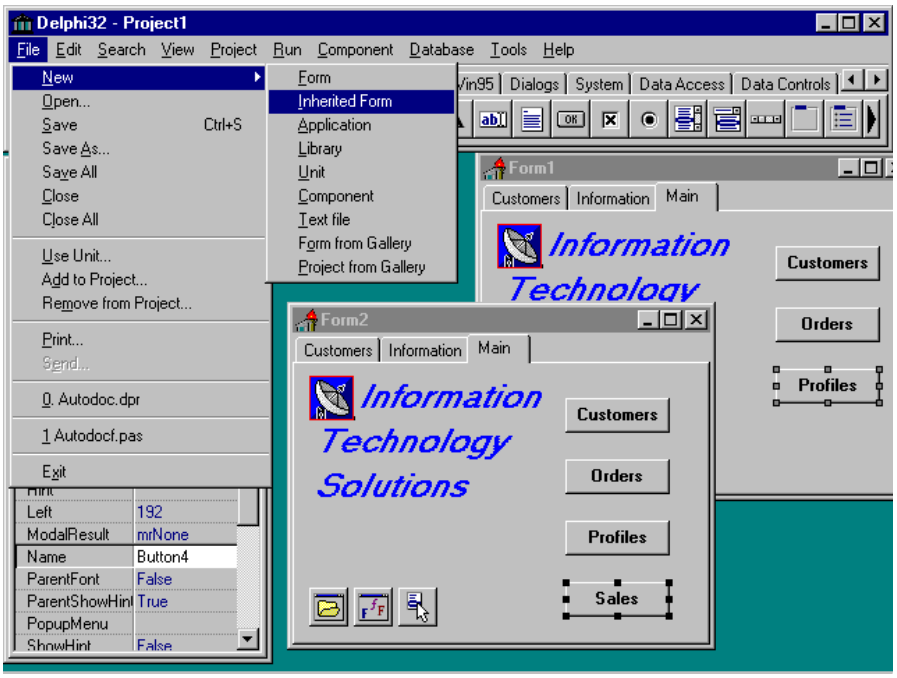
Delphi 2.0: 32-Bit BDE Overview

by Chris Frizelle

Back in September, when we previewed the forthcoming 32-bit version of Delphi, I said I hoped that more improvements would be announced in the database tools. Well, I'm pleased to say Borland have been working hard on just this area. In this article I'll outline some of the things we can expect to see in Delphi 2.0.

Of course, it goes without saying that the new Borland Database Engine (BDE) will be fully 32-bit, just as the rest of Delphi 2.0 will be. This brings its own performance improvements, but there have been other changes too which will help to speed things along. While you're drinking in all this, do remember that Delphi 2.0 is still in (late) beta and there may be some changes in the shipping version.



➤ *Wow! With objects you can inherit anything, even forms!*

Architecture

What Borland call their Database Application Architecture shows some of the thinking behind the more fundamental enhancements. A key aspect is the mutual separation of the data, business rules and application interface, with a 'layered' architecture. There's a database dictionary, data module objects for storing rules, re-usable forms and the application layer at the top.

The addition of a database dictionary will please many. It holds information on extended field attributes such as minimum, maximum and default values as well as display preferences. When used in a client/server environment, the dictionary is stored on the server and can hold triggers and stored procedures.

Data module objects form the next layer (see the screen shot on the facing page), defining rules for data access and what are often called 'business rules'. Using the same data module objects in various applications automatically means your access and business rules are adhered to. You can respond to `Before` and `After` events for posts, deletes, inserts and edits, for example, allowing business logic to be be applied to tables, stored procedures and queries.

Form Inheritance

One of the new features in Delphi 2.0 which gets a definite '*Aaaah!*' when shown to Delphi developers is form inheritance. The screenshot above shows what this means.

Create a form (placing all your usual data-aware controls) and then if you need a new form that looks substantially the same but has some differences, just *inherit* from the first one and make the amendments! This is an excellent example of how object-oriented development saves time and produces better applications with greater internal consistency, both in logic and use. What's more the forms are automatically *linked* too.

Object Repository

Building on this concept is the new Object Repository, which stores forms, data module objects and even complete applications. As you can see from the screenshot at the top of the facing page, it looks very like the current Gallery. Any new application can inherit, reference or just copy any existing structure. The repository is also customisable.

Did a client, or your boss, ever say to you 'I want something like that great Project XYZ you did for us, but a bit different'? Imagine being able to *inherit* Project XYZ and just code the changes, but also to have any new features you put into Project XYZ *automatically cascade up* into the new project! Very nice.

The Object Repository will also support team development, allowing you to store shared objects on a server. It looks like Borland have been thinking more about team development in other areas of the new version too. Although some may argue that truly great applications more often than not have one brilliant developer driving them, in many cases team development is the only way to meet increasingly short deadlines.

Data-Aware Controls

One of the areas which has seen a lot of activity in both commercial and shareware add-ons for Delphi 1.x has been the data-aware controls. Borland have obviously been taking a keen interest in this and have made some very welcome additions in version 2.0.

There's a new multi-object grid, which can hold data-aware check-boxes, images, edit controls and so on in the grid cells, with the grid taking care of row-to-row replication. The screenshot on the cover shows an example.

Also, there's now an enhanced datagrid, which allows codeless lookups between tables using drop-down lists, as you can see in the screenshot at the bottom of this page.

There might well be a few more pleasant surpises in store when you get that shiny new shrink-wrapped box too!

Inside The BDE

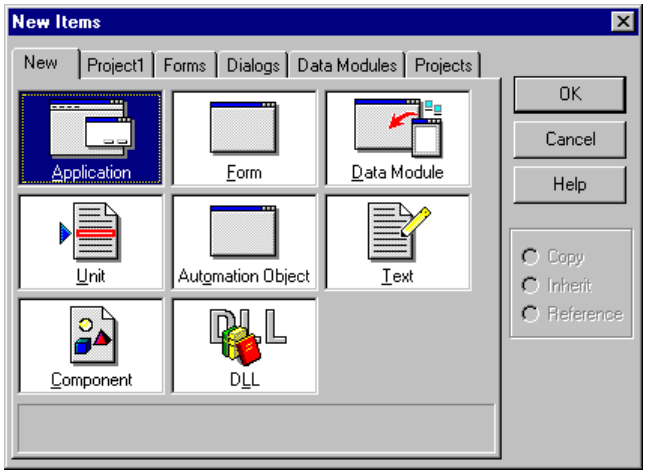
As well as all the pretty things, which impress the client when you do a prototype, there are also some behind-the-scenes enhancements which will still impress the client six months after your application has shipped and he's doubled the number of users!

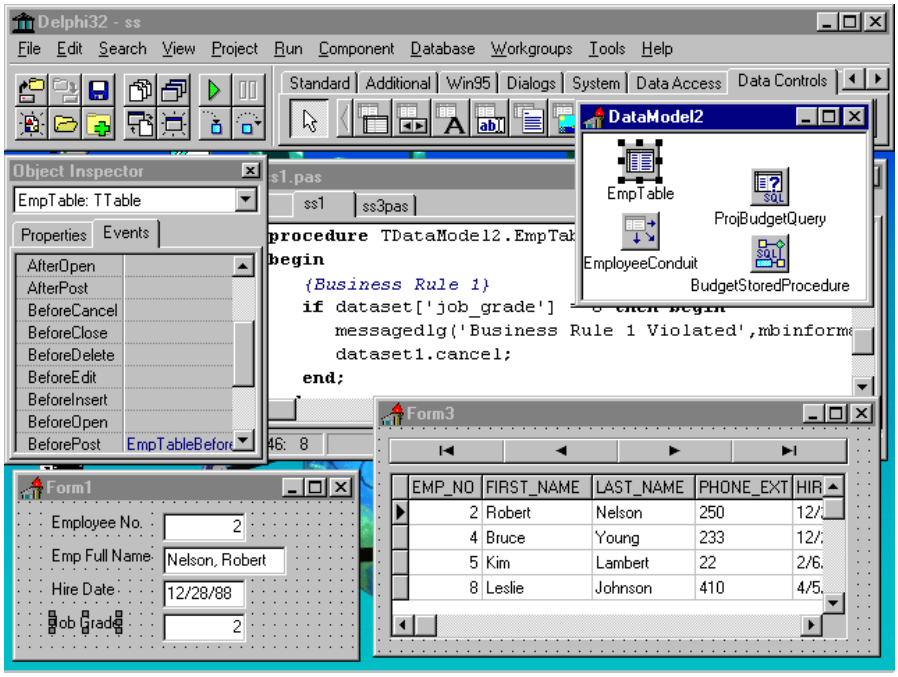
The new 32-bit BDE query engine has full SQL 92 compliance and has added functionality, for example transactional support for local databases. The native drivers for Oracle, MS SQL Server, Sybase System 10 and System 4, Informix, DB2, AS400 and InterBase have been improved, offering better performance, usability and more functionality.

Also new is cached update, which batches a set of local transactions and sends them all at once to the server. As well as reducing network traffic this also reduces the number of contentions in a high volume environment.

The SQL monitor allows you to trace calls between the client and server, reporting on the time spent in a single operation. In this way you can identify problem SQL statements and also optimise SQL performance.

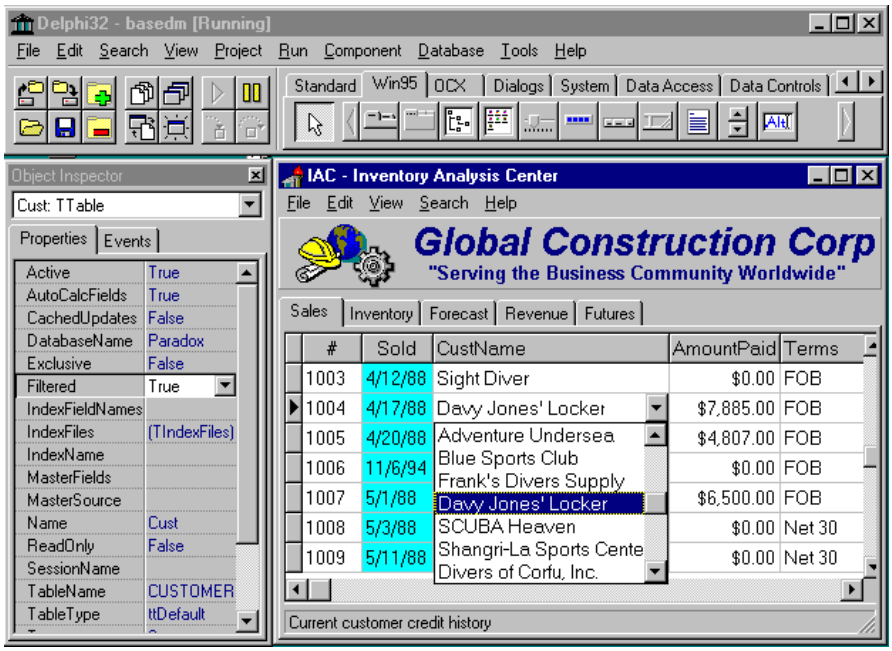
➤ *The Object Repository stores all application objects centrally*





➤ *Above: Business rules are encapsulated in new data module objects*

➤ *Below: Codeless lookups now feature in the new enhanced datagrid*



Database Explorer

New to version 2.0 is the Database Explorer: a one-stop tool for database administration. It can create and modify both local and SQL tables, as well as aliases, stored procedures, triggers and business rules. As the screen shot opposite shows, Database Explorer is used from inside Delphi itself.

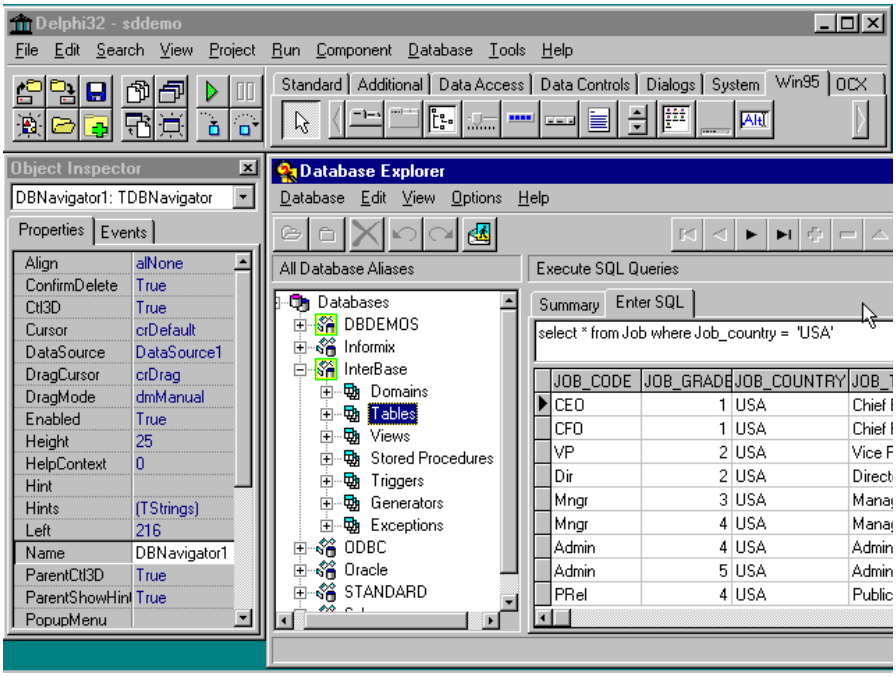
Conclusion

I hope this taster has given you food for thought. There are certainly lots of good new ideas which will make Delphi 2.0 even more productive as a development environment than version 1.x. What has made Delphi so popular is its unrivalled combination of productivity and power – in the new version it's great to see that both of these aspects have been significantly enhanced.

I believe Borland has done the right thing in getting their 32-bit product *right* rather than just rushing something, anything, out the door quickly with a '32-bit' label stuck on and mopping up the mess afterwards (a strategy which some others seem to have followed and which probably hasn't done them any good in the market at all...).

By the time you read this it's possible there will be further news on a shipping date for Delphi 2.0, but as I write, just before Christmas, it's still 'first calendar quarter 1996'. Likewise, details of pricing and upgrades have yet to be announced.

Rest assured that we'll be keeping you up to date with how to make use of all those juicy new features just as soon as we can!



➤ *Database Explorer has a pleasing new interface and makes BDE configuration and database management much easier than before*