
ORACLE®

Database Objects

Database Objects

Object	Description
Table	Basic unit of storage; composed of rows and columns
View	Logically represents subsets of data from one or more tables
Sequence	Numeric value generator
Index	Improves the performance of some queries
Synonym	Gives alternative names to objects

The CREATE TABLE Statement

- You must have:
  - CREATE TABLE privilege
  - A storage area

```
CREATE TABLE [schema.]table
             (column datatype [DEFAULT expr][, ...]);
```

- You specify:
  - Table name
  - Column name, column data type, and column size

```
CREATE TABLE dept
(
deptno NUMBER(2) DEFAULT 0 ,
dname VARCHAR(14),
loc VARCHAR (13)
)
```

```
INSERT INTO table_name
VALUES(1 ,'Ahmed','cat')
```

DESCRIBE dept

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT	DEPTNO	Number	-	2	0	-	✓	-	-
	DNAME	Varchar2	14	-	-	-	✓	-	-
	LOC	Varchar2	13	-	-	-	✓	-	-
									1 - 3

Database Objects

Tables in the Oracle Database

- User Tables:
  - Are a collection of tables created and maintained by the user
  - Contain user information
- Data Dictionary:
  - Is a collection of tables created and maintained by the Oracle Server
  - Contain database information

Database Objects

Prefix	Description
USER_	These views contain information about objects owned by the user
ALL_	These views contain information about all of the tables (object tables and relational tables) accessible to the user.
DBA_	These views are restricted views, which can be accessed only by people who have been assigned the DBA role.
V$	These views are dynamic performance views, database server performance, memory, and locking.

Database Objects

```
SELECT table_name
FROM user_tables
```

TABLE_NAME
REGIONS
LOCATIONS
DEPARTMENTS
JOBS
EMPLOYEES
JOB_HISTORY
DEPT

```
SELECT distinct object_type
FROM user_objects
```

OBJECT_TYPE
SEQUENCE
PROCEDURE
TRIGGER
TABLE
INDEX
VIEW

```
SELECT *
FROM cat
```

TABLE_NAME	TABLE_TYPE
REGIONS	TABLE
COUNTRIES	TABLE
LOCATIONS	TABLE
LOCATIONS_SEQ	SEQUENCE
DEPARTMENTS	TABLE
DEPARTMENTS_SEQ	SEQUENCE
JOBS	TABLE
EMPLOYEES	TABLE
EMPLOYEES_SEQ	SEQUENCE
JOB_HISTORY	TABLE

Database Objects

Data Types

Data type	Description
VARCHAR2(*size*)	Variable-length character data (a maximum *size* must be specified: Minimum *size* is 1; maximum *size* is 4000)
CHAR [(*size*)]	Fixed-length character data of length *size* bytes (default and minimum *size* is 1; maximum *size* is 2000)
NUMBER [(*p*,*s*)]	Number having precision *p* and scale *s* (The precision is the total number of decimal digits, and the scale is the number of digits to the right of the decimal point; the precision can range from 1 to 38 and the scale can range from -84 to 127)
DATE	Date and time values to the nearest second between January 1, 4712 B.C., and December 31, 9999 A.D.
LONG	Variable-length character data up to 2 gigabytes
CLOB	Character data up to 4 gigabytes

Creating a Table by Using a Subquery Syntax

- Create a table and insert rows by combining the `CREATE TABLE` statement and the `AS subquery` option.

```
CREATE TABLE table
        [(column, column...)]
AS subquery;
```

- Match the number of specified columns to the number of subquery columns.
- Define columns with column names and default values.

```
CREATE TABLE dept80
AS
SELECT employee_id,last_name,salary*12 annsal,hire_date
FROM employees
WHERE department_id=80

DESC dept80
```

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT80	EMPLOYEE_ID	Number	-	6	0	-	✓	-	-
	LAST_NAME	Varchar2	25	-	-	-	-	-	-
	ANNSAL	Number	-	-	-	-	✓	-	-
	HIRE_DATE	Date	7	-	-	-	-	-	-

1 - 4

The ALTER TABLE Statement

Use the ALTER TABLE statement to add, modify, or drop columns.

```
ALTER TABLE table
ADD         (column datatype [DEFAULT expr]
            [, column datatype]...);
```

```
ALTER TABLE table
MODIFY      (column datatype [DEFAULT expr]
            [, column datatype]...);
```

```
ALTER TABLE table
DROP       (column);
```

ALTER TABLE dept80 ADD (job_id CHAR(9))

DESC dept80

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT80	EMPLOYEE_ID	Number	-	6	0	-	✓	-	-
	LAST_NAME	Varchar2	25	-	-	-	-	-	-
	ANNSAL	Number	-	-	-	-	✓	-	-
	HIRE_DATE	Date	7	-	-	-	-	-	-
	JOB_ID	Char	9	-	-	-	✓	-	-

1 - 5

ALTER TABLE dept80
MODIFY (last_name VARCHAR(20))

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT80	EMPLOYEE_ID	Number	-	6	0	-	✓	-	-
	LAST_NAME	Varchar2	20	-	-	-	-	-	-
	ANNSAL	Number	-	-	-	-	✓	-	-
	HIRE_DATE	Date	7	-	-	-	-	-	-
	JOB_ID	Char	9	-	-	-	✓	-	-

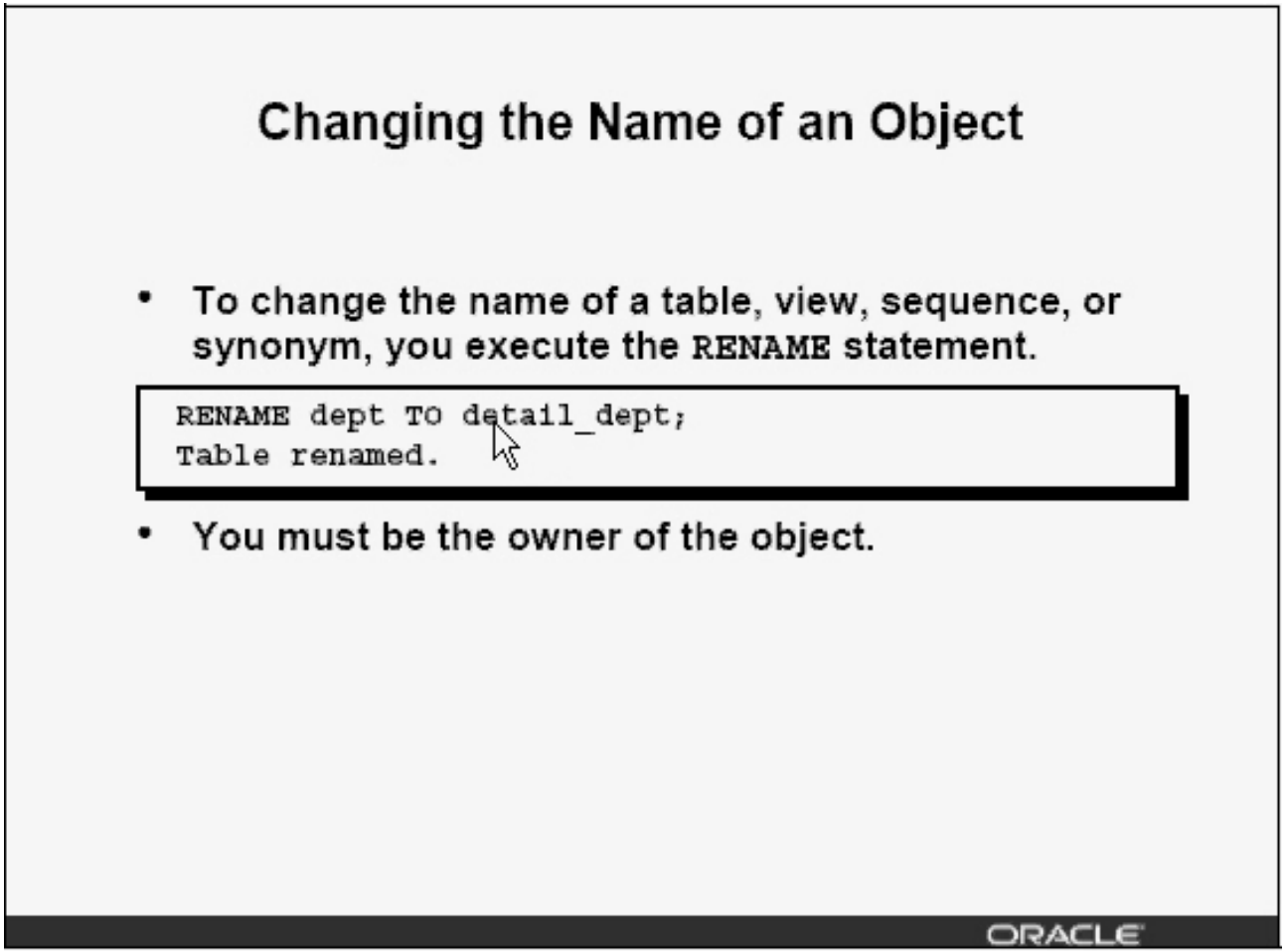
1 - 5

ALTER TABLE dept80 DROP COLUMN job_id

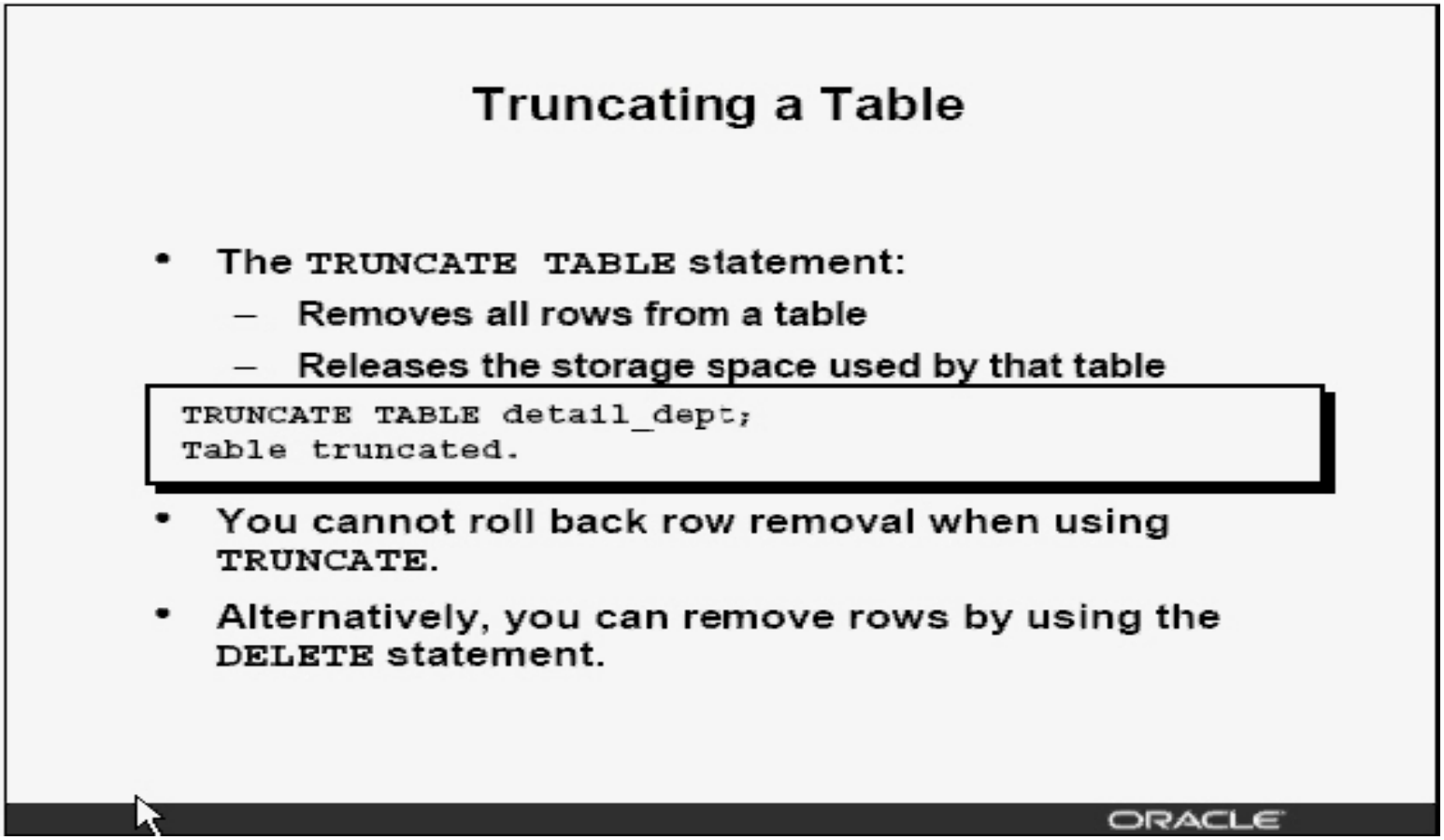
ALTER TABLE dept80 RENAME COLUMN job_id to Jobs

DROP TABLE dept80

Database Objects



RENAME dept80 To detail_dept80;



TRUNCATE TABLE detail_dept