Table 2.3 SQL Potential Keywords

AFTER	NEW	ROW
ALIAS	NONE	SAVEPOINT
ASYNC	OBJECT	SEARCH
BEFORE	OFF	SENSITIVE
BOOLEAN	OID	SEQUENCE
BREADTH	OLD	SIGNAL
COMPLETION	OPERATION	SIMILAR
CALL	OPERATORS	SQLEXCEPTION
CYCLE	OTHERS	SQLWARNING
DATA	PARAMETERS	STRUCTURE
DEPTH	PENDANT	TEST
DICTIONARY	PREORDER	THERE
EACH	PRIVATE	TRIGGER
ELSEIF	PROTEDCTED	TYPE
EQUALS	RECURSIVE	UNDER
GENERAL	REF	VARIABLE
IF	REFERENCING	VIRTUAL
IGNORE	REPLACE	VISIBLE
LEAVE	RESIGNAL	WAIT
LESS	RETURN	WHILE
LIMIT	RETURNS	WITHOUT
LOOP	ROLE	
ODIFY	ROUTINE	

Throughout this book, we will use an example database with five tables. This database contains the registration information for a fictitious (and very small) university. Each table contains a related set of information, described by that table's column names. Each column contains information of a certain type, drawn from the list of possible types described earlier.

A complete list of the records stored in each table is given in Appendix A. You may wish to refer to this list while studying the examples in later chapters. For now, though, we need only see what the five tables are and what information each one contains.

Figure 2.1 shows a summary of each table's columns in query diagram form. Note that, once again, one or more columns in each table have a small picture of a key beside the column name, identifying visually the columns that act as keys for that table.

The table in this database with the most columns is called `STUDENTS`. It contains information on all students currently enrolled at this university. Its columns are as follows:

- `student#`: A `SMALLINT` containing a unique number for each student
- `student_name`: A `CHAR(18)` containing a student's name

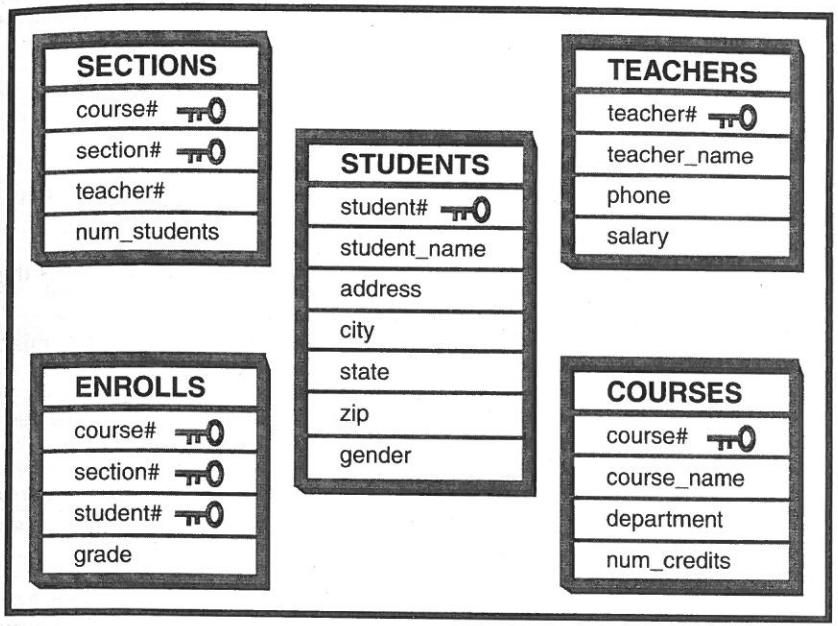

Figure 2.1 The example database.

- `address`: A `CHAR(30)` containing this student's street address
- `city`: A `CHAR(20)` containing the name of this student's home city
- `state`: A `CHAR(2)` containing the two-letter postal abbreviation of this student's home state
- `zip`: A `CHAR(5)` containing this student's home zip code
- `gender`: A `CHAR(1)` containing an "M" if this student is male, and an "F" if the student is female

Because it contains a unique value for each record, the `student#` column is designated as the key for this table.

Another table in the database is called `TEACHERS`. This table describes the teachers currently active at this university. Its columns are as follows:

- `teacher#`: A `SMALLINT` containing a unique number for each teacher
- `teacher_name`: A `CHAR(18)` containing a teacher's name
- `phone`: A `CHAR(10)` containing this teacher's phone number
- `salary`: A `FLOAT` containing this teacher's annual salary

lower_paid	lower_salary	higher_paid	higher_salary
Dr. Olsen	31778.00	Dr. Scango	32098.00
Dr. Olsen	31778.00	Dr. Engle	38200.00
Dr. Olsen	31778.00	Dr. Wright	35000.00
Dr. Scango	32098.00	Dr. Wright	35000.00
Dr. Scango	32098.00	Dr. Engle	38200.00
Dr. Wright	35000.00	Dr. Engle	38200.00

Final Thoughts

The great majority of databases in use today are relational, and the great majority of data extracted from those databases is accessed via SQL. While it's certainly not perfect, the language is nonetheless an enormous advance over what came before it. From its start as just another research project deep inside of IBM, SQL has quite literally taken over the database world. While the language is bound to keep changing, its fundamentals look likely to remain much the same for the foreseeable future. As a result, we believe that what you have learned from this book will be useful for many years to come.

APPENDIX A

The Example Database

ENROLLS

course#	section#	student#	grade
730	1	148	3
450	2	210	3
730	1	210	1
290	1	298	3
480	2	298	3
730	1	348	2
290	1	349	4
480	1	358	4
480	1	410	2
450	1	473	2
730	1	473	3
480	2	473	0
290	1	548	2
730	1	558	3
730	1	649	4
480	1	649	4
450	1	654	4
450	2	548	

TEACHERS

teacher#	teacher_name	phone	salary
303	Dr. Horn	257-3049	27540.00
290	Dr. Lowe	257-2390	31450.00
430	Dr. Engle	256-4621	38200.00
180	Dr. Cooke	257-8088	29560.00
560	Dr. Olsen	257-8086	31778.00
784	Dr. Scango	257-3046	32098.00
213	Dr. Wright	257-3393	35000.00

COURSES

course#	course_name	department	num_credits
450	Western Civilization	History	3
730	Calculus IV	Math	4
290	English Composition	English	3
480	Compiler Writing	Computer Science	3
550	Art History	History	3

SECTIONS

section#	teacher#	course#	num_students
1	303	450	2
1	290	730	6
1	430	290	3
1	180	480	3
2	560	450	2
2	784	480	2

STUDENTS

Student#	student_name	address	zip	city	state	gender
148	Susan Powell	534 East River Dr.	19041	Haverford	PA	F
210	Bob Dawson	120 South Jefferson	02891	Newport	RI	M
298	Howard Mansfield	290 Wynkoop Drive	22180	Vienna	VA	M
348	Susan Pugh	534 East Hampton Dr.	06107	Hartford	CT	F
349	Joe Adams	473 Emmerson Street	19702	Newark	DE	M
354	Janet Ladd	441 10th Street	18073	Pennsburg	PA	F
410	Bill Jones	120 South Harrison	92660	Newport	CA	M
473	Carol Dean	983 Park Avenue	02169	Boston	MA	F
548	Allen Thomas	238 West Ox Road	60624	Chicago	IL	M
558	Val Shipp	238 Westport Road	60556	Chicago	IL	F
649	John Anderson	473 Emmory Street	10008	New York	NY	M
654	Janet Thomas	441 6th Street	16510	Erie	PA	F

List of Ex