

## 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 employees ( employee_id number(6), first_name varchar2(20), ..job_id varchar2(10),
CONSTRAINT emp_emp_id_pk PRIMARY KEY (employee_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,...,column_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
```

### EMPLOYEE TABLE:

```
CREATE TABLE employees (employee_id
integer not null, first_name varchar(25),
last_name varchar(25), email varchar(25)
not null, phone_number varchar(25) not null,
hire_date date not null, job_id
varchar(25) not null, salary decimal(9,2),
commission_pct integer, manager_id
integer, department_id integer);
```

### 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
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### 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)

`CREATE TABLE LOCATION (location_id integer not null, st_addr varchar(40), postal_code varchar(12), city varchar(30) not null, 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 integer, name varchar(25));  
DESC DEPT;`

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 integer, first-name varchar(25), last-name varchar(25), dept_ID integer);  
DESC EMP;`

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 varchar(50);  
DESC EMP;`~~

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 columns. Name the columns Id, First\_name, Last\_name, salary and Dept\_id respectively.

```
CREATE TABLE EMPLOYEES (employee-ID integer,  
first-name varchar(25), last-name varchar(25),  
salary integer, dept-ID integer); DESC EMPLOYEES;
```

5. Drop the EMP table.

```
DROP TABLE EMP;
```

6. Rename the EMPLOYEES2 table as EMP.

```
ALTER TABLE EMPLOYEES RENAME TO EMP;  
DESC EMP;
```

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

```
ALTER TABLE DEPT COMMENT = 'Department details';  
ALTER TABLE EMP COMMENT = 'Employee details';
```

8. Drop the First\_name column from the EMP table and confirm it.

```
ALTER TABLE EMP DROP FIRST-NAME;
```

Evaluation Procedure	Marks awarded
Query(5)	5
Execution (5)	5
Viva(5)	5
Total (15)	15
Faculty Signature	B. A. S. A. K.