Department of Information Systems and Technologies
2025-2026 Fall Semester

CTIS259 Database Management Systems and Applications

Lab Guide 03

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Aim of this lab session: **1.** Managing Schema objects
2. Using DDL statements to Create and Manage Tables

ORACLE Server Configurations:

IP Address: 139.179.33.231

Port number: 1522

SID: orclctis

Please USE ora accounts (oraxx) !

Part-I

SQL-II Practice 3-1: Managing Schema Objects

Overview

In this practice, you use the `ALTER TABLE` command to modify columns and add constraints.

Task

1. Create the `DEPT2` table based on the following table instance chart. Enter the syntax in the SQL Worksheet. Then, execute the statement to create the table. Confirm that the table is created.

Column Name	ID	NAME
Key Type		
Nulls/Unique		
FK Table		
FK Column		
Data type	NUMBER	VARCHAR2
Length	7	25

```
Name                           Null     Type
------------------------------ -------- ------------
ID                                      NUMBER(7)
NAME                                    VARCHAR2(25)

2 rows selected
```

2. Populate the `DEPT2` table with data from the `DEPARTMENTS` table. Include only the columns that you need.

3. Create the `EMP2` table based on the following table instance chart. Enter the syntax in the SQL Worksheet. Then execute the statement to create the table. Confirm that the table is created.

Column Name	ID	LAST_NAME	FIRST_NAME	DEPT_ID
Key Type				
Nulls/Unique				
FK Table				
FK Column				
Data type	NUMBER	VARCHAR2	VARCHAR2	NUMBER
Length	7	25	25	7

```
Name                           Null     Type
------------------------------ -------- ------------------
ID                                      NUMBER(7)
LAST_NAME                               VARCHAR2(25)
FIRST_NAME                              VARCHAR2(25)
DEPT_ID                                 NUMBER(7)

4 rows selected
```

4. Modify the `EMP2` table to allow for longer employee last names. Confirm your modification.

```
Name                          Null     Type
----------------------------- -------- ----------------
ID                                     NUMBER(7)
LAST_NAME                              VARCHAR2(50)
FIRST_NAME                             VARCHAR2(25)
DEPT_ID                                NUMBER(7)

4 rows selected
```

5. Create the `EMPLOYEES2` table based on the structure of the `EMPLOYEES` table. Include only the `EMPLOYEE_ID`, `FIRST_NAME`, `LAST_NAME`, `SALARY`, and `DEPARTMENT_ID` columns. Name the columns in your new table `ID`, `FIRST_NAME`, `LAST_NAME`, `SALARY`, and `DEPT_ID`, respectively.

6. Drop the `EMP2` table.

7. Query the recycle bin to see whether the table is present.

	ORIGINAL_NAME	OPERATION	DROPTIME
17	EMP_NEW_SAL	DROP	2009-05-22:14:44:15
18	EMP2	DROP	2009-05-22:14:57:57

8. Restore the `EMP2` table to a state before the `DROP` statement.

9. Drop the `FIRST_NAME` column from the `EMPLOYEES2` table. Confirm your modification by checking the description of the table.

```
Name                          Null     Type
----------------------------- -------- ------------
ID                                     NUMBER(6)
LAST_NAME                     NOT NULL VARCHAR2(25)
SALARY                                 NUMBER(8,2)
DEPT_ID                                NUMBER(4)

4 rows selected
```

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10. In the `EMPLOYEES2` table, mark the `DEPT_ID` column as `UNUSED`. Confirm your modification by checking the description of the table.

```
Name                          Null     Type
----------------------------- -------- ----------------
ID                                     NUMBER(6)
LAST_NAME                     NOT NULL VARCHAR2(25)
SALARY                                 NUMBER(8,2)

3 rows selected
```

11. Drop all the `UNUSED` columns from the `EMPLOYEES2` table. Confirm your modification by checking the description of the table.

12. Add a table-level `PRIMARY KEY` constraint to the `EMP2` table on the `ID` column. The constraint should be named at creation. Name the constraint `my_emp_id_pk`.

13. Create a `PRIMARY KEY` constraint to the `DEPT2` table using the ID column. The constraint should be named at creation. Name the constraint `my_dept_id_pk`.

14. Add a foreign key reference on the `EMP2` table that ensures that the employee is not assigned to a nonexistent department. Name the constraint `my_emp_dept_id_fk`.

15. Modify the `EMP2` table. Add a `COMMISSION` column of the `NUMBER` data type, precision 2, scale 2. Add a constraint to the `COMMISSION` column that ensures that a commission value is greater than zero.

16. Drop the `EMP2` and `DEPT2` tables so that they cannot be restored. Verify the recycle bin.

Part-II
Using DDL Statements to Create and Manage Tables

4. Create the `EMPLOYEES3` table based on the structure of the `EMPLOYEES` table. Include only the `EMPLOYEE_ID`, `FIRST_NAME`, `LAST_NAME`, `SALARY`, and `DEPARTMENT_ID` columns. Name the columns in your new table `ID`, `FIRST_NAME`, `LAST_NAME`, `SALARY`, and `DEPT_ID`, respectively.

5. Alter the `EMPLOYEES3` table status to read-only. Please note that this option is supported in Oracle Database 11*g*.

6. Try to insert the following row in the `EMPLOYEES3` table:

ID	FIRST_NAME	LAST_NAME	SALARY	DEPT_ID
34	Grant	Marcie	5678	10

You will get the following error message:

```
Error starting at line : 1 in command -
INSERT INTO employees3
VALUES (34, 'Grant','Marcie',5678,10)
Error at Command Line : 1 Column : 13
Error report -
SQL Error: ORA-12081: update operation not allowed on table "ORA91"."EMPLOYEES3"
12081. 00000 -  "update operation not allowed on table \"%s\".\"%s\""
*Cause:    An attempt was made to update a read-only materialized view.
*Action:   No action required. Only Oracle is allowed to update a
           read-only materialized view.
```

7. Revert the `EMPLOYEES3` table to the read/write status. Now, try to insert the same row again. Please note that this option is supported in Oracle Database 11*g*. You should get the following messages:

```
Table EMPLOYEES3 altered.


1 row inserted.
```

8. Drop the `EMPLOYEES3` table.