Clarion 2.0 for Windows

*V*isual Developer Magazine (in its earlier life as *PC TECHNIQUES*) last reviewed Clarion for Windows (CW) in the June/July '95 issue, about 18 months ago. Top-Speed has done a lot in those 18 months, including two major releases and several new add-on products. A great product has gotten even better.

CW is a rapid application development tool. The integrated development environment (IDE) includes a compiler, an application generator (AppGen), a text editor, a screen/window editor, a data dictionary editor, a project management system, a report designer, and many other elements to support visual application design. CW also includes a "template" language facility, which drives AppGen, and a system of interchangeable database drivers that enable native (direct) access to a long list of database types, including TopSpeed's own Clarion and TopSpeed formats, as well as dBASE, Paradox, ASCII, DOS binary, Btrieve, ODBC, and SQL. The same code set, with all features and controls, will compile to Windows 3.1, Windows 95, and Windows NT.

The biggest change from 18 months ago is that CW now comes in three versions, differing mostly in the set of included components. The mainstay of the product line is the $499

Professional Edition. In addition to the development system, CW/Pro includes Clarion's excellent printed documentation, the CW Report Writer, the Clarion Resource Kit, and a full suite of database drivers. The combined list price of the Report Writer, Resource Kit is $280, constituting the bulk of the difference in list price between CW/Pro and CW/Std.

At $99, the Standard Edition does not include the printed documents (all are provided in electronic form), the Report Writer, or the Resource Kit. Only a few database drivers are included and there are some limits to the expandability of the development environment.

The Enterprise Edition ($1,499) will be targeted at corporate developers in larger companies. CW/Ent adds Inter-solv's PVCS Version Manager software to support team development, adds graphical data modeling to the Clarion database dictionary, provides database synchronization, and throws in the $199 TopSpeed Deployment Kit (a setup/installation utility) for good measure.

OOPs

The three holy grails of OOP, encapsulation, inheritance, and polymorphism, are directly supported by CW's OOP extensions. Encapsulation and single inheritance are supported by Clarion's **CLASS** structure, which declares an object's properties and methods. The **CLASS** declaration is also used to create an instance of an object statically (at compile time); objects are created at runtime with the **NEW()** function.

CW's polymorphism is implemented with virtual methods. The syntactic mechanism is clean and, perhaps more important, provides runtime performance almost as good as non-virtual methods.

The Template System

Despite the addition of OOP to the language, Clarion for Windows continues to revolve around its template-driven application generator, supported by the Clarion data dictionary and the system of interchangeable database drivers.

AppGen actually has its own language called the Clarion Template Language. Templates tell AppGen how to generate Clarion code for particular kinds of procedures. Templates also tell AppGen how to present themselves visually

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Product: Clarion 2.0 for Windows

Summary — A rapid application development tool which includes an integrated development environment (IDE); a powerful, template-driven application generator; replaceable database drivers for standalone, transactional, or client/server development; a data dictionary editor; and a native-code compiler. Version 2.0 incorporates object-oriented capabilities. Reviewed: CW/Pro 2.002.

Documentation — Over 2,600 pages in 5 well-done documents (electronic versions only in Standard Edition). Extensive online help, online manuals, plus additional information on database drivers.

Suggested List Price — Standard Edition ($99) and Professional Edition ($499) available now. Enterprise Edition ($1,499) available 1st Qtr 1997 (est). A time-limited evaluation CD is free. Prices shown for CD editions.

Will Fastie

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to the developer and what special information the developer needs to provide to a particular template (for example, what data files will be used).
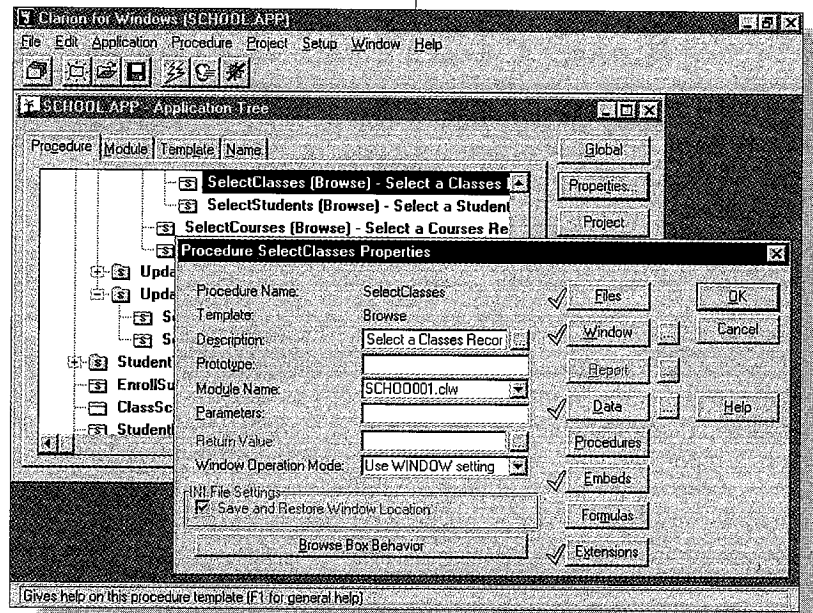
In building an application via AppGen you define the database structure using the data dictionary, then piece the app together by defining procedures based on templates. The project system keeps this part organized and manageable. As before, it's always possible to create rich applications without writing a line of actual code because the templates generate the standard procedures automatically.

Visual Development

While CW is a visually-oriented tool, building a CW app is different than building, say, a VB app. Via AppGen, CW focuses on the structure of the program as driven by *data*, correctly understanding that the visual aspect of the program is ultimately code-driven, rather than the other way around.

AppGen makes changing the code easy by exposing virtually every point where code can be added. AppGen also allows the developer to modify any of its code points and maintains those changes, so AppGen can regenerate an application containing both template-generated and programmer-generated code. With other tools, touching the code usually forces the developer to abandon automatic features.

I complained about the window (form) editor in the last review and I'll complain again. Despite many improvements and a much higher degree of usability in CW 2.0, the window editor still lacks many features taken for granted in other tools. For example, the editor supports a property box which pops up and stays on top. Unfortunately, the box allows access to just a tiny set of properties. I wanted to change the alignment of six labels from left to right so the colons would line up along the left side of the labeled fields. I had to perform six operations to make this happen. In VB and other tools, properties which a selected set of controls have in common can be modified in a single operation.

The CW project system. The dialog box shows the properties for the selected procedure on the project tree.

Reports

The Clarion language has always provided the syntax and semantics to create reports. During the last year, TopSpeed introduced its standalone CW Report Writer (RW), a product directly competitive with tools like Crystal Reports and R&R. RW can be used as a standalone product against data from any source supported by a Clarion database driver. A runtime report engine, CWPRINT.EXE, can be distributed royalty free, so RW reports and their engine can be part of a CW application.

Performance and Power

As always, CW's underlying technology delivers great performance. Like most development tools, CW compiles and links to create the .EXE file. Keep in mind that AppGen also *generates* code, adding an extra step to the process. Despite this, full compiles are extremely fast. The more common incremental compiles can happen in a flash.

AppGen, the data dictionary, and Report Writer are a formidable combination for rapid application development. CW empowers the developer well beyond what is possible with other desktop tools. Large, complex applications can be developed very quickly. Browsers for legacy data can be built in minutes, literally. Version 2.0's many enhancements merely confirm CW's status as the preeminent Windows development tool. ▼

DOWN TO THE WIRE · NICHOLAS PETRELEY

For a glimpse of the future and a little OOP to boot, visit Madame TopSpeed

JUST ABOUT A YEAR AGO, I trumpeted the new object-oriented features in Clarion for Windows 2.0. It was a useful but incomplete implementation of object orientation, and I wondered if TopSpeed (http://www.topspeed.com) intended to fill in some of the gaps. I'm wondering no more. I got my greedy little fingers on Beta 1 of Clarion 4, and I can tell you this is going to be one whopper of an upgrade for object-oriented programming (OOP) lovers. The package oozes with object orientation, and it more closely conforms to the academic ideal.

(What happened to Version 3, you ask? I'm told it ran off with Versions 1 and 2 of Windows NT, Versions 3, 4, and 5 of Word for Windows, dozens of other missing versions, and a few million socks.)

Clarion is built to take more of a data-centric approach to object orientation than competing products. You derive a custom database table from a standard one and add or override methods. Clarion's object orientation, therefore, resembles the approach of object-enabled database servers rather than development tools.

TopSpeed psychic hotline

Now, how are existing Clarion developers going to adjust to this massive language change? It will be practically effortless. They were prepped for it by the pseudo OOP in Clarion for Windows 2.0. More important, the product was accidentally prepped for an easy transition. Bear with me while I explain.

Clarion has been the beneficiary of so many happy accidents, one wonders if TopSpeed has a fortune-teller on staff. Clarion for DOS was event-driven in 1986. Along comes Windows with its event-driven model, and Clarion slips right into the Windows world while other products struggle.

The company added a template-based application generator to Clarion while it was a DOS-only product. (At the time, template-based application generators were all the rage.) The application generator let you visually define your application's behavior, and Clarion would generate the code for you.

Today's wizards serve the same fundamental purpose but with one important difference: You can't customize wizards. You can change Clarion templates to customize how Clarion will generate code, so your applications will look and feel the way you want them to.

Application generators are now passé, but most Clarion developers I know wouldn't part with theirs. That is a real boon, because all these developers have to do to start building object-oriented applications is take their old application designs — custom code included — and run them through the new application generator. The new templates will generate all object-oriented code. I'm sure there will be some tweaking that must be done in large, complex applications, but this is about as simple as it gets to move from procedural code to OOP.

Java half-decaf

Officials say TopSpeed is working on another addition to Clarion. This one will be available for Clarion for Windows 2.0, the current shipping version. It's called Clarion Application Broker. With it, you can build Clarion applications that run locally under Windows and from any platform supporting a Java-enabled browser. The logic still resides at the server; the browser simply provides the interface to that application courtesy of Java.
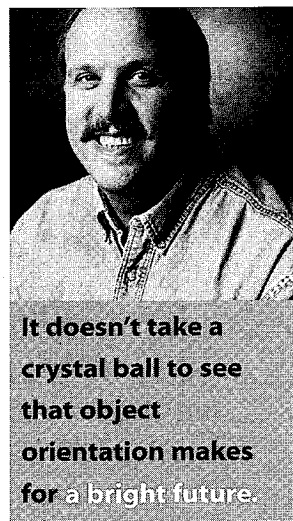
One really nice touch: You can write your own HTML that will add applets and features to the browser version of your application that won't appear when you run the application locally.

How did they do it? Once again, Clarion — by accident or prophecy — was written in such a way that it was fairly simple for TopSpeed to add this capability. The original Clarion for Windows used its own technique for handling Windows user interface controls rather than tapping directly into the standard Windows API. According to TopSpeed, this approach made it fairly simple to drop in remote Java objects as Windows controls.

Clarion isn't a household word like Visual Basic is, but developers would profit from abandoning the nobody-got-fired-for-buying-Visual-Basic mentality and taking a look at Clarion 4 — when it becomes available (there's no ship date). It's shaping up to be one of the hottest development tools around.

> It doesn't take a crystal ball to see that object orientation makes for a bright future.

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