Ex.No.: 2	DATA MANIPULATIONS

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));

INSERT into Employees values(101, 'John', 'Doe', 'john.doe@example.com', '123-456-7890', '09-08-2000', 'IT_PROG', 60000.00, NULL, 100, 10);

INSERT into Employees values(102, 'Jane', 'Smith', 'jane.smith@example.com', '234-567-8901','09-04-2004', 'HR_MAN', 75000.00, 0.05, 101, 20);

INSERT into Employees values(103,'Mike','Johnson', 'mike.johnson@example.com','345-678-9012','05-23-2003','SA_REP', 4000.00,0.10, 102,80);

INSERT into Employees values(104, 'Emily', 'Austin', 'emily.austin@example.com', '456-789-0123', '03-30-2001','FI_MGR', 3000.00, 0.01, 103, 40);

(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	60000
102	Jane	Smith	75000
103	Mike	Johnson	4000
104	Emily	Austin	3000

(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;

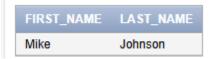| FIRST_NAME	LAST_NAME
John	Doe
Jane	Smith

(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
104	Emily	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
Mike	Johnson

(f) Display the unique Manager_Id.

   SELECT distinct Manager_id FROM employees;

MANAGER_ID
100
102
101
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)

```
CREATE TABLE Emp
(
EmpNO NUMBER(4),
EmpName VARCHAR(25),
Job VARCHAR(25),
Basic NUMBER(10,2),
DA NUMBER(10,2) as (Basic*0.30),
HRA NUMBER(10,2) as (Basic*0.40),
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	-	4	0	-	✓	-	-
	EMPNAME	VARCHAR2	25	-	-	-	✓	-	-
	JOB	VARCHAR2	25	-	-	-	✓	-	-
	BASIC	NUMBER	-	10	2	-	✓	-	-
	DA	NUMBER	-	10	2	-	✓	"BASIC"*0.30	-
	HRA	NUMBER	-	10	2	-	✓	"BASIC"*0.40	-
	PF	NUMBER	-	10	2	-	✓	-	-
	GROSSPAY	NUMBER	-	10	2	-	✓	-	-
	NETPAY	NUMBER	-	10	2	-	✓	-	-
									1 - 9

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

INSERT into Emp (EmpNo,EmpName,Job,Basic,PF) values (1,'john','manager',50000,5000);

INSERT into Emp(EmpNo,EmpName,Job,Basic,PF) values (2,'Alice','developer',40000,4000);

INSERT into Emp(EmpNo,EmpName,Job,Basic,PF) values (3,'Jane','designer',45000,4500);

INSERT into Emp(EmpNo,EmpName,Job,Basic,PF) values (4,'Smith','analyst',35000,3500);

INSERT into Emp(EmpNo,EmpName,Job,Basic,PF) values (5,'David','Tester',30000,3000);

UPDATE Emp set GrossPay=Basic+DA+HRA;

UPDATE Emp set NetPay=Basic -PF;

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
3	Jane	designer	45000	13500	18000	4500	76500	40500
1	john	manager	50000	15000	20000	5000	85000	45000
2	Alice	developer	40000	12000	16000	4000	68000	36000
4	Smith	analyst	35000	10500	14000	3500	59500	31500
5	David	Tester	30000	9000	12000	3000	51000	27000

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

SELECT *from Emp where Basic=(select min(Basic) from emp);

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
5	David	Tester	30000	9000	12000	3000	51000	27000

(c)If Net Pay is less than

SELECT *from Emp where NetPay=(select min(NetPay) from emp);

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
5	David	Tester	30000	9000	12000	3000	51000	27000

1 rows returned in 0.01 seconds   Download

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	Primary Key	
Nulls/Unique	NOT NULL	NOT NULL
FK table	Department	
FK column	Dept_id	
Data Type	Number	Varchar2
Length	7	25

CREATE TABLE DEPT
(
   ID NUMBER(7) PRIMARY KEY NOT NULL,
   NAME VARCHAR2(25) NOT NULL,
   Dept_id NUMBER(6) NOT NULL,
   CONSTRAINT FK_Dept_DeptID FOREIGN KEY (Dept_id)
   REFERENCES DEPARTMENT(Dept_id)

);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT	ID	NUMBER	-	7	0	1	-	-	-
	NAME	VARCHAR2	25	-	-	-	-	-	-
	DEPT_ID	NUMBER	-	6	0	-	-	-	-
									1 - 3

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	Primary Key			
Nulls/Unique	NOT NULL	NOT NULL		
FK table				
FK column				
Data Type	Number	Varchar2	Varchar2	Number
Length	7	25	25	7

```
CREATE TABLE EMP (
  ID NUMBER(7) PRIMARY KEY,
  LAST_NAME VARCHAR2(25) NOT NULL,
  FIRST_NAME VARCHAR2(25) NOT NULL,
  DEPT_ID NUMBER(7)
);
```

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	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 varchar(50);

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	1	-	-	-
	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 as dept_id
FROM EMPLOYEES;

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	1	-	-	-
	LAST_NAME	VARCHAR2	50	-	-	-	-	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	-	-	-
	DEPT_ID	NUMBER	-	7	0	-	✓	-	-
									1 - 4

5.Drop the EMP table.

   DROP table Emp;

6.Rename the EMPLOYEES2 table as EMP.

   ALTER table Employees2 rename to Emp;

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

Comment on table DEPT is 'Table for storing dept details.'

Comment on table EMP is'Table for storing employee details.'

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

ALTER table Emp Drop column First_Name;

ID	LAST_NAME	SALARY	DEPT_ID
101	Doe	60000	10
102	Smith	75000	20
103	Johnson	4000	80
104	Austin	3000	40