

**EXPERIMENT:2****DATA MANIPULATIONS**

Create the following tables with the given structure.

**EMPLOYEES TABLE**

```
create table EMPLOYEES(EMPLOYEE_ID Number(6) Not null, FIRST_NAME
Varchar(20),LAST_NAME Varchar(25) Not null, EMAIL Varchar(25) Not null,
PHONE_NUMBER Varchar(20),HIRE_DATE Date Not null , JOB_ID Varchar(10) not null,
SALARY Number(8,2),COMMISSION_PCT Number(2,2),MANAGER_ID
Number(6),DEPARTMENT Number(4));
```

Column Name	Data Type	Nullable	Default	Primary Key
EMPLOYEE_ID	NUMBER(6,0)	No	-	-
FIRST_NAME	VARCHAR2(20)	Yes	-	-
LAST_NAME	VARCHAR2(25)	No	-	-
EMAIL	VARCHAR2(25)	No	-	-
PHONE_NUMBER	VARCHAR2(20)	Yes	-	-
HIRE_DATE	DATE	No	-	-
JOB_ID	VARCHAR2(10)	No	-	-
SALARY	NUMBER(8,2)	Yes	-	-
COMMISSION_PCT	NUMBER(2,2)	Yes	-	-
MANAGER_ID	NUMBER(6,0)	Yes	-	-
DEPARTMENT	NUMBER(4,0)	Yes	-	-
1 - 11				

```
INSERT INTO Employees (EMPLOYEE_ID, FIRST_NAME, LAST_NAME, EMAIL,
PHONE_NUMBER, HIRE_DATE, JOB_ID, SALARY, COMMISSION_PCT,
MANAGER_ID, DEPARTMENT) VALUES
```

```
(1, 'PRIYA', 'MOHAN', 'priya@gamil.com', 'IN001', TO_DATE('09/22/2004',
'MM/DD/YYYY'), 'CS001', 53453, 0.2, 100, 60),
```

```
(2, 'JACK', 'STEVE', 'jack@gmail.com', 'IN002', TO_DATE('08/06/2001', 'MM/DD/YYYY'),
'DE002', 4556, 0.09, 100, 30),
```

```
(5, 'SREE', 'NIDHI', 'nidhi@gmail.com', 'IN023', TO_DATE('07/23/2000', 'MM/DD/YYYY'),
'EC124', 4355, 0.09, 110, 50),
```

```
(6, 'THENU', 'RAVI', 'thenu@gmail.com', 'IN231', TO_DATE('01/09/2002', 'MM/DD/YYYY'),
'CS002', 41323, 0.2, 110, 60),
```

(3, 'JOEL', 'AUSTIN', 'austin@gmail.com', 'US003', TO\_DATE('09/07/2000', 'MM/DD/YYYY'), 'CS004', 3242, 0.4, 103, 80),

(4, 'TOM', 'TONKS', 'tom@gmail.com', 'IT023', TO\_DATE('04/18/2020', 'MM/DD/YYYY'), 'AV021', 32643, 0.02, 102, 70);

EDIT	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT
	1	PRIYA	MOHAN	priya@gamil.com	IN001	09/22/2004	CS001	53453	.2	100	60
	2	JACK	STEVE	jack@gmail.com	IN002	08/06/2001	DE002	4556	.09	100	30
	5	SREE	NIDHI	nidhi@gmail.com	IN023	07/23/2000	EC124	4355	.09	110	50
	6	THENU	RAVI	thenu@gmail.com	IN231	01/09/2002	CS002	41323	.2	110	60
	3	JOEL	AUSTIN	austin@gmail.com	US003	09/07/2000	CS004	3242	.4	103	80
	4	TOM	TONKS	tom@gmail.com	IT023	04/18/2020	AV021	32643	.02	102	70
row(s) 1 - 6 of 6											

SELECT Employee\_id, First\_Name, Last\_Name, Salary FROM EMPLOYEES;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	SALARY
1	PRIYA	MOHAN	53453
2	JACK	STEVE	4556
5	SREE	NIDHI	4355
6	THENU	RAVI	41323
3	JOEL	AUSTIN	3242
4	TOM	TONKS	32643

6 rows returned in 0.01 seconds

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SELECT Employee\_id, First\_Name, Last\_Name FROM EMPLOYEES WHERE Manager\_id = 100;

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
1	PRIYA	MOHAN
2	JACK	STEVE

2 rows returned in 0.00 seconds

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SELECT First\_Name, Last\_Name FROM EMPLOYEES WHERE Salary >= 4800;

FIRST_NAME	LAST_NAME
PRIYA	MOHAN
THENU	RAVI
TOM	TONKS

3 rows returned in 0.00 seconds

```
SELECT Employee_id, First_Name, Last_Name FROM EMPLOYEES WHERE Last_Name = 'AUSTIN';
```

EMPLOYEE_ID	FIRST_NAME	LAST_NAME
3	JOEL	AUSTIN

1 rows returned in 0.00 seconds

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```
SELECT First_Name, Last_Name FROM EMPLOYEES WHERE Department_id IN (60, 70, 80);
```

FIRST_NAME	LAST_NAME
PRIYA	MOHAN
THENU	RAVI
JOEL	AUSTIN
TOM	TONKS

4 rows returned in 0.01 seconds

```
SELECT DISTINCT Manager_id FROM EMPLOYEES WHERE Manager_id IS NOT NULL;
```

MANAGER_ID
100
102
110
103

```
CREATE TABLE EMP1 (
```

```
EmpNo INT PRIMARY KEY, EmpName VARCHAR(100), Job VARCHAR(50),
```

```
Basic DECIMAL(10, 2),  
DA DECIMAL(10, 2),  
HRA DECIMAL(10, 2),  
PF DECIMAL(10, 2),  
GrossPay DECIMAL(10, 2),  
NetPay DECIMAL(10, 2)  
);
```

```
UPDATE Emp1
```

```
SET DA = Basic * 0.30,  
HRA = Basic * 0.40,  
GrossPay = Basic + DA + HRA,  
NetPay = GrossPay - PF;
```

Column Name	Data Type	Nullable	Default	Primary Key
EMPNO	NUMBER	No	-	1
EMPNAME	VARCHAR2(100)	Yes	-	-
JOB	VARCHAR2(50)	Yes	-	-
BASIC	NUMBER(10,2)	Yes	-	-
DA	NUMBER(10,2)	Yes	-	-
HRA	NUMBER(10,2)	Yes	-	-
PF	NUMBER(10,2)	Yes	-	-
GROSSPAY	NUMBER(10,2)	Yes	-	-
NETPAY	NUMBER(10,2)	Yes	-	-
1 - 9				

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

```
INSERT INTO emp1 (EMPNO, EMPNAME, JOB, BASIC, PF) VALUES
```

```
(2, 'STEVE', 'DESIGNER', 20000, 5000),  
(3, 'THENU', 'HR', 15000, 2000),  
(4, 'SANDY', 'ANALYST', 25000, 4000),  
(5, 'TOM', 'BUSINESS', 30000, 7000),  
(1, 'PRIYA', 'CYBER', 10000, 5000);
```

EDIT	EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
	2	STEVE	DESIGNER	20000	6000	8000	5000	34000	29000
	3	THENU	HR	15000	4500	6000	2000	25500	23500
	4	SANDY	ANALYST	25000	7500	10000	4000	42500	38500
	5	TOM	BUSINESS	30000	9000	12000	7000	51000	44000
	1	PRIYA	CYBER	10000	3000	4000	5000	17000	12000
row(s) 1 - 5 of 5									

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

```
SELECT EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay FROM Emp1
WHERE (Job, Basic) IN (SELECT Job, MIN(Basic) FROM Emp1 GROUP BY Job);
```

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
2	STEVE	DESIGNER	20000	6000	8000	5000	34000	29000
3	THENU	HR	15000	4500	6000	2000	25500	23500
4	SANDY	ANALYST	25000	7500	10000	4000	42500	38500
5	TOM	BUSINESS	30000	9000	12000	7000	51000	44000
1	PRIYA	CYBER	10000	3000	4000	5000	17000	12000

( c ) If Net Pay is less than 40000

```
SELECT EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay FROM Emp1
WHERE NetPay < 40000;
```

EMPNO	EMPNAME	JOB	BASIC	DA	HRA	PF	GROSSPAY	NETPAY
2	STEVE	DESIGNER	20000	6000	8000	5000	34000	29000
3	THENU	HR	15000	4500	6000	2000	25500	23500
4	SANDY	ANALYST	25000	7500	10000	4000	42500	38500
1	PRIYA	CYBER	10000	3000	4000	5000	17000	12000

4 rows returned in 0.00 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)

CREATE TABLE Department (

Dept\_id NUMBER(6) NOT NULL,

```

Dept_name VARCHAR2(20) NOT NULL,

Manager_id NUMBER(6),

Location_id NUMBER(4),

PRIMARY KEY (Dept_id)

);

```

Column Name	Data Type	Nullable	Default	Primary Key
DEPT_ID	NUMBER(6,0)	No	-	1
DEPT_NAME	VARCHAR2(20)	No	-	-
MANAGER_ID	NUMBER(6,0)	Yes	-	-
LOCATION_ID	NUMBER(4,0)	Yes	-	-
				1 - 4

#### JOB\_GRADE TABLE

NAME	NULL?	TYPE
Grade_level		Varchar(2)
Lowest_sal		Number
Highest_sal		Number

```

CREATE TABLE JOB_GRADE (

Grade_level VARCHAR2(2),

Lowest_sal NUMBER,

Highest_sal NUMBER

);

```

Column Name	Data Type	Nullable	Default	Primary Key
GRADE_LEVEL	VARCHAR2(2)	Yes	-	-
LOWEST_SAL	NUMBER	Yes	-	-
HIGHEST_SAL	NUMBER	Yes	-	-
				1 - 3

**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 NUMBER(4) NOT NULL,

St\_addr VARCHAR2(40),

Postal\_code VARCHAR2(12),

City VARCHAR2(30) NOT NULL,

State\_province VARCHAR2(25),

Country\_id CHAR(2),

PRIMARY KEY (Location\_id)

);

Column Name	Data Type	Nullable	Default	Primary Key
LOCATION_ID	NUMBER(4,0)	No	-	1
ST_ADDR	VARCHAR2(40)	Yes	-	-
POSTAL_CODE	VARCHAR2(12)	Yes	-	-
CITY	VARCHAR2(30)	No	-	-
STATE_PROVINCE	VARCHAR2(25)	Yes	-	-
COUNTRY_ID	CHAR(2)	Yes	-	-
1 - 6				

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 DEPT1 (  
    ID NUMBER(7) NOT NULL,  
    NAME VARCHAR2(25) NOT NULL,  
    PRIMARY KEY (ID)  
);
```

Column Name	Data Type	Nullable	Default	Primary Key
ID	NUMBER(7,0)	No	-	1
NAME	VARCHAR2(25)	No	-	-
				1 - 2

```
SELECT table_name  
FROM user_tables  
WHERE table_name = 'DEPT1';
```

2.

```
CREATE TABLE EMP2 (  
    ID NUMBER(7) NOT NULL,  
    LAST_NAME VARCHAR2(25) NOT NULL,  
    FIRST_NAME VARCHAR2(25),  
    DEPT_ID NUMBER(7),  
    PRIMARY KEY (ID)  
);
```

Column Name	Data Type	Nullable	Default	Primary Key
ID	NUMBER(7,0)	No	-	1
LAST_NAME	VARCHAR2(25)	No	-	-
FIRST_NAME	VARCHAR2(25)	Yes	-	-
DEPT_ID	NUMBER(7,0)	Yes	-	-
				1 - 4

```
SELECT table_name  
FROM user_tables  
WHERE table_name = 'EMP';
```



```
ALTER TABLE EMP2 MODIFY (LAST_NAME VARCHAR2(50));
SELECT column_name, data_type, data_length
FROM user_tab_columns
WHERE table_name = 'EMP2'
AND column_name = 'LAST_NAME';
```

COLUMN_NAME	DATA_TYPE	DATA_LENGTH
LAST_NAME	VARCHAR2	50

```
CREATE TABLE EMPLOYEES2 (
  Id NUMBER(6) PRIMARY KEY,      -- Corresponds to Employee_id
  First_name VARCHAR2(20),       -- Corresponds to First_Name
  Last_name VARCHAR2(25) NOT NULL, -- Corresponds to Last_Name
  salary NUMBER(8, 2),           -- Corresponds to Salary
  Dept_id NUMBER(4)              -- Corresponds to Department_id
);
```

Column Name	Data Type	Nullable	Default	Primary Key
ID	NUMBER(6,0)	No	-	1
FIRST_NAME	VARCHAR2(20)	Yes	-	-
LAST_NAME	VARCHAR2(25)	No	-	-
SALARY	NUMBER(8,2)	Yes	-	-
DEPT_ID	NUMBER(4,0)	Yes	-	-
				1 - 5

```
DROP TABLE EMP2;
```

Results	Explain	Describe	Sa
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```
Table dropped.
```

```
ALTER TABLE EMPLOYEES2 RENAME TO EMP2;
```

```
Table altered.
```

```
COMMENT ON TABLE DEPT1 IS 'Department details';  
COMMENT ON TABLE EMP2 IS 'Employee details';  
SELECT table_name, comments  
FROM user_tab_comments  
WHERE table_name IN ('DEPT1', 'EMP2');
```

TABLE_NAME	COMMENTS
DEPT1	Department details
EMP2	Employee details

```
ALTER TABLE EMP DROP COLUMN FIRST_NAME;  
SELECT column_name  
FROM user_tab_columns  
WHERE table_name = 'EMP2';
```

COLUMN_NAME
ID
LAST_NAME
SALARY
DEPT_ID