   20   20   20   20   54                        T
```
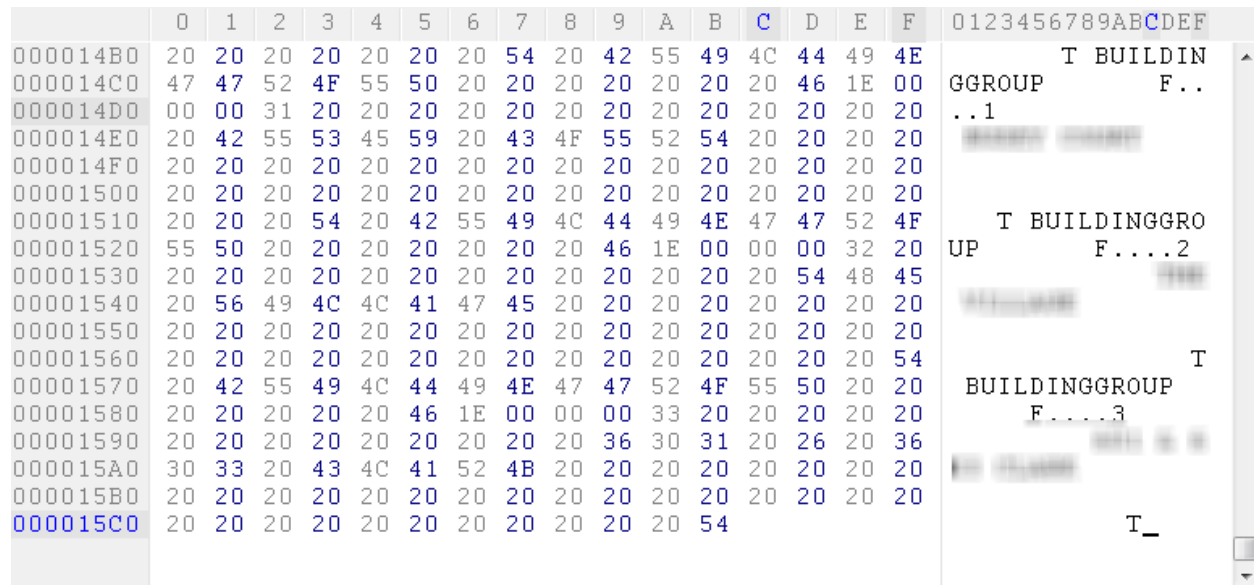
Figure 13: Hex Workshop shows that the physical size of the file is 0x15CB bytes.

This is a simple and actually fairly common error condition – the table header record thinks there are 56 data records in the table but in fact there are only 55. One row is physically missing off the end of the file, but the data that is present in the rest of the file is not corrupted and the file ends on a data record boundary. Therefore it's easy to fix the problem simply by correcting the record count in the header record.

Decimal value 55 is hexadecimal value 0x37, so you can use Hex Workshop to insert that value into byte 4 of the header record as illustrated in Figure 14. After the corrected file has been saved to disk, it can once again be opened in Visual FoxPro.

```
              0    1    2    3    4    5    6    7    8    9    A    B    C    D    E    F    0123456789ABCDEF
00000000     30   0B   02   0C   37   00   00   00   08   02   5C   00   00   00   00   00   0...7.....\.....
00000010     00   00   00   00   00   00   00   00   00   00   00   00   01   03   00   00   ................
00000020     43   4C   49   53   54   4E   41   4D   45   00   00   43   01   00   00   00   CLISTNAME..C....
00000030     14   00   00   00   00   00   00   00   00   00   00   00   00   00   00   00   ................
00000040     4C   48   45   41   44   45   52   00   00   00   00   4C   15   00   00   00   LHEADER....L....
```
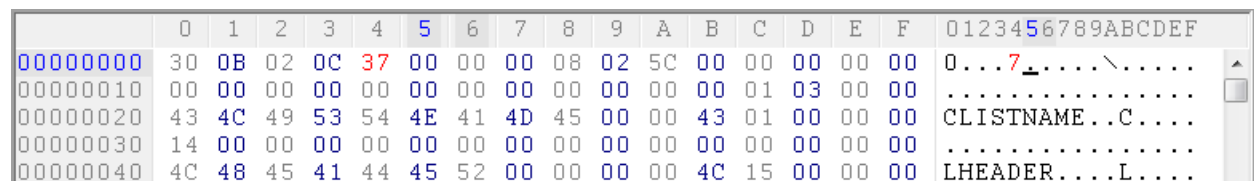
Figure 14: In Hex Workshop, bytes whose value has been changed are displayed in red until the file is saved.

While the VFP HexEdit tool would have been adequate to handle the simple example above, I've encountered much more extensive corruptions on much larger files. In these situations, a more powerful tool like Hex Workshop is a real time saver. For one thing, the hexadecimal values involved in the calculations become larger and more difficult to work with when dealing with tables containing thousands or tens of thousands of rows. Not only does Hex Workshop come with the hex calculator and base converter tools mentioned above, but you can actually change the display to use decimal values. I know — real developers don't need no stinkin' decimal values, but it does make life easier.

The number of file corruption issues I've had to repair in this manner has fortunately been fairly low, but these problems almost inevitably involve a customer's critical data file at a critical time of their business day, meaning the pressure's on to fix it. At times like that I've been glad to have a tool like Hex Workshop to help save the day.

Registry Crawler

Originally by 4Developers, LLC. Now available from Brothersoft – www.brothersoft.com

Registry Crawler is an enhanced Windows registry search tool. Its principal advantages over regedit are that it's faster and that it builds a list of all matching registry entries instead of stopping on each one as it finds them. As an added convenience, the list entries are hyperlinked so a single click launches regedit and jumps to the appropriate key.

Figure 15 shows the Registry Crawler window after a search for the string "TortoiseHgCMenu", which identifies entries pertaining to the TortoiseHg context menu in Windows Explorer. In this case I was interested in comparing the entries on my Windows 7 machine to those on my Windows XP machine. Registry Crawler made it easy to create and print a list from each machine and then look for differences.
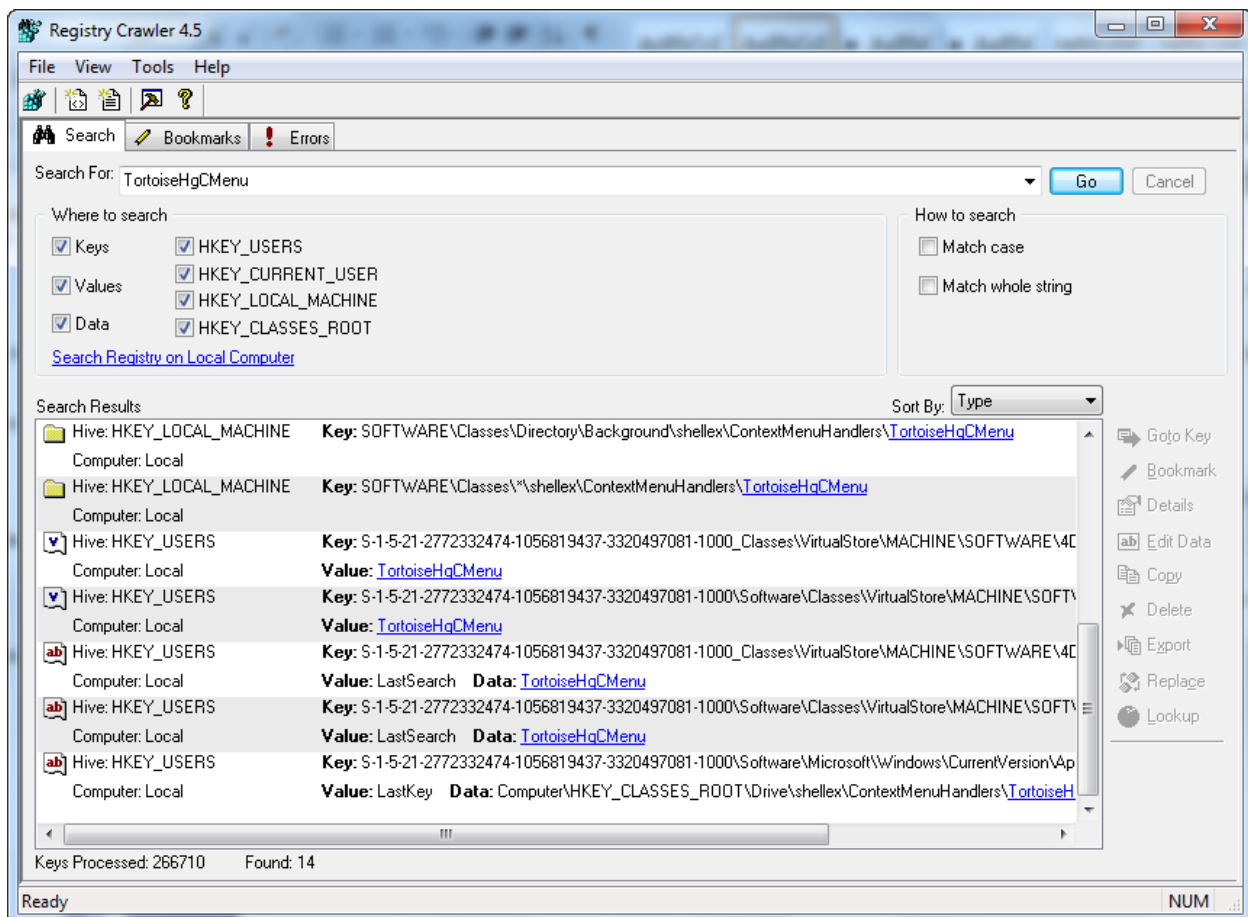
Figure 15: Registry Crawler builds a list of all registry entries matching the search criteria. The list entries are hyperlinked to regedit.

Another nice feature of Registry Crawler is the ability to create bookmarks. If you frequently access certain keys in the registry, you can bookmark them in Registry Crawler and use the Go To Key feature to quickly jump to that location in regedit without performing a search.

Registry Crawler is an older utility last updated in 2004. However, it's still available and it works on Windows 7 – at least on the 32-bit edition – so it continues to be useful even today.

Tools to help you learn and stay in touch

FeedDemon
Nick Bradbury – www.feeddemon.com

It's been a few years since RSS feeds really hit the scene big time, but when they did they became an indispensable way to keep up with an increasingly large volume of information on a regular basis. One of the early feed readers – programs that fetch information from RSS feeds and organize and present it for viewing – was Nick Bradbury's FeedDemon. I became an early fan of this program, mostly based on its ease of use but also in part on my past favorable experiences with other products such as TopStyle and HomeSite from the same author.

I wrote about FeedDemon publicly for the first time in a blog post in February of 2005, which is still available at http://rickborup.blogspot.com/2005/02/insanely-great-software-feeddemon.html. If you know nothing about the program this is not a bad place to start reading. Since then, FeedDemon has gone through some significant changes and improvements, including a change of ownership, but it is still being maintained and enhanced by its original author.

Like many feed readers, FeedDemon enables you to organize the feeds to which you subscribe into categories. A global refresh goes out and gets updated content from all of your feeds, or you can update individual feeds. Feeds with new content are displayed in bold, making it easy to quickly scan and see what's new. Keyboard shortcuts and toolbar icons also facilitate easy navigation through your collection of feeds.

Figure 16 shows the FeedDemon interface in the latest version v4.0.0.22. The interface is configurable, but I use a fairly conventional approach with an organized list of feeds on the left and individual feed items on the right. Feed items are presented in summary form and are arranged in reverse chronological order with the most recent at the top. Unread feed items are bolded.

For each feed item there is an icon you can click to expand the article. In Figure 16, the topmost item is shown expanded while the rest are shown in summary mode. Feed titles are hyperlinks to whatever the feed author has pointed them to, typically a blog post or another Web page. Depending on how you have FeedDemon configured, clicking on the feed title opens the target page either within FeedDemon or in your browser. FeedDemon is integrated with Internet Explorer and used its HTML rendering engine to display content within its own window.

FeedDemon allows you to choose from among several styles for displaying feed items. The one I use is called the surfer style, which I find to be the cleanest and most convenient, but others can easily be selected from the style dropdown list at the bottom of the window.
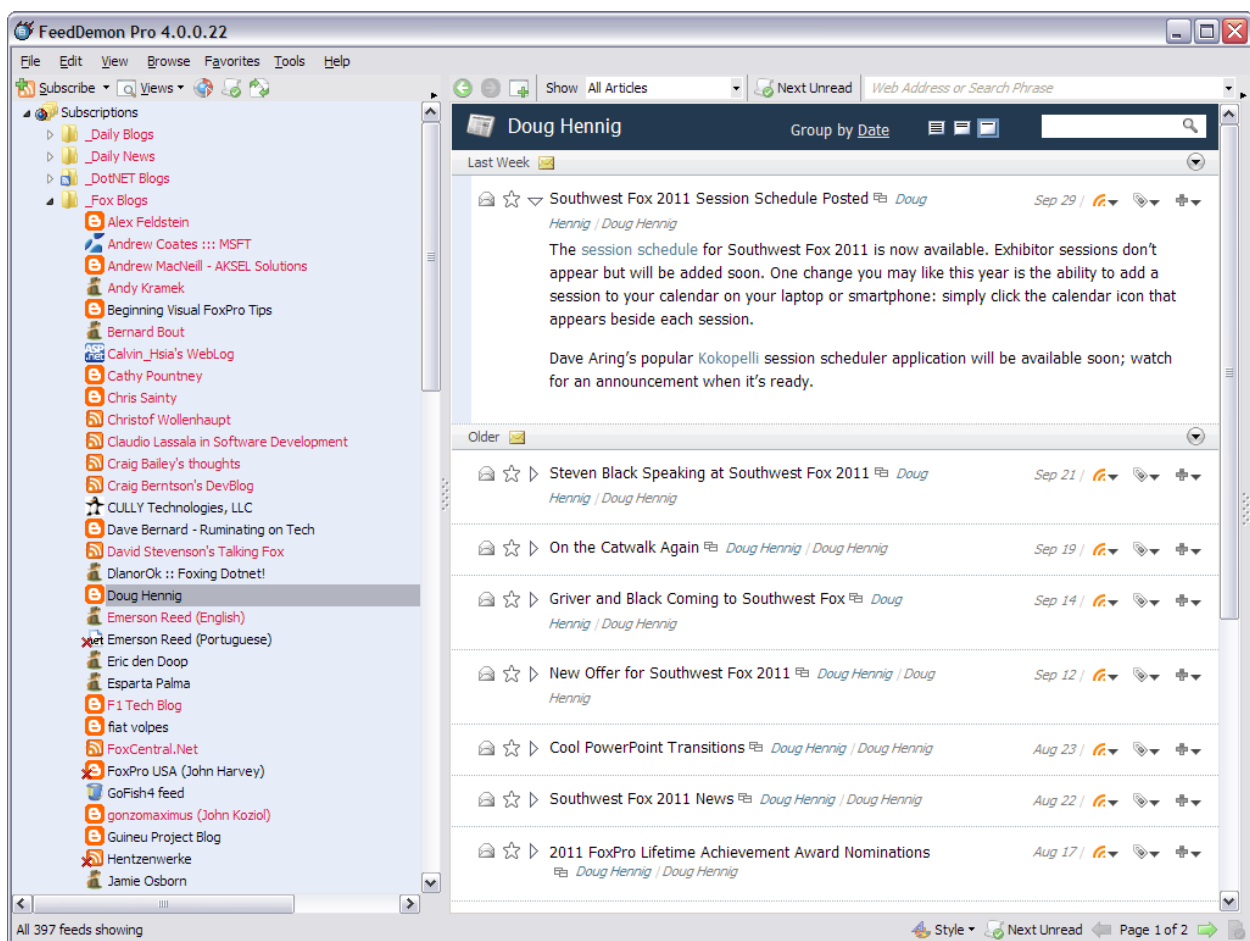
Figure 16: The FeedDemon interface features an organized list of feeds on the left, with the individual feed items for the selected feed shown on the right. Feeds in red contain items marked as favorites, which are permanently saved in the FeedDemon database until explicitly deleted.

There is much more to be said about FeedDemon, including its ability to synchronize with Google Reader so you can use FeedDemon on two or more machines and each is aware of what you've already read on the other. FeedDemon also has built-in tools for tagging, sharing, creating watches for topics of interest, podcasts, and more. For me, FeedDemon

has been and continues to be a great way to stay in touch and keep up with the "river of information" from hundreds of RSS feeds.

Twitter

Twitter, Inc. – www.twitter.com

Where were you when blogging died? OK, it didn't really die—the 400+ active RSS feeds I still subscribe to attest to that—but it definitely got moved to the back seat for a lot of people when Twitter came along.

In case you've been living under a rock, Twitter is the social media website where you can communicate with others in messages of 140 characters or less. These messages are known as "tweets". Although originally envisioned as purely social (as far as I know), the software developers community among others has adopted Twitter as the de facto standard way of sharing small bits of technical information quickly and easily.

For me, Twitter has become the most useful way of staying current with what's happening among developers and other tech gurus whose tweets I follow on a daily basis. The limit of 140 characters per message is certainly a constraint, but you'd be surprised how much information can be conveyed in that small format.

The use of URL-shortening services such as bit.ly vastly improves the ability to embed links to other resources in tweets while still staying within the 140-character limit. A quick review of the tweets from people I follow—admittedly biased in favor of technical and scientific sources—shows that about 80% of them include links to other resources, making it a fantastic way to keep up with what's happening every day and to quickly jump to further information when something looks really relevant or interesting.

Twitter also enables direct messaging between you and another person. Direct messages are private in the sense that they're not part of the public timeline visible to everyone. Whether public or private, however, all Twitter communications are asynchronous so there's no guarantee the person whom you're addressing will see your tweet in a timely manner if at all. With the use of a program like TweetDeck this turns out not be really much of an issue, though.

Sadly, my blog fell into disuse once I began using Twitter to post information I wanted to share with others. I feel there is definitely still a place for blogs, particularly when you want to post longer and more detailed material. Blogs also have the advantage of a permanent URL, whereas tweets are ephemeral. Many people who both tweet and blog use Twitter to link to their blog posts, which leverages the advantages of both media.

All you really need in order to use Twitter is a free account and a Web browser. The Twitter website enables you to manage your account and to see tweets from the people you follow, but in my opinion you're not getting the full value of Twitter unless you have a way to

organize and manage the information you're interested in following. Fortunately, there are ways to do that, so keep reading.

TweetDeck

Recently acquired by Twitter – www.tweetdeck.com

Twitter without TweetDeck is like milk without cookies – still good for you, but not nearly as much fun.

There are many Twitter client applications out there, but for me TweetDeck is at the top of the list for desktop use. TweetDeck enables you to arrange those you follow into groups, which makes for a much more usable interface than the simple timeline offered by the Twitter website.

Figure 17: TweetDeck enables you to organize the people you follow into groups. You can also tweet directly from TweetDeck.

As illustrated in Figure 17, your TweetDeck groups are presented as columns and tweets are shown in reverse chronological order within each column. The column order can be rearranged to suit your preference. TweetDeck provides a global filtering capability you can use to hide tweets from specific individuals or that contain references to things you may not be interested in knowing about.

TweetDeck can be set up to use real time streaming from Twitter, which means you virtually instantaneous notification of new tweets from people you follow. The TweetDeck interface is configurable, but by default notifications are accompanied by a sound and a popup window that persists for a few seconds.

TweetDeck in an Adobe® AIR® application. It's free but you do need to install the AIR runtime environment, which is also free. In my experience both have been trouble-free and peacefully co-exist with all the other apps on my machine. The AIR runtime environment also supports other apps such as the excellent Balsamiq Mockups mentioned elsewhere in this paper, so you may already have it installed on your computer.

Tools to help you support your clients and your apps in the field

LogMeIn Pro

LogMeIn, Inc. – www.logmein.com

For connecting to other computers remotely, it's hard to beat LogMeIn. I began using it about three years ago for remote access to my own machines, and liked it so much that now most of my client support is also done via LogMeIn.

LogMeIn offers a variety of products, but LogMeIn Pro and LogMeIn Free are the two I use the most. LogMeIn free is a scaled down edition of the Pro edition offering basic remote access to other machines over the Internet. LogMeIn Pro offers many useful features including file transfer, which can replace the need to use FTP to fetch files from or send files to a client's machine remotely.

To use LogMeIn you begin by establishing an account. Sign up is free and requires only an email address and password. Once you have an account you can begin adding computers. Each computer to be accessed remotely needs to download and install a small client program from LogMeIn. The program runs transparently in the background and makes the machine available for remote connection with the appropriate credentials. Because it's Web based, you can log in to your LogMeIn account using a Web browser from any machine with Internet access. Once logged in you can then connect remotely to any of the machines you've added to your account.

Figure 18 illustrates the LogMeIn Web page after logging in. I happen to have only two computers set up under this particular account, which are shown in the list. To connect remotely I can simply click the big green Remote Control button for the machine I want. Once connected, the remote computer's screen is displayed in the browser, from which I can interact with it as if I were physically present.
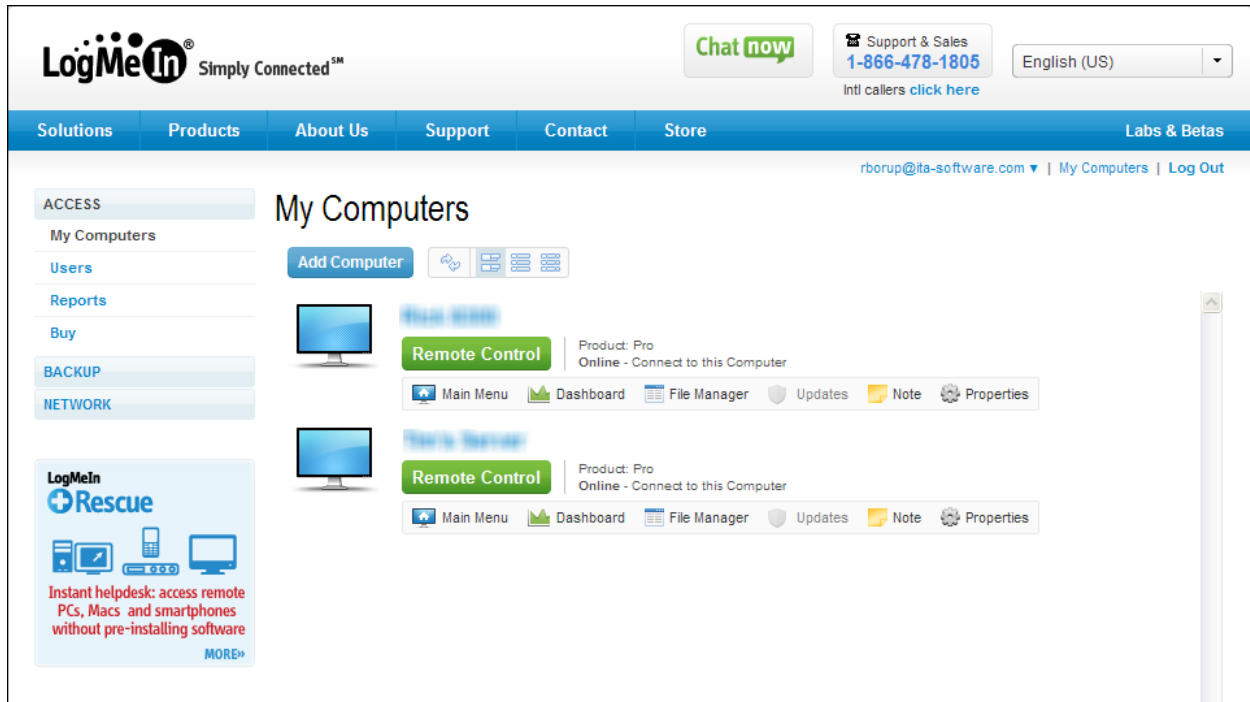
Figure 18: After logging in to your LogMeIn account, you can access your computers remotely from within your Web browser.

The core remote access feature of LogMeIn does not differ substantially from what you get with a remote desktop connection using RDP. What sets LogMeIn apart from my point of view it its easy setup, ease of use, and the extended feature set in the Pro version. Most of my clients have now begun using it as well, which not only enables me to provide remote support but also enables them to connect to their own office machines from home. I think it's fair to say those who are using it have become fans.

Remote Desktop Manager

Devolutions, Inc. – http://remotedesktopmanager.com

If you support many clients and many machines remotely, you may find yourself wishing you had a good way to organize and access all of your remote connections. For that, Remote Desktop Manager may be just what you're looking for.

Remote Desktop Manager, or RDM for short, is a relatively new addition to my suite of tools. I'm not sure how long it's actually been around. I only became aware of it this year, but it's quickly become the only way I interact with my remote connections. The free Standard Edition offers the basic functionality, but for me the additional features included in the Enterprise Edition made it well worth the cost of the license.

The RDM interface enables you to organize your remote connections into groups, and to configure those connections for access from within RDM. RDM is aware of and provides dialogs to easily configure many types of connections including Microsoft Remote Desktop

(RDP), LogMeIn, VNC, VPN, FTP, and many others. The RDM user interface, shown in Figure 19, displays your connections by group on the left. The main body of the interface on the right is used for configuration dialogs as well as for embedded connections.
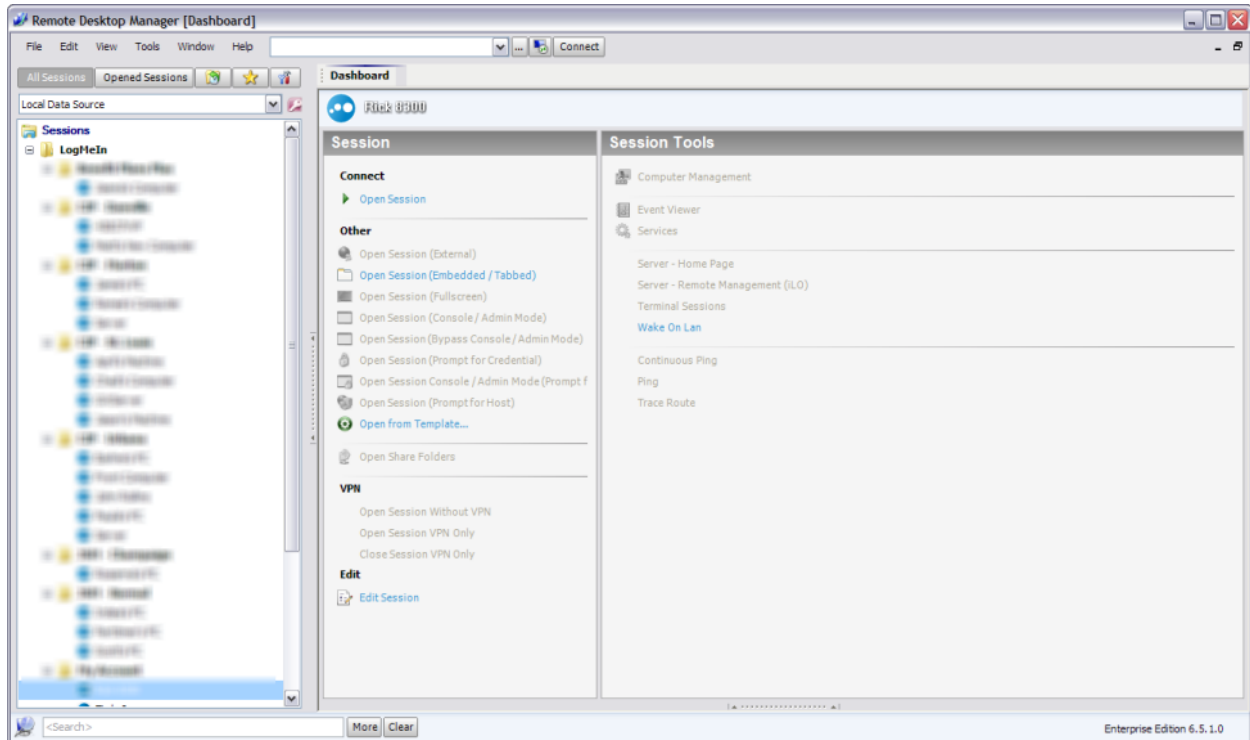

Figure 19: Remote Desktop Manager enables you to organize your remote connections into groups, and to launch access to the remote machines from within RDM itself.

As someone who uses LogMeIn for most remote connections, of the best feature of RDM is its ability to store all the connection information necessary to open any of those connections. This includes my own LogMeIn account username and password as well as the connection and login information for each remote machine. Using RDM, I can connect to any of my LogMeIn machines with a single click, instead of having to log in from a browser, choose a machine from the list, and manually log in to that machine once the connection is established. This is enormously more convenient and saves me a ton of time and aggravation.

Remote Desktop Manager is definitely one of those tools you wonder how you ever got along without. If you use many different remote connections in your daily work I think you'll find it well worth your time to try RDM.

WS_FTP Pro

Ipswitch, Inc. – www.ipswitch.com

When I first began creating websites back in the early 90's, the tools available were very rudimentary by today's standards. Developers used an HTML editor to create the content and FTP to transfer files up to the Web server. These days, most Web development tools come with an integrated FTP client, but back then you needed an external FTP program.

WS_FTP was a popular choice and it even had a free version, so that's what I went with. One reason I chose it was for its ability to run FTP commands on a shared server on which I did not have access to the shell interface. WS_FTP also had the ability to set read-write-execute file permissions on Linux servers, which one of my clients was using at the time.

Today, WS_FTP has evolved considerably and continues to be a premier choice for file transfer solutions. Although I now use Web development tools with their own integrated file transfer capability, I find I still use WS_FTP regularly, both as a desktop tool and also in client solutions where its scripting capabilities enables me to do things that would otherwise be much more difficult.

When used as a desktop client, WS_FTP Professional features the traditional dual-pane interface with your local machine on one side and the remote machine on the other. Its Site Manager tool enables you to create, name, group, and store the information and credentials for each of your FTP connections. Once configured, opening a connection is as simple as selecting the desired site from the list. In this regard WS_FTP is not much different than other FTP clients.
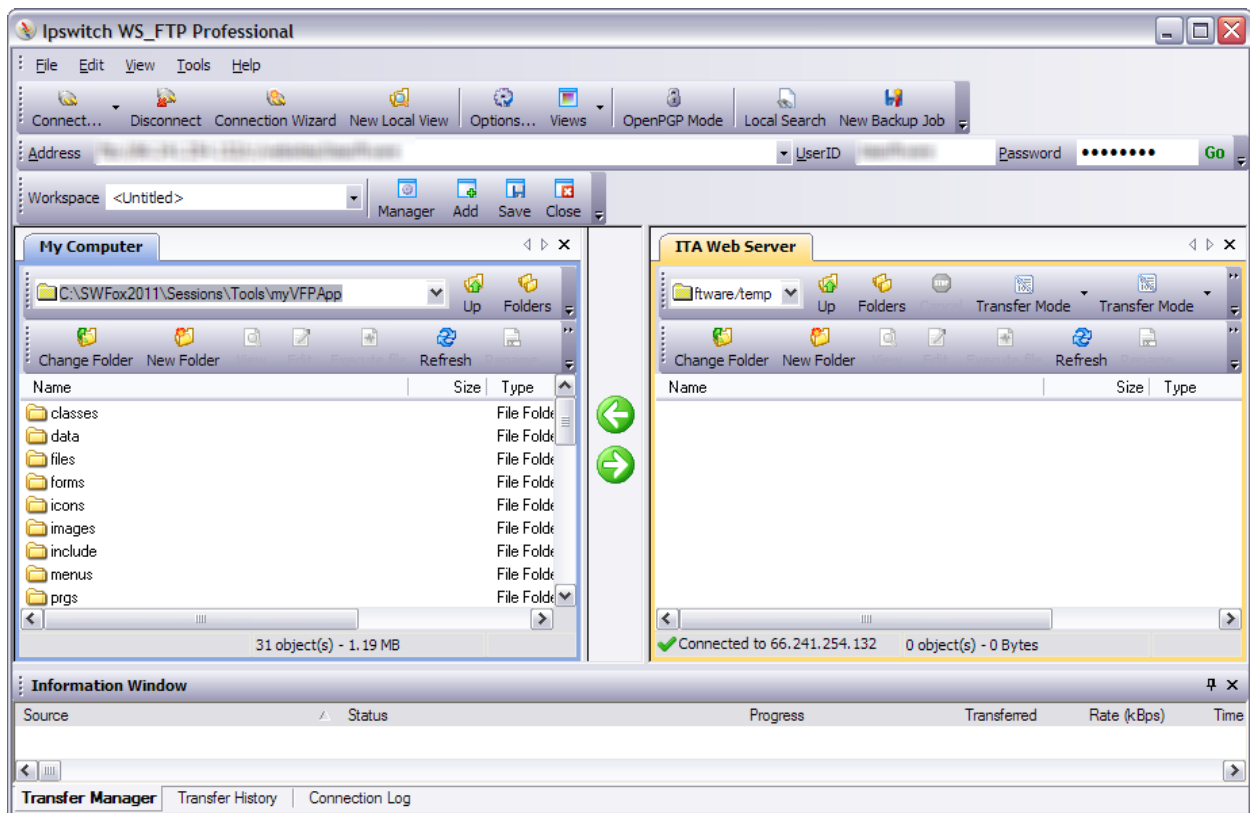
Figure 20: WS_FTP features a traditional dual-pane interface with the local computer on one side and the remote computer on the other. The Information Window at the bottom displays a progress indicator when a transfer is in progress, as well as other information. This screenshot is from an older version of the program.

The current version of WS_FTP supports FTP, SSL, SSH, and HTTP/S file transfer protocols, making it a flexible solution when secure FTP is a requirement.

From a developer's point of view, however, what really sets WS_FTP apart from other programs is its scripting capabilities. Script files are text files containing conventional FTP commands along with connection information. Scripts can reference the connection information you've stored in your list of sites, so you don't need to expose usernames or passwords in the scripts. Finally, scripts are executed by a special-purpose program that comes with WS_FTP, which means they can be run without opening the user interface.

Because they're simple text files, it's easy to generate script files programmatically. This is very useful when the script depends on information that's available at run time but not at design time. The script execution program can be invoked by calling the Run method on an instance of the Windows Scripting Host shell object. Together, all of this enables you as the developer to create a completely dynamic and completely automated runtime FTP solution.

The listing below shows a sample WS_FTP script file designed to fetch multiple files matching the pattern "order*.txt" from the ORDERS folder on an FTP server whose connection information is stored as MYSITE in a WS_FTP Site Manager group named MYGROUP. Note the first line, which initiates a trace log of the activity that occurs when this script runs. A trace log is a very useful debugging tool, but it can be omitted when everything is running smoothly.

```
TRACE "C:\SWFox2011\Sessions\Tools\Code\ScriptTrace.txt"
CONNECT "MYGROUP!MYSITE"
CD "ORDERS"
LCD "C:\SWFox2011\Sessions\Tools\Code\Orders\"
MGET "order*.txt"
CLOSE
```

Stonefield Database Toolkit

Stonefield Systems Group, Inc. – www.stonefield.com

It's hard for me to imagine supporting an application that uses Visual FoxPro databases without the benefits of the Stonefield Database Toolkit. It's also difficult to imagine that by now not every VFP developer has heard of it or used it, but I felt this paper would be incomplete without mentioning it.

Stonefield Database Toolkit, or SDT for short, is a VFP data dictionary tool on steroids. It extends and enhances your ability to work with a VFP database container and with the individual tables and views it contains. If used for nothing else than to design and modify a

database, it's still a great tool. To me, though, it's best benefits derive from its ability to reindex , repair, and update database structures in the field.

One challenge facing developers who support applications using VFP databases is that it's very difficult to modify a client's database container and their live database tables in the field. For one thing you may not have access to or permission to directly access their data. For another, even if you do have access to the client's data, you don't typically have a copy of Visual FoxPro installed on client's machines that you can use to modify the database and update the tables. One solution would be to download the client's database, modify and update it on your machine, and upload it back to the client. Clearly this is pretty lame not to mention time-consuming solution.

Enter Stonefield Database Toolkit, which makes all this easy to do. SDT's Update method creates or updates table structures programmatically, meaning you can build that functionality into your application so the client can run it at their own site. Essentially all you need to do is to distribute the updated meta data and provide a way for the client to launch the SDT Update method.

In my own apps I've automated this process by adding a way for the app to detect when a database update is pending, and then, with the customer's consent, to launch the update process automatically. It works great. Customers love it because they're in control and don't have to pay me for a site visit, and as the developer I love it because it frees me from having to deal with manual solutions.

Although SDT has not been updated for several years, that's only because there really isn't anything else to be added to it. SDT is a mature tool works fine with the latest VFP 9.0 applications.

Tools to improve your personal productivity and time management

Design Tools

Balsamiq Mockups

Balsamiq Studios, LLC – http://balsamiq.com

It was easy to decide to include Balsamiq Mockups in the list of twenty, but difficult to decide where to put it. Balsamiq Mockups is a wire-framing tool you can use to quickly create and share design ideas with your team members, clients, and other stakeholders. You'll probably use it often during the life cycle of a software application, both for initial design and for the design of ongoing enhancements. Regardless of how or when you use it, though, it always saves you a lot of time over other ways to create and communicate design concepts to others. That's why I chose to place it in the category of tools that improve your personal productivity.

Balsamiq Mockups comes with a set of shapes you can combine to create mockups of windows, text boxes, data entry fields, command buttons, check boxes, scroll bars, and a host of others. All of them have a deliberate comic appearance, making it obvious to anyone viewing the mockup that what they're seeing is not a final product. This has an important advantage: Show a customer a screenshot, even if it's just a sample of what the real one might look like, and they may very well perceive it to be an exact representation of the final product. Show them something that conveys the same information but is obviously not the final product and they'll more readily understand it's only intended as a basis for discussion.

Balsamiq Mockups is easy to learn and to use. Simply drag and drop shapes from the toolbar on the main design surface and arrange them as desired. Among other conveniences, it includes some neat alignment tools that make it easy to create a neatly designed mockup. Mockups are saved in the proprietary .bmml format but can also be saved as.png image files, which makes it easy to share them with others via email, in a Word document, or on a Web page.

Figure 21 shows the Balsamiq Mockups interface with a mockup I created to communicate a screen design idea to a client. The client immediately understood the idea behind what I was proposing and we had a great common basis for further discussion. A picture truly is worth a thousand words.
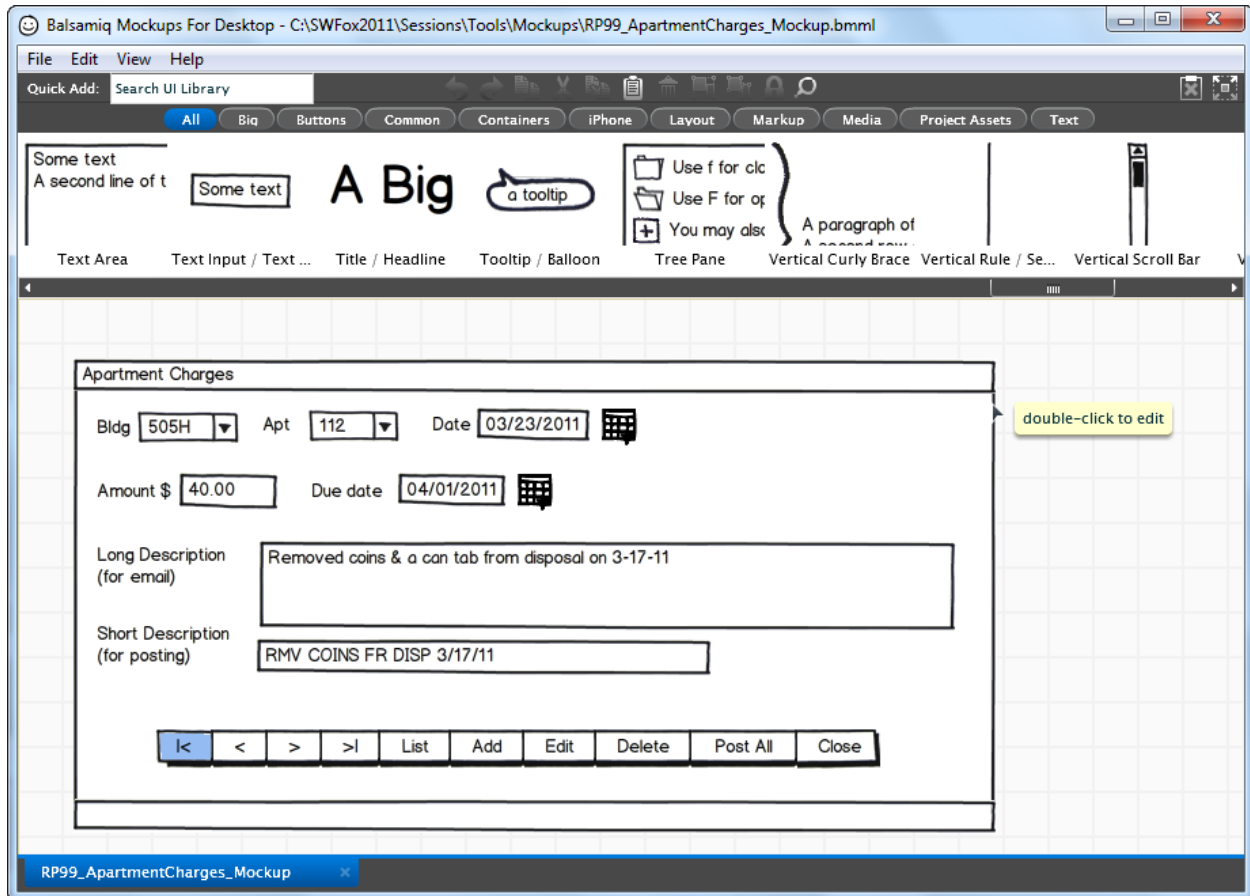
Figure 21: Balsamiq Mockups makes it easy to create comic-style, wireframe mockups of design concepts to share with others.

For more information about Balsamiq Mockups, see the vendor's website and read the white paper from Rick Schummer's Mocking the Customer presentation at Southwest Fox 2010.

Screen Capture Utilities

Snagit

TechSmith Corporation – http://www.techsmith.com/snagit/default.asp

Techsmith Corporation's **Snagit** is the grand-daddy and by far the most powerful screen capture utility for Windows. TechSmith is the company that also brings you Camtasia and Jing. Snagit is now also available for the Mac.

In version 10, Snagit introduced what they call their "all-in-one capture tool". This tool truly rocks because it makes it significantly easier to capture either a window or a region without having to decide in advance which one you want. In earlier versions of Snagit, and in other screen capture tools, you typically have to select the type of capture (window,

region, etc.) beforehand or use a different hotkey combination depending on what you want. Snagit's all-in-one tool is smart. Hover over a window's title bar and the entire window is selected for you to capture with one click. Hover over anything else and you can capture a region of the screen with a simple click and drag motion while holding down the left mouse button. Unless you change the default settings, pressing the Print Screen key on your keyboard activates the all-in-one capture tool when Snagit is running.

Snagit's other great feature is the Snagit Editor. By default, new screen captures are sent to the Snagit Editor, which opens in a separate window. The Editor comes with a complete set of tools to annotate, resize, crop, clip, stamp, or otherwise modify the captured image. Recent captures are displayed as thumbnail images along the bottom of the Editor window for easy selection. The Editor's toolbar makes it easy to save an image to disk, print it, or copy it to the clipboard for pasting into an email or document.

HyperSnap

Hyperionics Technology, LLC - http://hyperionics.com

HyperSnap is another screen capture tool and one of my long time favorites. I sometimes choose to use HyperSnap over Snagit when I want a light-weight capture tool without the overhead of Snagit's Image Editor.

HyperSnap version 7 was released in July 2011. Like Snagit, the Print Screen key can be configured to capture a number of options including but not limited to the full screen, the active window, any window, or a region. The capture region tool feature magnification of the upper left and lower right corner for precision captures. Unlike Snagit's all-in-one tool, however, it does not automatically sense that you want an entire window when you move the mouse near the title bar. Another difference is that it takes two clicks to complete the capture, one to select the starting location on the screen and the second to complete the capture after moving the mouse to the ending location. Depending on how you look at it, this is either a benefit or an annoyance. In my experience, it's actually kind of nice not to have to hold the mouse button down while trying to position the mouse cursor to capture a precise region.

Time Management Tools

Time Is Money

http://red-ring.com/

I've used other time tracking software tools in the past but have found Time Is Money to be the best for my purposes. One of its advantages is that its database uses dbf files (not Visual FoxPro, but VFP compatible). This enabled me to write my own data extraction and reporting tools. If there is a weakness with Time Is Money it's that the out of the box reports are fairly rudimentary in my opinion. I created reports that format my data in a way that makes it easy to enter into QuickBooks, which is what I use for invoicing.

To use Time Is Money, you set up projects and give them names. You then punch in when you begin work on a project and punch out when you're done. Time can be tracked in various increments depending on how you bill your clients. I bill to the nearest 10th of an hour so I have it set up for six-minute increments, as shown in Figure 22.[3]
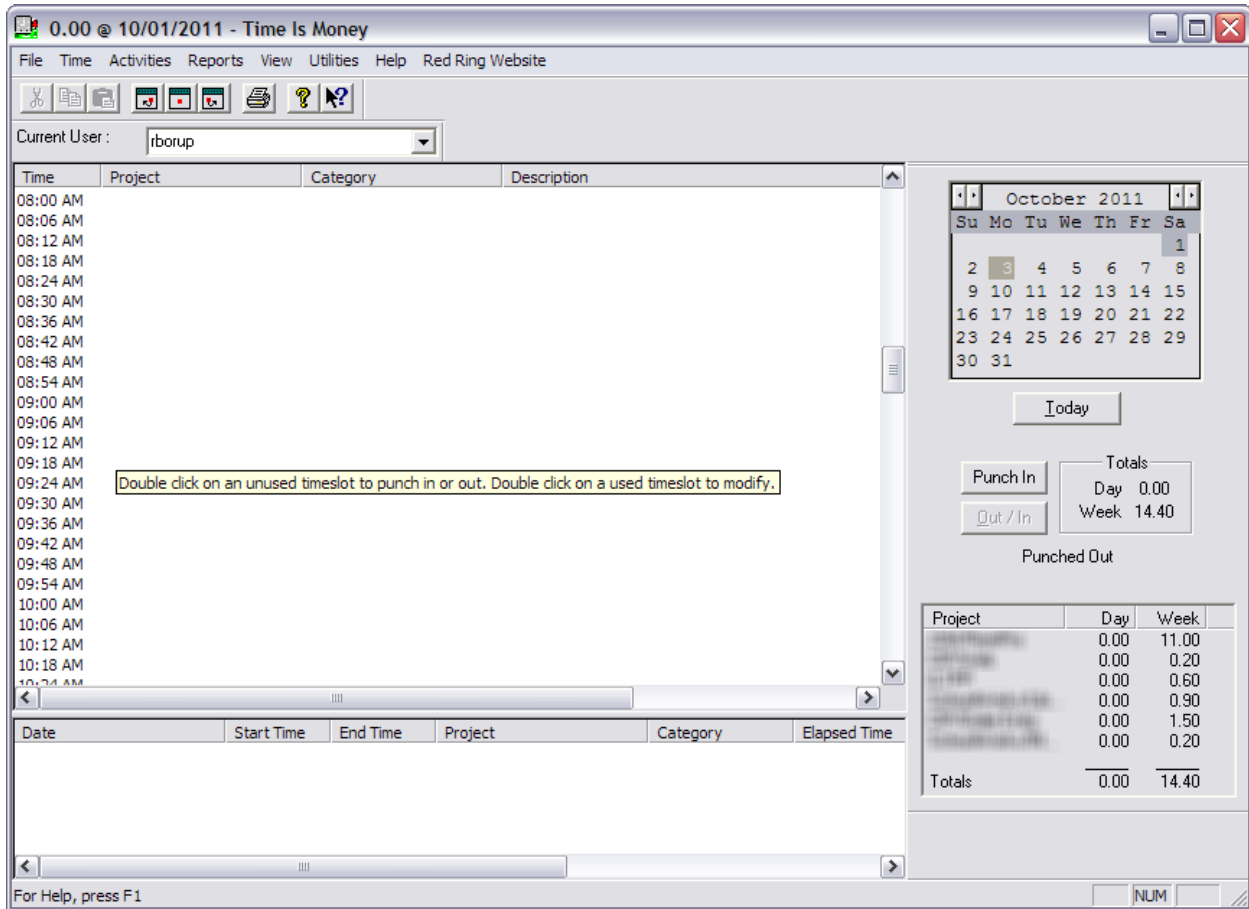

Figure 22: The Time Is Money user interface shows daily time increments in the main body. Different dates can be selected by clicking on the calendar in the upper right. The lower right panel show daily and weekly totals by project.

With its user interface minimized, Time Is Money occupies a small space in the lower right hand of your screen showing whether you're punched in to a project or whether you've punched out.

Besides the fact that it uses DBF files, another thing that persuaded me to switch to Time Is Money is the ability to edit timeslots you've already punched out of. This is sometimes necessary if you discover that time has been incorrectly recorded, assigned to the wrong

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[3] In my experience, the developer of Time Is Money is very responsive. When I first began using it, it did not have the 10th of an hour increments I wanted. I suggested this to the developer as a possible enhancement, and he followed through by including the feature in the next release.

project, or classified incorrectly as to the type of work performed – systems analysis, programming, tech support, or whatever classifications you use, which are fully customizable in Time Is Money. The tool I formerly used to track time required the erroneous entry to be deleted and then reentered as if new, which was a general annoyance plus it meant copying and pasting comments from one to the other. Time Is Money is much nicer in this regard.

PomoTime

Xoring – http://www.xoring.com/

If you use the Pomodoro time management technique you may want something to help track your 25-minute work intervals and ping you when they're up. PomoTime is the software equivalent of a mechanical timer, but with several additional features. For starters it times your 25-minute work intervals and makes a sound when each one is expired. You can optionally set a ticking sound to occur while the timer is active – some people may find this annoying (which is why it's optional) but I like it because it helps me remember to focus on the task at hand and avoid distractions.
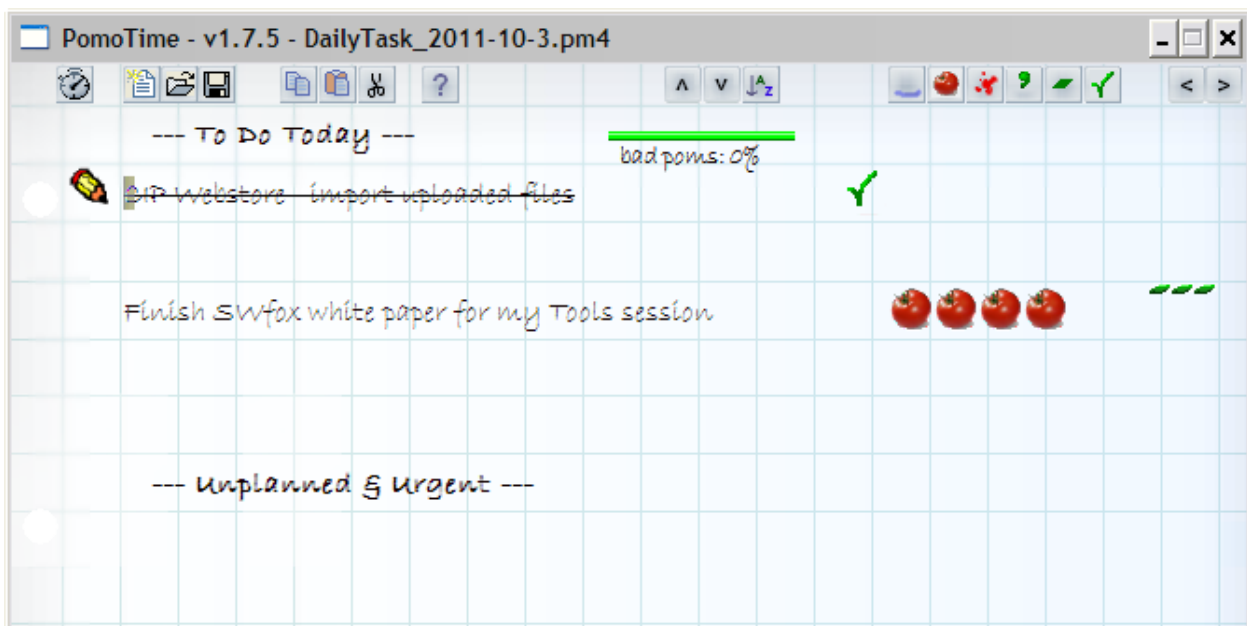

Figure 23: The PomoTime interface uses various icons to indicate progress on the projects being tracked. A tomato indicates a completed pom, or 25-minute work interval. Completed project are lined out and marked with a check.

In addition, PomoTime lets you enter items on an electronic version of the Pomodoro Activity Inventory sheet. You can then associate each work interval with a particular activity, and PomoTime keeps track of how many Pomodoros (poms for short) you worked on each activity in a day. The software also enables you to record internal and external interruptions within each pom as well as tracking bad poms.

If you're not familiar with the Pomodoro Technique and you're wondering what tomatoes have to do with it, visit the Pomodoro Technique website at www.pomodorotechnique.com and read the white paper from Toni Feltman's session on the subject at Southwest Fox 2010.

Q & A

Q: Is this a complete list of tools?
A: No. These are merely some of my favorites. There are certainly many other excellent tools that are not mentioned here, including some that may be your favorites.

Q: Your session sucks because you didn't mention X, which is my very favorite most excellent tool that I use every day and everybody else should be using it too!!!
A: See Question 1.

Summary

So there you have it – twenty tools to make your life as a developer easier and more productive. It's clear that in a session like this I could only give a thirty-thousand foot overview of these products. My hope is that out of these twenty you've discovered at least one new tool that interests you enough to explore it further on your own.

The appendix contains a list of many other software tools and utilities I regularly use and recommend. I'd encourage you to explore them as well. Good luck and happy hunting.

Appendix – Other Software Tools and Utilities

Issue View – www.issueview.com
A bug tracking and project management tool, free for single users.

ctSiteMonitor – http://ctSiteMonitor.cullytechnologies.com
From Kevin Cully, a sweet utility for pinging your websites and receiving email notification if they don't respond.

ctEggTimer – http://cully.biz
Also from Kevin Cully. Originally designed as a timer for the Pomodoro Technique, but useful for many other purposes such as timing conference presentations.

Beyond Compare – www.scootersoftware.com
A truly indispensable tool for comparing and synchronizing files and folders. Includes a 3-way diff tool that can be hooked up to version control systems.

Password Agent – www.moonsoftware.com
A utility to track your passwords and other confidential information in a secure database.

PowerDesk – www.avanquest.com
A replacement for Windows Explorer, with many more features than the original.

DropBox – www.dropbox.com
A cloud-based tool for sharing and synchronize files among different computers.

SlickRun – www.fiddler2.com/SlickRun/
A tiny window from which you can launch any program on your computer with a few keystrokes. Still useful even on Windows 7.

WizMouse – http://antibody-software.com
Make the mouse wheel scroll whichever window the mouse pointer is over, not just the active window.

FinePrint – www.fineprint.com
A virtual printer. Save paper by previewing everything before you print it. Delete those extraneous trailing pages from Web page printouts. Easily do duplex printing even on printers that don't support it.

Evernote – www.evernote.com
Capture, categorize, and organize web pages for future reference. Browser based and also a desktop client.

Xmarks – www.xmarks.com
Web-based tool for synchronizing your browser bookmarks among different browsers and machines.

TopStyle – www.topstyle4.com
A CSS editor that also knows HTML. Originally from Nick Bradbury, now marketed and maintained by another author.

Pixie – www.nattyware.com
Detect the color of any pixel on your screen. Great for color coordination when developing Web pages.

Axialis Icon Workshop – www.axialis.com
Design your own icons easily with this full featured editor.

Tab Groups in Firefox 7.x – http://support.mozilla.com/en-US/kb/what-are-tab-groups
A terrific new feature in the latest version of Firefox. Organize your frequently visited sites into groups instead of keeping all those tabs open at once.