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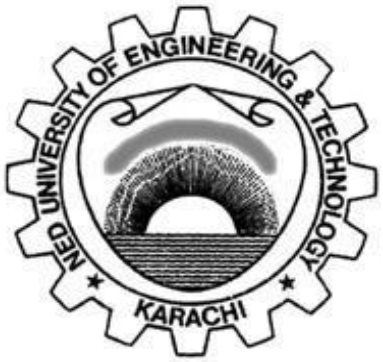

Database Management System
(DBMS – 204)

Experiment # 08

Creating and Managing Tables

Student Name: Kabeer Ahmed

Roll Number: SE-19028

Maximum Marks	Performance = 05	Viva = 05	Total = 10
Marks Obtained			
Remarks (if any)			

Experiment evaluated by

Instructor Name: Engr. Adiba Jafar

Signature and Date:

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Outcome

After completing this lesson, you should be able to do the following:

1. Describe the main database objects
2. Create tables
3. Describe the data types that can be used when specifying column definition
4. Alter table definitions
5. Drop, rename, and truncate tables

The CREATE TABLE Statement

1. You must have:
   CREATE TABLE privilege
   A storage area

CREATE TABLE[schema.]table(column datatype[DEFAULTexpr][, ...]);

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

Referencing Another User's Tables

1. Tables belonging to other users are not in the user's schema.
2. You should use the owner's name as a prefix to those tables.
   SELECT * FROM user_b.employees;

Creating Tables

1. Create the table.

CREATE TABLE deptA(deptno NUMBER(2),dname VARCHAR2(14),loc VARCHAR2(13));
Table created.

2. Confirm creation of the table.

DESCRIBE dept

Tables in the Oracle Database

1. User tables:
   Are a collection of tables created and maintained by the user
   Contain user information
2. Data dictionary:
   Is a collection of tables created and maintained by the Oracle Server
   Contain database information

Querying the Data Dictionary

1. See the names of tables owned by the user.
   SELECT table_name FROM user_tables;
2. View distinct object types owned by the user.
   SELECT DISTINCT object_type FROM user_objects;
3. View tables, views, synonyms, and sequences owned by the user.
   SELECT * FROM user_catalog;

Creating a Table by Using a Subquery Syntax

a. Create a table and insert rows by combining the CREATE TABLE statement and the AS Subquery option.
   CREATE TABLE
   table[(column,column...)] AS subquery;
b. Match the number of specified columns to the number of subquery columns.
c. Define columns with column names and default values.

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SE-19028

CREATE TABLE EMPA AS SELECT empno, ename,sal, Hiredate FROM emp WHERE deptno = 30;
Table created.

The ALTER TABLE Statement

Use the ALTER TABLE statement to:

1. Add a new column
2. Modify an existing column
3. Define a default value for the new column
4. Drop a column

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);
The ALTER TABLE

Adding a Column

1. Use the ADD clause to add columns.

ALTER TABLE EMPA ADD (job VARCHAR2(9));
Table altered.

Modifying a Column

1. You can change a column's data type, size, and default value.

ALTER TABLE EMPA MODIFY (ename VARCHAR2(30));
Table altered.

2. A change to the default value affects only subsequent insertions to the table.

Dropping a Column

Use the DROP COLUMN clause to drop columns you no longer need from the table.

ALTER TABLE EMPA DROP COLUMN job;
Table altered.

The SET UNUSED Option

1. You use the SET UNUSED option to mark one or more columns as unused.
2. You use the DROP UNUSED COLUMNS option to remove the columns that are marked as unused.

ALTER TABLE table SET UNUSED (column);
OR
ALTER TABLE table COLUMN column;
SET UNUSED ALTER TABLE table
DROP UNUSED COLUMNS;

ALTER TABLE EMPA SET UNUSED (sal);
Table altered.
ALTER TABLE EMPA DROP UNUSED COLUMNS;
Table altered.

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Dropping a Table

a. All data and structure in the table is deleted.
b. Any pending transactions are committed.
c. All indexes are dropped.
d. You cannot roll back the DROP TABLE statement.

DROP TABLE EMPA;

Table dropped.

Changing the Name of an Object

•To change the name of a table, view, sequence, or synonym, execute the RENAME statement.

RENAME dept TO detail_dept;

Table renamed.

•You must be the owner of the object.

Truncating a Table

1. The TRUNCATE TABLE statement:
   a. Removes all rows from a table
   b. Releases the storage space used by that table

TRUNCATE TABLE detail_dept;

Table truncated.

2. You cannot roll back row removal when using TRUNCATE.
3. Alternatively, you can remove rows by using the DELETE statement.

Adding Comments to a Table

• You can add comments to a table or column by using The COMMENT statement.

COMMENT ON TABLE employees
IS 'Employee Information';

Comment created.

•Comments can be viewed through the data dictionary views:

–ALL_COL_COMMENTS
–USER_COL_COMMENTS
–ALL_TAB_COMMENTS
–USER_TAB_COM

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LAB# 08

Creating and Managing Tables

Practice 7

1. Create the DEPT40 table based on the following table instance chart. Place the syntax in a script called lab8_1.sql , then execute the statement in the script to create the table. Confirm that the table is created.
ID NAME Column Name Key Type Nulls/Unique FK Table FK Column
NUMBER VARCHAR2 Data type 7 25 Length

```
SQL> save D:\Oracle_Database_12c_Release_2_v12.2.0.1.0\lab8_1.sql
Created file D:\Oracle_Database_12c_Release_2_v12.2.0.1.0\lab8_1.sql
SQL> run D:\Oracle_Database_12c_Release_2_v12.2.0.1.0\lab8_1.sql
  1* INSERT INTO dept40(id,name) SELECT deptno, dname from dept;

4 rows created.

SQL> select * from dept40;

no rows selected

SQL> desc dept40
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                                 NUMBER(7)
 NAME                                               VARCHAR2(25)
```

2. Populate the DEPT40 table with data from the DEPT table. Include only columns that you need.

3. Create the DEPT40 table based on the following table instance chart. Place the syntax in a script called lab8_3.sql , and then execute the statement in the script to create the table. Confirm that the table is created. ID LAST_NAME FIRST_NAME DEPT_ID
Column Name
Key Type
Nulls/Unique
FK Table
FK Column
NUMBER VARCHAR2 VARCHAR2 NUMBER
Data type Length 7 25 25 7

```
SQL> save D:\Oracle_Database_12c_Release_2_v12.2.0.1.0\lab8_1.sql
Created file D:\Oracle_Database_12c_Release_2_v12.2.0.1.0\lab8_1.sql
SQL> run D:\Oracle_Database_12c_Release_2_v12.2.0.1.0\lab8_1.sql
  1  create table dept40(
  2    id number(7),
  3    name varchar2(25)
  4*   )

Table created.

SQL> select * from dept40;
```

Kabeer Ahmed
SE-19028

4. Modify the EMPA table to allow for longer employee last names. Confirm your modification.

```
SQL> ALTER TABLE EMPA MODIFY (last_name varchar2(30));

Table altered.
```

5. Confirm that both the DEPT40 and EMPA tables are stored in the data dictionary. (Hint:USER_TABLES)

```
select * from user_tables;
```

Query Result

SQL | All Rows Fetched: 133 in 0.135 seconds

	TABLE_NAME	TABLESPACE_NAME	CLUSTER_NAME	IOT_NAME	STATUS	PCT_FREE	PCT_USED	INI_TRANS	MAX_TRANS	INITIAL_EXTENT
126	LOGSTDBY$EDS_TABLES	SYSAUX	(null)	(null)	VALID	10	(null)	1	255	65536
127	SQLPLUS_PRODUCT_PROFILE	SYSTEM	(null)	(null)	VALID	10	40	1	255	65536
128	HELP	SYSTEM	(null)	(null)	VALID	0	40	1	255	49152
129	DEPT	SYSTEM	(null)	(null)	VALID	10	40	1	255	65536
130	EMP	SYSTEM	(null)	(null)	VALID	10	40	1	255	65536
131	SALGRADE	SYSTEM	(null)	(null)	VALID	10	40	1	255	65536
132	DEPT40	SYSTEM	(null)	(null)	VALID	10	40	1	255	65536
133	EMPA	SYSTEM	(null)	(null)	VALID	10	40	1	255	65536

157	DEPT40	TABLE
158	EMPA	TABLE

6. Create the EMP2 table based on the structure of the EMP table. Include only the EMPNO , ENAME , SAL , and DEPTNO columns. Name the columns in your new table EMPNO , ENAME ,, SAL , and DEPTNO respectively.

```
CREATE TABLE emp2 AS
SELECT empno , ename,sal, deptno FROM emp;
```

```
Table EMP2 created.
```

7. Drop the EMPA table.

Kabeer Ahmed
SE-19028

```
drop table empa;
```

```
Script Output
Task completed in 0.06 seconds
Table EMPA dropped.
```

8. Rename the EMP2 table as EMP3.

```
rename emp2 to emp3;
```

```
Script Output
Task completed in 0.02 seconds
Table renamed.
```

9. Add a comment to the DEPT40 and EMPA table definitions describing the tables. Confirm your additions in the data dictionary.

```
COMMENT ON TABLE emp IS 'Emlpoyee Information';
COMMENT ON TABLE dept IS 'Department number 40';
COLUMN table_name FORMAT A15
COLUMN table_type FORMAT A10
COLUMN comments FORMAT A40
SELECT * FROM user_tab_comments
WHERE table_name = 'DEPT' OR table_name = 'EMP';
```

```
Script Output
Task completed in 0.12 seconds
Comment on table emp 'EMLPOYEE INFORMATION' succeeded.

Comment on table dept 'DEPARTMENT NUMBER 40' succeeded.
```

Kabeer Ahmed
SE-19028

TABLE_NAME	TABLE_TYPE	COMMENTS	ORIGIN_CON_ID
DEPT	TABLE	Department number 40	1
EMP	TABLE	Emlpoyee Information	1

10. Drop the ENAME column from the EMP3 table. Confirm your modification by checking the description of the table.

```
ALTER TABLE emp3 DROP COLUMN ENAME;
DESCRIBE emp
```

Script Output | Task completed in 0.12 seconds

```
Table EMP3 altered.

Name                 Null     Type
-------------------- -------- -------------
EMPNO                NOT NULL NUMBER
ENAME                         VARCHAR2(50)
JOB                           VARCHAR2(50)
MGR                           NUMBER
HIREDATE                      DATE
SAL                           NUMBER
COMM                          NUMBER
DEPTNO                        NUMBER
SAL_REVIEW_DATE               DATE
```

11. In the EMP3 table, mark the DEPTNO column in the EMP3 table as UNUSED . Confirm your modification by checking the description of the table.

```
ALTER TABLE emp3
SET UNUSED (deptno);
DESCRIBE emp3
```

Kabeer Ahmed
SE-19028

```
Table EMP3 altered.

Name   Null         Type
-----  ---------    ------
EMPNO  NOT NULL     NUMBER
SAL                 NUMBER
```

12. Drop all the UNUSED columns from the EMP3 table. Confirm your modification by checking the description of the table.

```
ALTER TABLE emp3
  DROP UNUSED COLUMNS;
  DESCRIBE emp3
```

Script Output | Task completed in

```
Table EMP3 altered.

Name   Null         Type
-----  ---------    ------
EMPNO  NOT NULL     NUMBER
SAL                 NUMBER
```