Ex.No.: 2	DATA MANIPULATIONS
Date: 26/7/24	

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)

(a) 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	Doe	6000
102	Jane	Smith	4500
103	Mike	Johnson	7200
104	Emily	Davis	5000
105	Robert	Miller	6200
106	Sophia	Wilson	5600
107	Daniel	Brown	5800
108	Lisa	Taylor	4600
109	Kevin	Anderson	7100
110	Rachel	Thomas	5300

(b) 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	Doe

(c) 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	Doe
Mike	Johnson
Emily	Davis
Robert	Miller
Sophia	Wilson
Daniel	Brown
Kevin	Anderson
Rachel	Thomas

(d) List out the employees whose last name is _AUSTIN'

SELECT Employee_id, First_name, Last_name FROM EMPLOYEES WHERE Last_name = 'AUSTIN';

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
109	Kevin	AUSTIN

(e) 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	Doe
Jane	Smith
Mike	Johnson
Emily	Davis
Robert	Miller
Sophia	Wilson
Daniel	Brown
Lisa	Taylor
Kevin	AUSTIN
Rachel	Thomas

(f) Display the unique Manager_Id.

SELECT DISTINCT Manager_id FROM EMPLOYEES;

MANAGER_ID
100
102
101
104
105
103

Create an Emp table with the following fields: (EmpNo, EmpName, Job,Basic, DA, HRA,PF, GrossPay, NetPay) (Calculate DA as 30% of Basic and HRA as 40% of Basic)

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

```
INSERT INTO EMP (EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay)
VALUES (1, 'John Doe', 'Manager', 50000, 0.30 * 50000, -- DA as 30% of Basic
  0.40 * 50000, -- HRA as 40% of Basic,0.12 * 50000, -- PF as 12% of Basic
 50000 + (0.30 * 50000) + (0.40 * 50000), -- GrossPay (50000 + (0.30 * 50000) + (0.40 *
50000)) - (0.12 * 50000) -- NetPay
    );

INSERT INTO EMP (EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay)
VALUES (2, 'Jane Smith', 'Clerk', 30000,  0.30 * 30000, 0.40 * 30000,
    0.12 * 30000,
    30000 + (0.30 * 30000) + (0.40 * 30000),
    (30000 + (0.30 * 30000) + (0.40 * 30000)) - (0.12 * 30000)
    );

INSERT INTO EMP (EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay)
VALUES (3, 'Mike Johnson', 'Salesman', 40000,
    0.30 * 40000,
    0.40 * 40000,
    0.12 * 40000,
    40000 + (0.30 * 40000) + (0.40 * 40000),
    (40000 + (0.30 * 40000) + (0.40 * 40000)) - (0.12 * 40000)
    );

INSERT INTO EMP (EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay)
VALUES (4, 'Emily Davis', 'Accountant', 35000,
    0.30 * 35000,
    0.40 * 35000,
    0.12 * 35000,
    35000 + (0.30 * 35000) + (0.40 * 35000),
    (35000 + (0.30 * 35000) + (0.40 * 35000)) - (0.12 * 35000)
    );

INSERT INTO EMP (EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay)
VALUES (5, 'Robert Miller', 'Clerk', 25000,
    0.30 * 25000,
    0.40 * 25000,
    0.12 * 25000,
    25000 + (0.30 * 25000) + (0.40 * 25000),
    (25000 + (0.30 * 25000) + (0.40 * 25000)) - (0.12 * 25000)
    );
```

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
1	John Doe	Manager	50000	15000	20000	6000	85000	79000
2	Jane Smith	Clerk	30000	9000	12000	3600	51000	47400
3	Mike Johnson	Salesman	40000	12000	16000	4800	68000	63200
4	Emily Davis	Accountant	35000	10500	14000	4200	59500	55300
5	Robert Miller	Clerk	25000	7500	10000	3000	42500	39500

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

SELECT EmpNo, EmpName, Job, Basic FROM EMP E1 WHERE Basic = (
    SELECT MIN(Basic) FROM EMP E2 WHERE E2.Job = E1.Job);

EMPNO	EMPNAME	JOB	BASIC
1	John Doe	Manager	50000
3	Mike Johnson	Salesman	40000
4	Emily Davis	Accountant	35000
5	Robert Miller	Clerk	25000

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

SELECT EmpNo, EmpName, NetPay FROM EMP WHERE NetPay < 50000;

EMPNO	EMPNAME	NETPAY
2	Jane Smith	47400
5	Robert Miller	39500

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 (Dept_id NUMBER(6) NOT NULL, Dept_name VARCHAR2(20) NOT NULL,Manager_id NUMBER(6), Location_id NUMBER(4), CONSTRAINT my_dept_id_pk PRIMARY KEY (Dept_id));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT	DEPT_ID	NUMBER	-	6	0	1	-	-	-
	DEPT_NAME	VARCHAR2	20	-	-	-	-	-	-
	MANAGER_ID	NUMBER	-	6	0	-	✓	-	-
	LOCATION_ID	NUMBER	-	4	0	-	✓	-	-

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 (EmpNo NUMBER(7) PRIMARY KEY,Last_name VARCHAR2(25) NOT NULL,First_name VARCHAR2(25),Dept_id NUMBER(7), CONSTRAINT my_emp_dept_id_fk FOREIGN KEY (Dept_id) REFERENCES DEPT(Dept_id));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	EMPNO	NUMBER	-	7	0	1	-	-	-
	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	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	EMPNO	NUMBER	-	7	0	1	-	-	-
	LAST_NAME	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	DEPT_ID	NUMBER	-	7	0	-	✓	-	-

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 (Id NUMBER(6) PRIMARY KEY,First_name VARCHAR2(20),Last_name VARCHAR2(25), Salary NUMBER(8,2),Dept_id NUMBER(4));

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEES2	ID	NUMBER	-	6	0	1	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPT_ID	NUMBER	-	4	0	-	✓	-	-

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.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	6	0	1	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPT_ID	NUMBER	-	4	0	-	✓	-	-

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

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

TABLE_NAME	TABLE_TYPE	COMMENTS
DEPT	TABLE	This table contains department information.
EMP	TABLE	This table contains employee information.
DEMO_CUSTOMERS	TABLE	-
MY_EMPLOYEE	TABLE	-
APEX$_ACL	TABLE	-
STUDENTS	TABLE	-
APEX$_WS_TAGS	TABLE	-
APEX$_WS_WEBPG_SECTIONS	TABLE	-
APEX$_WS_LINKS	TABLE	-
MANAGER	TABLE	-

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

ALTER TABLE EMP DROP COLUMN First_name;

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	6	0	1	-	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPT_ID	NUMBER	-	4	0	-	✓	-	-