EXERCISE-1
Creating and Managing Tables

OBJECTIVE

After the completion of this exercise, students should be able to do the following:

- Create tables
- Describing the data types that can be used when specifying column definition
- Alter table definitions
- Drop, rename, and truncate tables

NAMING RULES

Table names and column names:

- Must begin with a letter
- Must be 1-30 characters long
- Must contain only A-Z, a-z, 0-9, _, $, and #
- Must not duplicate the name of another object owned by the same user
- Must not be an oracle server reserve words
- 2 different tables should not have same name.
- Should specify a unique column name.
- Should specify proper data type along with width
- Can include "not null" condition when needed. By default it is 'null'.

The CREATE TABLE Statement

Table: Basic unit of storage; composed of rows and columns

Syntax: 1 Create table table_name (column_name1 data_ type (size)
column_name2 data_ type (size)….);

Syntax: 2 Create table table_name (column_name1 data_ type (size) constraints,
column_name2 data_ type constraints …);

Example:

Create table employlees (employee_id number(6), first_name varchar2(20), ..job_id varchar2(10),
CONSTRAINT emp_emp_id_pk PRIMARY KEY (employlee_id));

Tables Used in this course

Creating a table by using a Sub query

SYNTAX
// CREATE TABLE table_name(column_name type(size)…);

Create table table_name **as** select column_name1,column_name2,……colmn_namen from
table_name where predicate;

AS Subquery

Subquery is the select statement that defines the set of rows to be inserted into the new table.

Example

Create table dept80 as select employee_id, last_name, salary*12 Annsal, hire_date
from employees where dept_id=80;

The ALTER TABLE Statement

The ALTER statement is used to

- Add a new column
- Modify an existing column
- Define a default value to the new column
- Drop a column
- To include or drop integrity constraint.

SYNTAX

ALTER TABLE table_name ADD /MODIFY(Column_name type(size));

ALTER TABLE table_name DROP COLUMN (Column_nname);

ALTER TABLE ADD CONSTRAINT Constraint_name PRIMARY KEY (Colum_Name);

Example:

Alter table dept80 add (jod_id varchar2(9));
Alter table dept80 modify (last_name varchar2(30));
Alter table dept80 drop column job_id;

NOTE: Once the column is dropped it cannot be recovered.

DROPPING A TABLE

- All data and structure in the table is deleted.
- Any pending transactions are committed.
- All indexes are dropped.
- Cannot roll back the drop table statement.

Syntax:

Drop table *tablename;*

Example:

Drop table dept80;

RENAMING A TABLE

To rename a table or view.

Syntax

RENAME old_name to new_name

Example:

Rename dept to detail_dept;

TRUNCATING A TABLE

Removes all rows from the table.

Releases the storage space used by that table.

Syntax
TRUNCATE TABLE *table_name*;
Example:
TRUNCATE TABLE copy_emp;

Find the Solution for the following:

Create the following tables with the given structure.

EMPLOYEES TABLE

NAME	NULL?	TYPE
Employee_id	Not null	Number(6)
First_Name		Varchar(20)
Last_Name	Not null	Varchar(25)
Email	Not null	Varchar(25)
Phone_Number		Varchar(20)
Hire_date	Not null	Date
Job_id	Not null	Varchar(10)
Salary		Number(8,2)
Commission_pct		Number(2,2)
Manager_id		Number(6)
Department_id		Number(4)

DEPARTMENT TABLE

NAME	NULL?	TYPE
Dept_id	Not null	Number(6)
Dept_name	Not null	Varchar(20)
Manager_id		Number(6)
Location_id		Number(4)

JOB_GRADE TABLE

NAME	NULL?	TYPE
Grade_level		Varchar(2)
Lowest_sal		Number

Highest_sal		Number

LOCATION TABLE

NAME	NULL?	TYPE
Location_id	Not null	Number(4)
St_addr		Varchar(40)
Postal_code		Varchar(12)
City	Not null	Varchar(30)
State_province		Varchar(25)
Country_id		Char(2)

1. Create the DEPT table based on the DEPARTMENT following the table instance chart below. 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

```
CREATE TABLE DEPT (
   ID NUMBER(7) NOT NULL,     -- ID is a number with length 7, cannot be NULL
   NAME VARCHAR2(25) NOT NULL -- NAME is a varchar2 with length 25, cannot be NULL
);
OUTPUT
TABLE_NAME  OWNER  TABLESPACE_NAME CLUSTER_NAME NUM_ROWS BLOCKS
EMPTY_BLOCKS AVG_SPACE CHAIN_CNT AVG_ROW_LEN SAMPLE_SIZE
LAST_ANALYZED
---------- ------- -------------- ---------- -------- ------ ---------- -------- -------- ---------- --------
- ------------
DEPT       SCOTT   USERS          NULL       0        0      0          0        0        0          0
NULL
```

2. Create the EMP table based on the following instance chart. 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

```
CREATE TABLE EMP (
  ID NUMBER(7),
  LAST_NAME VARCHAR2(25),
  FIRST_NAME VARCHAR2(25),
  DEPT_ID NUMBER(7)
);
DESC EMP;
OUTPUT
Name        Null?   Type
----------- -------- ------------
ID                   NUMBER(7)
LAST_NAME            VARCHAR2(25)
FIRST_NAME           VARCHAR2(25)
DEPT_ID              NUMBER(7)
```

3. Modify the EMP table to allow for longer employee last names. Confirm the modification.(Hint: Increase the size to 50)

```
ALTER TABLE EMP MODIFY (LAST_NAME VARCHAR2(50));
DESC EMP;
OUTPUT
Name        Null?   Type
----------- -------- ------------
ID                   NUMBER(7)
LAST_NAME            VARCHAR2(50)
FIRST_NAME           VARCHAR2(25)
DEPT_ID              NUMBER(7)
```

4. Create the EMPLOYEES2 table based on the structure of EMPLOYEES table. Include Only the Employee_id, First_name, Last_name, Salary and Dept_id coloumns. Name the columns Id, First_name, Last_name, salary and Dept_id respectively.

```
CREATE TABLE EMPLOYEES2 AS
SELECT
  EMPLOYEE_ID AS ID,
  FIRST_NAME,
  LAST_NAME,
  SALARY,
  DEPARTMENT_ID AS DEPT_ID
FROM EMPLOYEES;

DESC EMPLOYEES2;
Name        Null?    Type
----------- -------- ------------
ID                   NUMBER(6)
FIRST_NAME           VARCHAR2(20)
LAST_NAME            VARCHAR2(25)
SALARY               NUMBER(8,2)
DEPT_ID              NUMBER(4)
```

5. Drop the EMP table.

```
DROP TABLE EMP;

SELECT TABLE_NAME FROM USER_TABLES;

TABLE_NAME

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EMPLOYEES2
```

6. Rename the EMPLOYEES2 table as EMP.

RENAME EMPLOYEES2 TO EMP;

SELECT TABLE_NAME FROM USER_TABLES;

TABLE_NAME

EMP

7. Add a comment on DEPT and EMP tables. Confirm the modification by describing the table.

COMMENT ON TABLE DEPT IS 'Department details table';

COMMENT ON TABLE EMP IS 'Employee details table';

SELECT TABLE_NAME, COMMENTS FROM USER_TAB_COMMENTS

WHERE TABLE_NAME IN ('DEPT', 'EMP');

TABLE_NAME COMMENTS

DEPT Department details table

EMP Employee details table

8. Drop the First_name column from the EMP table and confirm it.

ALTER TABLE EMP DROP COLUMN FIRST_NAME;

DESC EMP;

Name Null? Type

ID NUMBER(6)

LAST_NAME VARCHAR2(25)
SALARY NUMBER(8,2)
DEPT_ID NUMBER(4)

Evaluation Procedure	Marks awarded
Query(5)	
Execution (5)	
Viva(5)	
Total (15)	
Faculty Signature	