IBM Informix SQL Quick Syntax Guide

IBM Informix 4GL, Version 4.1
IBM Informix SQL, Version 4.1
IBM Informix ESQL/C, Version 5.0
IBM Informix ESQL/COBOL, Version 5.0
IBM Informix SE, Version 5.0
IBM Informix NET, Version 5.0
IBM Informix OnLine, Version 5.2
IBM Informix OnLine/Optical, Version 5.0
IBM Informix STAR, Version 5.0

November 2002
Part No. 000-9123

Note:
Before using this information and the product it supports, read the information in the appendix entitled "Notices."

Table of Contents

Introduction

In This Introduction

This introduction provides an overview of the information in this manual and describes the conventions it uses.

About This Manual

The following statements and segments are presented in this guide:

- SQL statements
- SQL segments
- Stored Procedure Language (SPL) statements

Syntax Conventions

Syntax diagrams describe the format of SQL statements or commands, including alternative forms of a statement, required and optional parts of the statement, and so forth. Syntax diagrams have their own conventions, which are defined in detail and illustrated in this section. SQL statements are listed in their entirety in the *IBM Informix Guide to SQL: Reference*, although some statements may appear in other manuals.

Each syntax diagram displays the sequences of required and optional elements that are valid in a statement. Briefly:

- All keywords are shown in uppercase letters for ease of identification, even though you need not enter them that way.
- Words for which you must supply values are in italics.

A diagram begins at the upper left with a keyword. It ends at the upper right with a vertical line. Between these points you can trace any path that does not stop or back up. Each path describes a valid form of the statement.

Along a path, you may encounter the following elements:

KEYWORD — You must spell a word in uppercase letters exactly as shown; however, you can use either uppercase or lowercase letters when you enter it.

(.,;+*-/) — Punctuation and mathematical notations are literal symbols that you must enter exactly as shown.

" " — Double quotes are literal symbols that you must enter as shown. You can replace a pair of double quotes with a pair of single quotes, if you prefer. You cannot mix double and single quotes.

variable — A word in italics represents a value that you must supply. The nature of the value is explained immediately following the diagram unless the variable appears in a box. In that case, the page number of the detailed explanation follows the variable name.

ADD Clause p. 7-14 — A reference in a box represents a subdiagram on the same page or another page. Imagine that the subdiagram is spliced into the main diagram at this point.

Relational Operator *see* SQLR — A reference to the SQLR represents an SQL statement or segment described in the *IBM Informix Guide to SQL: Reference*. Imagine that the statement or segment is spliced into the main diagram at this point.

I4GL — A code in an icon is a signal warning you that this path is valid only for some products or under certain conditions. The codes indicate the products or conditions that support the path. The following codes are used:

SE — This path is valid only for IBM Informix SE.

OL — This path is valid only for IBM Informix OnLine.

STAR — This path is valid only for IBM Informix STAR.

INET — This path is valid only for IBM Informix NET.

I4GL — This path is valid only for IBM Informix 4GL.

ISQL This path is valid only for IBM Informix SQL.

ESQL This path is valid for SQL statements in all the following embedded language products: IBM Informix ESQL/C and IBM Informix ESQL/COBOL.

E/C This path is valid only for IBM Informix ESQL/C.

E/CO This path is valid only for IBM Informix ESQL/COBOL.

E/F This path is valid only for INFORMIX-ESQL/FORTRAN.

DB This path is valid only for DB-Access.

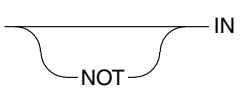
SPL This path is valid only if you are using Informix Stored Procedure Language (SPL).

+ This path is an Informix extension to ANSI standard SQL. If you initiate Informix extension checking and include this syntax branch, you receive a warning. If you have set the DBANSIWARN environment variable, you receive the warnings at run time. To receive the warnings at compile time, compile with the **-ansi** flag.

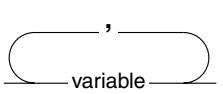
A shaded option is the default. Even if you do not explicitly type the option, it will be in effect unless you choose another option.

Syntax enclosed in a pair of arrows indicates that this is a subdiagram.

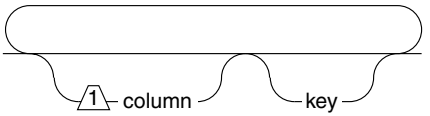
The vertical line is a terminator and indicates that the statement is complete.



A branch below the main line indicates an optional path.



A loop indicates a path that can be repeated.



A gate (1) in an option indicates that you can only use that option once, even though it is within a larger loop.

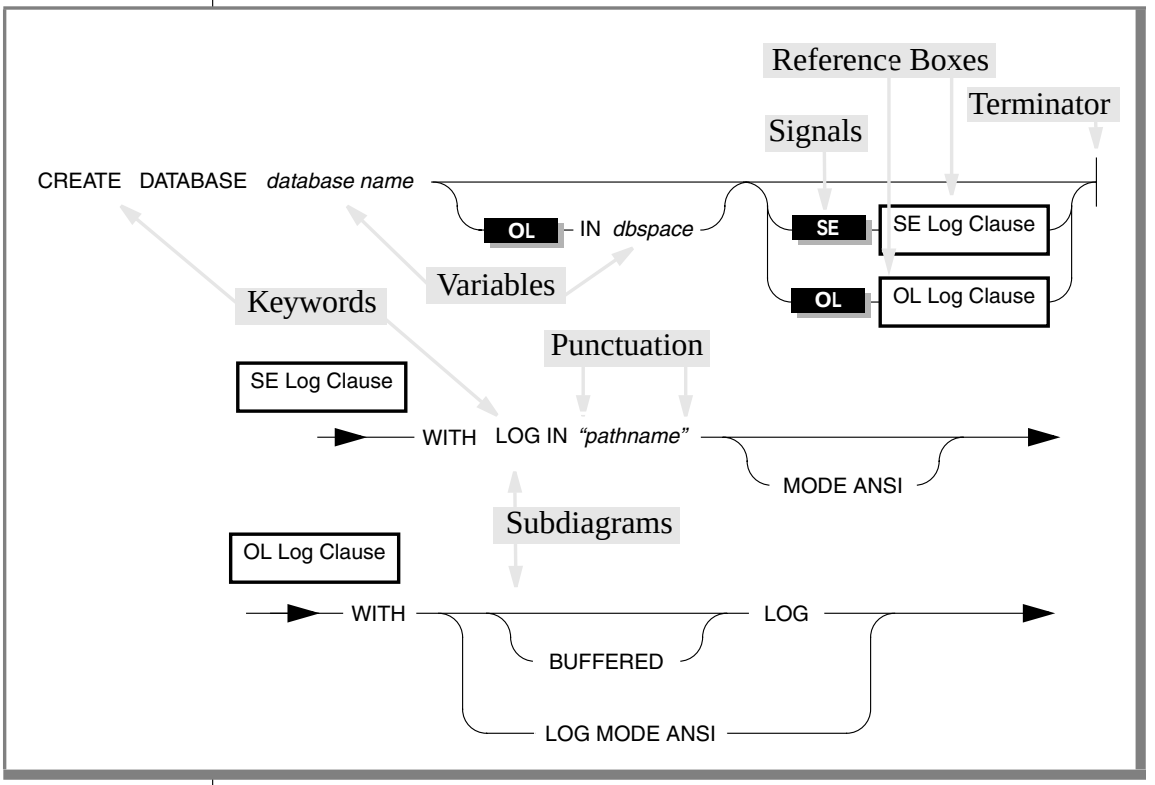
In the *IBM Informix Guide to SQL: Reference*, icons that appear in the left margin indicate that the accompanying shaded text is valid only for some products or under certain conditions. In addition to the icons described in the preceding list, you may encounter the following icons in the left margin:

ANSI This icon indicates that the functionality described in the shaded text is valid only if your database is ANSI-compliant.

X/O This icon indicates that the functionality described in the shaded text conforms to X/Open standards for dynamic SQL. This functionality is available when you compile your embedded-language application with the **-xopen** flag.

Figure 1 shows the elements of a syntax diagram for the CREATE DATABASE statement.

Figure 1
Elements of a syntax diagram



To construct a statement using this diagram, start at the top left with the keywords CREATE DATABASE. Then follow the diagram to the right, proceeding through the options that you want. The diagram conveys the following information:

1. You must type the words CREATE DATABASE.
2. You must supply a *database name*.
3. You can stop, taking the direct route to the terminator, or you can take one or more of the optional paths.
4. If desired, you can designate a dbspace by typing the word IN and a dbspace name.

5. If desired, you can specify logging. Here, you are constrained by the database server with which you are working.
   - If you are using IBM Informix OnLine, go to the subdiagram named *OL Log Clause*. Follow the subdiagram by typing the keyword WITH, then choosing and typing either LOG, BUFFERED LOG, or LOG MODE ANSI. Then, follow the arrow back to the main diagram.
   - If you are using IBM Informix SE, go to the subdiagram named *SE Log Clause*. Follow the subdiagram by typing the keywords WITH LOG IN, typing a double quote, supplying a pathname, and closing the quotes. You can then choose the MODE ANSI option below the line or continue to follow the line across.
6. Once you are back at the main diagram, you come to the terminator. Your CREATE DATABASE statement is complete.

Chapter

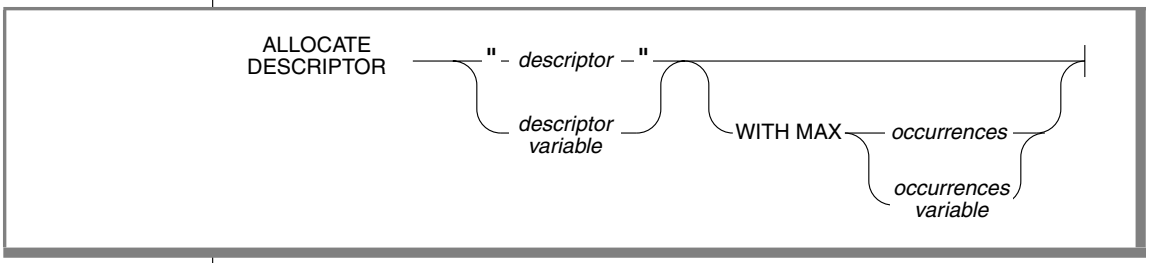
1

SQL Statements

ESQL

ALLOCATE DESCRIPTOR

Figure 1-1
ALLOCATE DESCRIPTOR



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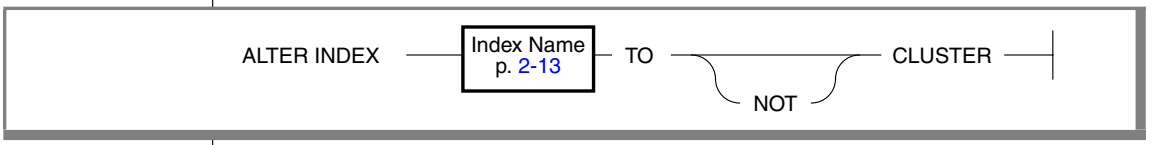
ALTER INDEX

Figure 1-2
ALTER INDEX



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ALTER TABLE

Figure 1-3
ALTER TABLE

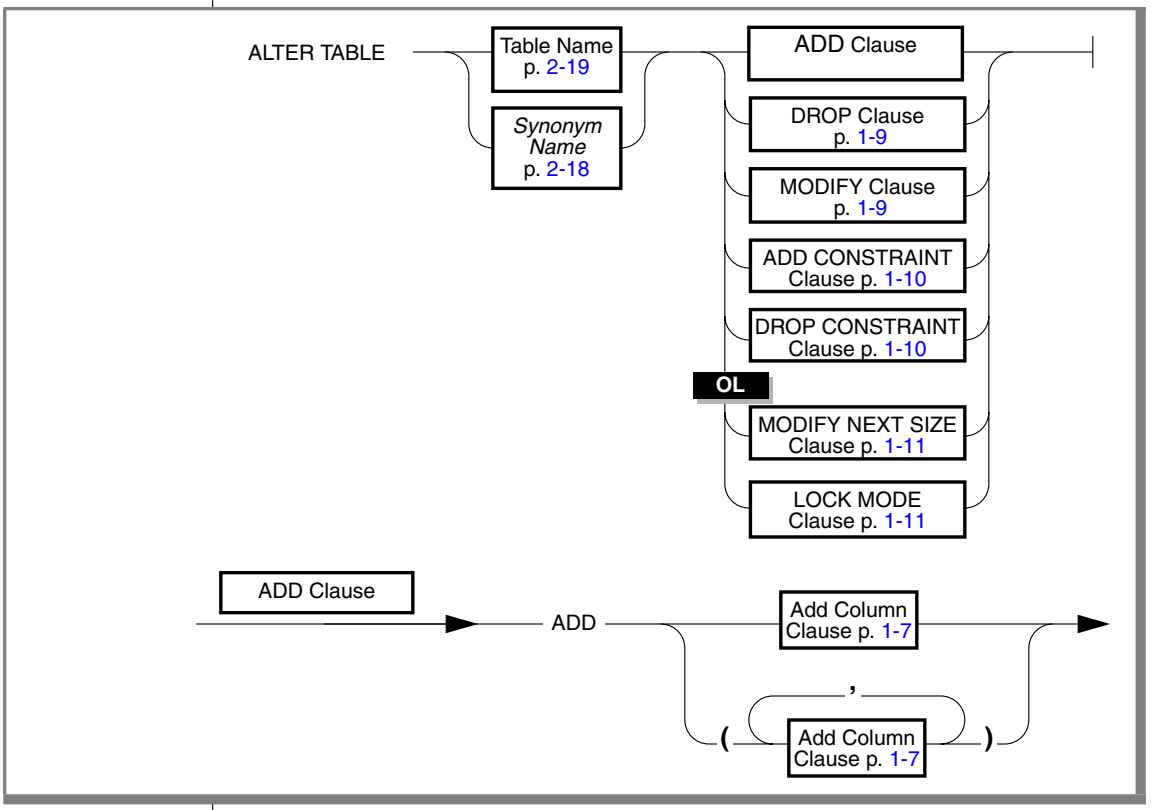


Figure 1-3 (continued)
ALTER TABLE

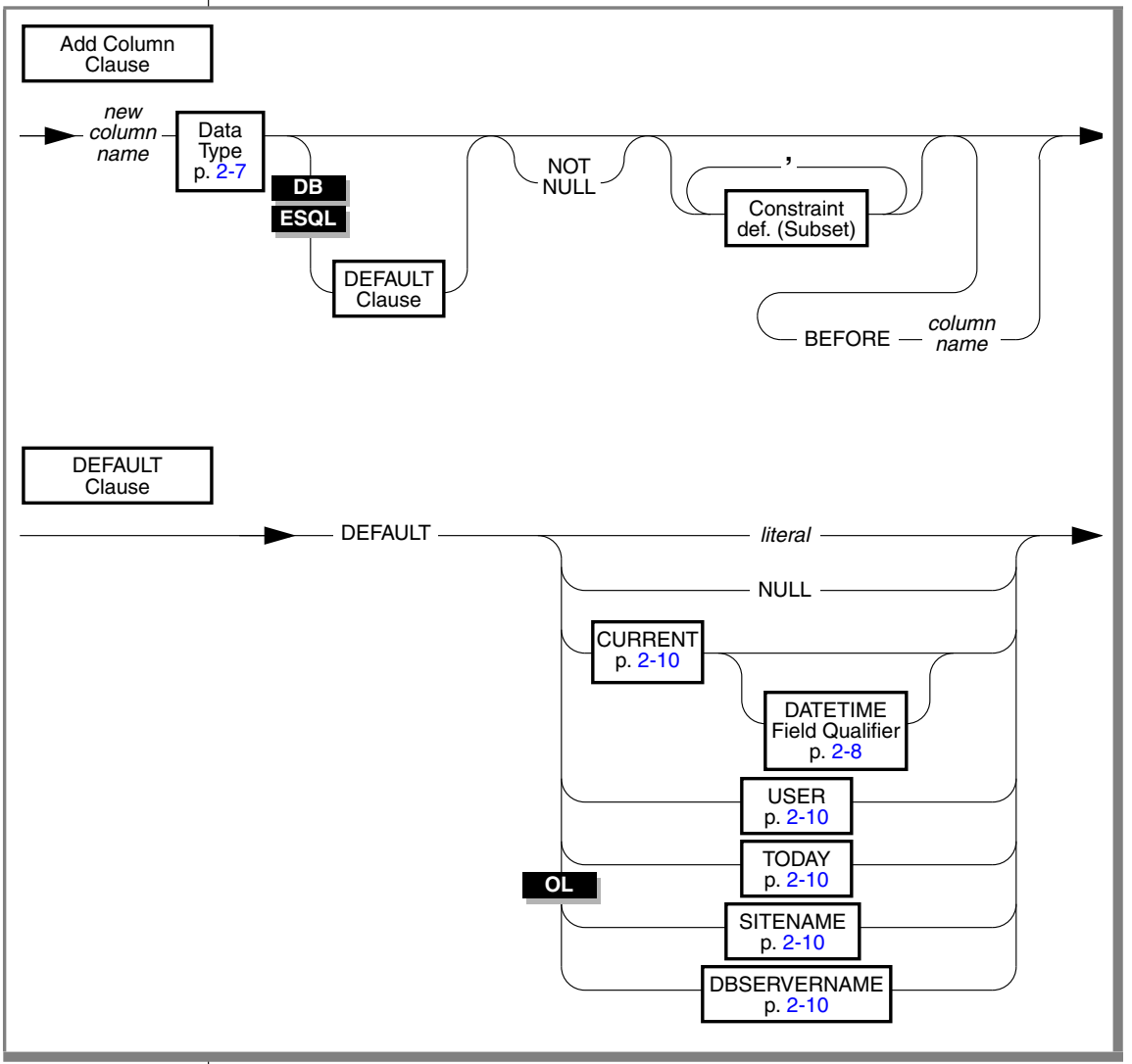


Figure 1-3 (continued)
ALTER TABLE

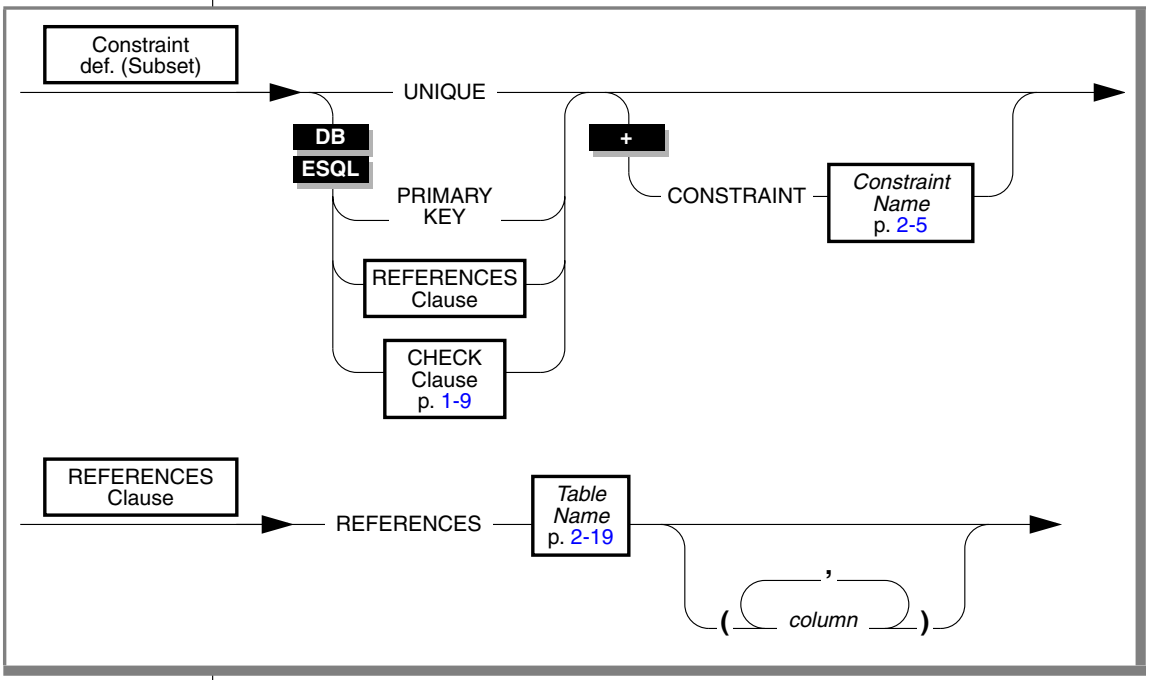


Figure 1-3 (continued)
ALTER TABLE

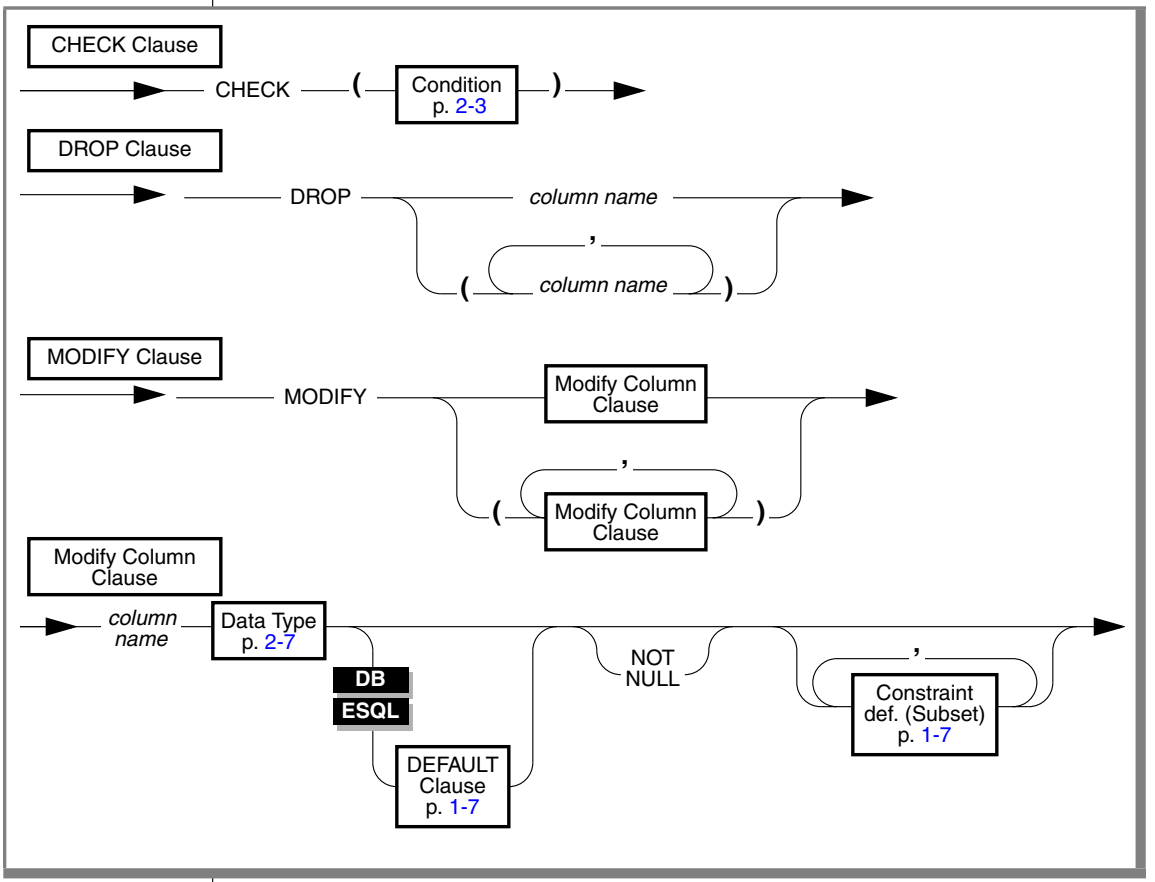


Figure 1-3 (continued)
ALTER TABLE

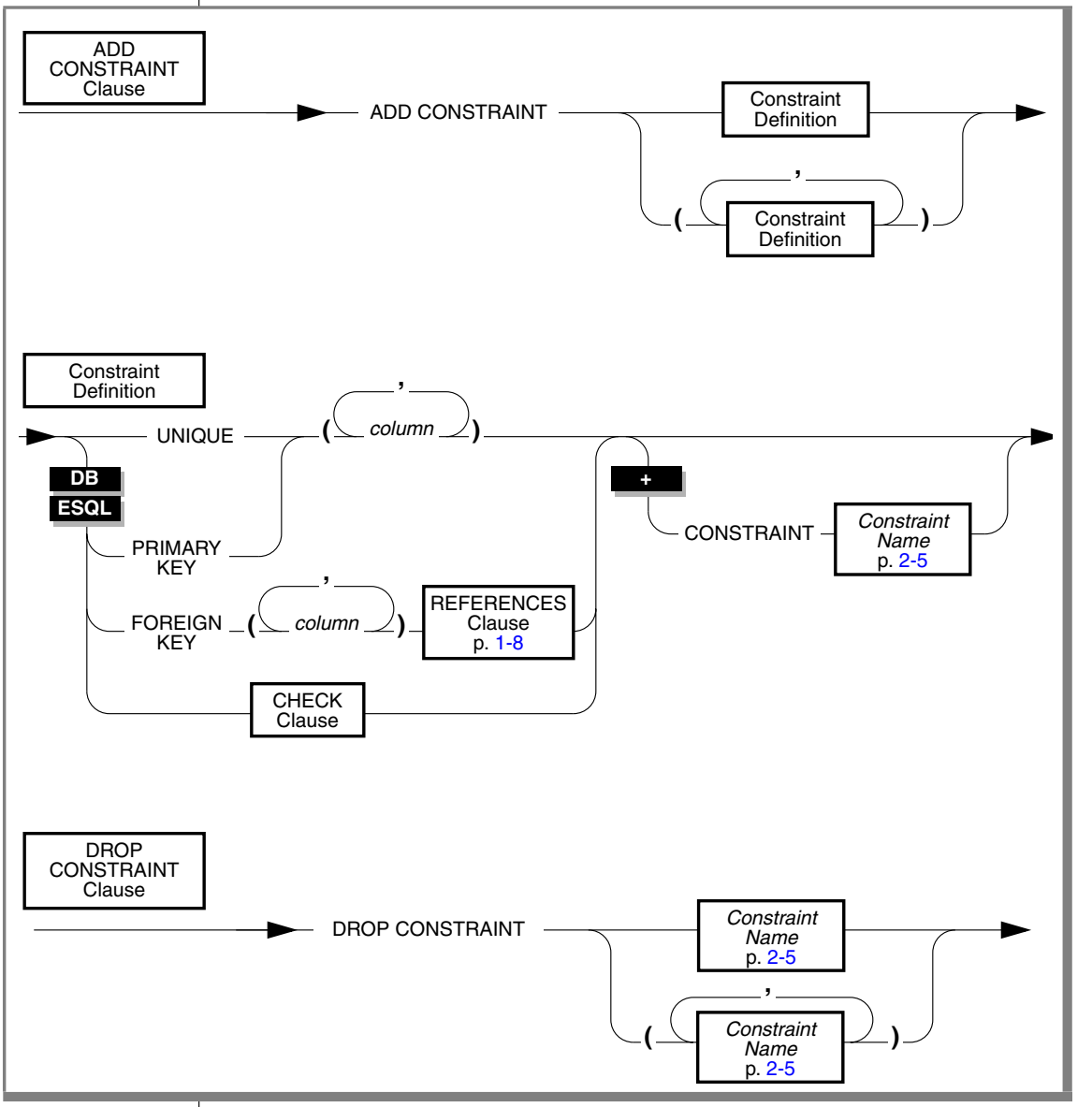
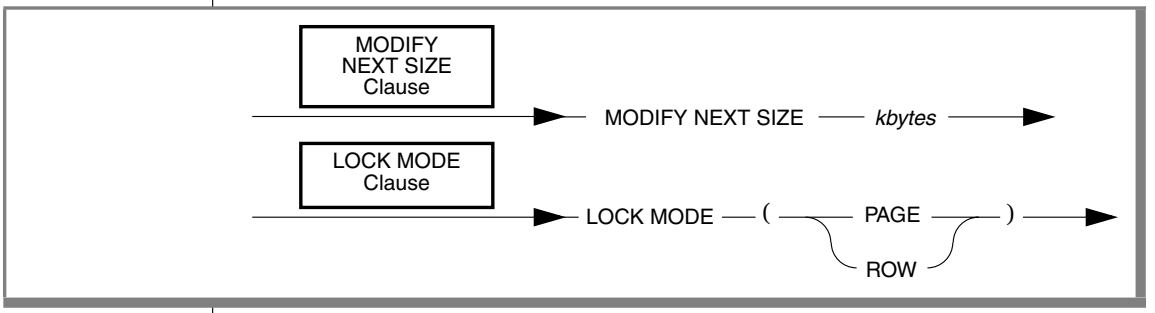


Figure 1-3 (continued)
ALTER TABLE



+

BEGIN WORK

Figure 1-4
BEGIN WORK

SE

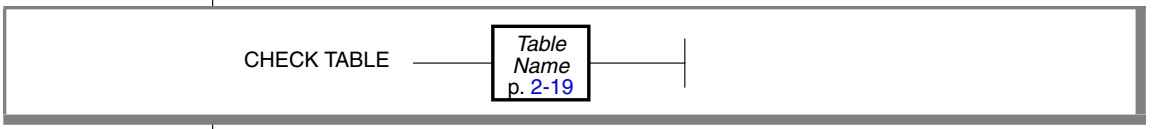
DB

ISQL

+

CHECK TABLE

Figure 1-5
CHECK TABLE

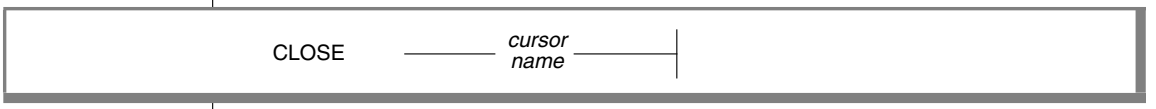


I4GL

ESQL

CLOSE

Figure 1-6
CLOSE



+

CLOSE DATABASE

Figure 1-7
CLOSE DATABASE

COMMIT WORK

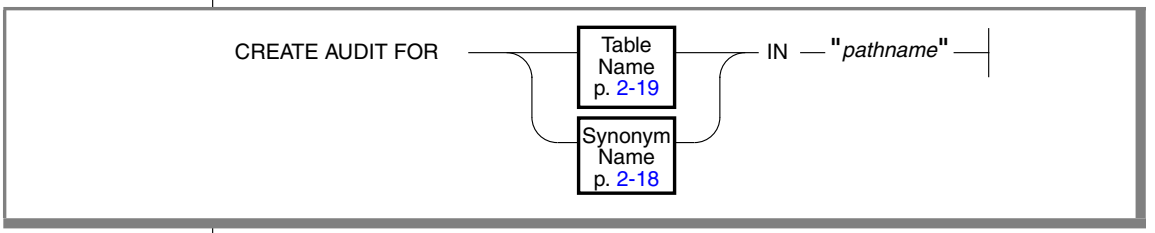
Figure 1-8
COMMIT WORK

SE

+

CREATE AUDIT FOR

Figure 1-9
CREATE AUDIT FOR



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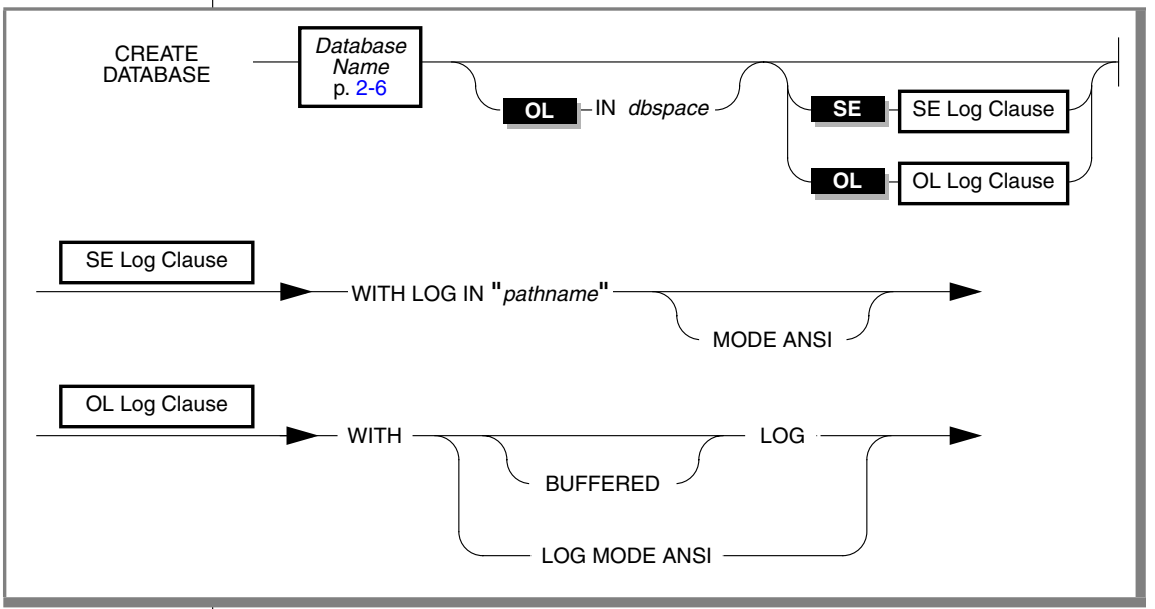
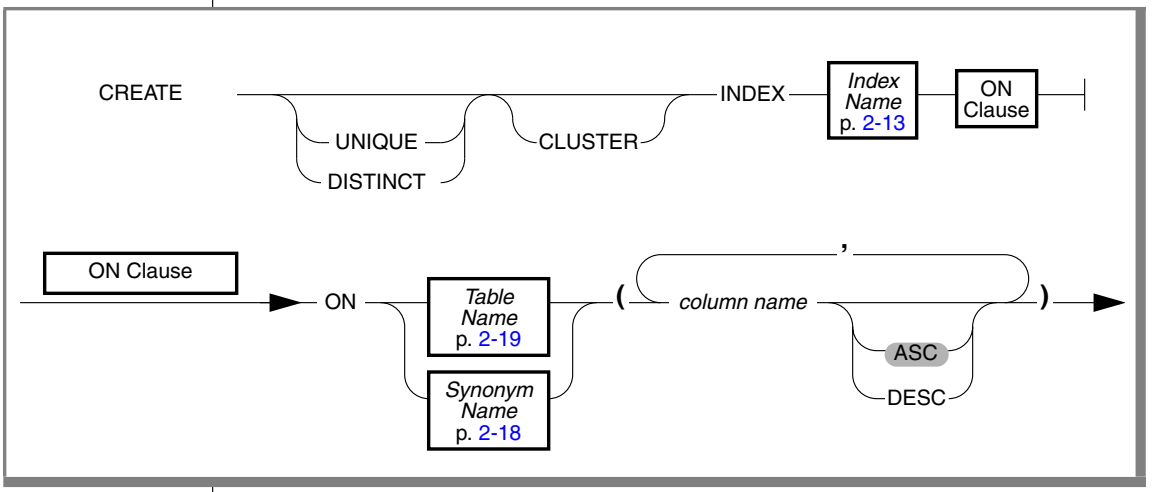
CREATE DATABASE

Figure 1-10
CREATE DATABASE



CREATE INDEX

Figure 1-11
CREATE INDEX



DB

ESQL

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CREATE PROCEDURE

Figure 1-12 *CREATE PROCEDURE*

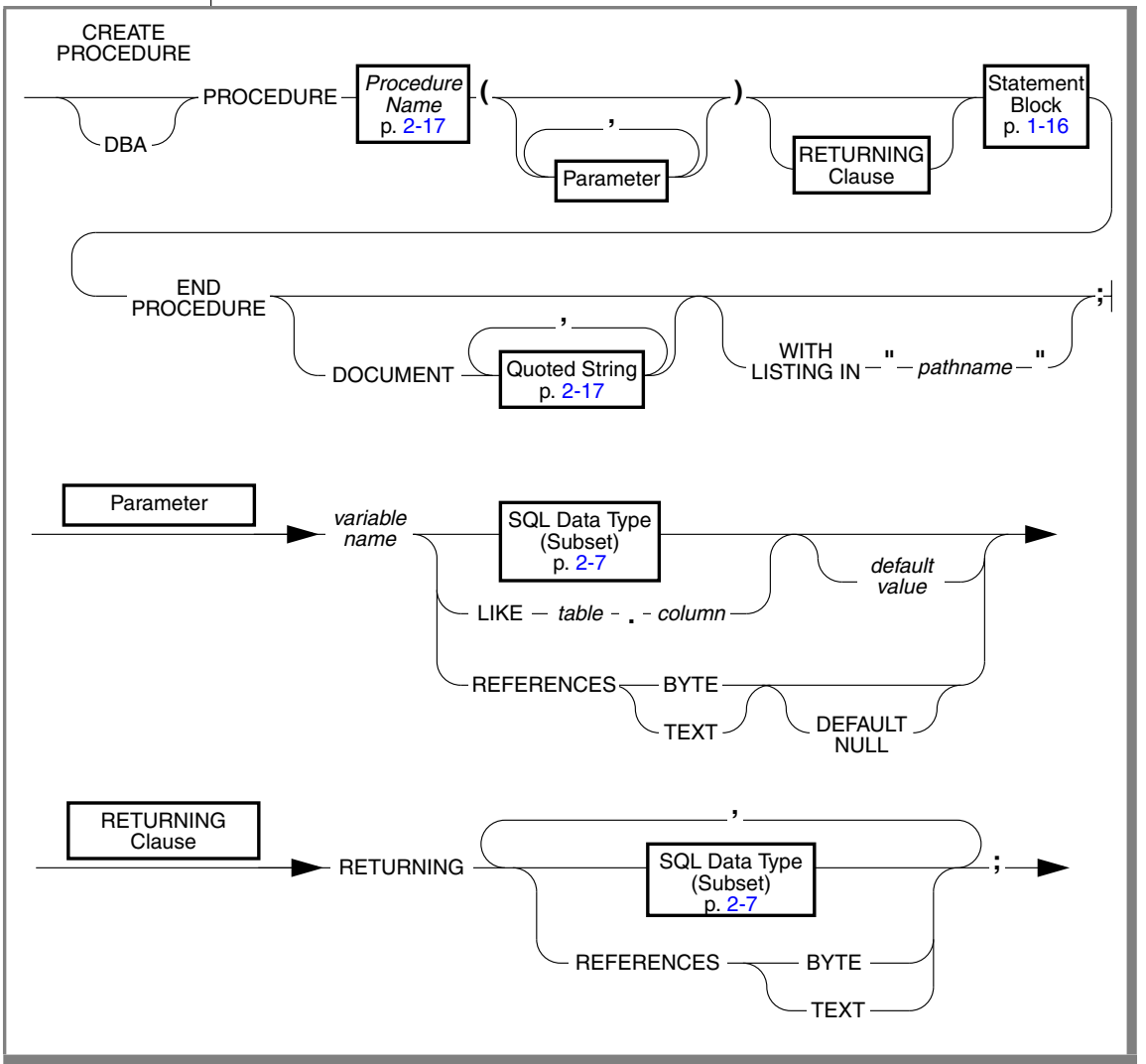
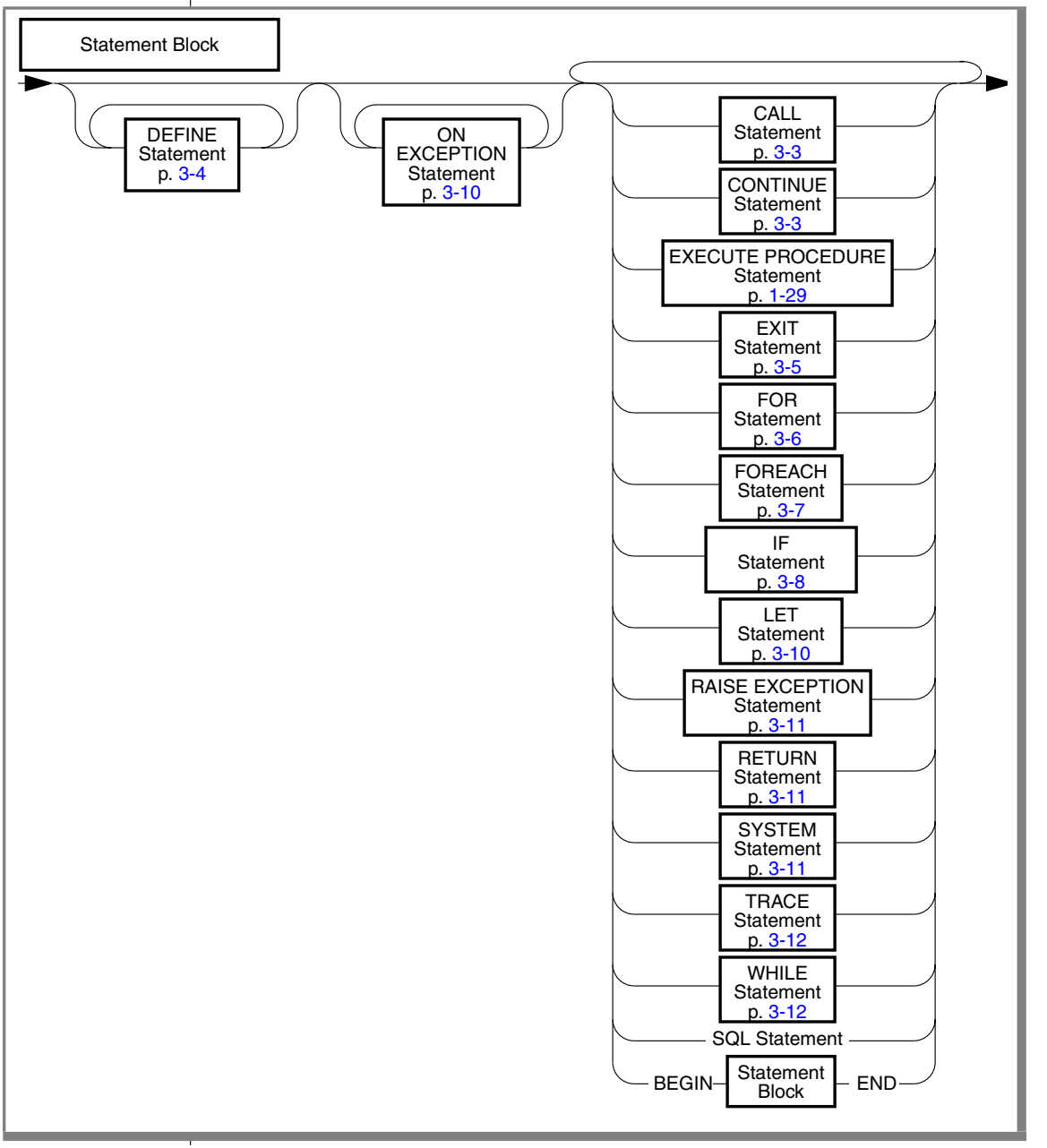


Figure 1-12 (continued) *CREATE PROCEDURE*



ESQL

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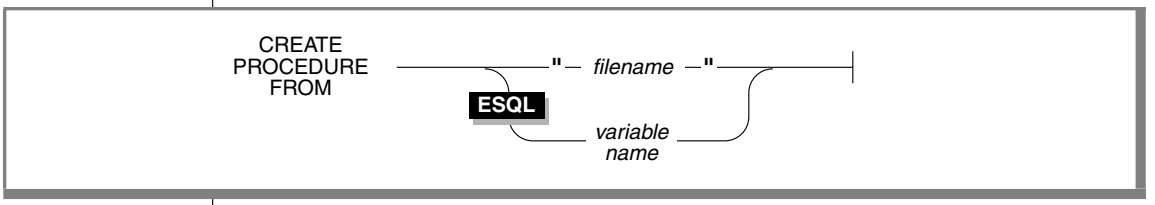
CREATE PROCEDURE FROM

Figure 1-13
CREATE PROCEDURE FROM

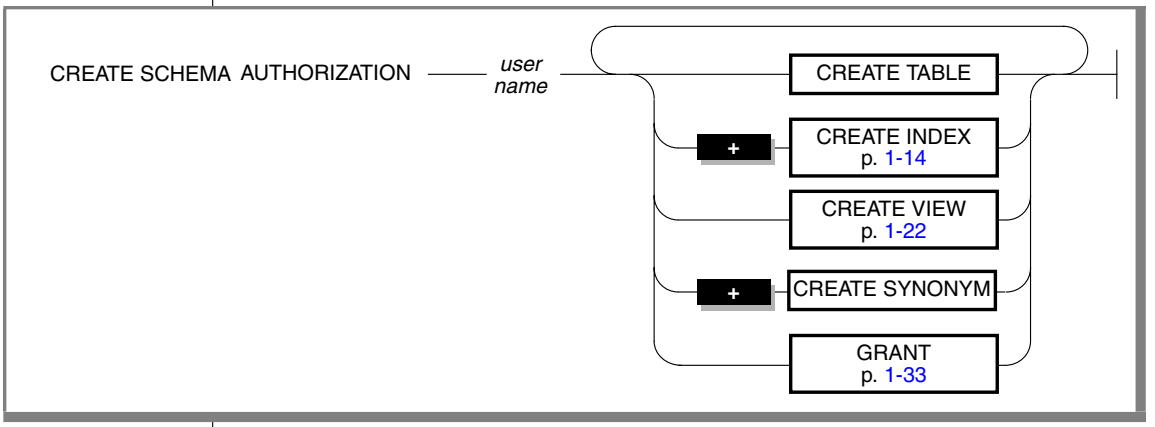


DB

ISQL

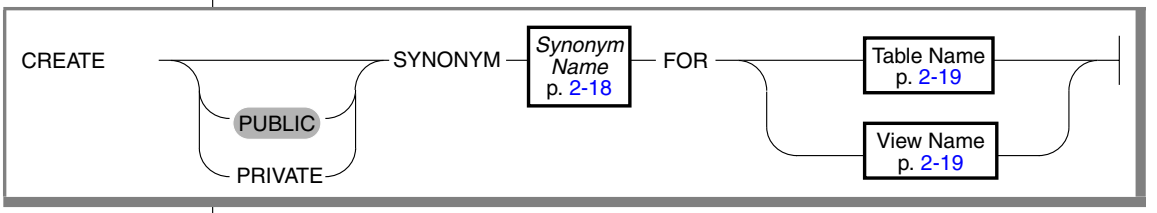
CREATE SCHEMA AUTHORIZATION

Figure 1-14
CREATE SCHEMA AUTHORIZATION



CREATE SYNONYM

Figure 1-15
CREATE SYNONYM



CREATE TABLE

Figure 1-16
CREATE TABLE

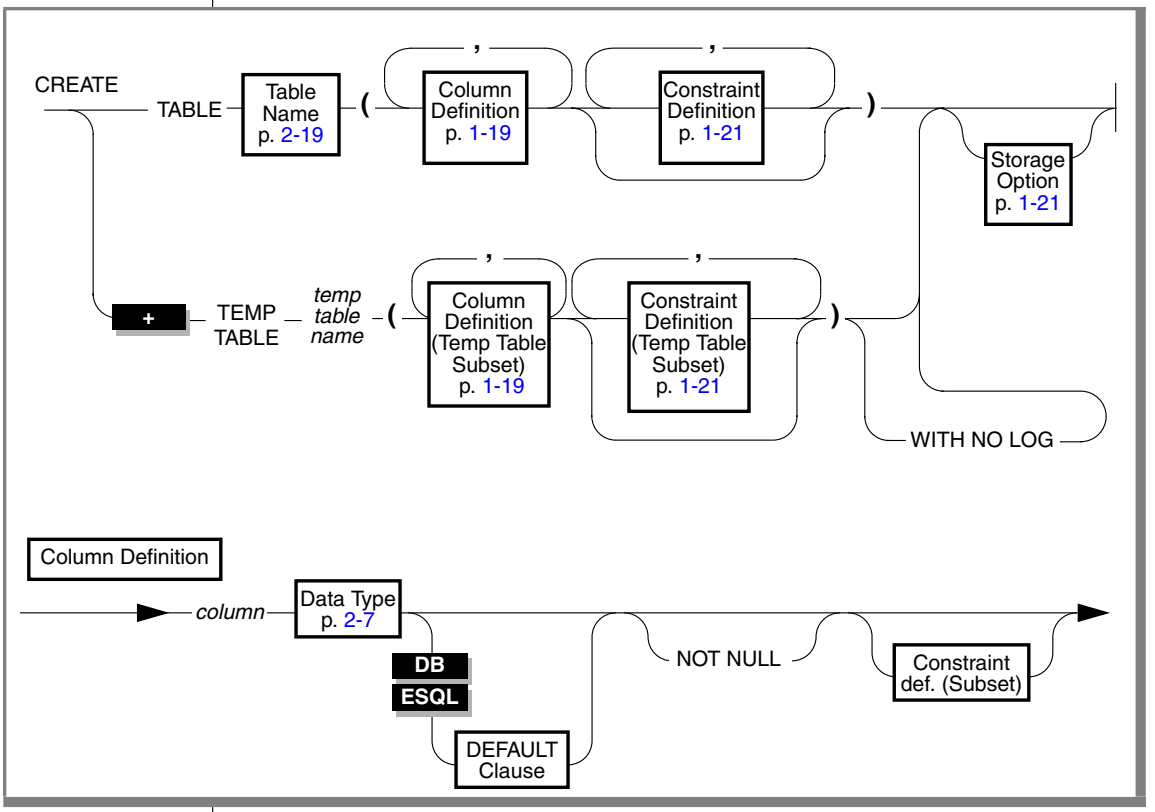


Figure 1-16 (continued)
CREATE TABLE

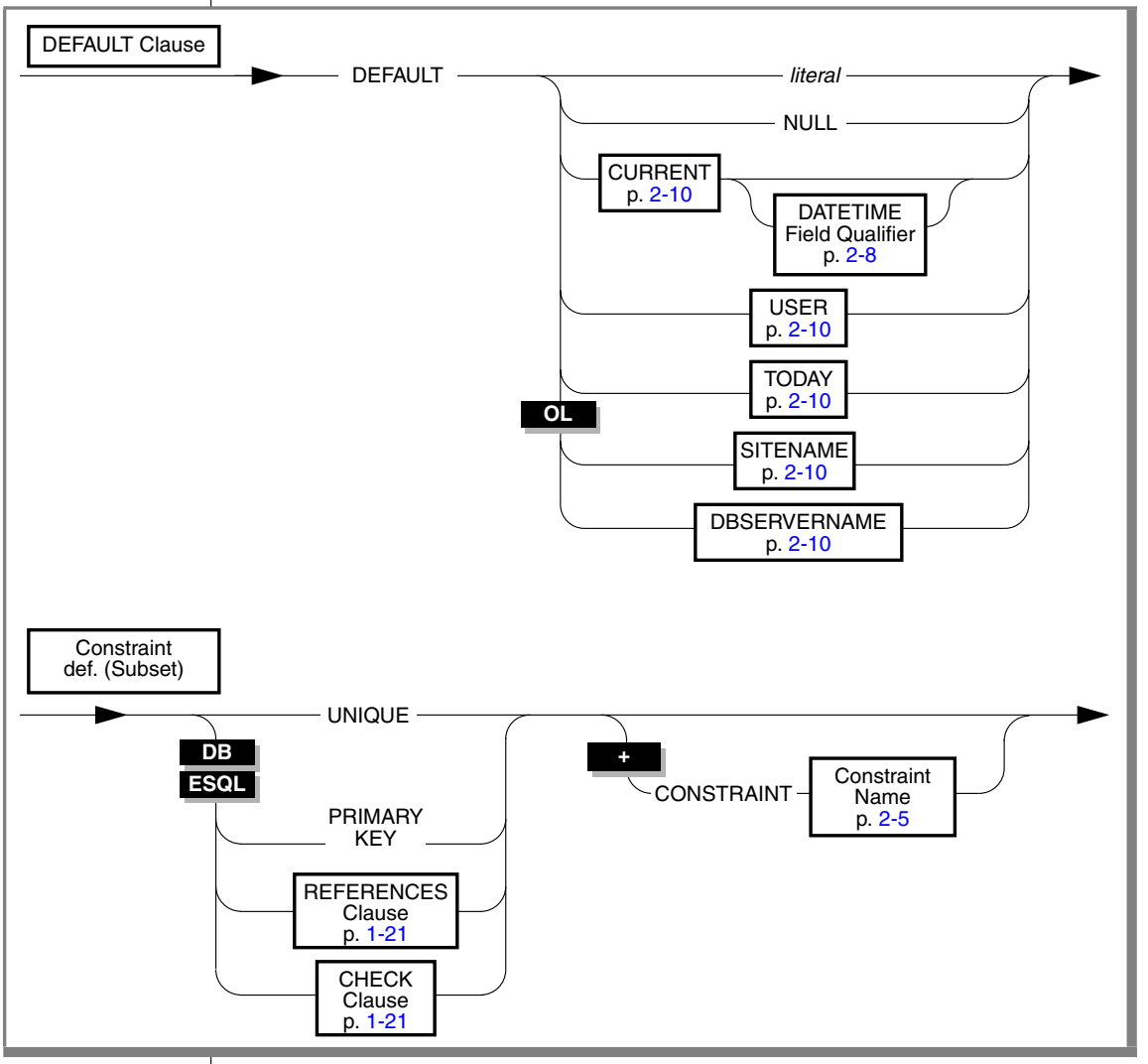


Figure 1-16 (continued)
CREATE TABLE

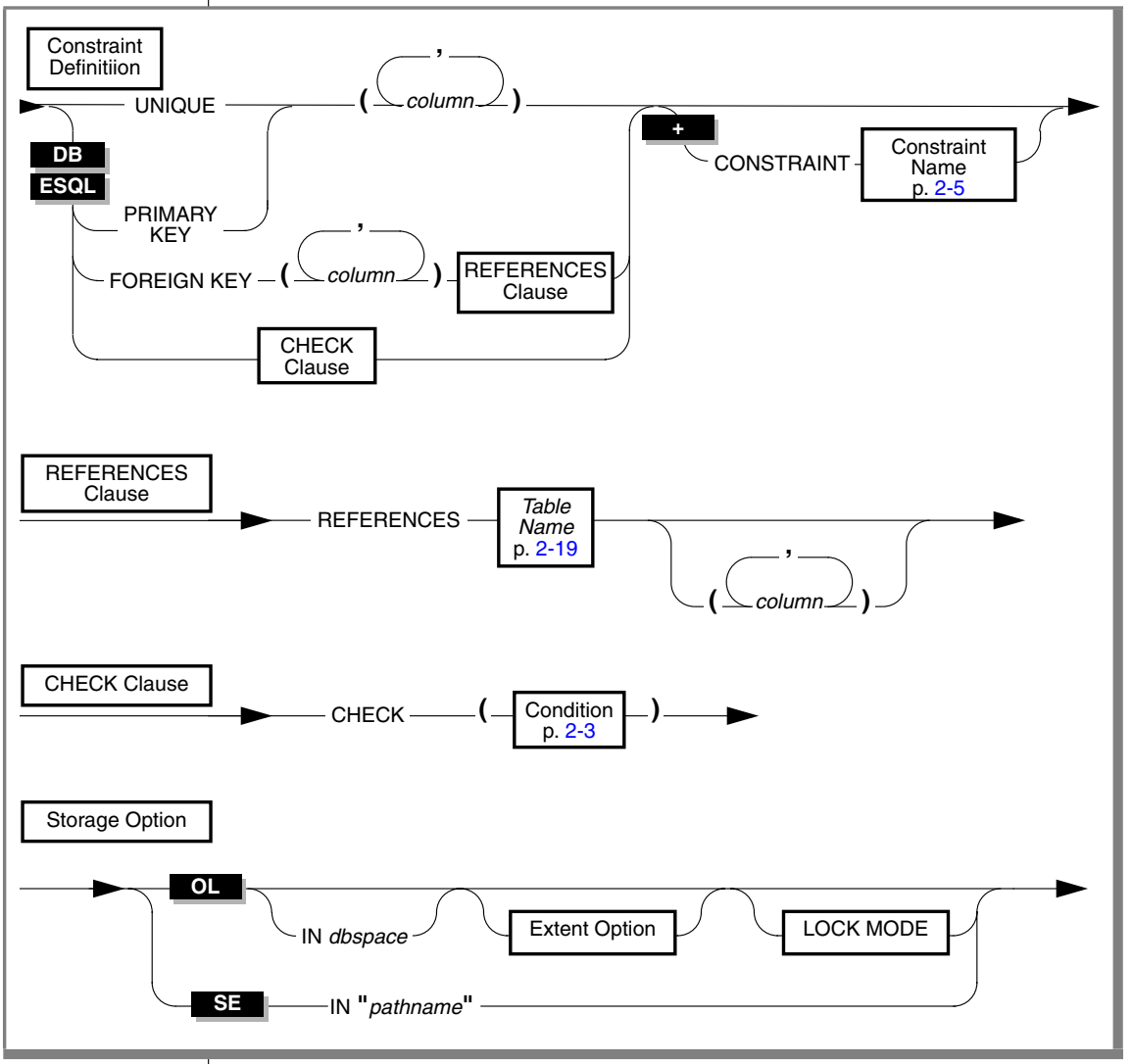
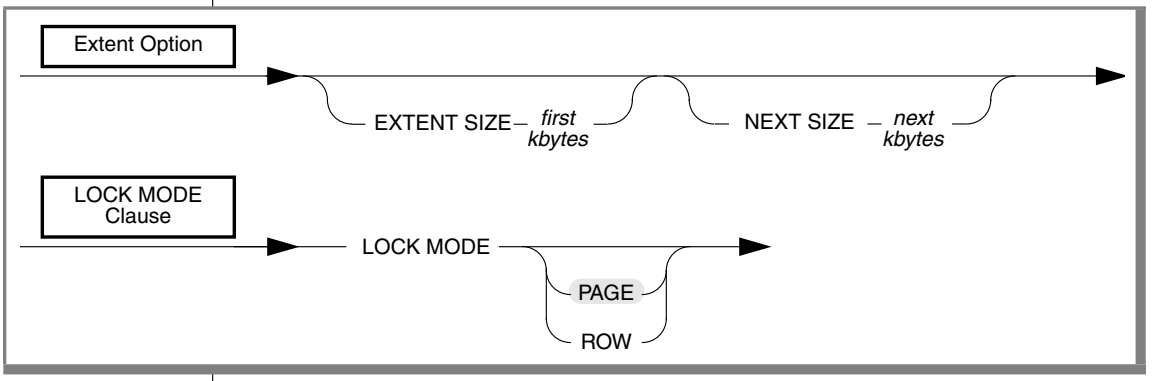
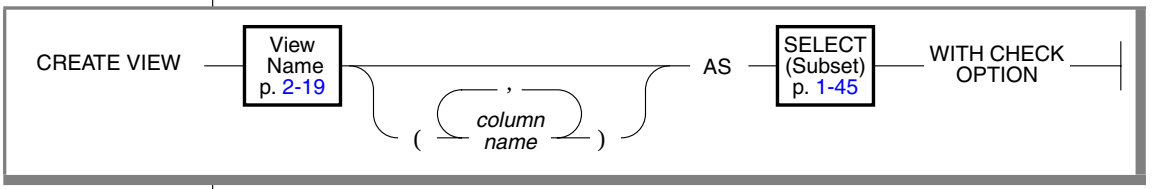


Figure 1-16 (continued)
CREATE TABLE



CREATE VIEW

Figure 1-17
CREATE VIEW



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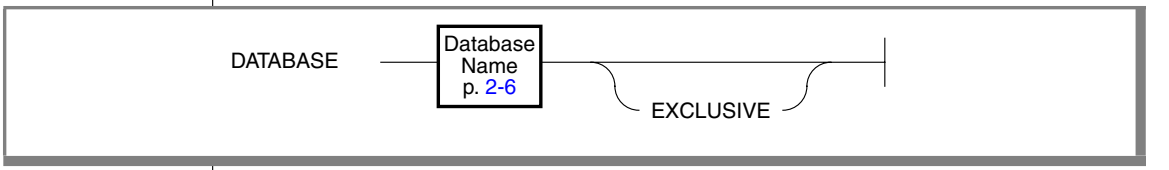
DATABASE

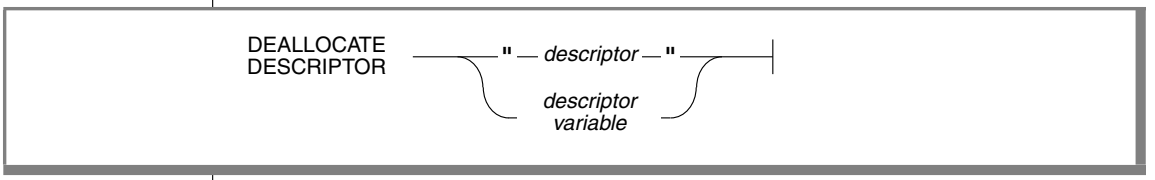
Figure 1-18
DATABASE



ESQL+

DEALLOCATE DESCRIPTOR

Figure 1-19
DEALLOCATE DESCRIPTOR

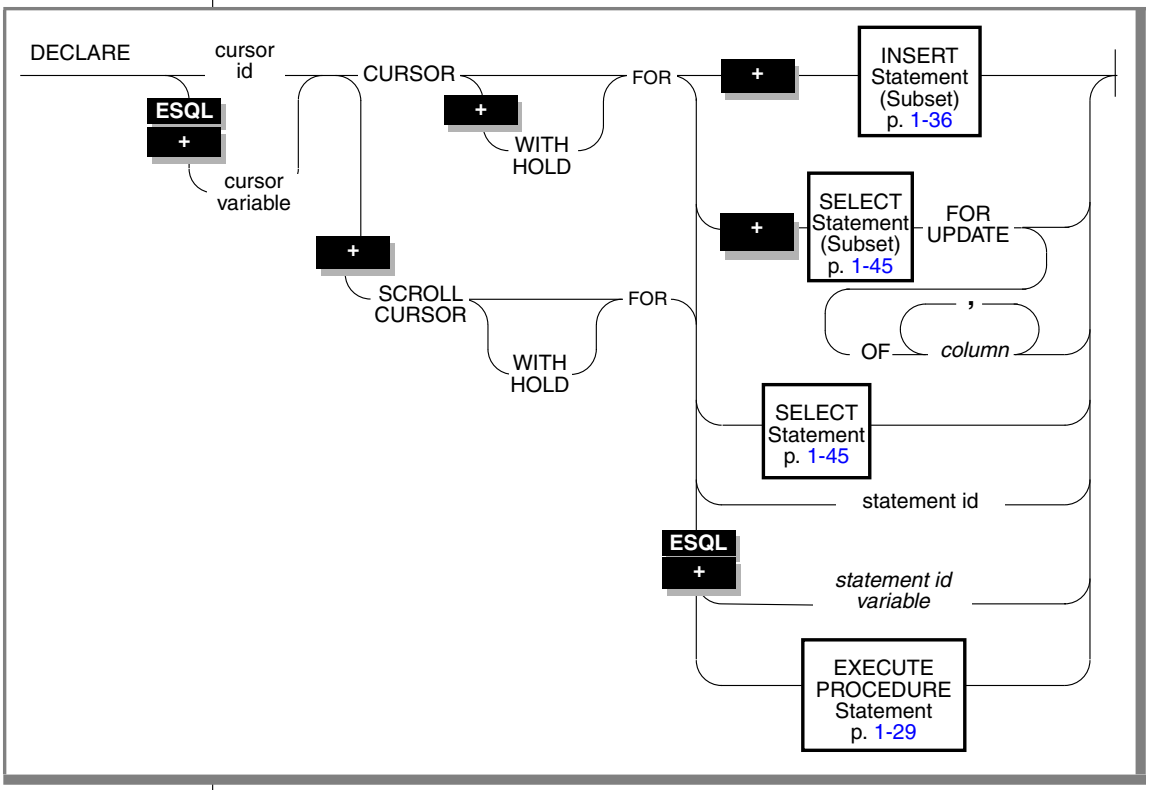


DECLARE

I4GL

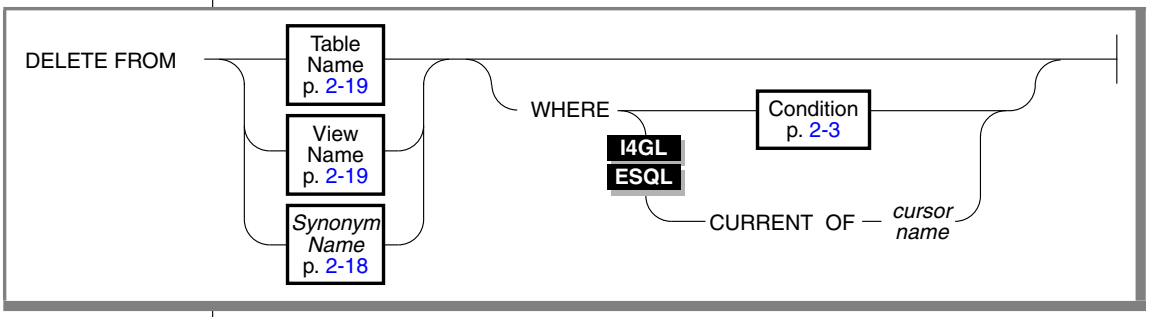
ESQL

Figure 1-20
DECLARE



DELETE FROM

Figure 1-21
DELETE FROM



ESQL
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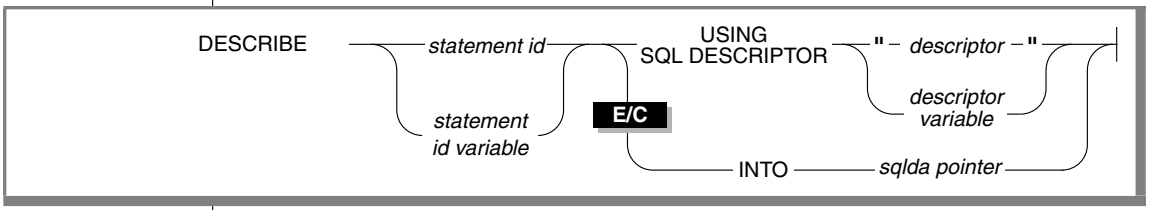
DESCRIBE

Figure 1-22
DESCRIBE



SE

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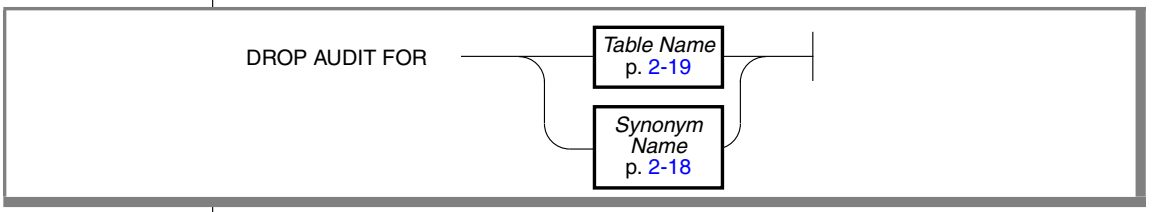
DROP AUDIT FOR

Figure 1-23
DROP AUDIT FOR



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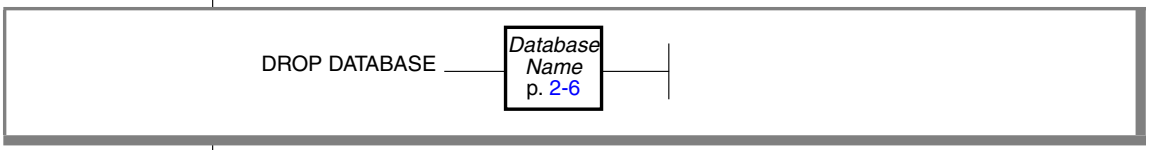
DROP DATABASE

Figure 1-24
DROP DATABASE



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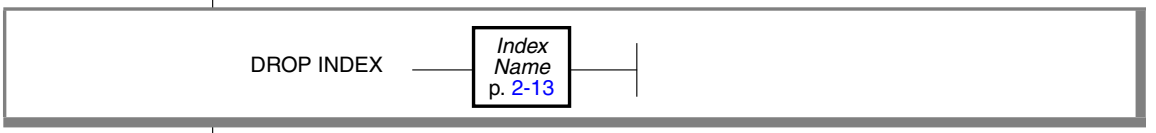
DROP INDEX

Figure 1-25
DROP INDEX



DB

ESQL

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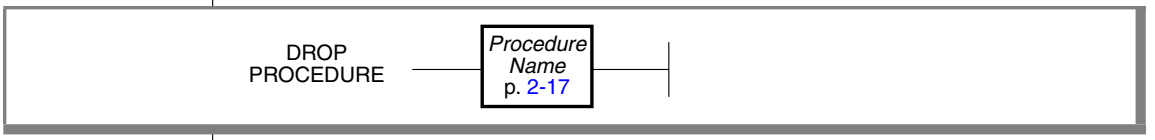
DROP PROCEDURE

Figure 1-26
DROP PROCEDURE



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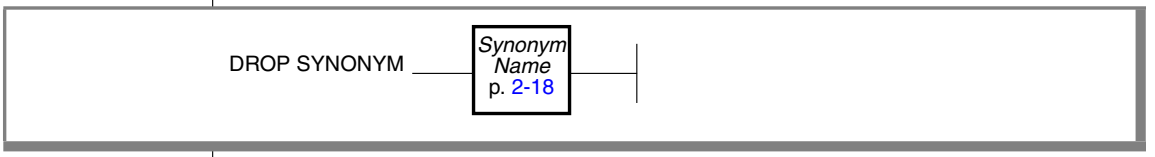
DROP SYNONYM

Figure 1-27
DROP SYNONYM



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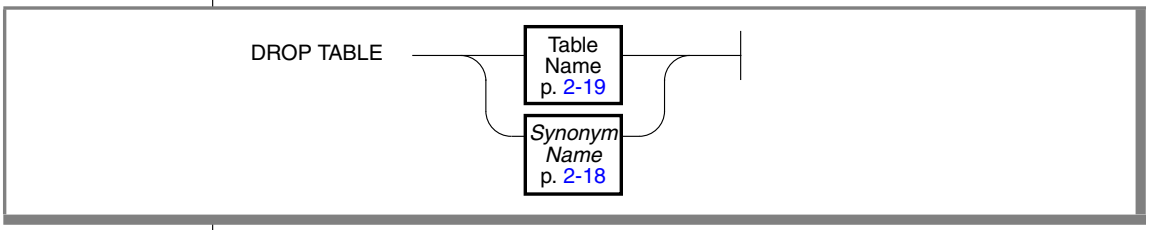
DROP TABLE

Figure 1-28
DROP TABLE



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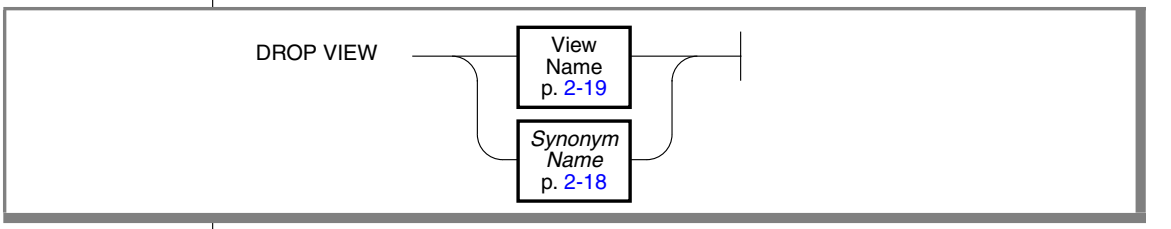
DROP VIEW

Figure 1-29
DROP VIEW



I4GL

ESQL

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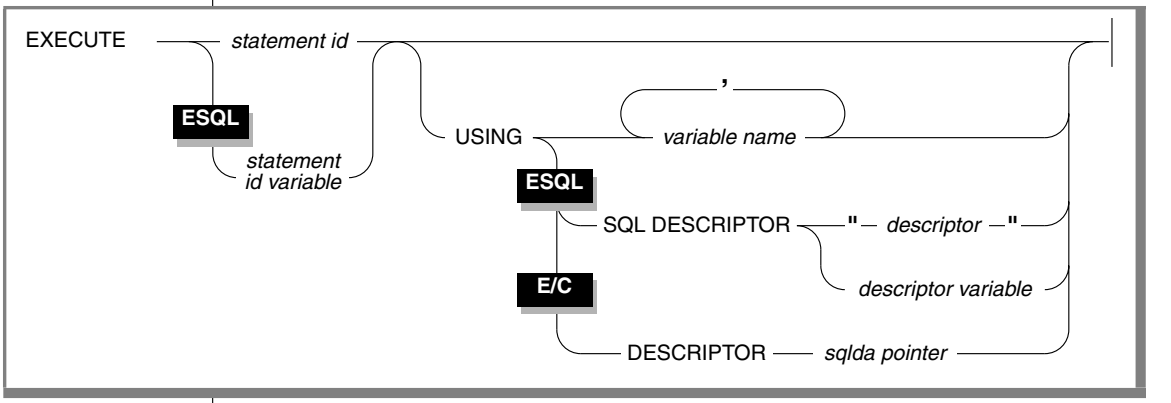
EXECUTE

Figure 1-30
EXECUTE

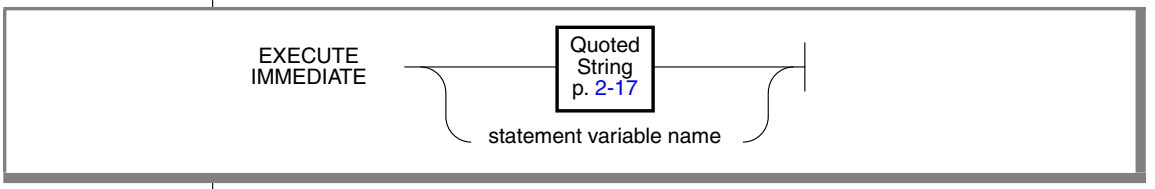


I4GL

ESQL

EXECUTE IMMEDIATE

Figure 1-31
EXECUTE IMMEDIATE



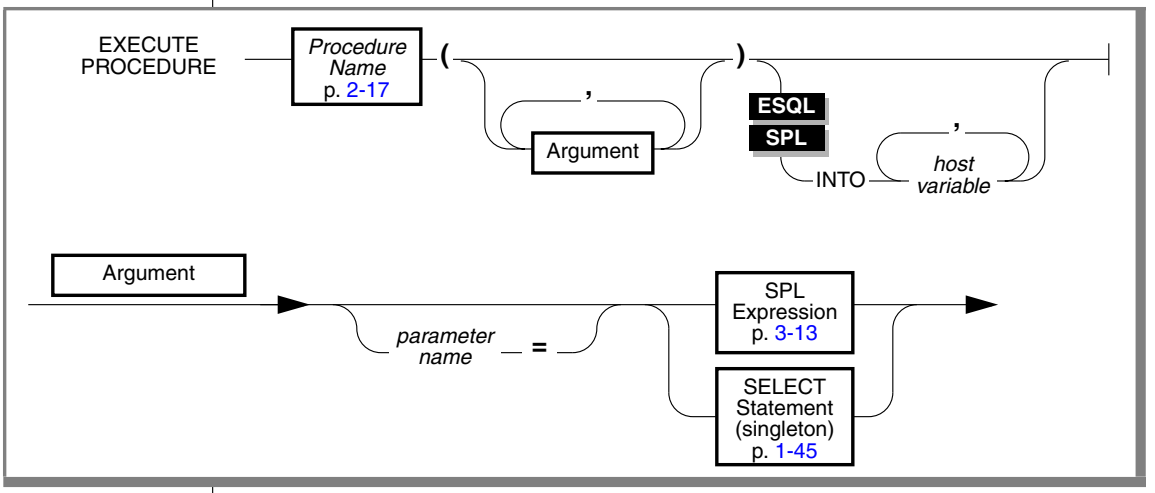
DB

ESQL

+

EXECUTE PROCEDURE

Figure 1-32
EXECUTE PROCEDURE

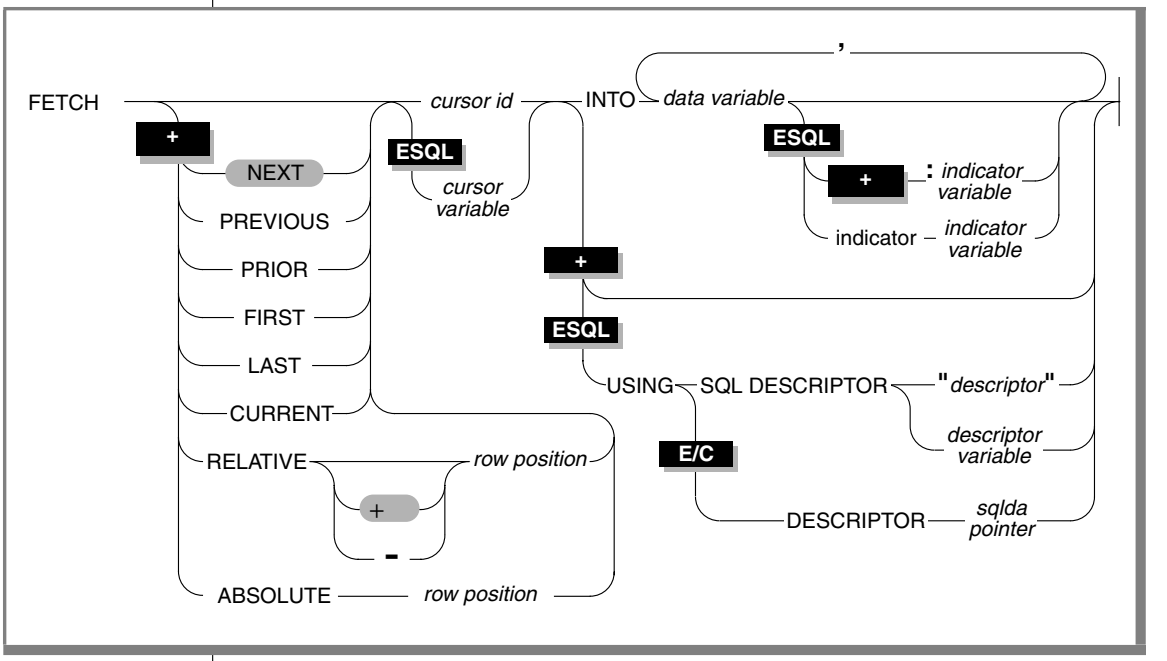


I4GL

ESQL

FETCH

Figure 1-33
FETCH



I4GL

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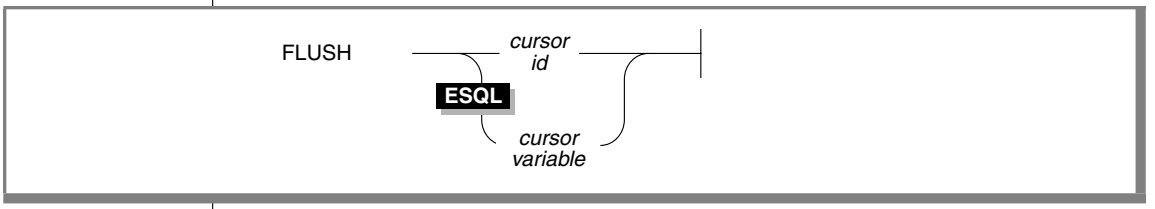
FLUSH

Figure 1-34
FLUSH



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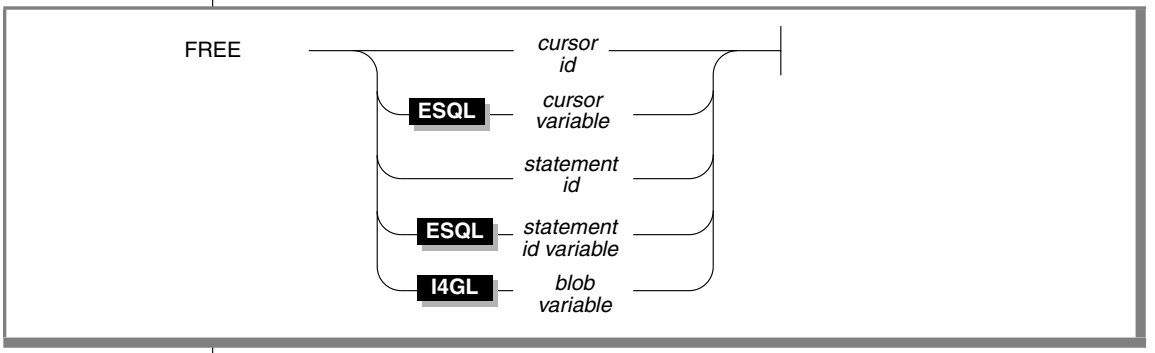
FREE

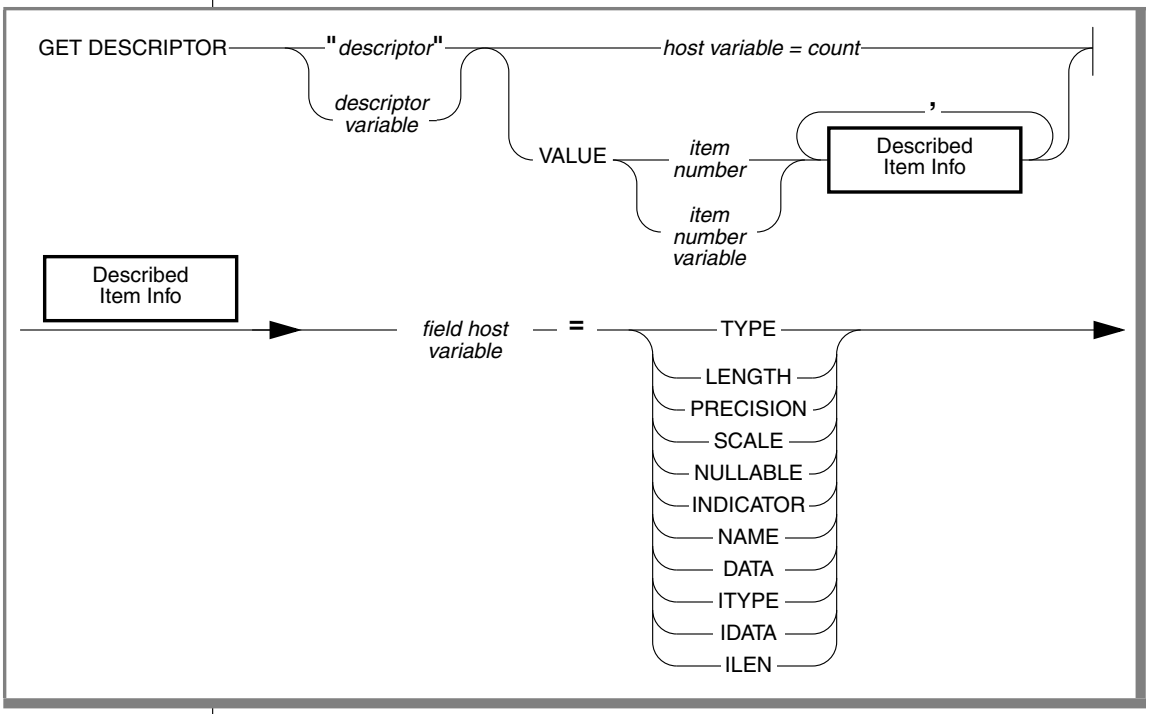
Figure 1-35
FREE



ESQL

GET DESCRIPTOR

Figure 1-36
GET DESCRIPTOR



GRANT

Figure 1-37
GRANT

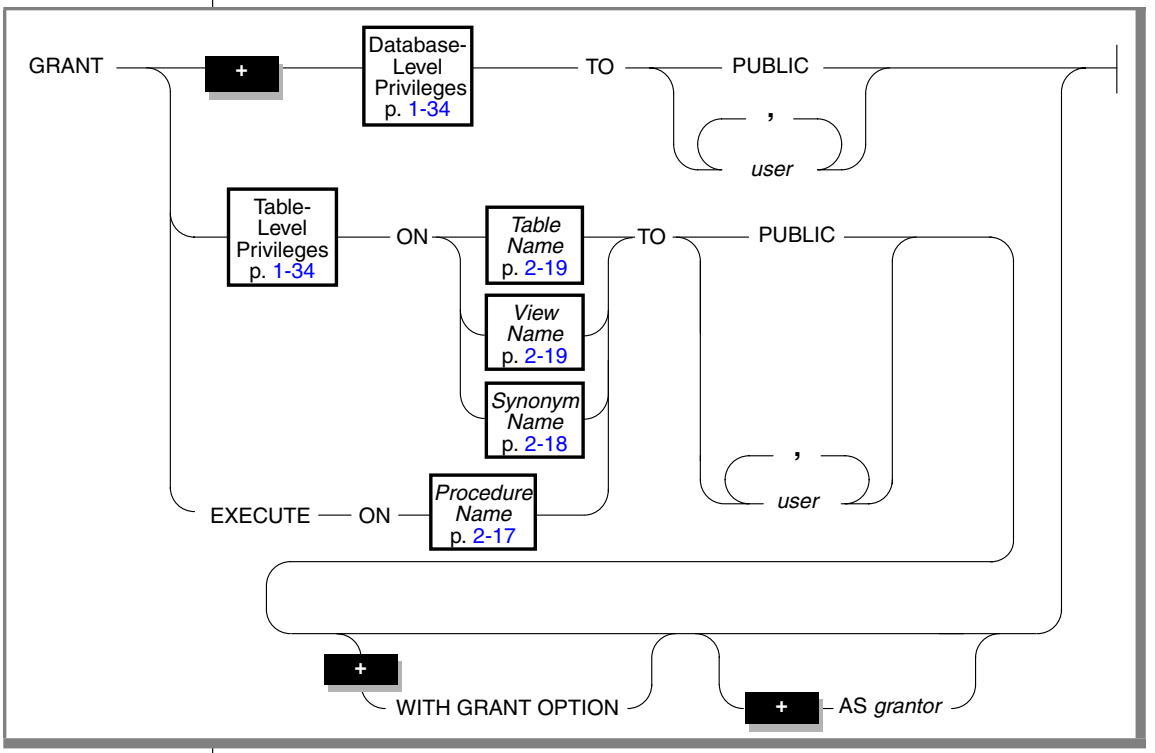
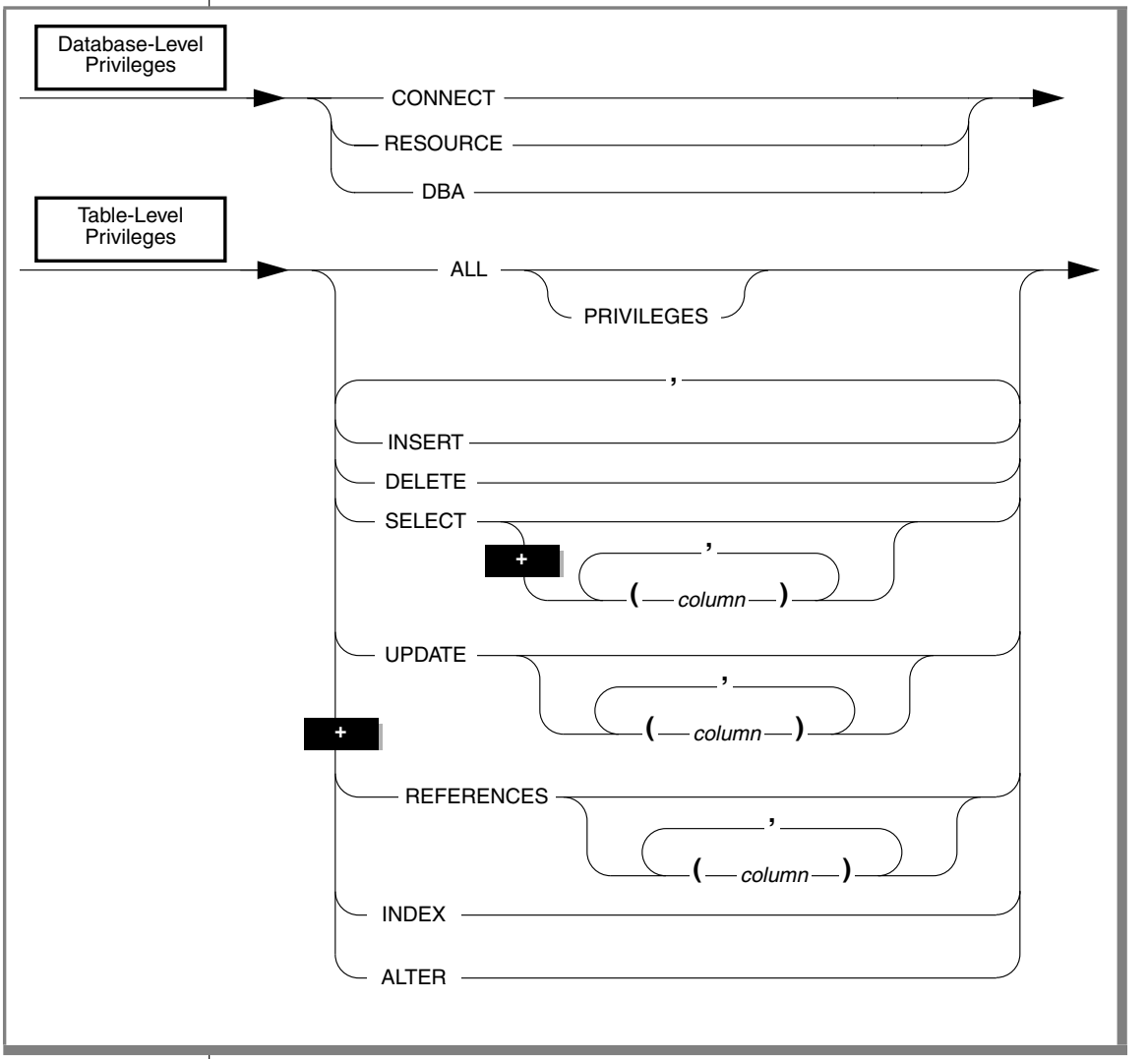


Figure 1-37 (continued)
GRANT



DB

ISQL

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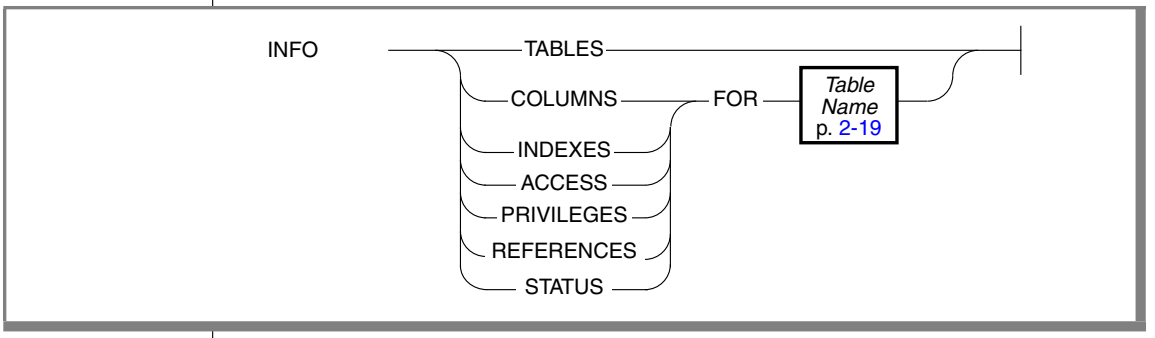
INFO

Figure 1-38
INFO



INSERT INTO

Figure 1-39
INSERT INTO

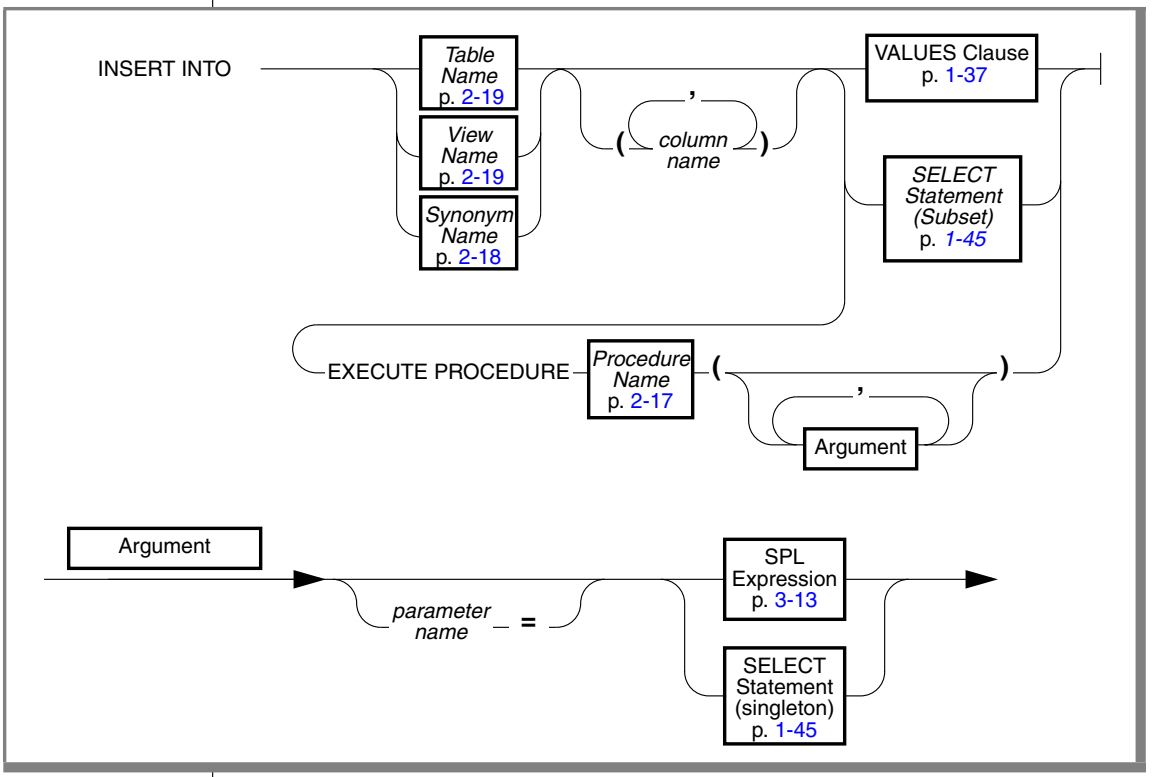
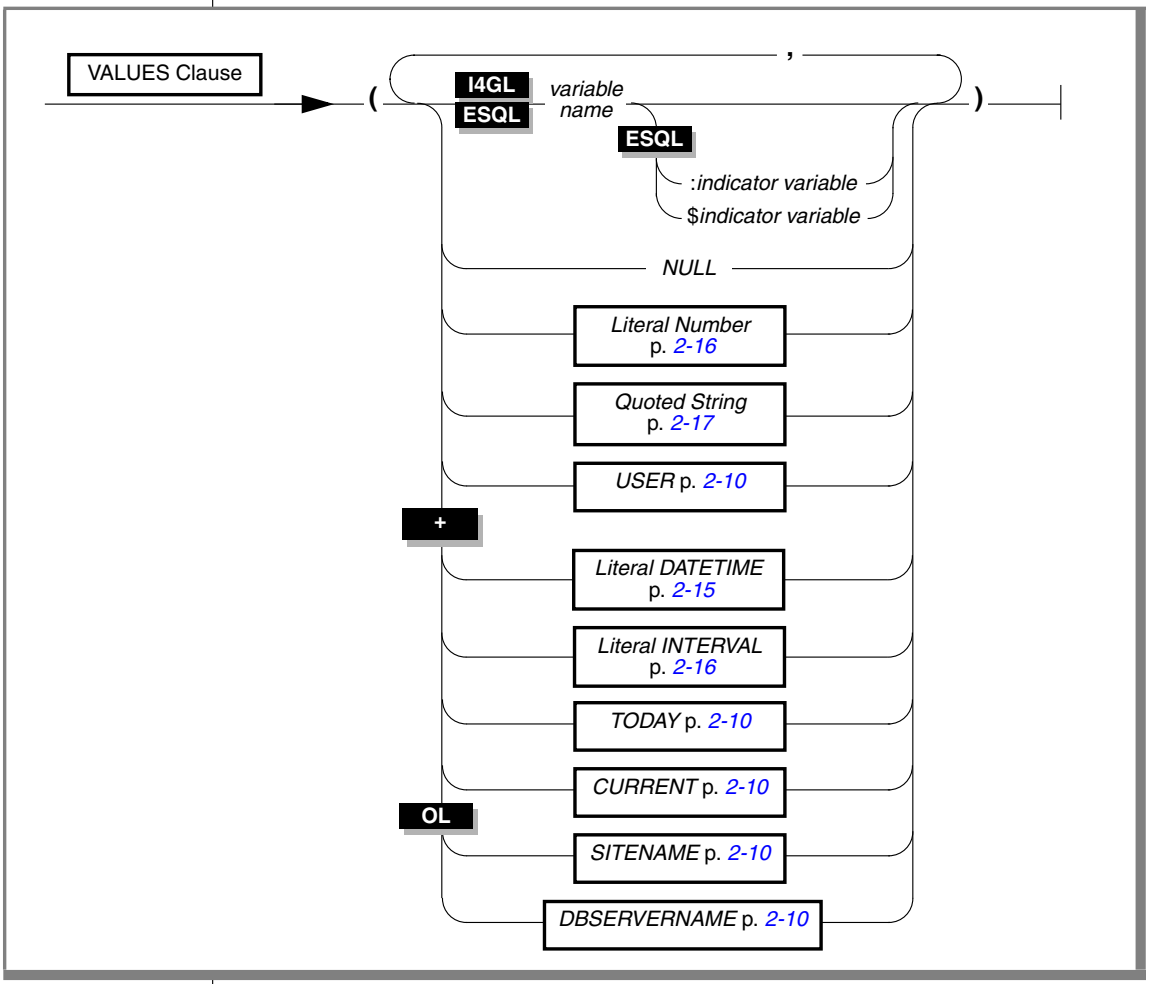


Figure 1-39 (continued)
INSERT INTO



LOAD FROM

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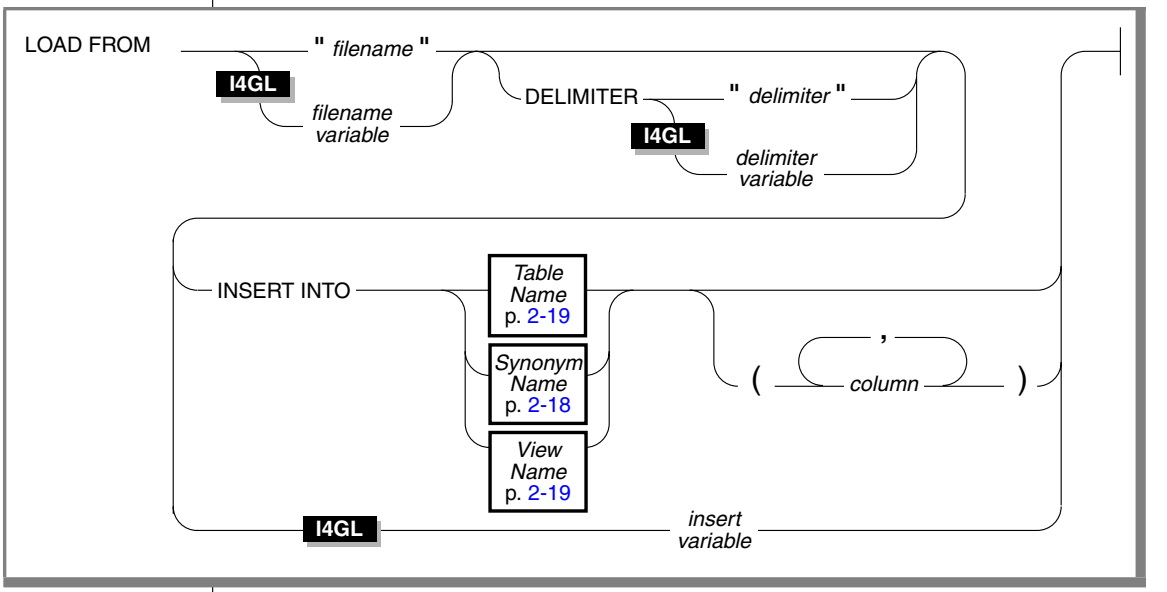
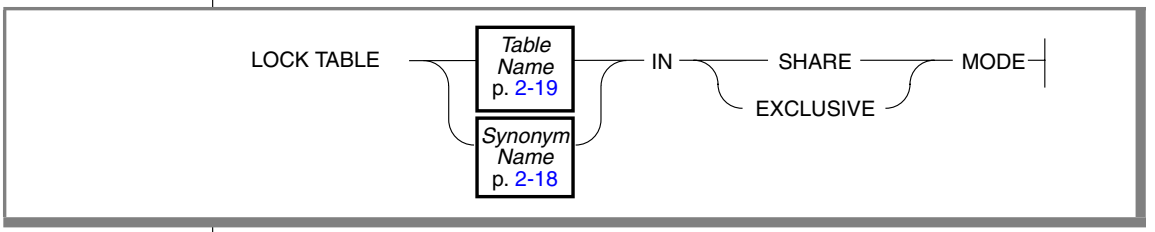
Figure 1-40
LOAD FROM



+

LOCK TABLE

Figure 1-41
LOCK TABLE



I4GL

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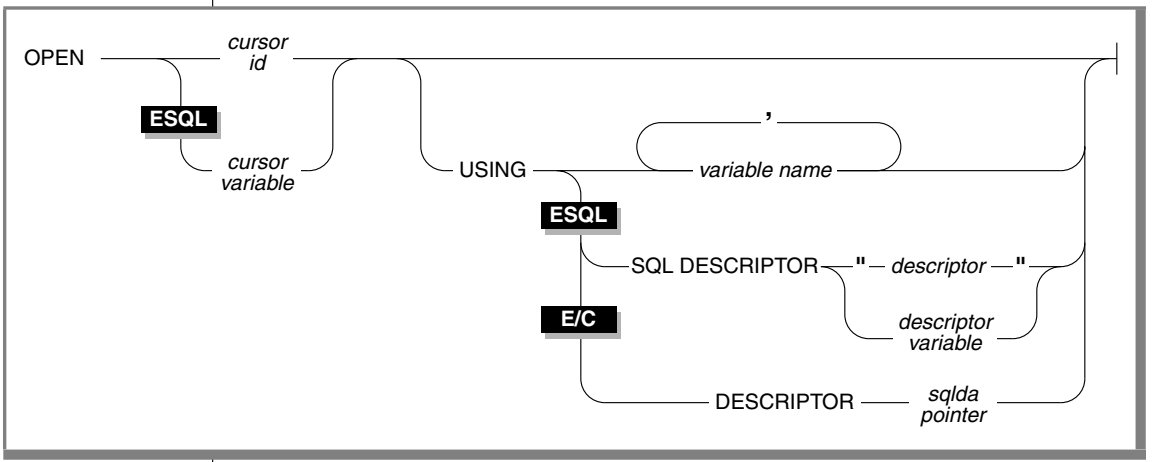
OPEN

Figure 1-42
OPEN



DB

ISQL

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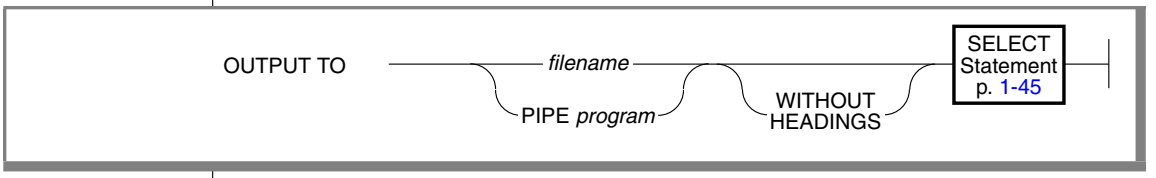
OUTPUT TO

Figure 1-43
OUTPUT TO

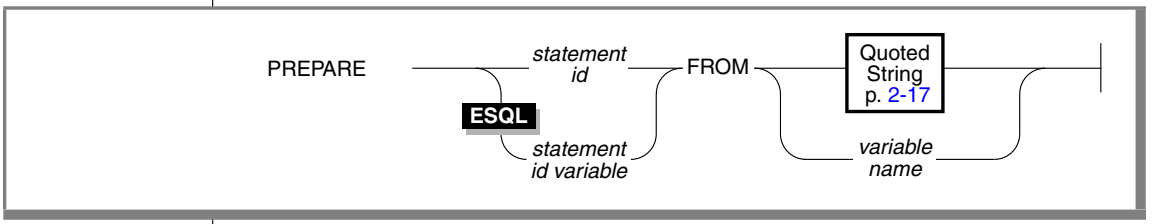


I4GL

ESQL

PREPARE

Figure 1-44
PREPARE



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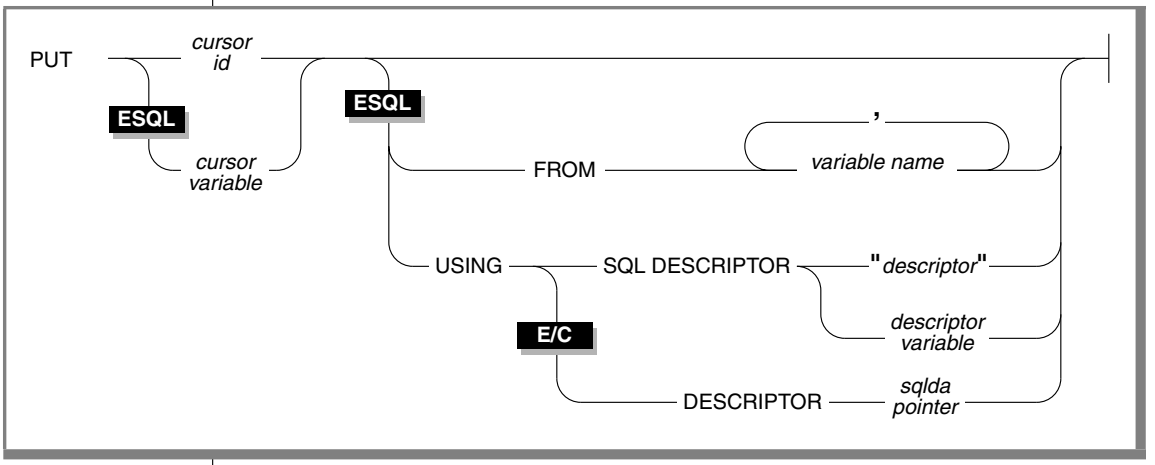
PUT

Figure 1-45
PUT

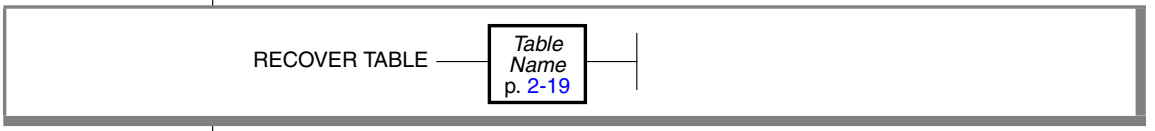


SE

+

RECOVER TABLE

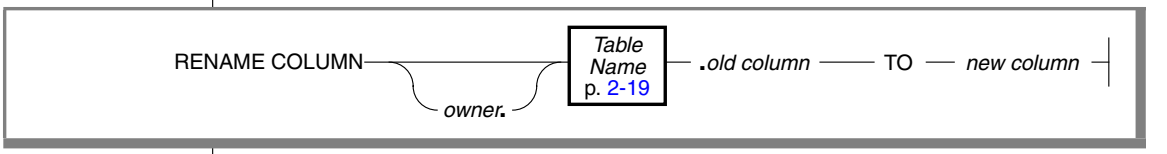
Figure 1-46
RECOVER TABLE



+

RENAME COLUMN

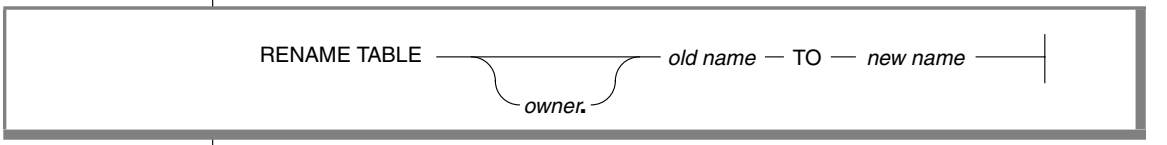
Figure 1-47
RENAME COLUMN



+

RENAME TABLE

Figure 1-48
RENAME TABLE



SE

DB

ISQL

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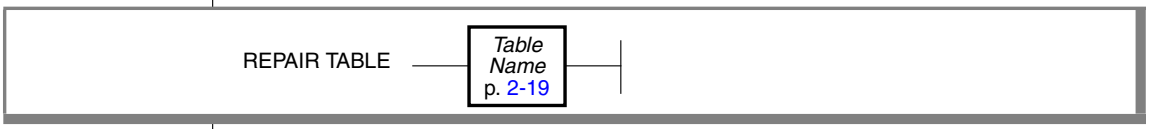
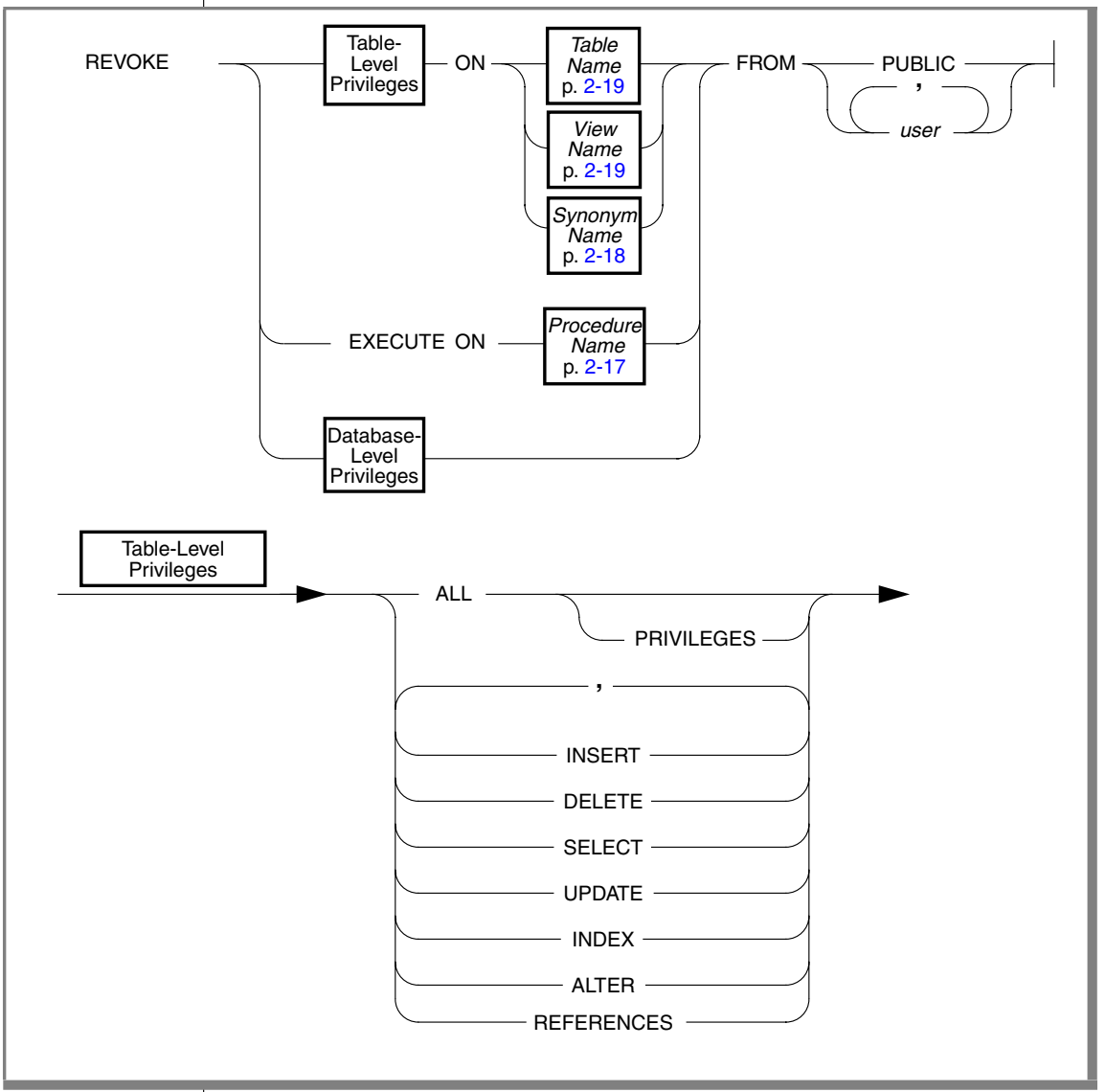
REPAIR TABLE

Figure 1-49
REPAIR TABLE



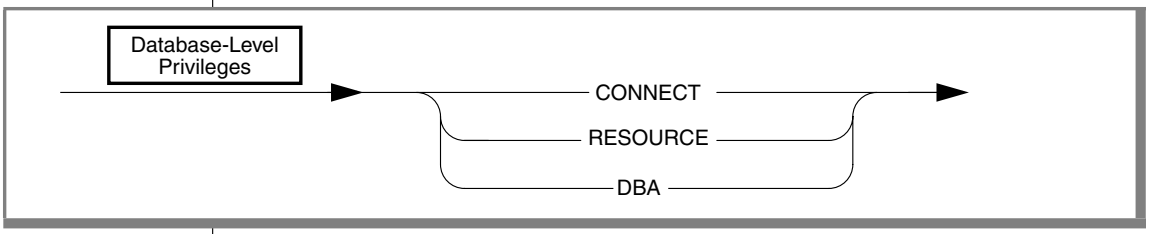
REVOKE

Figure 1-50
REVOKE



REVOKE

Figure 1-50 (continued)
REVOKE



ROLLBACK WORK

Figure 1-51
ROLLBACK WORK

SE

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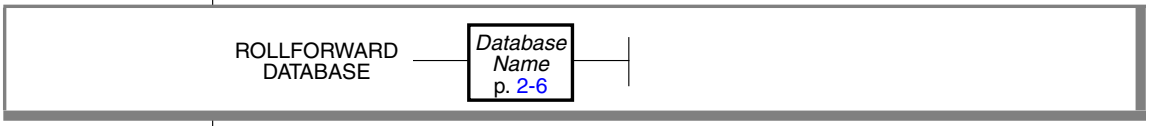
ROLLFORWARD DATABASE

Figure 1-52
ROLLFORWARD DATABASE



SELECT

Figure 1-53
SELECT

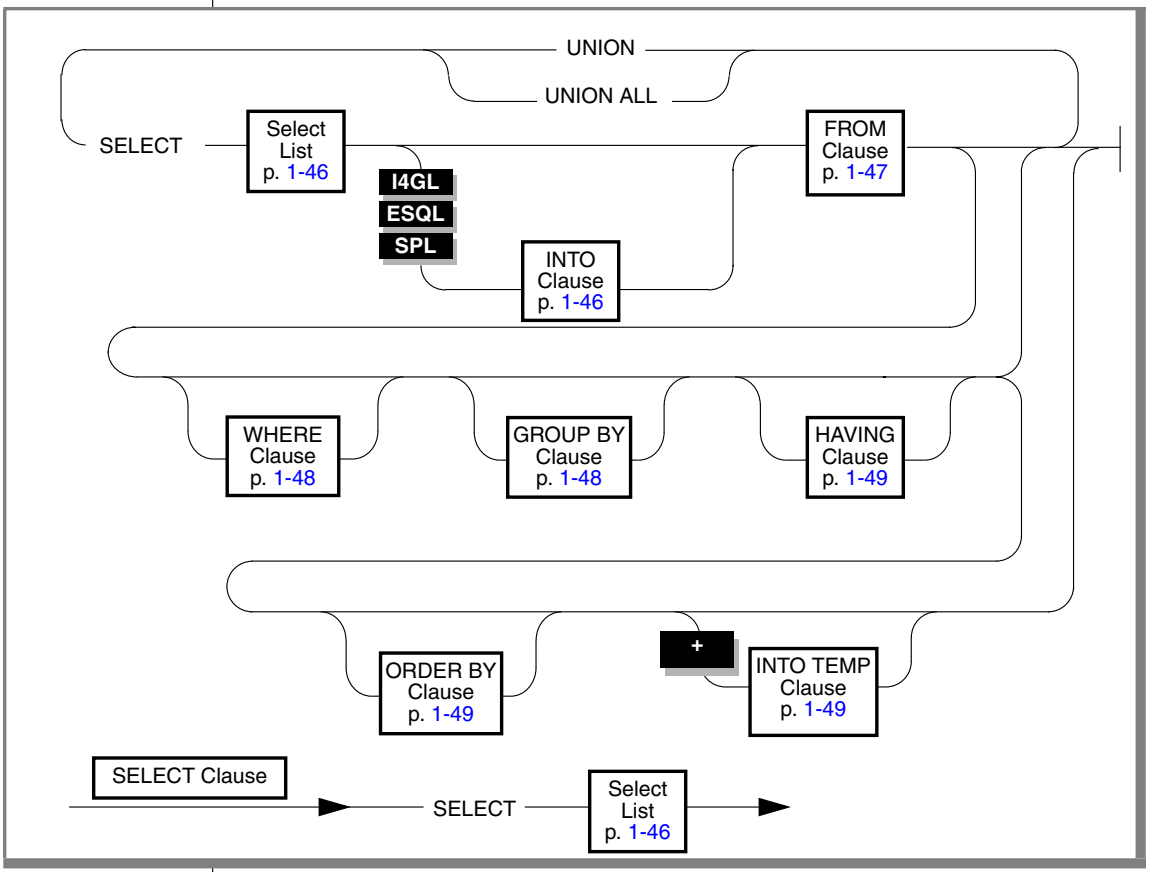


Figure 1-53 (continued)
SELECT

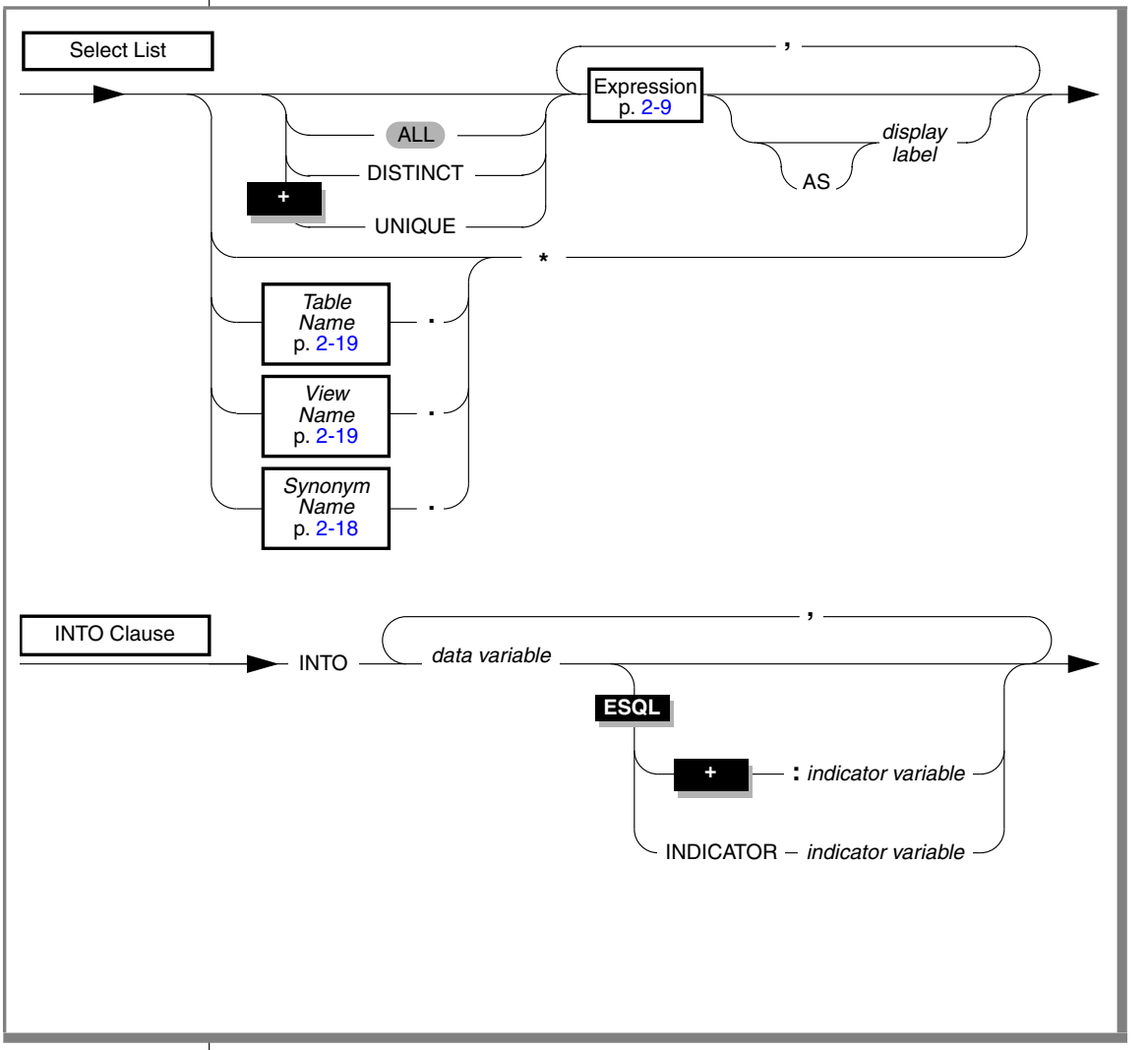


Figure 1-53 (continued)
SELECT

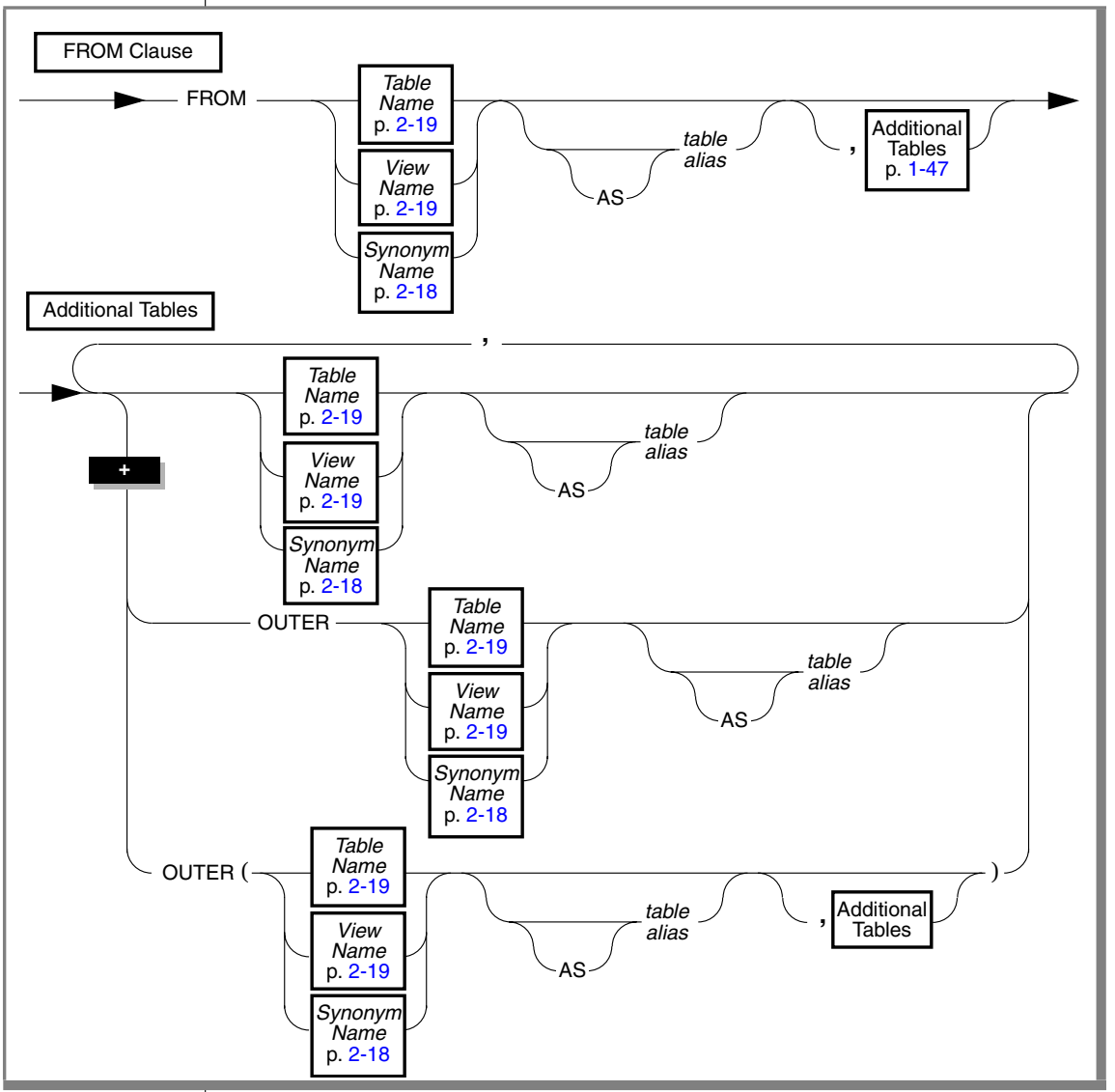


Figure 1-53 (continued)
SELECT

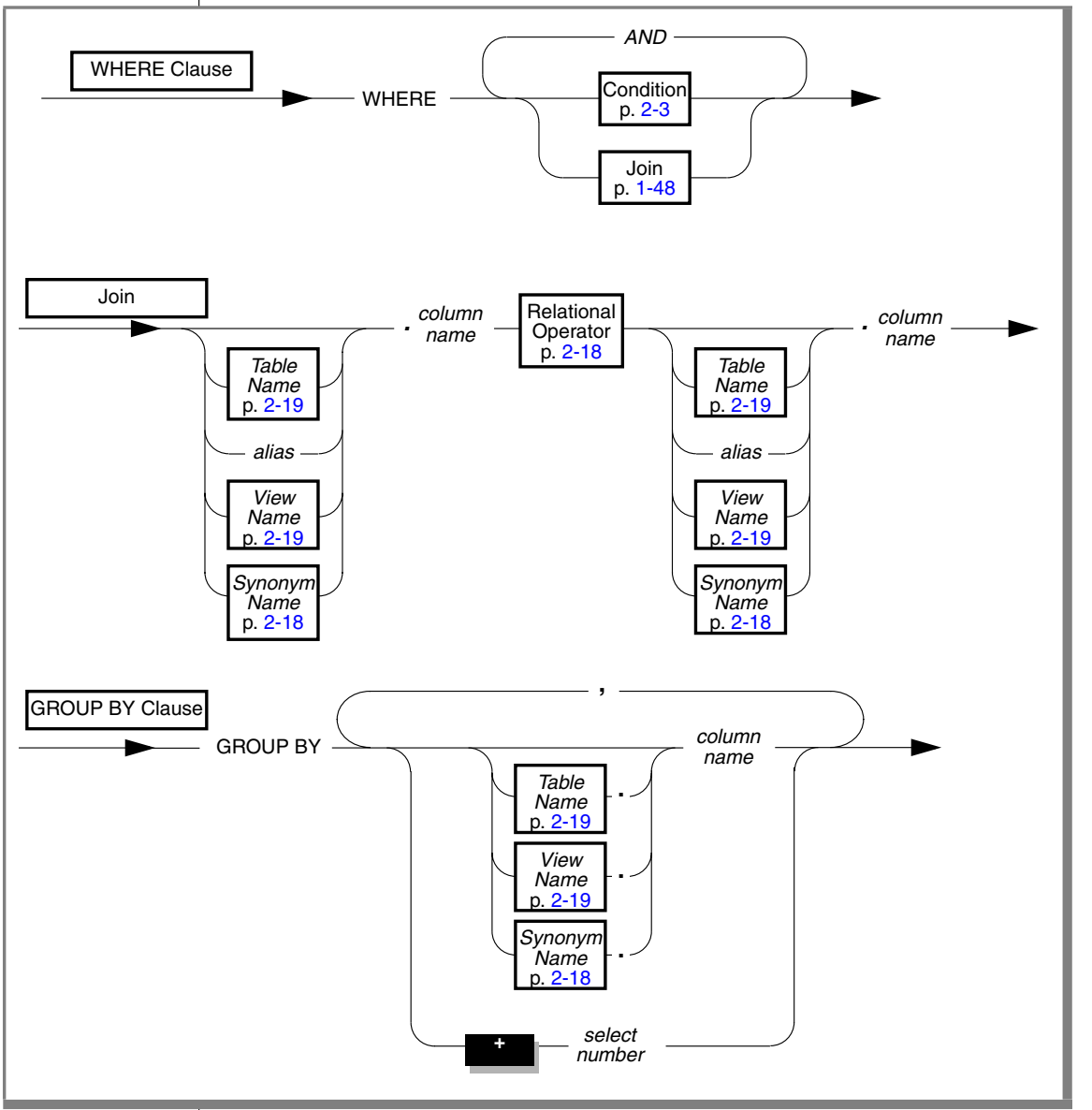
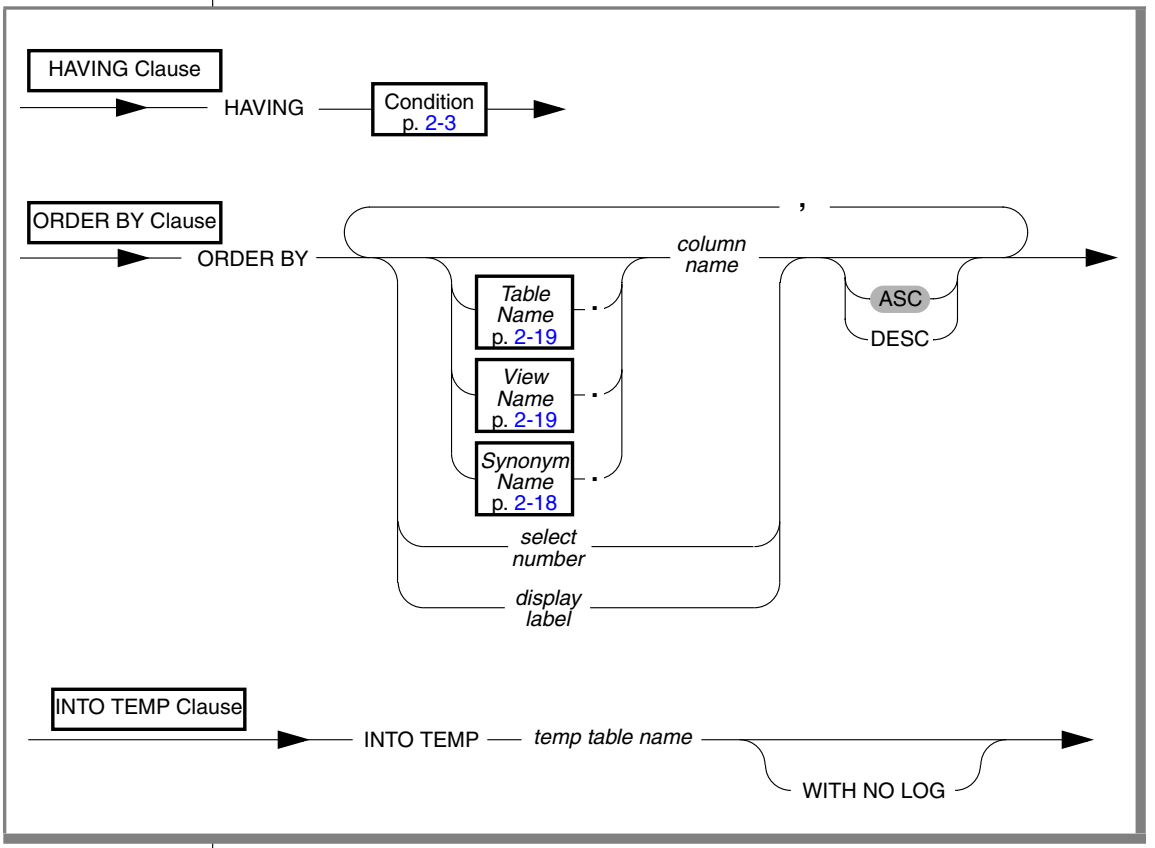


Figure 1-53 (continued)
SELECT



OL

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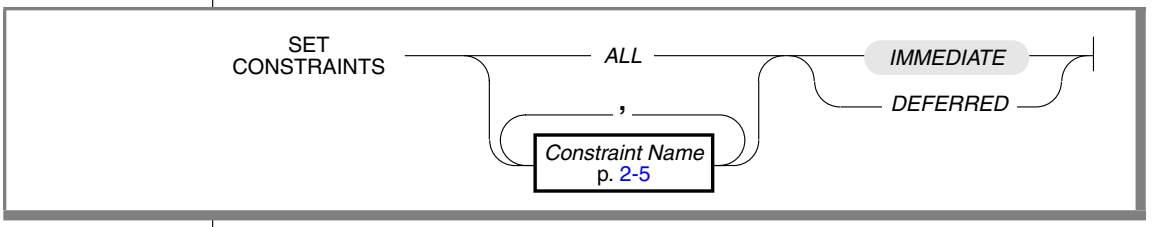
SET CONSTRAINTS

Figure 1-54
SET CONSTRAINTS



DB

ESQL

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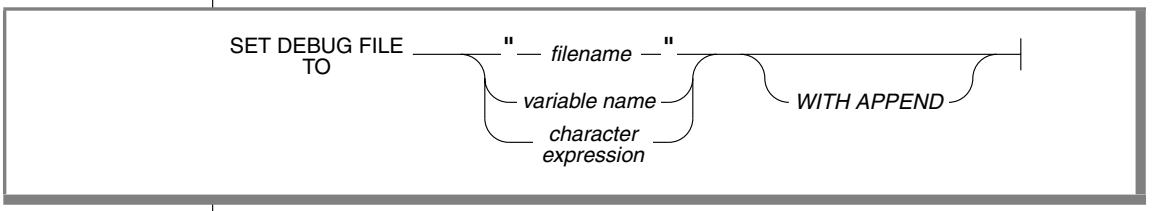
SET DEBUG FILE TO

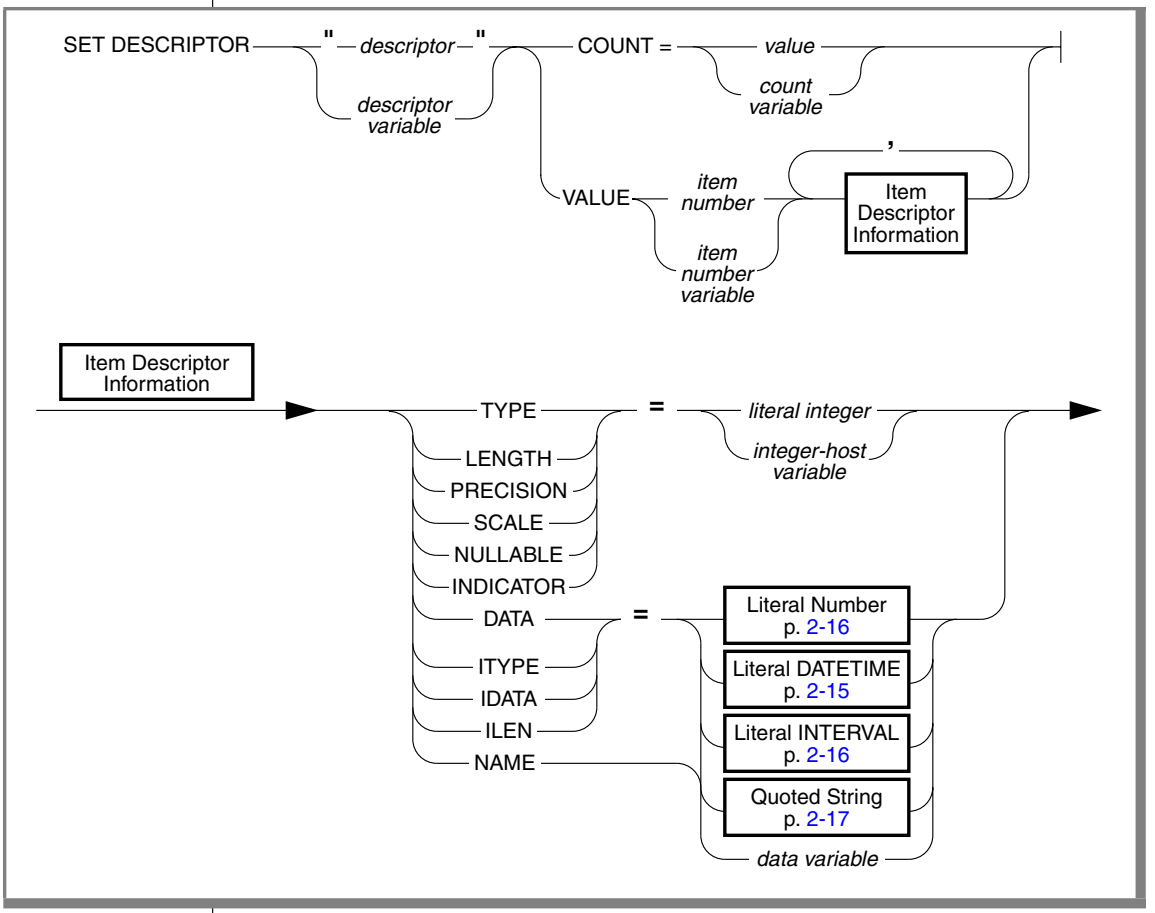
Figure 1-55
SET DEBUG FILE TO



ESQL

SET DESCRIPTOR

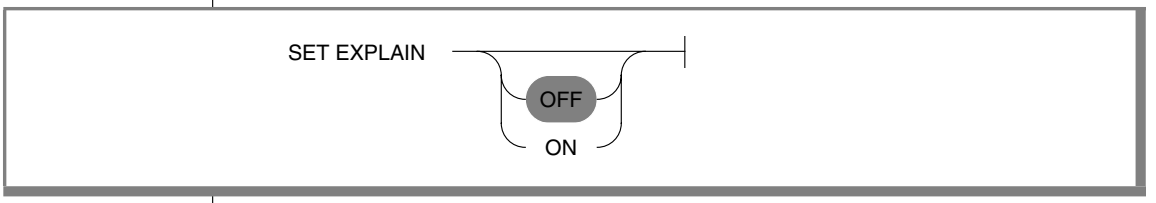
Figure 1-56
SET DESCRIPTOR



+

SET EXPLAIN

Figure 1-57
SET EXPLAIN

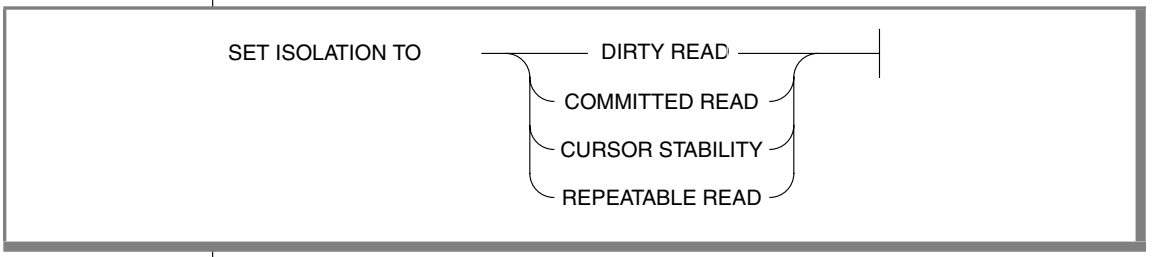


OL

+

SET ISOLATION TO

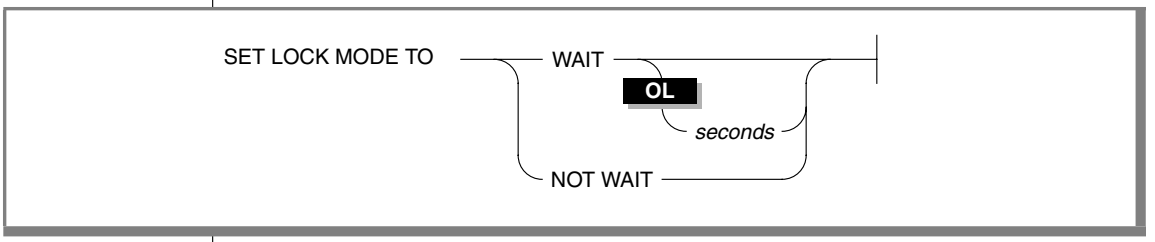
Figure 1-58
SET ISOLATION TO



+

SET LOCK MODE TO

Figure 1-59
SET LOCK MODE TO

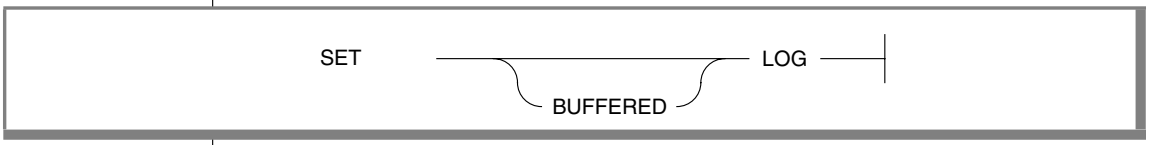


OL

+

SET

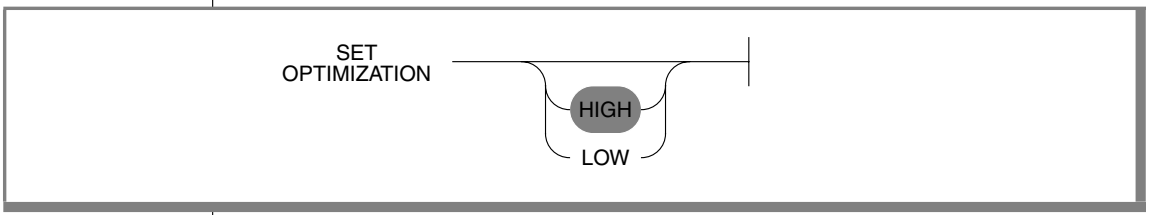
Figure 1-60
SET



+

SET OPTIMIZATION

Figure 1-61
SET OPTIMIZATION



SE

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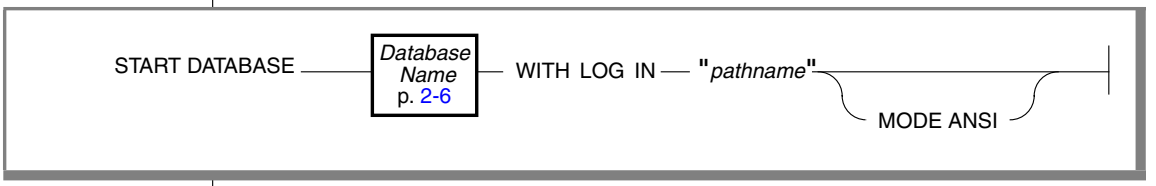
START DATABASE

Figure 1-62
START DATABASE



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DB

ISQL

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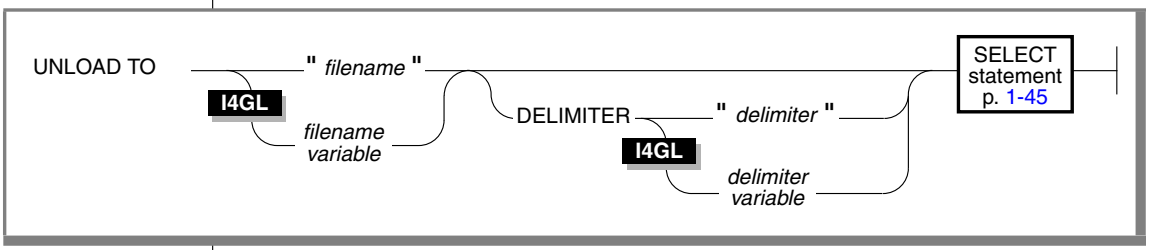
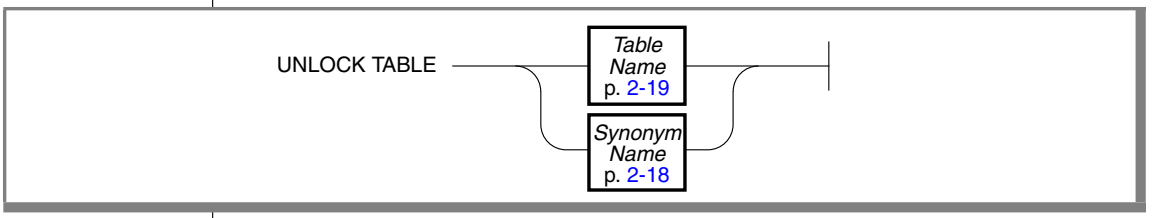
UNLOAD TO

Figure 1-63
UNLOAD TO



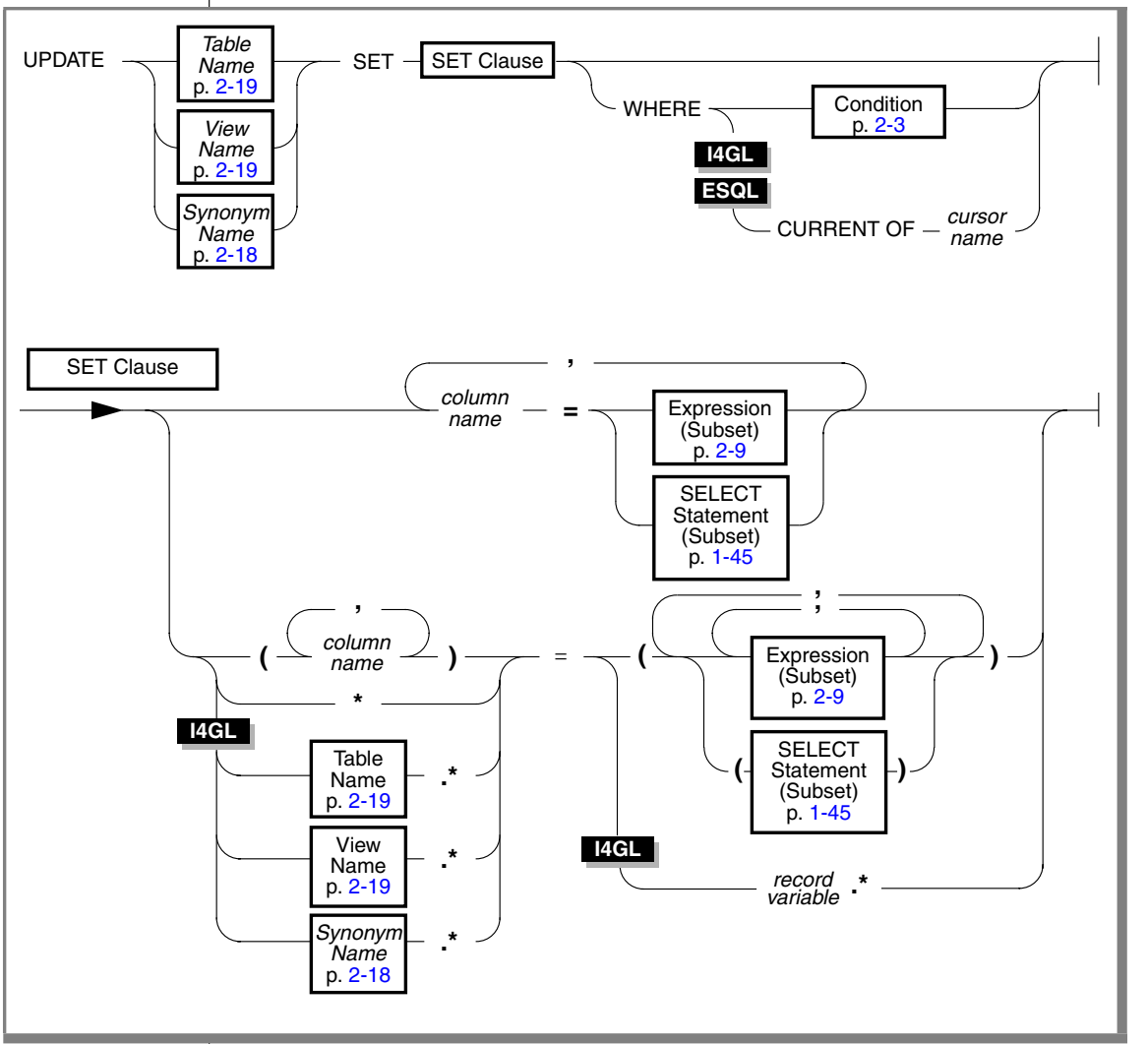
UNLOCK TABLE

Figure 1-64
UNLOCK TABLE



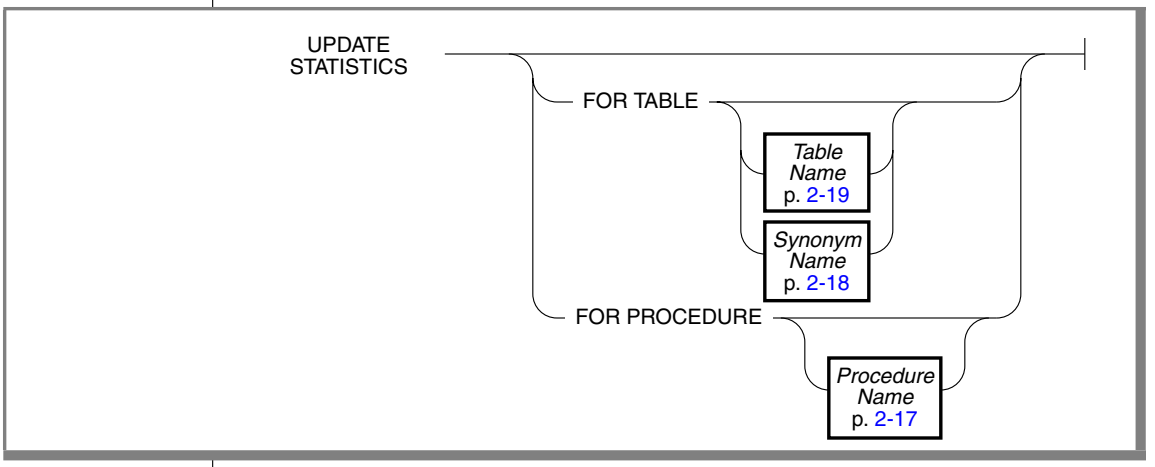
UPDATE

Figure 1-65
UPDATE



UPDATE STATISTICS

Figure 1-66
UPDATE STATISTICS

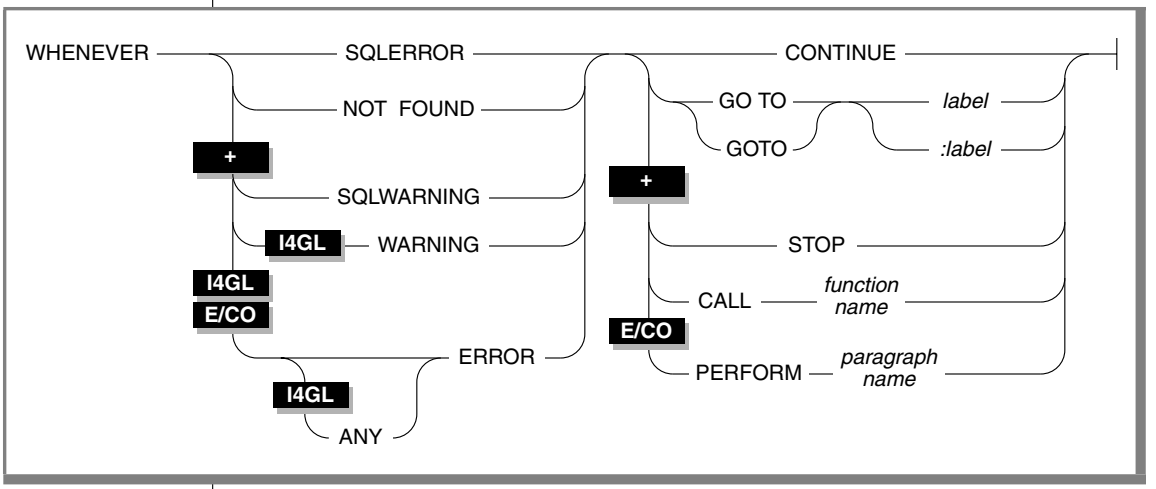


I4GL

ESQL

WHENEVER

Figure 1-67
WHENEVER



Chapter

2

SQL Segments

Condition

Figure 2-1
Condition

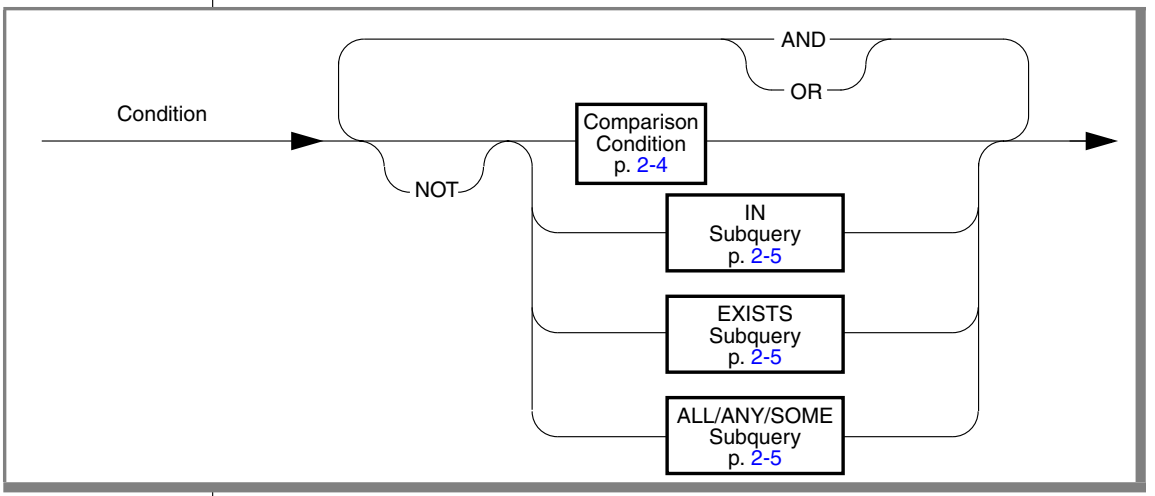


Figure 2-1 (continued)
Condition

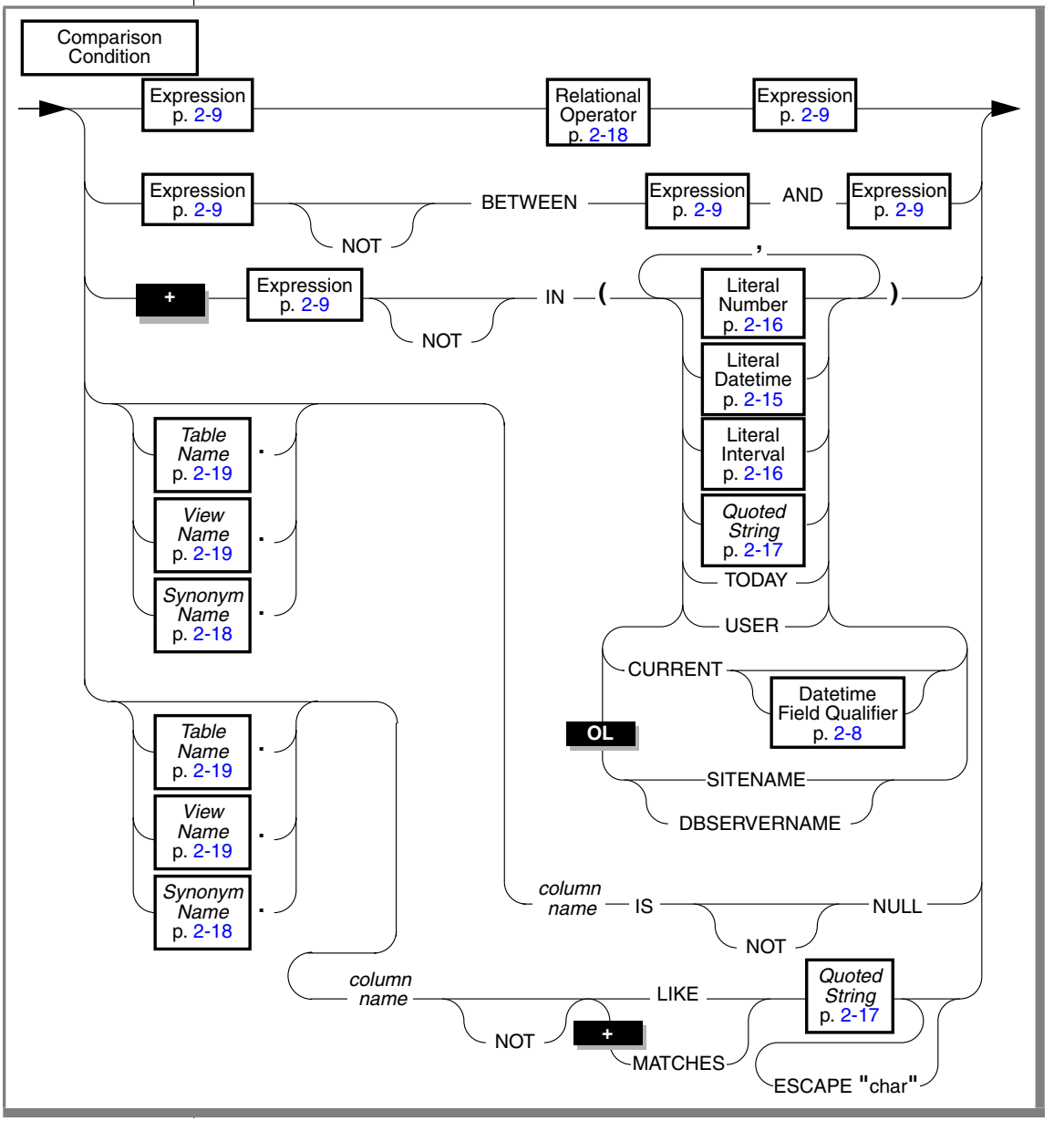
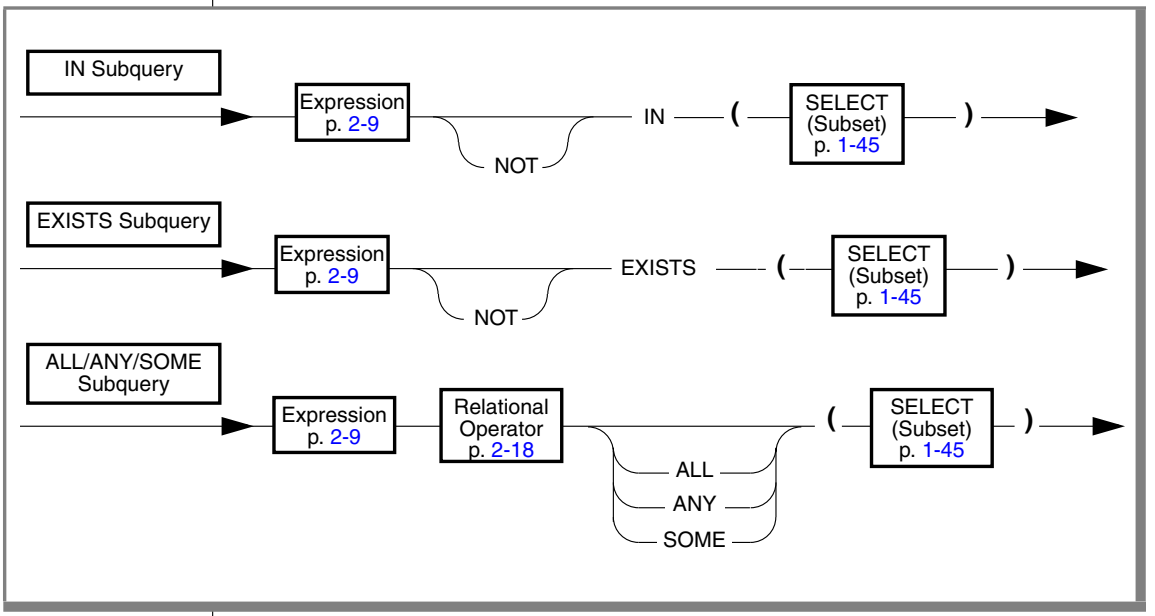
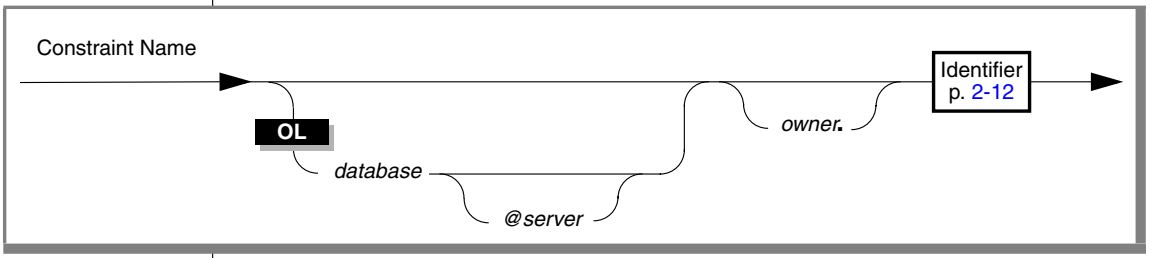


Figure 2-1 (continued)
Condition



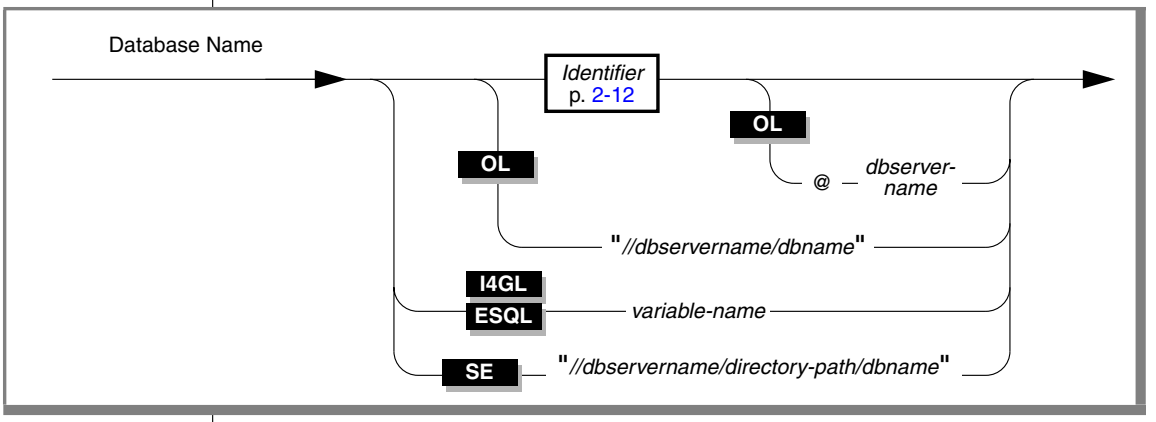
Constraint Name

Figure 2-2
Constraint Name



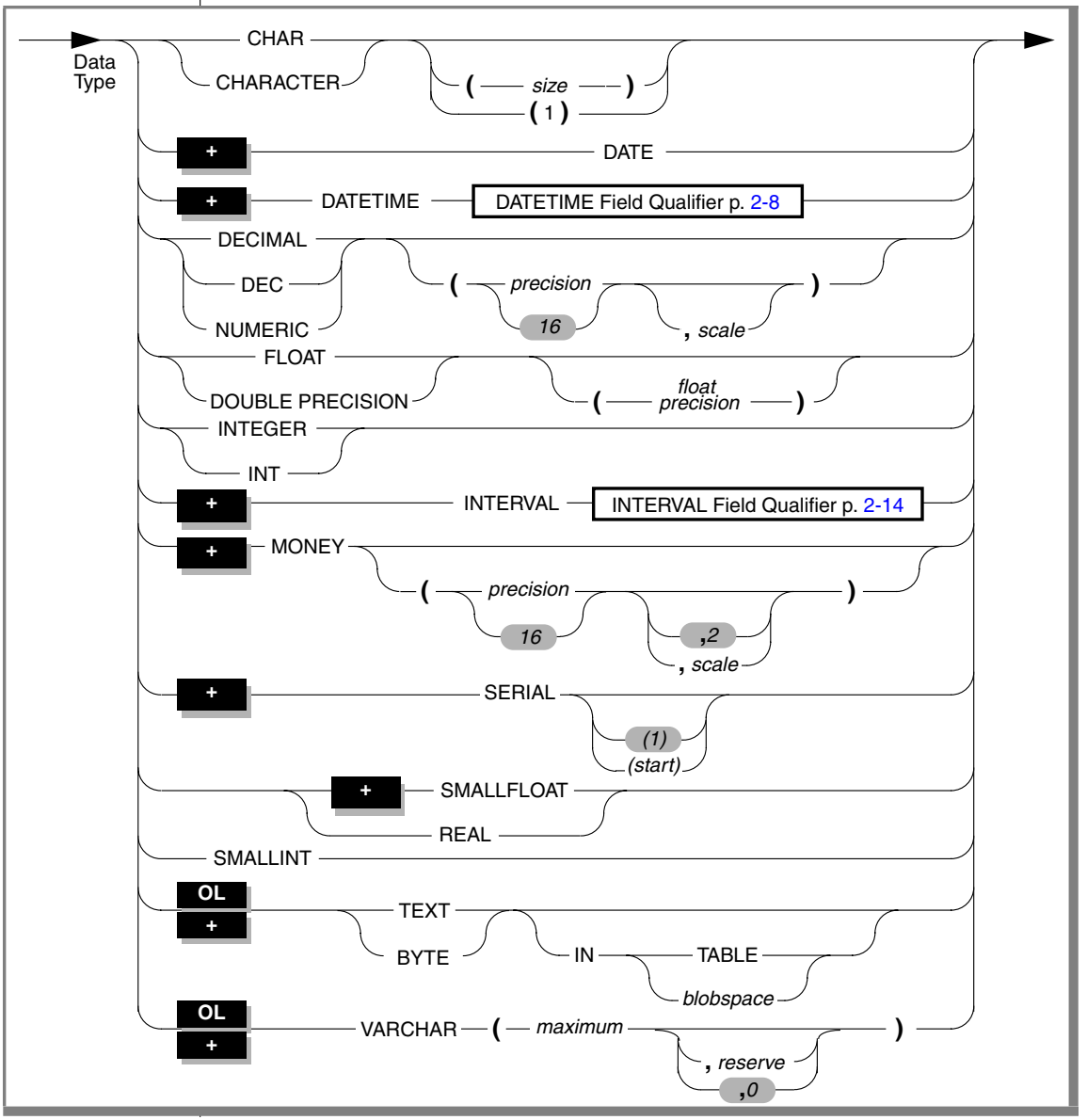
Database Name

Figure 2-3
Database Name



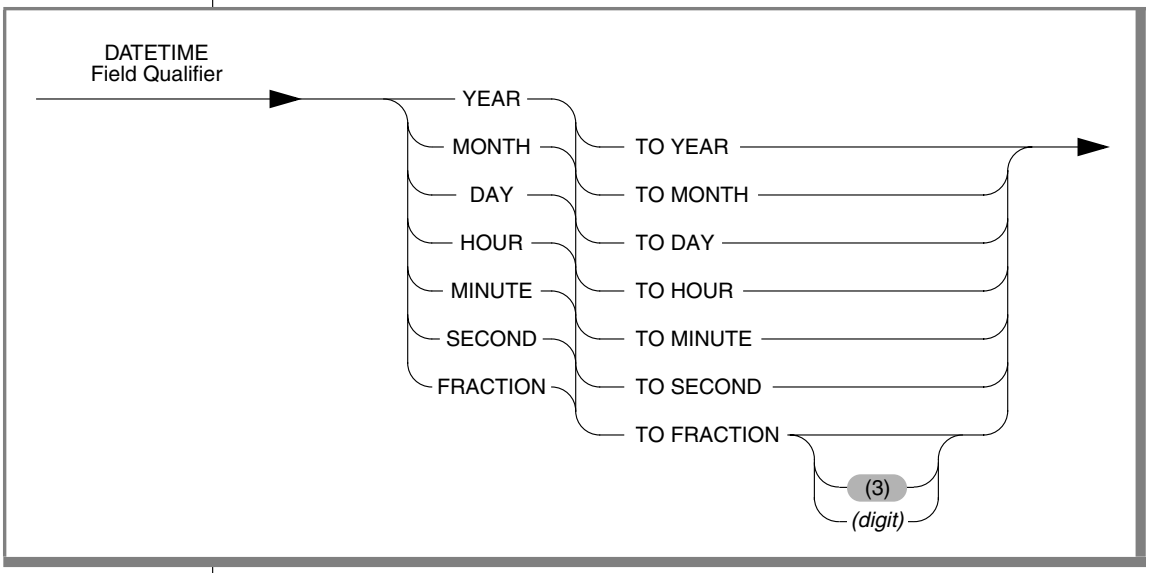
Data Type

Figure 2-4 *Data Type*



DATETIME Field Qualifier

Figure 2-5
DATETIME Field Qualifier



Expression

Figure 2-6
Expression

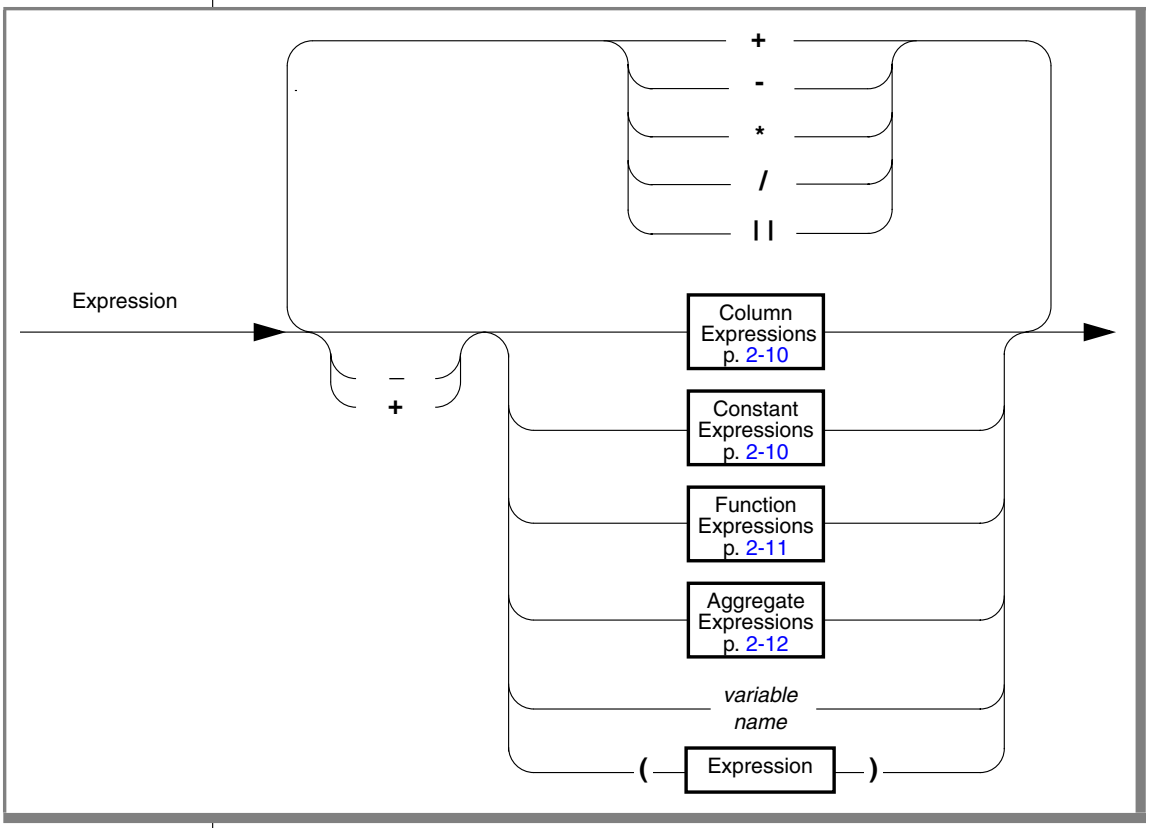


Figure 2-6 (continued)
Expression

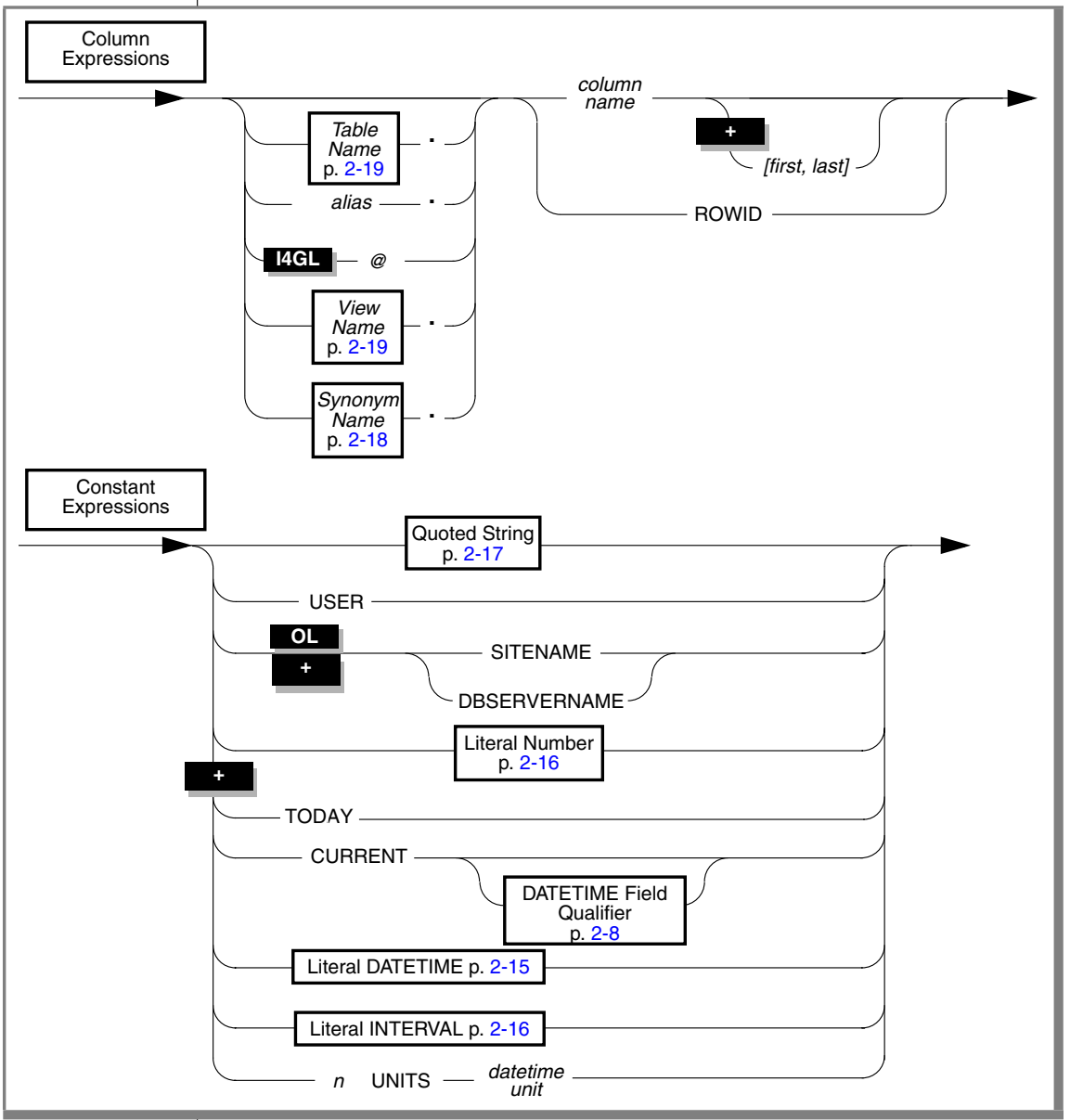


Figure 2-6 (continued)
Expression

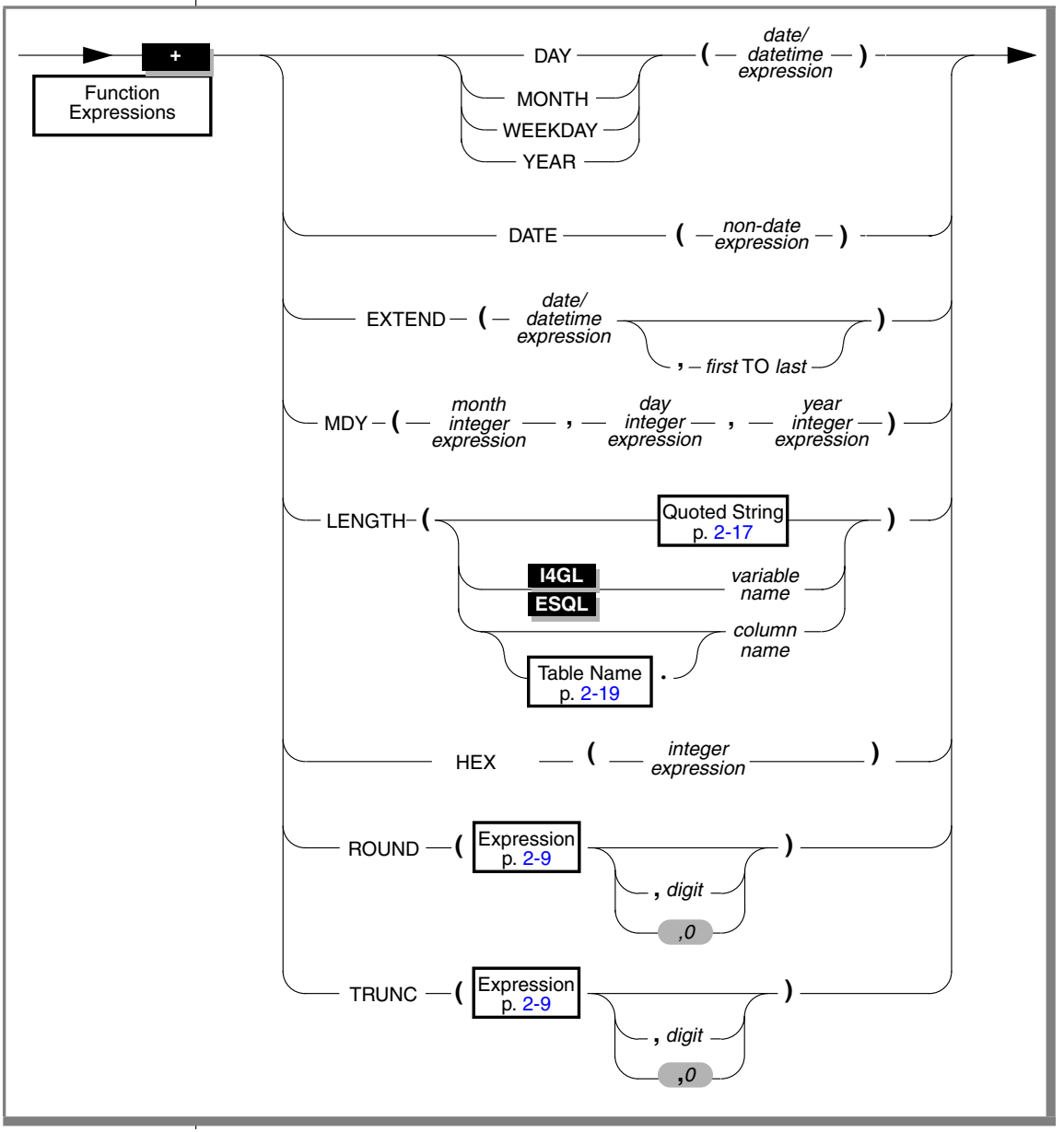
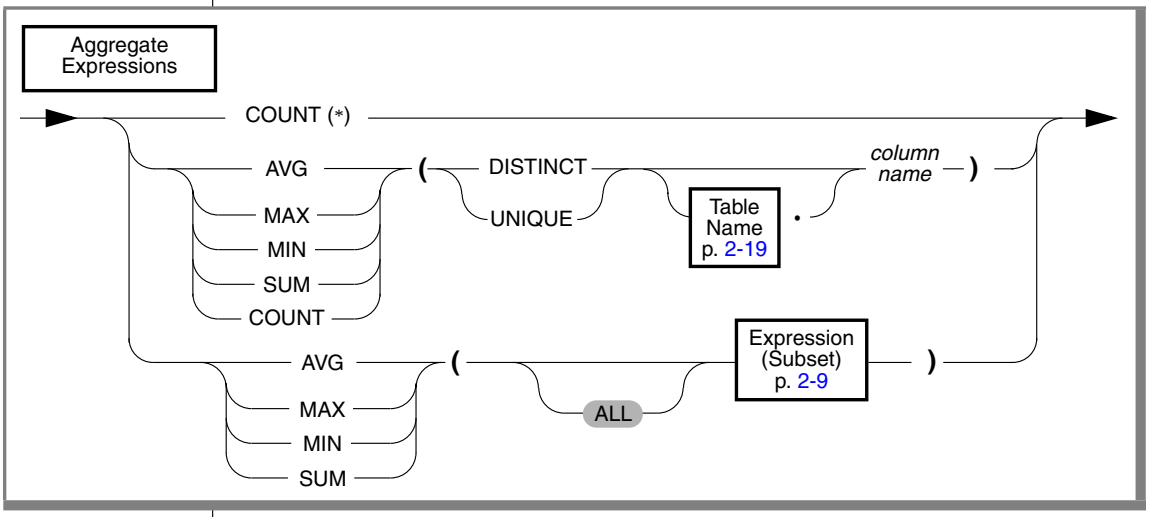
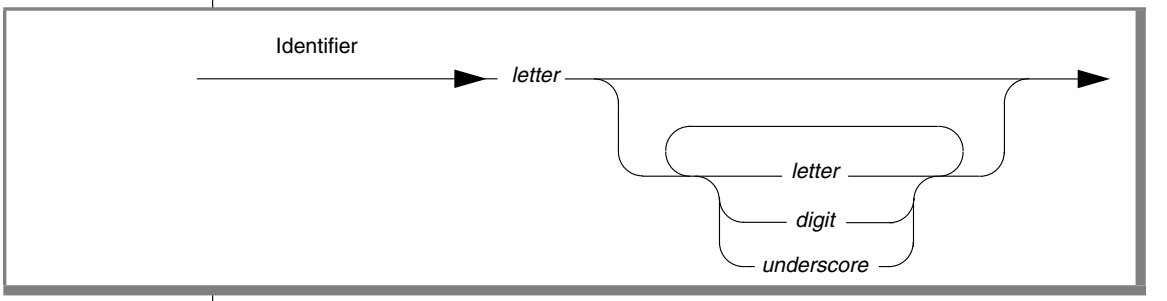


Figure 2-6 (continued)
Expression



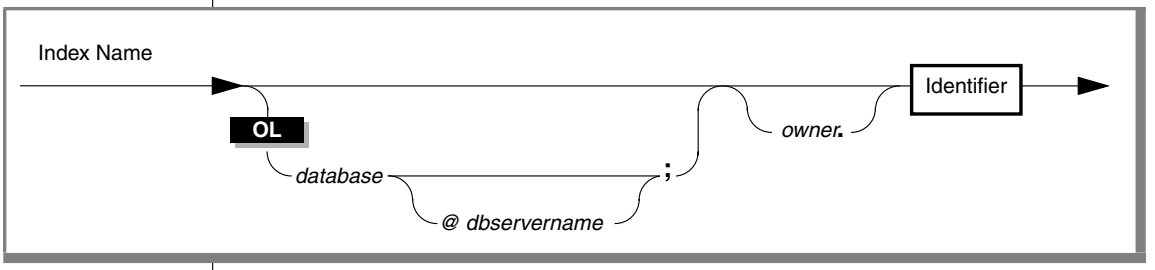
Identifier

Figure 2-7
Identifier



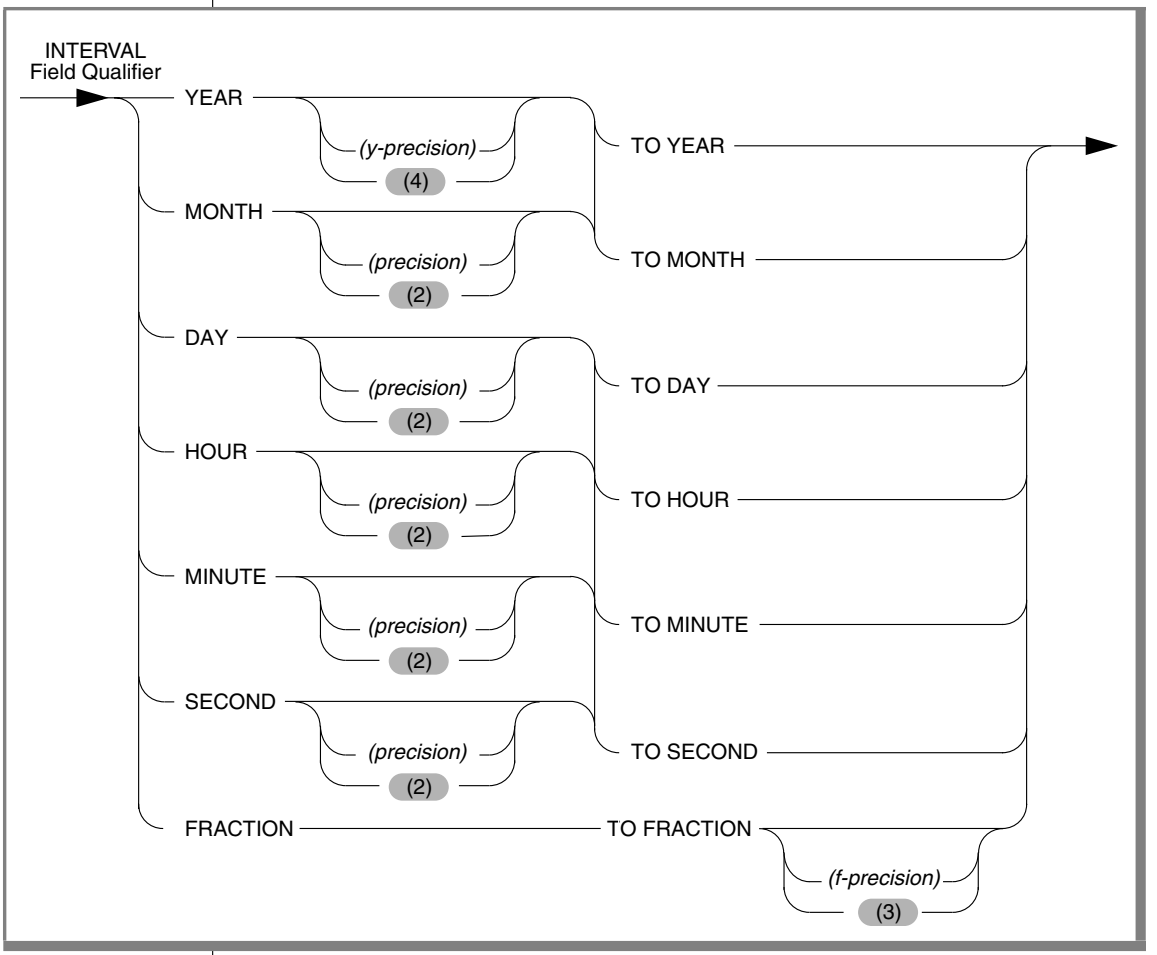
Index Name

Figure 2-8
Index Name



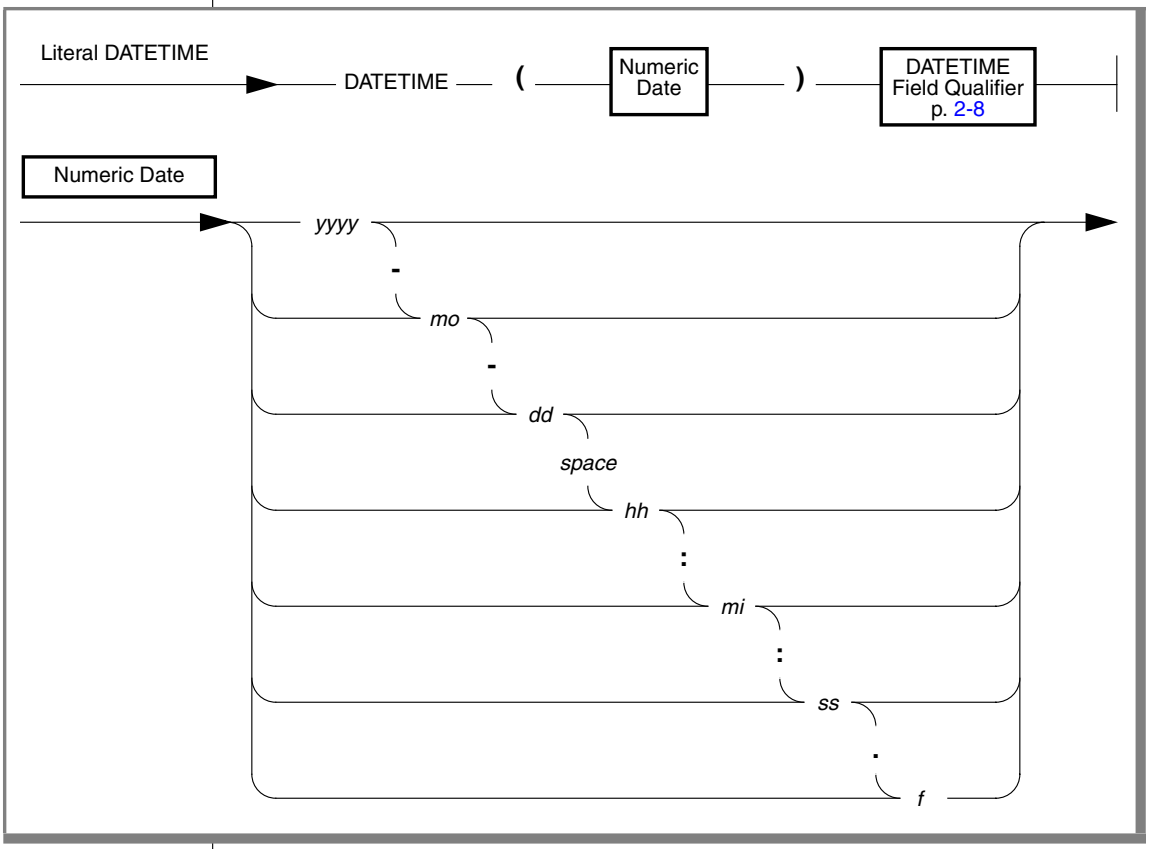
INTERNAL Field Qualifer

Figure 2-9
INTERVAL Field Qualifier



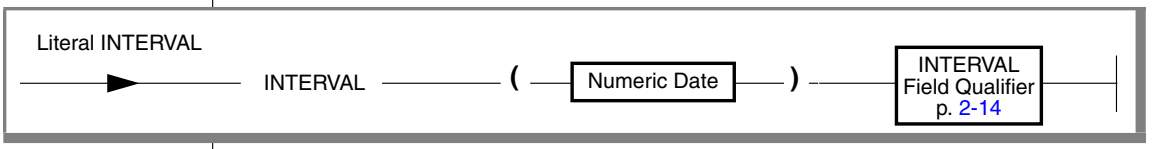
Literal DATETIME

Figure 2-10
Literal DATETIME



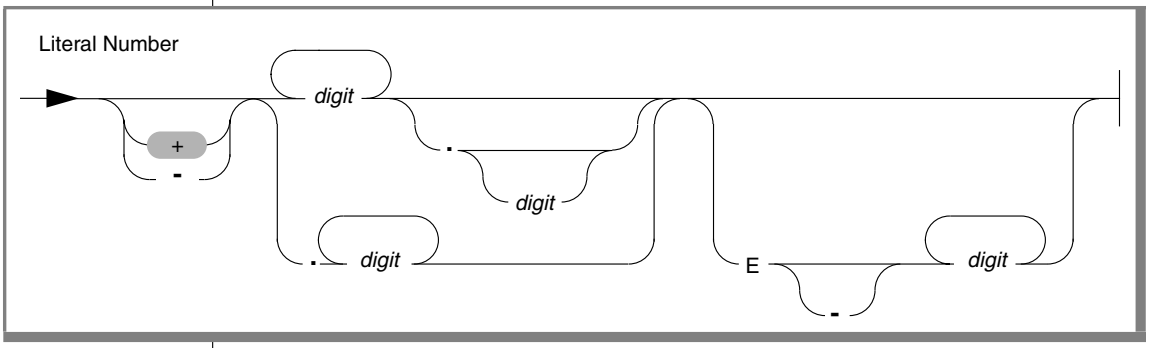
Literal INTERVALS

Figure 2-11
Literal INTERVALS



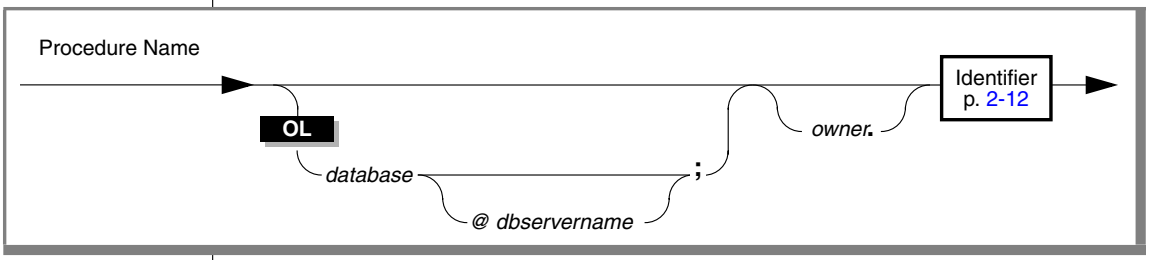
Literal Number

Figure 2-12
Literal Number



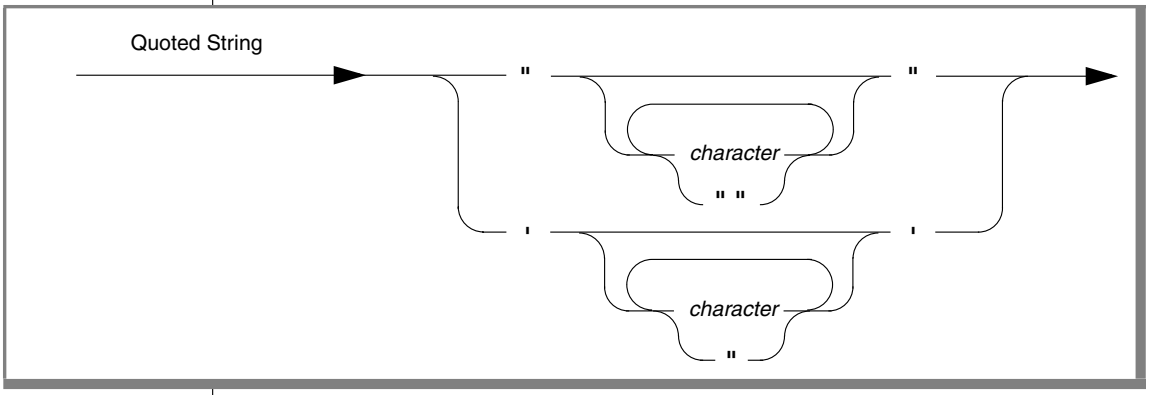
Procedure Name

Figure 2-13
Procedure Name



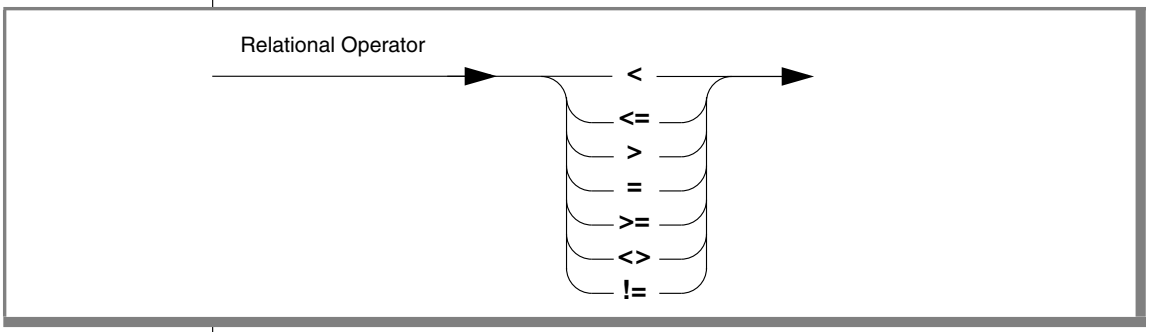
Quoted String

Figure 2-14
Quoted String



Relational Operator

Figure 2-15
Relational Operator



Synonym Name

Figure 2-16
Synonym Name

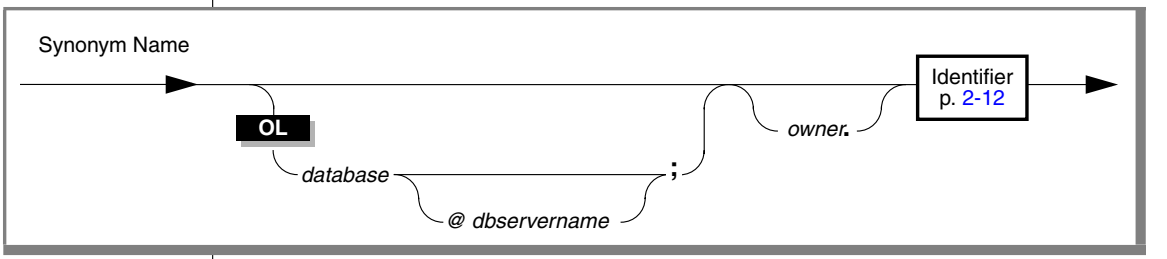
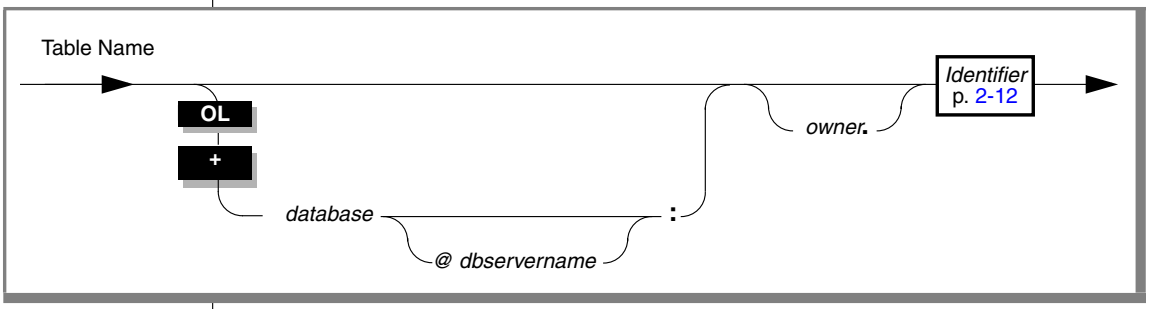


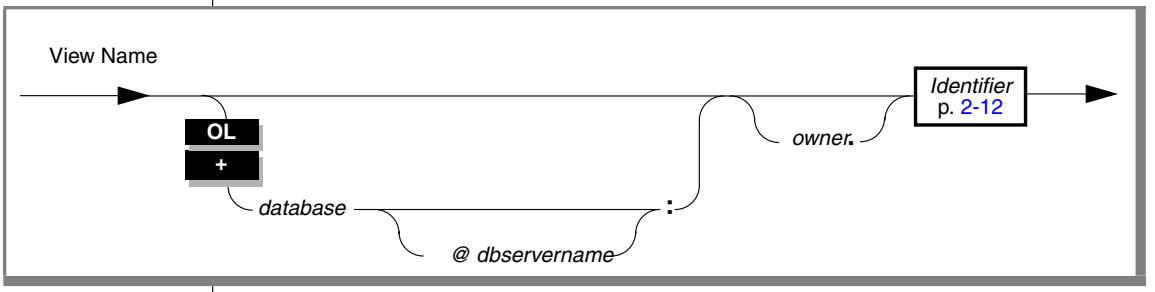
Table Name

Figure 2-17
Table Name



View Name

Figure 2-18
View Name



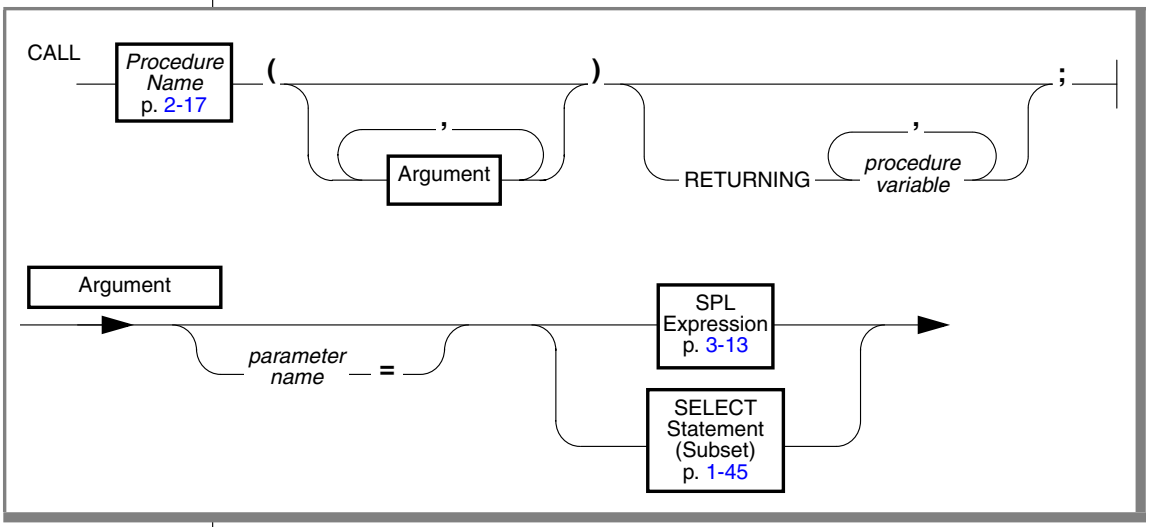
Chapter

3

Stored Procedure Language Statements

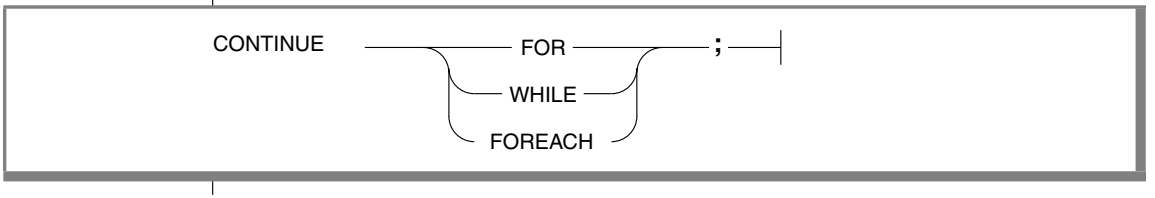
CALL

Figure 3-1
CALL



CONTINUE

Figure 3-2
CONTINUE



DEFINE

Figure 3-3
DEFINE

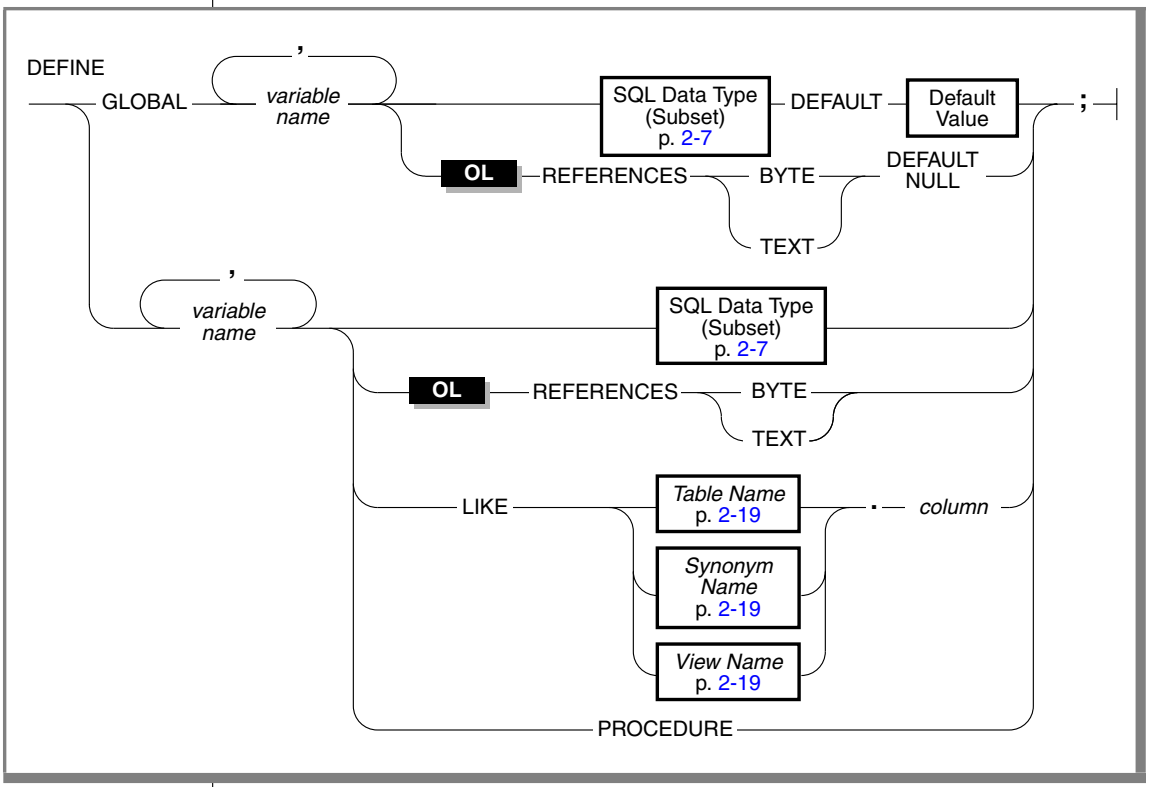
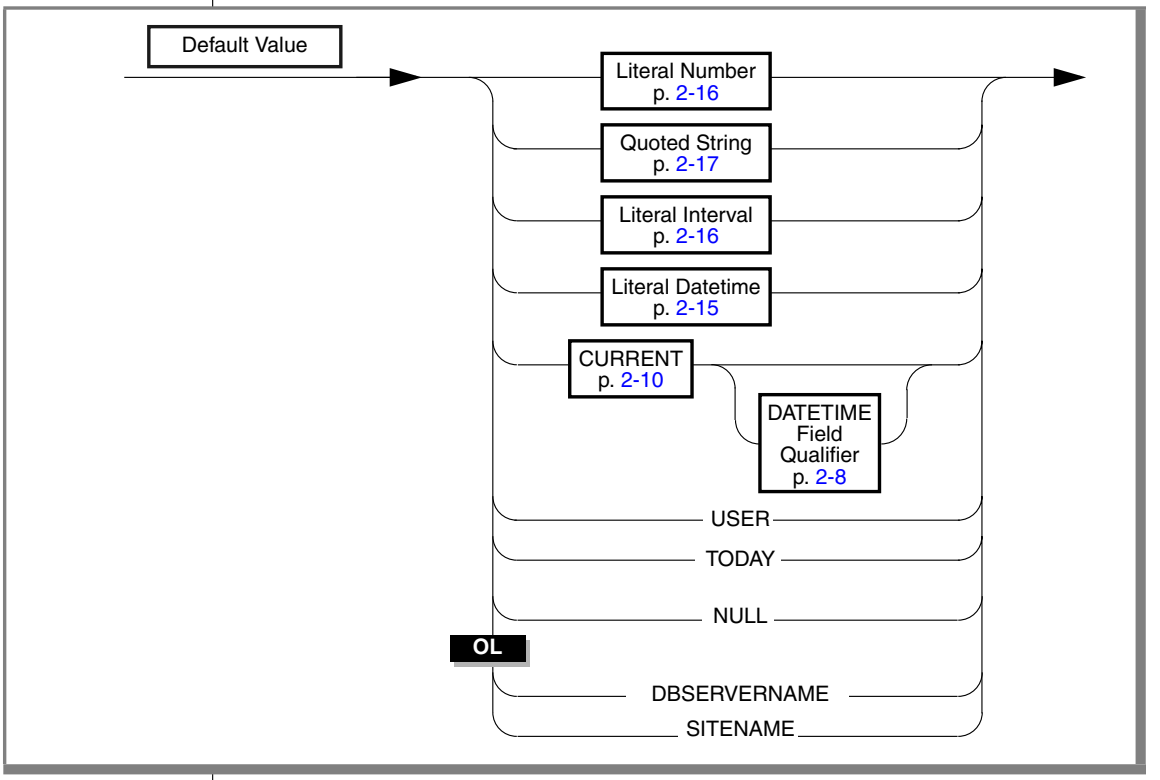
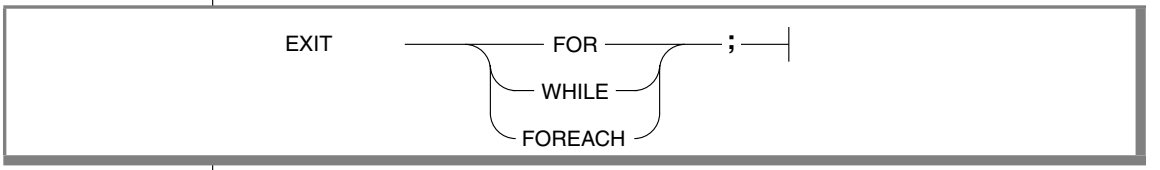


Figure 3-3 (continued)
DEFINE



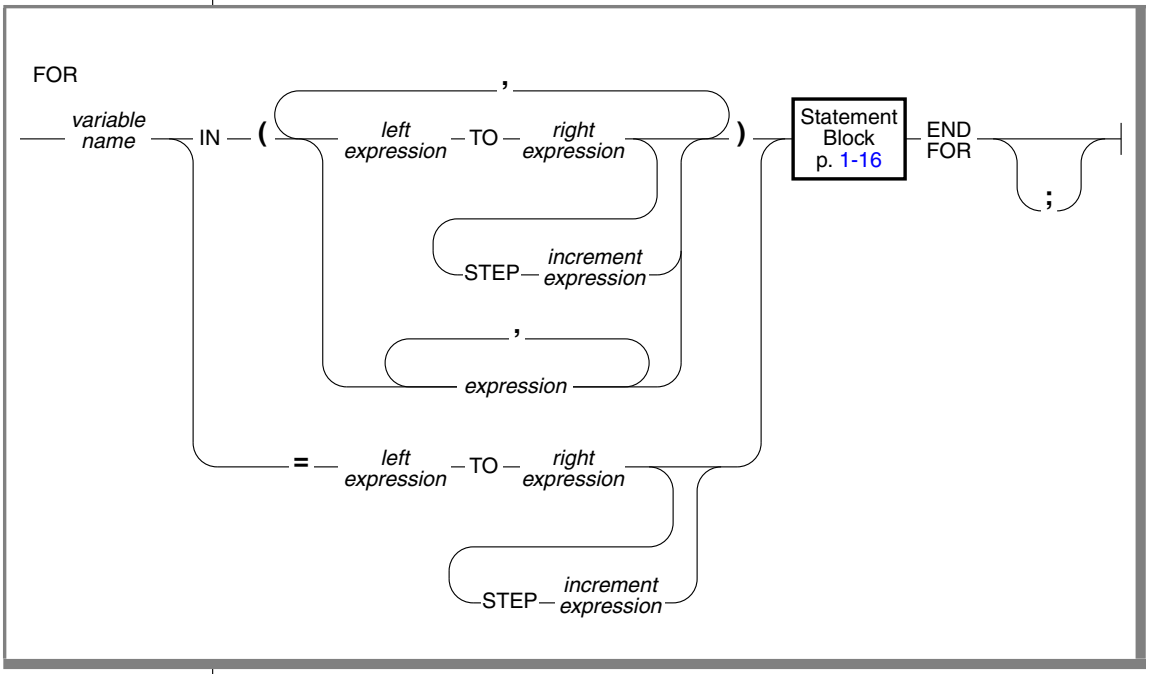
EXIT

Figure 3-4
EXIT



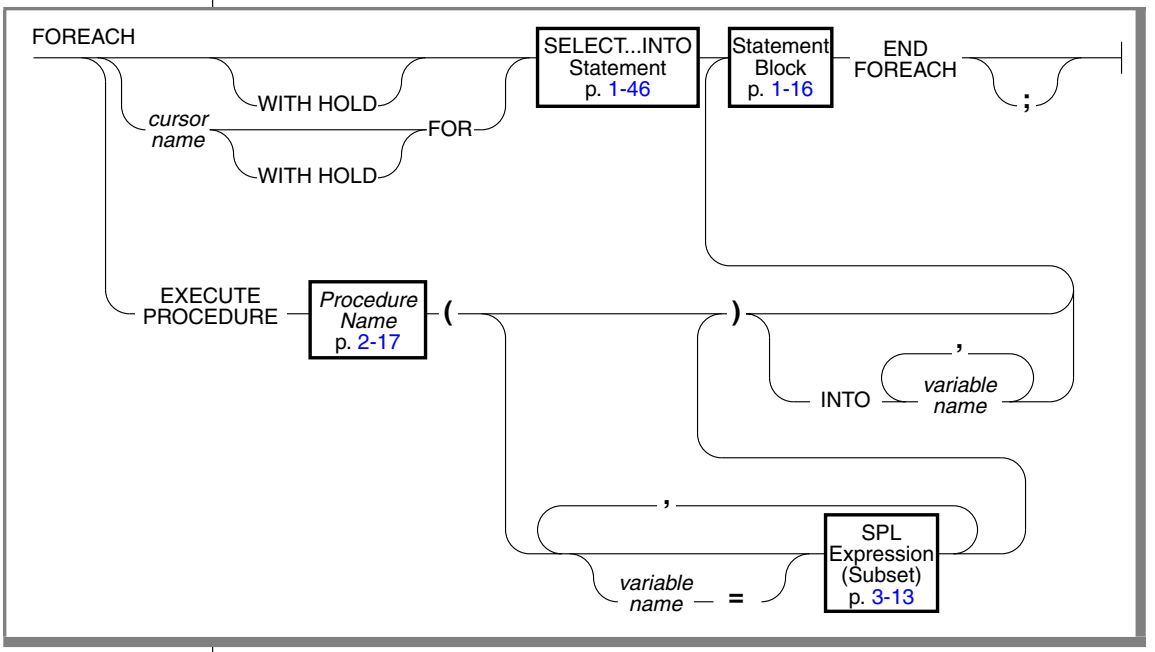
FOR

Figure 3-5
FOR



FOREACH

Figure 3-6
FOREACH



IF

Figure 3-7
IF

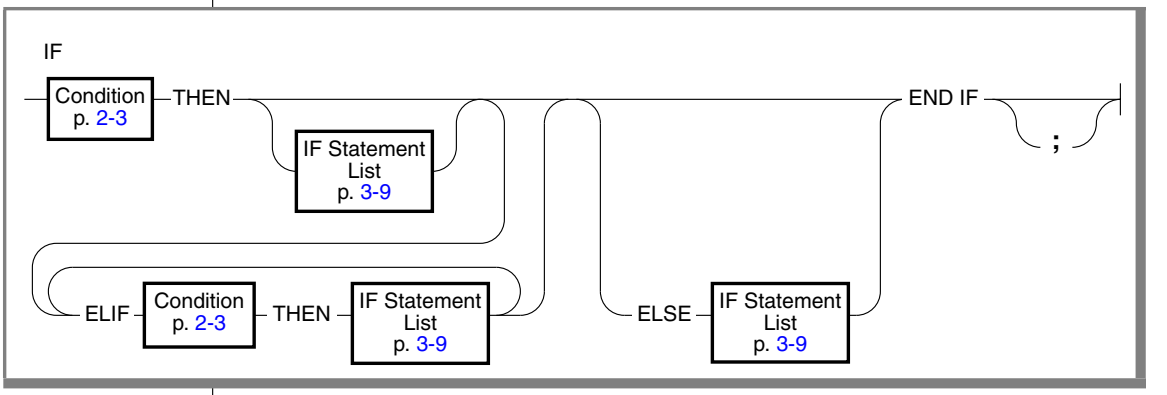
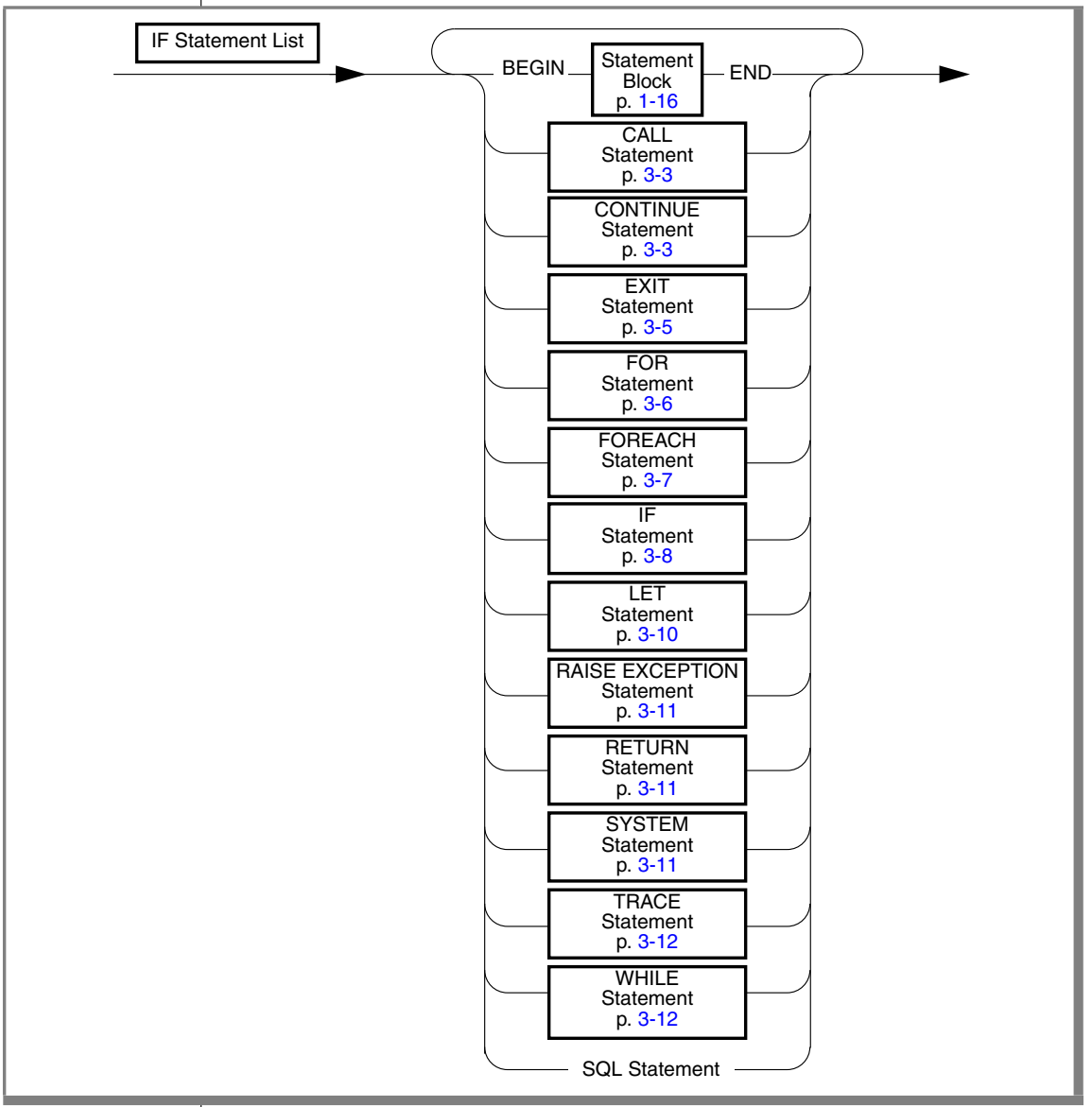
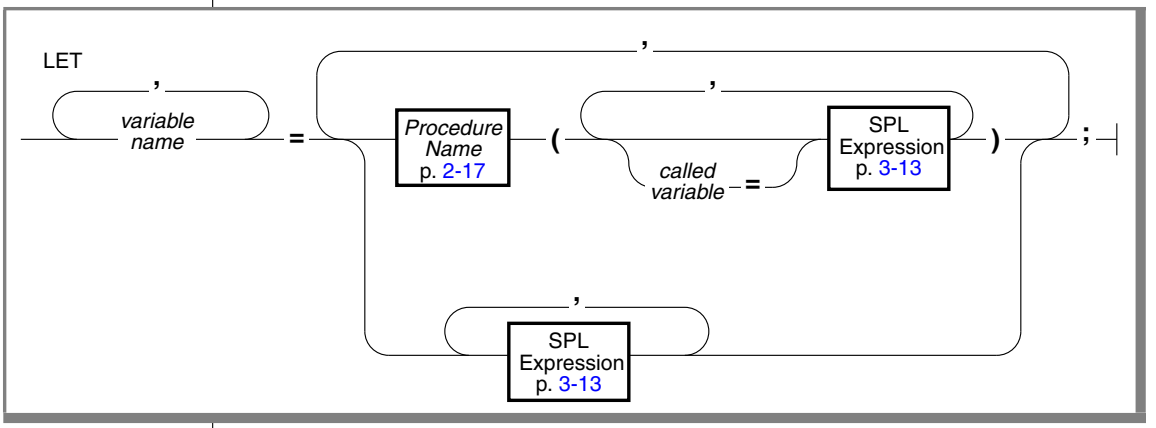


Figure 3-7 (continued)
IF



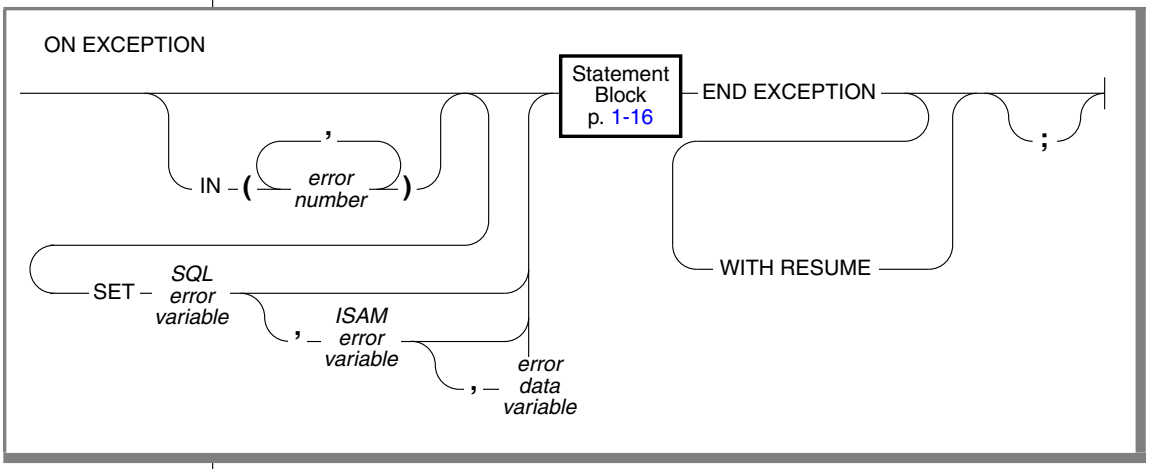
LET

Figure 3-8
LET



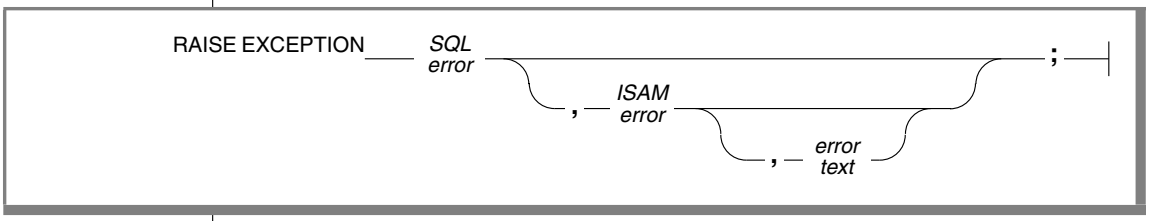
ON EXCEPTION

Figure 3-9
ON EXCEPTION



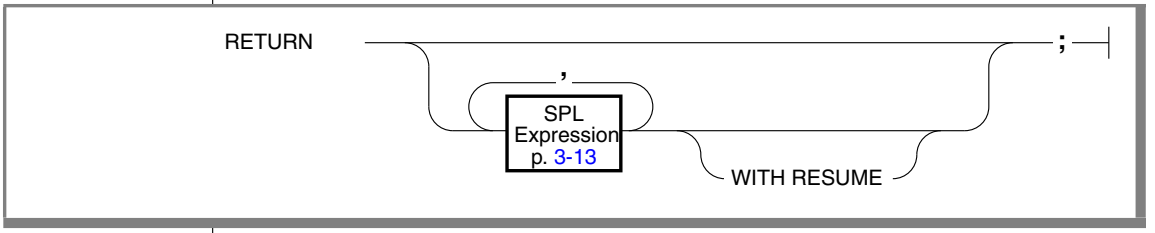
RAISE EXCEPTION

Figure 3-10
RAISE EXCEPTION



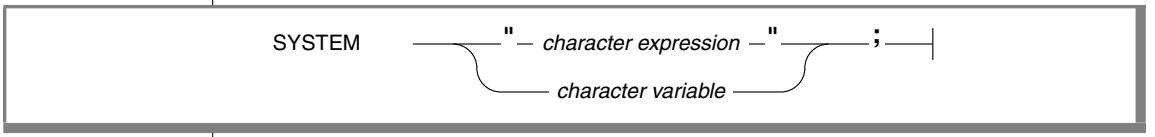
RETURN

Figure 3-11
RETURN



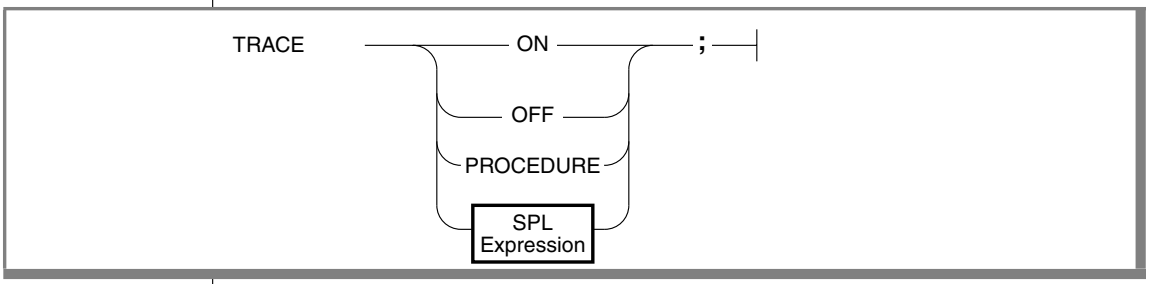
SYSTEM

Figure 3-12
SYSTEM



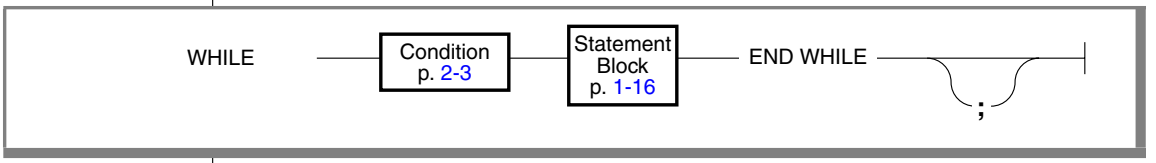
TRACE

Figure 3-13
TRACE



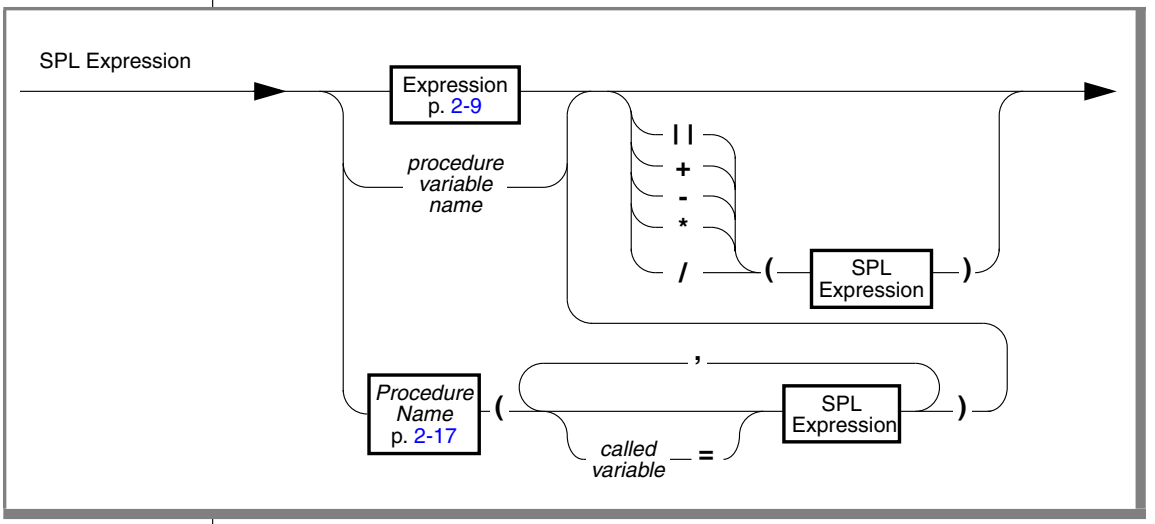
WHILE

Figure 3-14
WHILE



SPL Expression

Figure 3-15
SPL Expression



Appendix

A

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