Ex.No.: 2		DATA MANIPULATIONS
Date:	5/8/24	

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)

```
CREATE TABLE EMPLOYEES (EMPLOYEE_ID NUMBER(6) NOT NULL,FIRST_NAME
VARCHAR2(20),LAST_NAME VARCHAR2(25) NOT NULL,EMAIL VARCHAR2(25) NOT
NULL,PHONE_NUMBER VARCHAR2(20),HIRE_DATE DATE NOT NULL,JOB_ID VARCHAR2(10) NOT
NULL,SALARY NUMBER(8, 2),COMMISSION_PCT NUMBER(2, 2), MANAGER_ID
NUMBER(6),DEPARTMENT_ID NUMBER(4));
```

```
Table created.
```

Object Type **TABLE** Object **EMPLOYEES**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEES	EMPLOYEE_ID	NUMBER	-	6	0	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	-	-	-
	EMAIL	VARCHAR2	25	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	20	-	-	-	✓	-	-
	HIRE_DATE	DATE	7	-	-	-	-	-	-
	JOB_ID	VARCHAR2	10	-	-	-	-	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	COMMISSION_PCT	NUMBER	-	2	2	-	✓	-	-
	MANAGER_ID	NUMBER	-	6	0	-	✓	-	-
	DEPARTMENT_ID	NUMBER	-	4	0	-	✓	-	-

1 - 11

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
101	John	Austin	jaustin@example.com	123-456-7890	01/01/2022	IT_PROG	5000	.23	100	60
102	Betty	Smith	bsmith@example.com	123-456-7891	02/15/2023	HR_REP	4500	.2	100	60
103	Ralph	Jones	rjones@example.com	123-456-7892	05/20/2021	IT_PROG	4800	.05	101	70
104	Chad	Davis	cdavis@example.com	123-456-7893	09/10/2020	SALES	5300	.13	102	80
105	Audrey	Austin	aaustin@example.com	123-456-7894	03/23/2019	HR_REP	3000	.15	100	60

1 : Find out the employee id, names, salaries of all the employees

SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME, SALARY FROM EMPLOYEES;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
101	John	Austin	5000
102	Betty	Smith	4500
103	Ralph	Jones	4800
104	Chad	Davis	5300
105	Audrey	Austin	3000

2 : List out the employees who works under manager 100

SELECT EMPLOYEE_ID, FIRST_NAME, LAST_NAME FROM EMPLOYEES WHERE MANAGER_ID = 100;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
101	John	Austin
102	Betty	Smith
105	Audrey	Austin

3 : Find the names of the employees who have a salary greater than or equal to 4800

SELECT FIRST_NAME, LAST_NAME FROM EMPLOYEES WHERE SALARY >= 4800;

FIRST_NAME	LAST_NAME
John	Austin
Ralph	Jones
Chad	Davis

4 : List out the employees whose last name is _AUSTIN‘

SELECT FIRST_NAME, LAST_NAME FROM EMPLOYEES WHERE LAST_NAME = 'Austin';

FIRST_NAME	LAST_NAME
John	Austin
Audrey	Austin

5 : Find the names of the employees who works in departments 60,70 and 80

SELECT FIRST_NAME, LAST_NAME FROM EMPLOYEES WHERE DEPARTMENT_ID IN (60, 70, 80);

FIRST_NAME	LAST_NAME
John	Austin
Betty	Smith
Ralph	Jones
Chad	Davis
Audrey	Austin

6 : Display the unique Manager_Id.

SELECT DISTINCT MANAGER_ID FROM EMPLOYEES;

MANAGER_ID
100
102
101

CREATE TABLE Emp (EmpNo NUMBER(5) ,EmpName VARCHAR2(50),Job VARCHAR2(50),Basic NUMBER(10, 2),DA NUMBER(10, 2),HRA NUMBER(10, 2), PF NUMBER(10, 2), GrossPay NUMBER(10, 2),NetPay NUMBER(10, 2));

Object Type **TABLE** Object **EMP**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	EMPNO	NUMBER	-	5	0	-	✓	-	-
	EMPNAME	VARCHAR2	50	-	-	-	✓	-	-
	JOB	VARCHAR2	50	-	-	-	✓	-	-
	BASIC	NUMBER	-	10	2	-	✓	-	-
	DA	NUMBER	-	10	2	-	✓	-	-
	HRA	NUMBER	-	10	2	-	✓	-	-
	PF	NUMBER	-	10	2	-	✓	-	-
	GROSSPAY	NUMBER	-	10	2	-	✓	-	-
	NETPAY	NUMBER	-	10	2	-	✓	-	-

1 - 9

(a) Insert Five Records and calculate GrossPay and NetPay.

BEGIN

INSERT INTO Emp (EmpNo, EmpName, Job, Basic, DA, HRA, PF) VALUES (101, 'John Doe', 'IT', 12000, 3600, 4800, 1000);

INSERT INTO Emp (EmpNo, EmpName, Job, Basic, DA, HRA, PF) VALUES (102, 'Betty Smith', 'HR', 9000, 2700, 3600, 800);

INSERT INTO Emp (EmpNo, EmpName, Job, Basic, DA, HRA, PF) VALUES (103, 'Michael Jordan', 'Finance', 15000, 4500, 6000, 1200);

INSERT INTO Emp (EmpNo, EmpName, Job, Basic, DA, HRA, PF) VALUES (104, 'Ralph Lauren', 'IT', 8000, 2400, 3200, 700);

INSERT INTO Emp (EmpNo, EmpName, Job, Basic, DA, HRA, PF) VALUES (105, 'Chad Brown', 'HR', 7000, 2100, 2800, 600);

END;/

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
101	John Doe	IT	12000	3600	4800	1000	-	-
102	Betty Smith	HR	9000	2700	3600	800	-	-
103	Michael Jordan	Finance	15000	4500	6000	1200	-	-
104	Ralph Lauren	IT	8000	2400	3200	700	-	-
105	Chad Brown	HR	7000	2100	2800	600	-	-

UPDATE Emp SET GrossPay = Basic + DA + HRA, NetPay = (Basic + DA + HRA) - PF;

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
101	John Doe	IT	12000	3600	4800	1000	20400	19400
102	Betty Smith	HR	9000	2700	3600	800	15300	14500
103	Michael Jordan	Finance	15000	4500	6000	1200	25500	24300
104	Ralph Lauren	IT	8000	2400	3200	700	13600	12900
105	Chad Brown	HR	7000	2100	2800	600	11900	11300
106	Alice Johnson	Finance	5000	1500	2000	600	8500	7900

(b) Display the employees whose Basic is lowest in each department.

SELECT Job, MIN(Basic) AS MinBasic FROM Emp GROUP BY Job;

JOB	MINBASIC
IT	8000
HR	7000
Finance	5000

(c) If Net Pay is less than 50000, display employee number,name and net pay

SELECT EmpNo, EmpName, NetPay FROM Emp WHERE NetPay < 10000;

EMPNO	EMPNAME	NETPAY
106	Alice Johnson	7900

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) , NAME VARCHAR2(25));

Object Type **TABLE** Object **DEPT**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT	ID	NUMBER	-	7	0	-	✓	-	-
	NAME	VARCHAR2	25	-	-	-	✓	-	-

1 - 2

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));

Object Type **TABLE** Object **EMP**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	DEPT_ID	NUMBER	-	7	0	-	✓	-	-

1 - 4

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));
```

```
Table altered.
```

Object Type **TABLE** Object **EMP**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	-	✓	-	-
	LAST_NAME	VARCHAR2	50	-	-	-	✓	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	DEPT_ID	NUMBER	-	7	0	-	✓	-	-

1 - 4

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 FROM EMPLOYEES;
```

Object Type **TABLE** Object **EMPLOYEES2**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEES2	ID	NUMBER	-	6	0	-	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	-	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPARTMENT_ID	NUMBER	-	4	0	-	✓	-	-

1 - 5

5. Drop the EMP Table

```
DROP TABLE EMP;
```

```
Table dropped.
```

6. Rename the EMPLOYEES2 table as EMP.

ALTER TABLE EMPLOYEES2 RENAME TO EMP;

```
Table altered.
```

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

COMMENT ON TABLE DEPT IS 'This table stores department information.';
COMMENT ON TABLE EMP IS 'This table stores employee information.';

SELECT * FROM USER_TAB_COMMENTS;

TABLE_NAME	TABLE_TYPE	COMMENTS
DEPT	TABLE	This table stores department information.
EMP	TABLE	This table stores employee information.

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

ALTER TABLE EMP DROP COLUMN FIRST_NAME;
DESCRIBE EMP;

Object Type **TABLE** Object **EMP**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	6	0	-	-	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	-	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPARTMENT_ID	NUMBER	-	4	0	-	✓	-	-

1 - 4