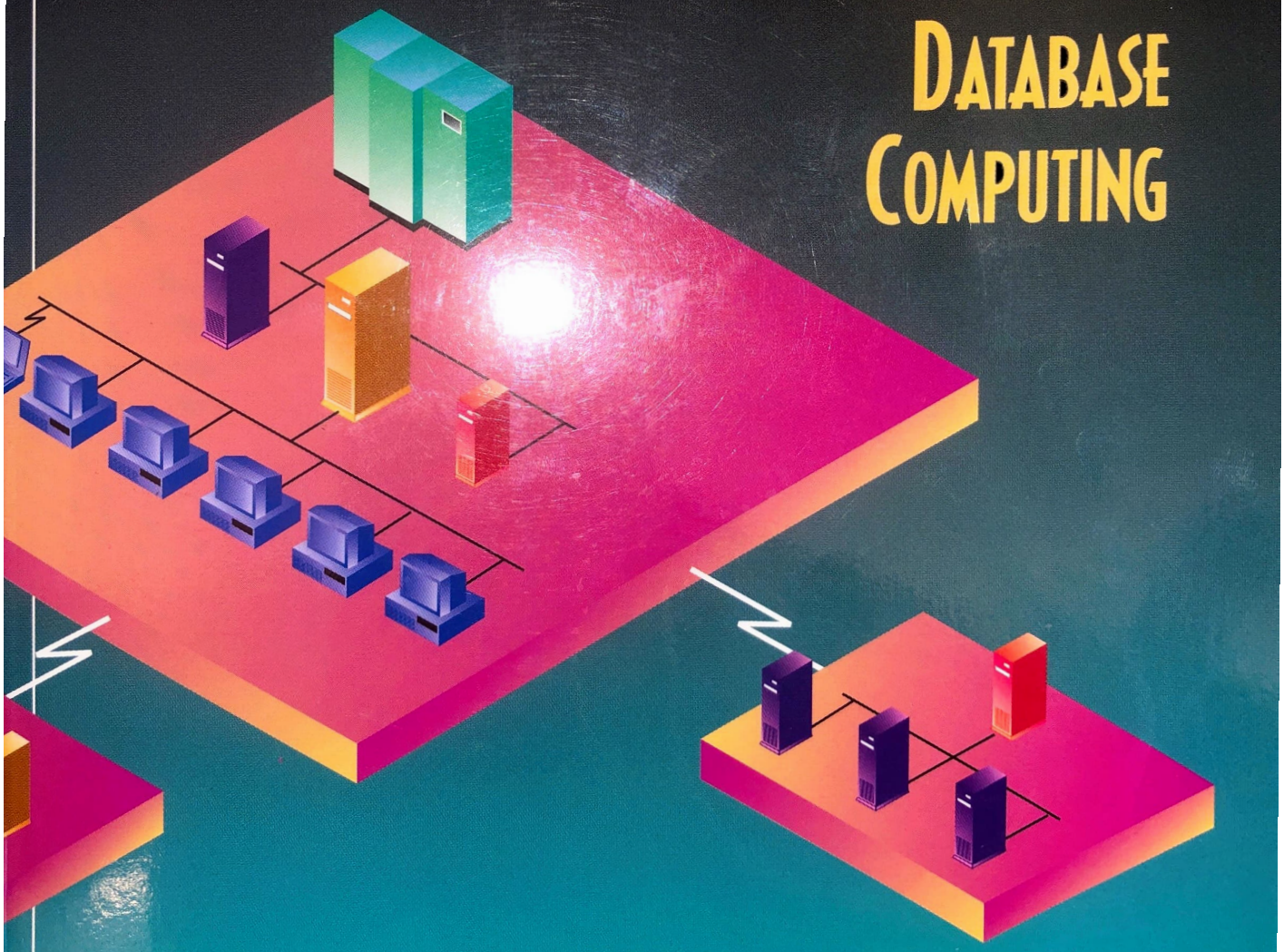
THE SQL SERVER 7.0 HANDBOOK

A GUIDE TO MICROSOFT DATABASE COMPUTING



KEN ENGLAND • NIGEL STANLEY

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The SQL Server 7.0 Handbook:

A Guide to Microsoft Database Computing

Ken England and Nigel Stanley

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As can be seen from Figure 4.3, there are a number of menu options labelled *Action*, *View*, and *Tools* on the *command bar*. The *Action* menu is equivalent to right-clicking an object. The options presented are the same and these depend on what object is selected in the console tree or details pane. Also, depending on which object is selected, various *command buttons* are displayed. For example, if a specific object such as the database *pubs* or the table *authors* is displayed, the *Delete* option in the *Action* menu is displayed and the *Delete* button is highlighted.

Note: Usually a *Refresh* button is present on the command bar. This forces the metadata cache on the SQL Server Enterprise Manager client to be refreshed. It will reread the system tables on the server. If this is not done a change made by another connection may not be displayed by the current SQL Server Enterprise Manager session.

The *Tools* menu presents a list of tools such as the Query Analyzer, SQL Server Profiler, and Database Maintenance Planner.

4.3 Creating Tables, User-Defined Data Types and Views

In relational databases, such as SQL Server, data is stored in tables. Examples of tables are those in the *pubs* database including the *titles* and *authors* tables. Usually, a table represents some real-world object that is relevant to a company's business, sometimes referred to as an entity. A table may contain a number of rows that are instances of an entity. For example, the *authors* table contains a number of rows, one for each author. The rows consist of columns, which represent attributes of the entity. For example, the *authors* table consists of a number of columns that are attributes of the entity author, such as the author's name and address. Figure 4.4 shows the *Authors* table in the pubs database and five rows from it.

Figure 4.4 *The Authors Table*

au_id	au_lname	au_fname	phone	address	city	state	zip	contract
172-32-1176	White	Johnson	408 496-7223	10932 Bigge Rd.	Menlo Park	CA	94025	1
213-46-8915	Green	Marjorie	415 986-7020	309 63rd St. #411	Oakland	CA	94618	1
238-95-7766	Carson	Cheryl	415 548-7723	589 Darwin Ln.	Berkeley	CA	94705	1
267-41-2394	O'Leary	Michael	408 286-2428	22 Cleveland Av. #14	San Jose	CA	95128	1
274-80-9391	Straight	Dean	415 834-2919	5420 College Av.	Oakland	CA	94609	1

At a point in the database design cycle it becomes necessary to physically create the tables that until now merely existed as part of a logical design.

By now a number of decisions should have been made, such as:

- The tables that are to be created in the database.
- The columns that comprise the tables.
- The data types, size, and precision of those columns.
- Default values for columns.
- Legal values for columns.
- Nullability for columns.
- The columns in a table that constitute the primary keys.
- The columns in a table that constitute the foreign keys.
- The views that are to be created in the database.
- The indexes that are to be created on a table.

Assuming this is so, let us now look at how tables, user-defined data types, and views are created. We will look at how to create these objects in Transact-SQL and the SQL Server Enterprise Manager.

4.3.1 Creating Tables

Tables are created with the CREATE TABLE Transact-SQL statement or with the SQL Server Enterprise Manager. The attributes of a table will be described using the CREATE TABLE statement and then we will look at creating a table with the SQL Server Enterprise Manager.

Basically, creating a table is simply a case of naming the table and listing the columns that it will be comprised of:

```
CREATE TABLE titleauthor
  (
  au_id       ID,
  title_id    TID,
  au_ord      TINYINT    NULL,
  royaltyper  INT        NULL
  )
```

The only items that need to be considered initially are the names of the columns and the table itself, the data types of the columns and whether the columns allow *null* values. There are a number of other attributes concerning, for example, database integrity and we shall cover these in later chapters.

In the above example the data types are *TINYINT, INT, ID,* and *TID*. TINYINT and INT are known as *system data types,* whereas ID and TID

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