Managing Databases/ Data Dictionaries with the BASIS IDE

By Jeff Ash

The ***BASIS IDE*** (Integrated Development Environment) offers a powerful new tool called the Data Dictionary module that provides a central location for programmers to work on Business BASIC development projects. A major component of most projects is its data files or database. BASIS provides several tools for managing these data files and databases, such as the ***BBj Enterprise Manager***, ***DDBuilder***®, and various utilities. To improve the efficiency of the development process for Business BASIC developers, BASIS added a number of new features to the BASIS IDE that streamline the management of data files and databases. This article focuses on the enhancements that give developers the ability to manage databases and ***data dictionaries*** using the BASIS IDE.

Applications still perform most data access by reading and writing directly to data files using ***READ RECORD*** and ***WRITE RECORD*** calls in the program. However, a number of new applications change the way they access data by using SQL (Structured Query Language). SQL simplifies the process of making complex queries on data in the files. The BASIS SQL engine provides a way to access normal data files using SQL statements. In order to accomplish this, the engine requires a data dictionary. The data dictionary describes the organization of the data in the data files. The SQL engine uses this information to execute SQL statements. The BBj Enterprise Manager, DDBuilder®, and now the BASIS IDE can create and maintain data dictionaries.

Data Dictionary Module

A forthcoming module in the BASIS IDE, called the Data Dictionary module, provides access to data dictionaries locally and on remote BBj Services installations. This module eliminates the need for DDBuilder and centralizes the manipulation of data definitions and program development into one location. It also makes DDBuilder functionality available on platforms other than Microsoft® Windows.

In addition to providing a number of new features, the Data Dictionary module allows developers to perform most of the tasks currently available in DDBuilder. For those not familiar with DDBuilder, it is a GUI application used for defining tables, columns, indexes, views, and type definitions accessible by the SQL engine. Each table definition refers to a physical data file and defines the layout of the fields or columns contained in each record in the file. Sometimes, more than one table definition can refer to a single file. Every table has a list of column and index definitions that describe this information. The new BASIS IDE Data Dictionary module provides all of this capability.

The Data Dictionary module also adds a number of helpful features that further enhance the productivity of developers, including:

- Seamless integration into the BASIS IDE
- Intuitive interface for defining column definitions, indexes, and views
- Simplied navigation between tables since all the column definitions for a table are contained on a single tab in a table's definition editor (see **Figure 1**)
- Effortless generation of a string template from a table definition
- Optional ability to change the physical file structure to match changes in column definitions
- Smooth file conversion of different file types
- Easy ways to change the indexes on the physical data file to match the dictionary, or change the dictionary to match the indexes on the physical data file
- Simultaneous work environments that provides the ability to have multiple table editors opened at a time, allowing for work on several tables at the same time
- Built-in ability to remember working table definitions between IDE sessions

Other new features include:

- Copy a table, view, or type definition
- Print data dictionary information in a variety of useful formats
- Test changes made to a data dictionary by running SQL statements on it immediately
- And much more…

continued...

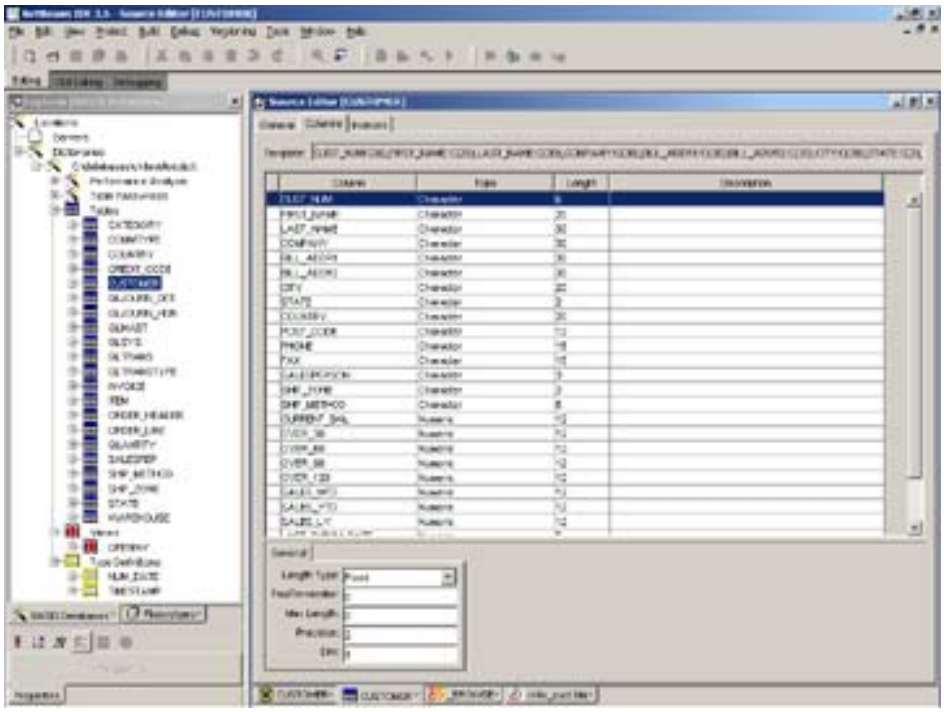

Figure 1. Table Column Definitions in the Data Dictionary.

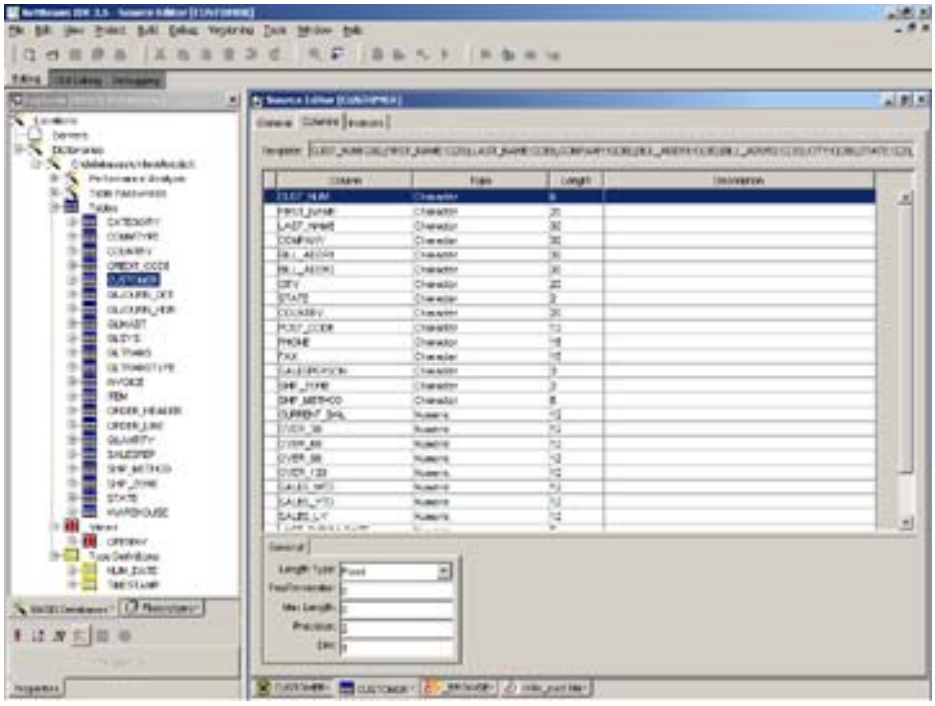

Figure 2. Table Index Definitions in the Data Dictionary.

The screen shots provided on the left, illustrate different parts of the interface working with data dictionaries.

Figure 1 shows the column definition editor tab for a table definition. Notice the clean, easy to follow layout. The bottom portion shows additional details about the selected column. Also, notice the three different table definitions and two file views. See ***Viewing Data Files in the BASIS IDE*** for more information about data files currently open in the IDE.

Figure 2 shows a number of different dictionary components open simultaneously. It also shows the interface for defining indexes on a table. Moreover, developers can mount multiple dictionaries in the IDE for use with each subsequent IDE session.

Conclusion

Integration of the new Data Dictionary module in the BASIS IDE can greatly increase the productivity of Business BASIC developers using SQL to access their BASIS database. This host of new features never before available in any other BASIS product significantly extends the suite of Business BASIC development tools. Furthermore, the addition of the Data Dictionary module to the BASIS IDE provides developers with a centralized location for all their BBj, Visual PRO/5®, and PRO/5® development tasks. Look for this new module soon in the nightly builds and in the 4.0 release of BBj due out in 2004.