

Session 5-1 Table Creation and Management

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Data Definition Language (DDL)

- Create a new table using the CREATE TABLE command
- Add a column to an existing table
- Modify the definition of a column in an existing table
- Delete a column from an existing table
- Rename a table
- Truncate a table
- Drop a table



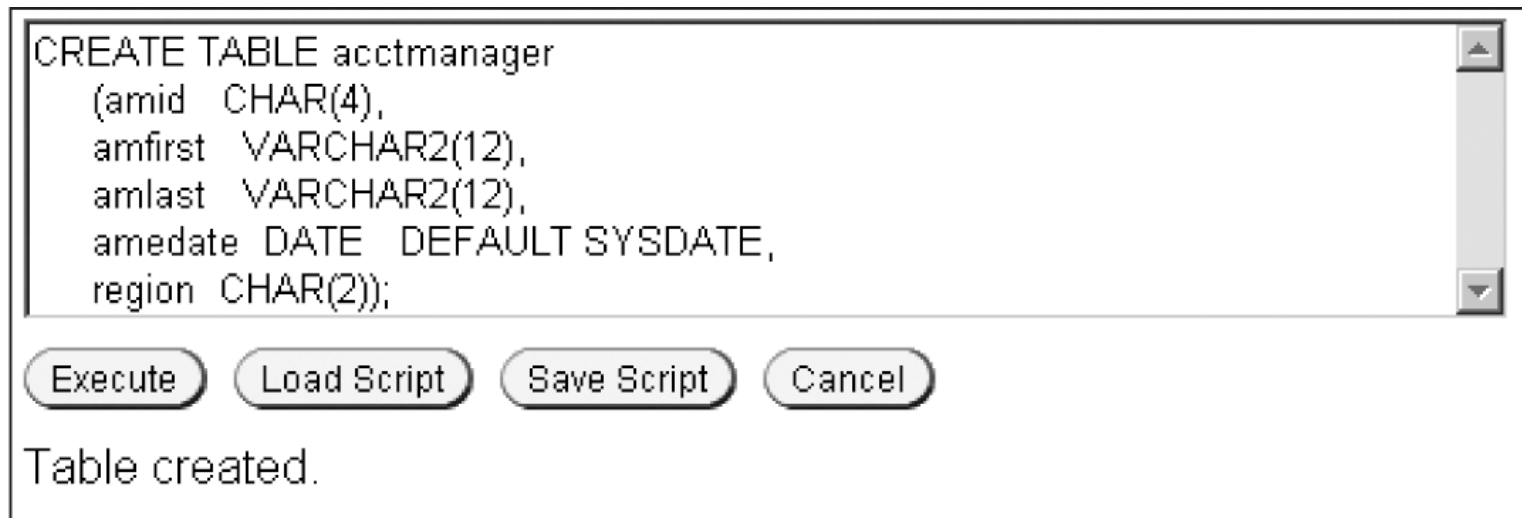
Table Creation - CREATE TABLE Command

```
CREATE TABLE [ schema. ] tablename  
  ( columnname datatype [ DEFAULT value ]  
    [ , columnname datatype [ DEFAULT value ] ] );
```

- Column definition list must be enclosed in parentheses
- Datatype must be specified for each column
- Maximum of 1,000 columns



CREATE TABLE Command Example



A screenshot of a database command window. The main text area contains the following SQL command: `CREATE TABLE acctmanager (amid CHAR(4), amfirst VARCHAR2(12), amlast VARCHAR2(12), amedate DATE DEFAULT SYSDATE, region CHAR(2));`. Below the text area are four buttons: "Execute", "Load Script", "Save Script", and "Cancel". The "Execute" button is highlighted. Below the buttons, the text "Table created." is displayed.

```
CREATE TABLE acctmanager
(amid CHAR(4),
amfirst VARCHAR2(12),
amlast VARCHAR2(12),
amedate DATE DEFAULT SYSDATE,
region CHAR(2));
```

Execute Load Script Save Script Cancel

Table created.

FIGURE 3-4 The creation of the ACCTMANAGER table



Datatype in Oracle 10g

ORACLE 10g DATATYPES	
Datatype	Description
VARCHAR2(<i>n</i>)	Variable-length character data, where <i>n</i> represents the maximum length of the column. Maximum size is 4000 characters. There is no default size for this datatype; a minimum value must be specified. <i>Example:</i> VARCHAR2(9) can contain up to nine letters, numbers, or symbols.
CHAR(<i>n</i>)	Fixed-length character column, where <i>n</i> represents the length of the column. Default size is 1. Maximum size is 2000 characters. <i>Example:</i> CHAR(9) can contain nine letters, numbers, or symbols. However, if fewer than nine are entered, spaces are added to the right to force the data to reach a length of nine.
NUMBER(<i>p,s</i>)	Numeric column, where <i>p</i> indicates precision , or the total number of digits to the left and right of the decimal position, to a maximum of 38 digits; and <i>s</i> , or scale , indicates the number of positions to the right of the decimal. <i>Example:</i> NUMBER(7, 2) can store a numeric value up to 99999.99. If precision or scale is not specified, the column defaults to a precision of 38 digits.
DATE	Stores date and time between January 1, 4712 B.C. and December 31, 9999 A.D. Seven bytes are allocated to the column to store the century, year, month, day, hour, minute, and second of a date. Oracle 10g displays the date in the format DD-MON-YY. Other aspects of a date can be displayed by using the TO_CHAR format. The width of the field is predefined by Oracle 10g as seven bytes.

FIGURE 3-2 Oracle 10g datatypes



Table Creation Through Subqueries - CREATE TABLE...AS command

- You can use subqueries to retrieve data from an existing table
- Requires use of AS keyword
- New column names can be assigned

```
CREATE TABLE tablename [(columnname, ...)]  
AS (subquery);
```

FIGURE 3-7 CREATE TABLE...AS command syntax



CREATE TABLE...AS Command Example

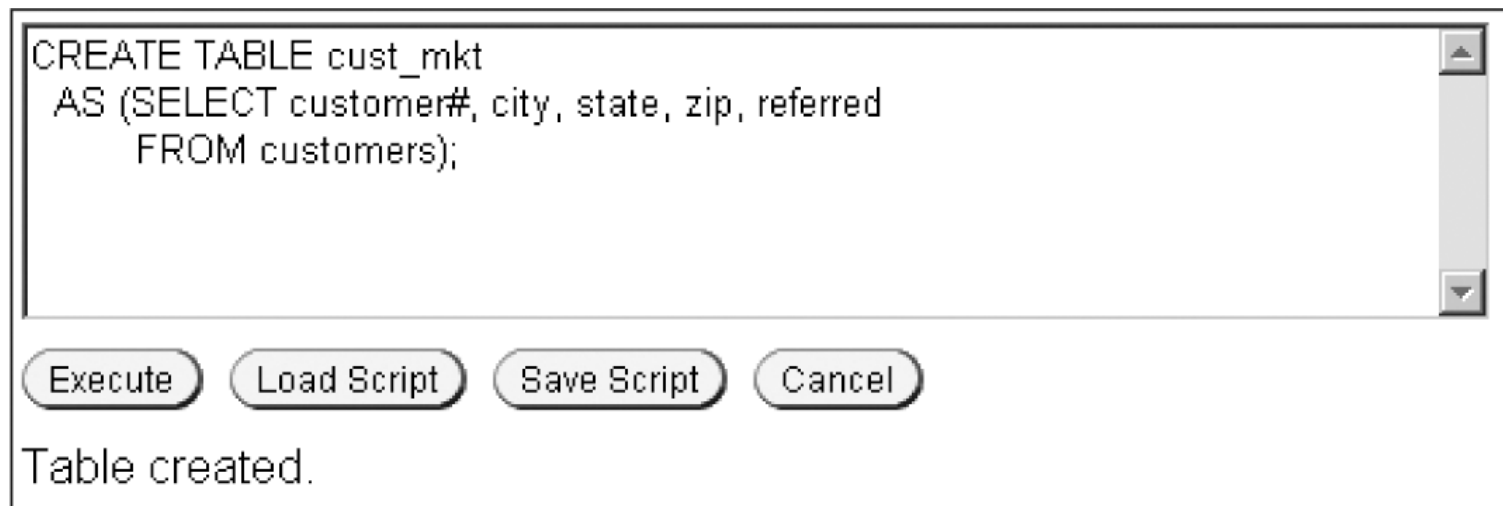


FIGURE 3-8 Creating a table based on a subquery



CREATE TABLE...AS Command Example (cont'd)

CREATE TABLE ... AS
copies *both*
structure and data
of the reference
table

```
SELECT *  
FROM cust_mkt;
```

Execute Load Script Save Script Cancel

CUSTOMER#	CITY	ST	ZIP	REFERRED
1001	EASTPOINT	FL	32328	
1002	SANTA MONICA	CA	90404	
1003	TALLAHASSEE	FL	32306	
1004	BOISE	ID	83707	
1005	SEATTLE	WA	98115	
1006	ALBANY	NY	12211	
1007	AUSTIN	TX	78710	1003
1008	CHEYENNE	WY	82003	
1009	BURBANK	CA	91510	1003
1010	ATLANTA	GA	30314	
1011	CHICAGO	IL	60606	
1012	BOSTON	MA	02110	
1013	CLERMONT	FL	34711	1006
1014	CODY	WY	82414	
1015	MIAMI	FL	33111	
1016	BURBANK	CA	91508	1010
1017	KALMAZOO	MI	49006	
1018	MACON	GA	31206	
1019	MORRISTOWN	NJ	07962	1003
1020	TRENTON	NJ	08607	

20 rows selected.



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Rename Copied Columns

Rename the
customer#
column as *id*

```
CREATE TABLE cust_mkt (id, city, state, zip, referred)  
AS (SELECT customer#, city, state, zip, referred FROM customers);
```

Execute

Load Script

Save Script

Cancel

Table created.

```
DESCRIBE cust_mkt;
```

Execute

Load Script

Save Script

Cancel

Name	Null?	Type
ID		NUMBER(4)
CITY		VARCHAR2(12)
STATE		VARCHAR2(2)
ZIP		VARCHAR2(5)
REFERRED		NUMBER(4)



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Modifying Existing Tables – ALTER TABLE Command

- Accomplished through the ALTER TABLE command
 - Use an ADD clause to add a column
 - Use a MODIFY clause to change a column
 - Use a DROP COLUMN to drop a column

```
ALTER TABLE tablename  
ADD|MODIFY|DROP COLUMN| columnname [definition];
```

FIGURE 3-11 Syntax for the ALTER TABLE command



ALTER TABLE...ADD Command

ALTER TABLE publisher
ADD (ext NUMBER(4));

DESC publisher

Execute Load Script Save Script Cancel

Table altered.

Name	Null?	Type
PUBID	NOT NULL	NUMBER(2)
NAME		VARCHAR2(23)
CONTACT		VARCHAR2(15)
PHONE		VARCHAR2(12)
EXT		NUMBER(4)

EXT column added



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ALTER TABLE...MODIFY Command

DESCRIBE acctmanager

Execute Load Script Save Script Cancel

Name	Null?	Type
AMID	NOT NULL	CHAR(4)
AMFIRST	NOT NULL	VARCHAR2(12)
AMLAST	NOT NULL	VARCHAR2(12)
AMEDATE		DATE
AMSAL		NUMBER(8,2)
AMCOMM		NUMBER(7,2)
REGION		CHAR(2)

ALTER TABLE acctmanager
MODIFY (amlast VARCHAR2(18));

Execute Load Script Save Script Cancel

Table altered.

From VARCHAR2(12)
to VARCHAR2(18)

FIGURE 3-19 The ALTER TABLE...MODIFY command used to increase the width of the Amlast column



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ALTER TABLE...DROP COLUMN Command

- Can only reference **one column per execution**
- Deletion is permanent
- Cannot delete last remaining column in a table



FIGURE 3-21 The ALTER TABLE...DROP COLUMN command



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Renaming Table

- RENAME...TO is used to rename a table – the old name is no longer valid

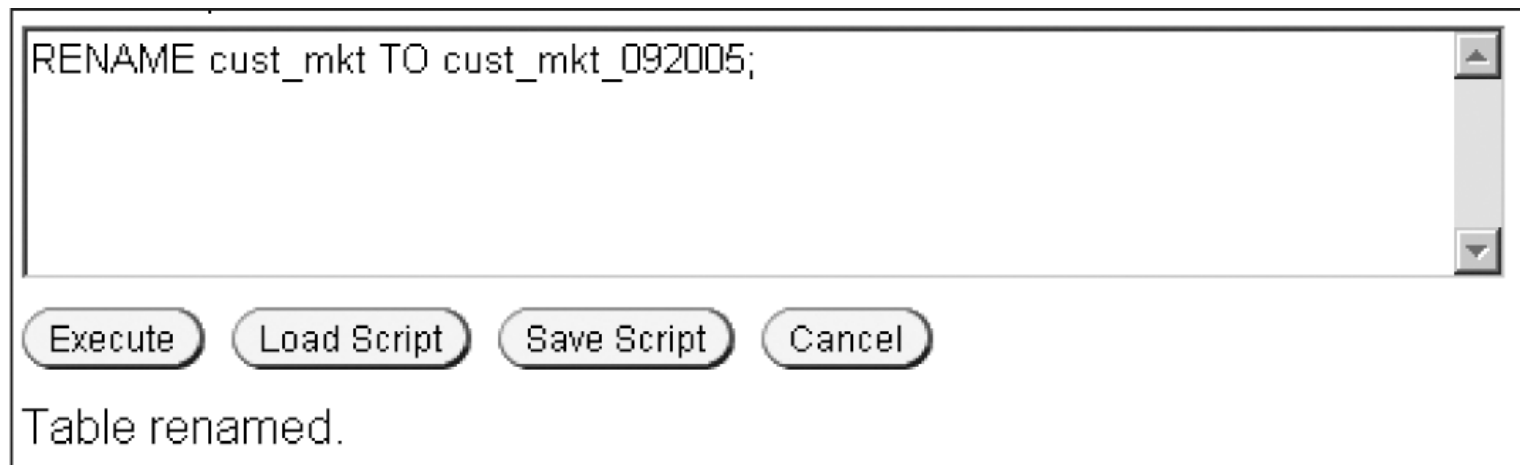


FIGURE 3-30 The RENAME...TO command



Truncating Table

- TRUNCATE TABLE command - rows are deleted
- The structure of table still remains

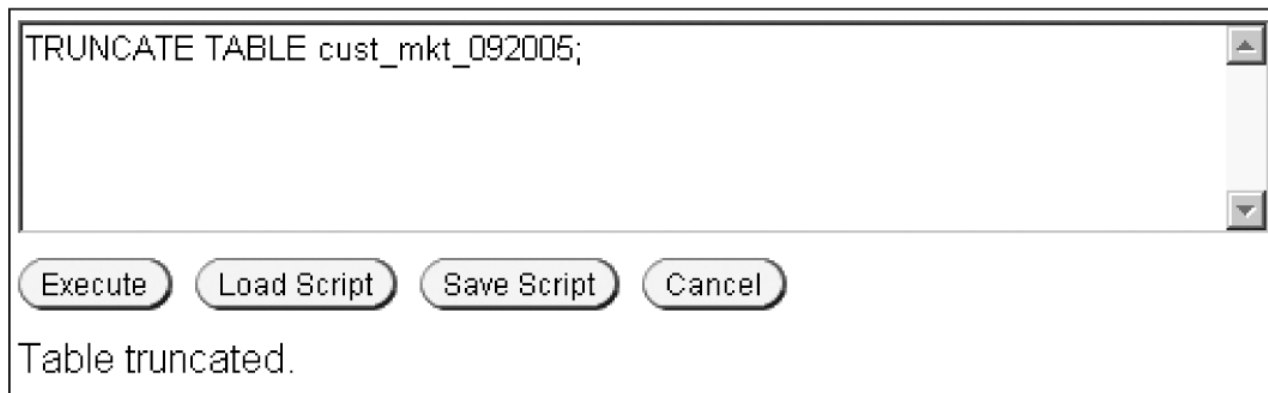


FIGURE 3-33 The TRUNCATE TABLE command



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Deleting (Dropping) a Table

- DROP TABLE command - table **structure and contents** are deleted

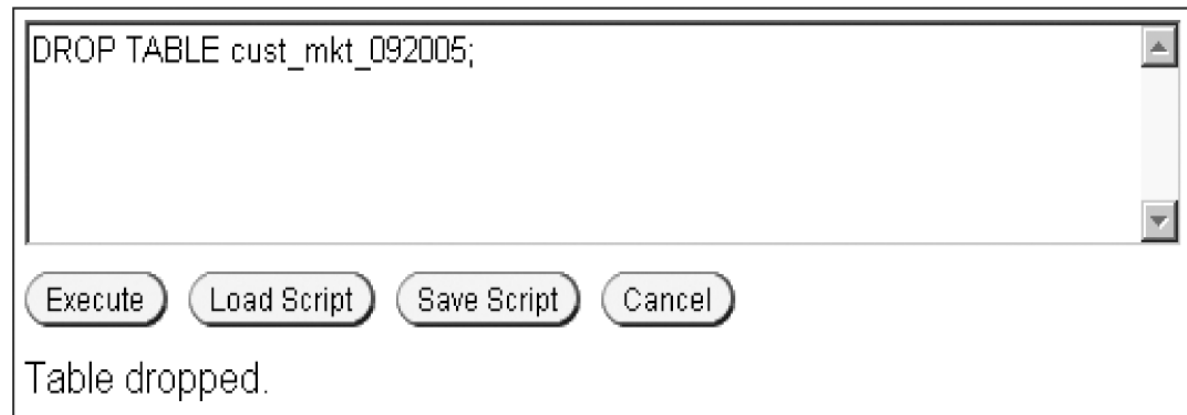


FIGURE 3-35 Using the DROP TABLE command to remove the CUST_MKT_092005 table



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Wrap-up

- Create a table with the **CREATE TABLE** command
- Change the structure of a table with the **ALTER TABLE** command
 - Columns can be added, resized, and even deleted with the ALTER TABLE command
- Tables can be renamed with the **RENAME...TO** command
- To delete all the rows in a table, use the **TRUNCATE TABLE** command
- To remove both the structure of a table and all its contents, use the **DROP TABLE** command

