Practices for Lesson 11: Using DDL Statements to Create and Manage Tables

Chapter 11

Practices for Lesson 11: Overview

Lesson Overview

This practice covers the following topics:

- Creating new tables
- Creating a new table by using the `CREATE TABLE AS` syntax
- Verifying that tables exist
- Altering tables
- Adding columns
- Dropping columns
- Setting a table to read-only status
- Dropping tables

Note: Before starting this practice, execute the `/home/oracle/labs/sql1/code_ex/cleanup_scripts/cleanup_11.sql` script.

Practice 11-1: Introduction to Data Definition Language

Overview

In this practice, you create new tables by using the `CREATE TABLE` statement. Confirm that the new table was added to the database. You also learn to set the status of a table as `READ ONLY`, and then revert to `READ/WRITE`. You use the `ALTER TABLE` command to modify table columns.

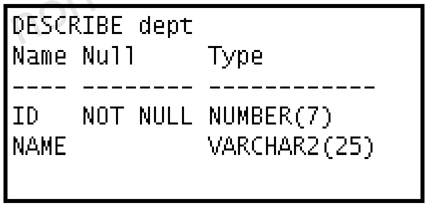
Notes

- For all the DDL and DML statements, click the Run Script icon (or press F5) to execute the query in SQL Developer. Thus, you get to see the feedback messages on the Script Output tabbed page. For `SELECT` queries, continue to click the Execute Statement icon or press F9 to get the formatted output on the Results tabbed page.
- Execute the `cleanup_11.sql` script from `/home/oracle/labs/sql1/code_ex/cleanup_scripts/cleanup_11.sql` before performing the following tasks.

Tasks

1. Create the `DEPT` table based on the following table instance chart. Save the statement in the `lab_11_01.sql` script, and then execute the statement in the script to create the table. Confirm that the table is created.

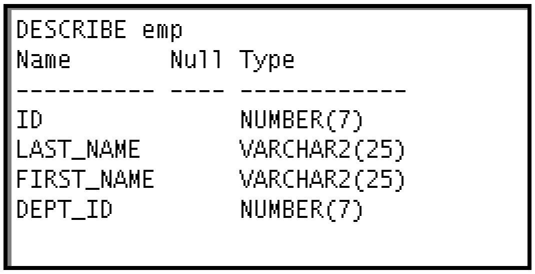
Column Name	ID	NAME
Key Type	Primary key	
Nulls/Unique		
FK Table		
FK Column		
Data type	NUMBER	VARCHAR2
Length	7	25



```
DESCRIBE dept
Name Null     Type
---- -------- ------------
ID   NOT NULL NUMBER(7)
NAME          VARCHAR2(25)
```

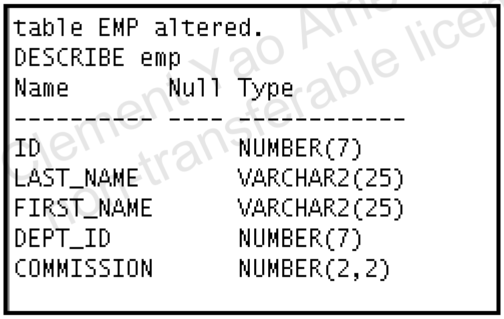
2. Create the EMP table based on the following table instance chart. Save the statement in the lab_11_02.sql script, and then execute the statement in the script to create the table. Confirm that the table is created.

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



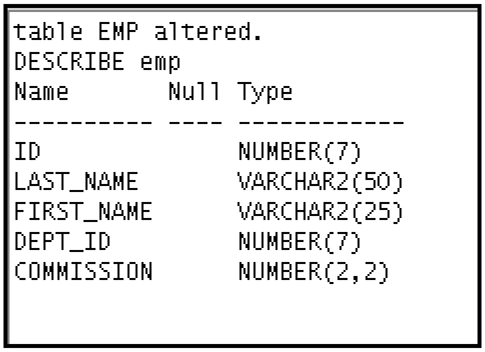
```
DESCRIBE emp
Name       Null Type
---------- ---- ------------
ID              NUMBER(7)
LAST_NAME       VARCHAR2(25)
FIRST_NAME      VARCHAR2(25)
DEPT_ID         NUMBER(7)
```

3. Modify the EMP table. Add a COMMISSION column of the NUMBER data type, with precision 2 and scale 2. Confirm your modification.



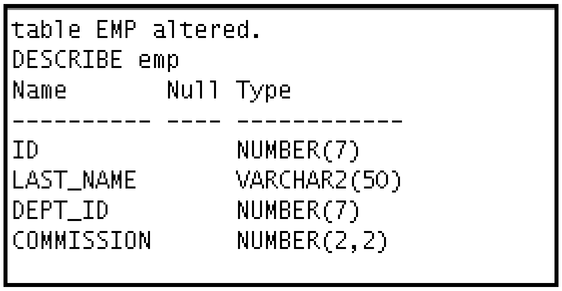
```
table EMP altered.
DESCRIBE emp
Name       Null Type
---------- ---- ------------
ID              NUMBER(7)
LAST_NAME       VARCHAR2(25)
FIRST_NAME      VARCHAR2(25)
DEPT_ID         NUMBER(7)
COMMISSION      NUMBER(2,2)
```

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



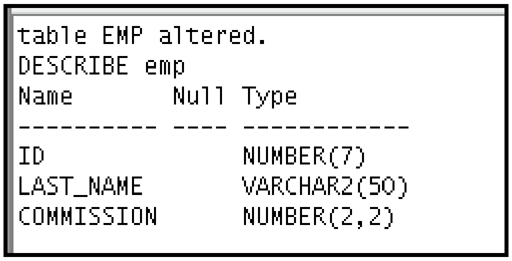
```
table EMP altered.
DESCRIBE emp
Name       Null Type
---------- ---- ------------
ID              NUMBER(7)
LAST_NAME       VARCHAR2(50)
FIRST_NAME      VARCHAR2(25)
DEPT_ID         NUMBER(7)
COMMISSION      NUMBER(2,2)
```

5. Drop the FIRST_NAME column from the EMP table. Confirm your modification by checking the description of the table.



```
table EMP altered.
DESCRIBE emp
Name       Null Type
---------- ---- ------------
ID              NUMBER(7)
LAST_NAME       VARCHAR2(50)
DEPT_ID         NUMBER(7)
COMMISSION      NUMBER(2,2)
```

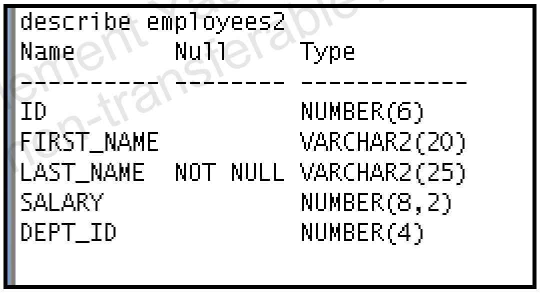
6. In the EMP table, mark the DEPT_ID column as UNUSED. Confirm your modification by checking the description of the table.



```
table EMP altered.
DESCRIBE emp
Name       Null Type
---------- ---- ------------
ID              NUMBER(7)
LAST_NAME       VARCHAR2(50)
COMMISSION      NUMBER(2,2)
```

7. Drop all the UNUSED columns from the EMP table.

8. 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.

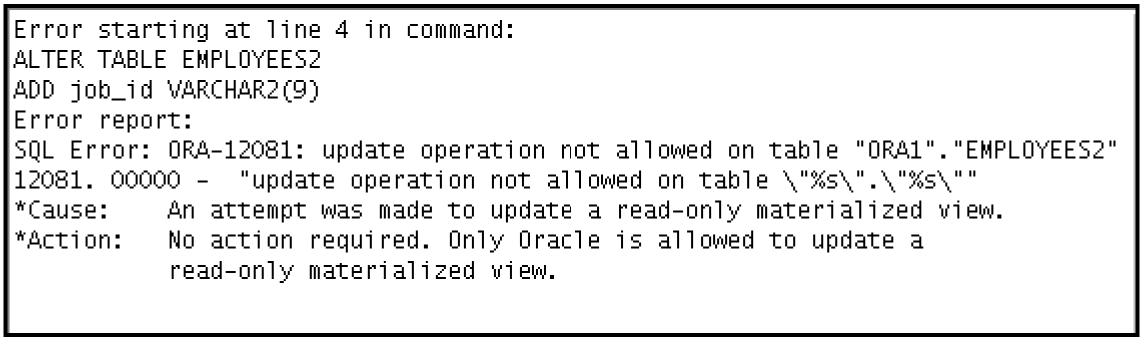


```
describe employees2
Name       Null     Type
---------- -------- ------------
ID                  NUMBER(6)
FIRST_NAME          VARCHAR2(20)
LAST_NAME  NOT NULL VARCHAR2(25)
SALARY              NUMBER(8,2)
DEPT_ID             NUMBER(4)
```

9. Alter the status of the EMPLOYEES2 table to read-only.

10. Try to add a column `JOB_ID` in the `EMPLOYEES2` table.

    Note: You will get the “Update operation not allowed on table” error message. You will not be allowed to add any column to the table because it is assigned a read-only status.

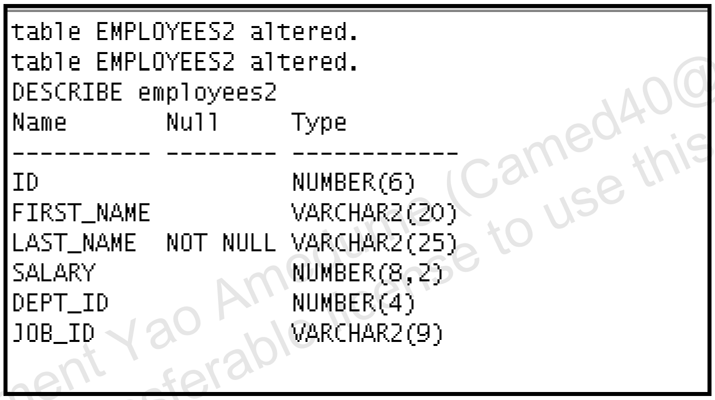


```
Error starting at line 4 in command:
ALTER TABLE EMPLOYEES2
ADD job_id VARCHAR2(9)
Error report:
SQL Error: ORA-12081: update operation not allowed on table "ORA1"."EMPLOYEES2"
12081. 00000 -  "update operation not allowed on table \"%s\".\"%s\""
*Cause:    An attempt was made to update a read-only materialized view.
*Action:   No action required. Only Oracle is allowed to update a
           read-only materialized view.
```

11. Revert the `EMPLOYEES2` table to read/write status. Now try to add the same column again.

    Now, because the table is assigned a `READ WRITE` status, you will be allowed to add a column to the table.

    You should get the following messages:



```
table EMPLOYEES2 altered.
table EMPLOYEES2 altered.
DESCRIBE employees2
Name       Null     Type
---------- -------- ------------
ID                  NUMBER(6)
FIRST_NAME          VARCHAR2(20)
LAST_NAME  NOT NULL VARCHAR2(25)
SALARY              NUMBER(8,2)
DEPT_ID             NUMBER(4)
JOB_ID              VARCHAR2(9)
```

12. Drop the `EMP`, `DEPT`, and `EMPLOYEES2` table.