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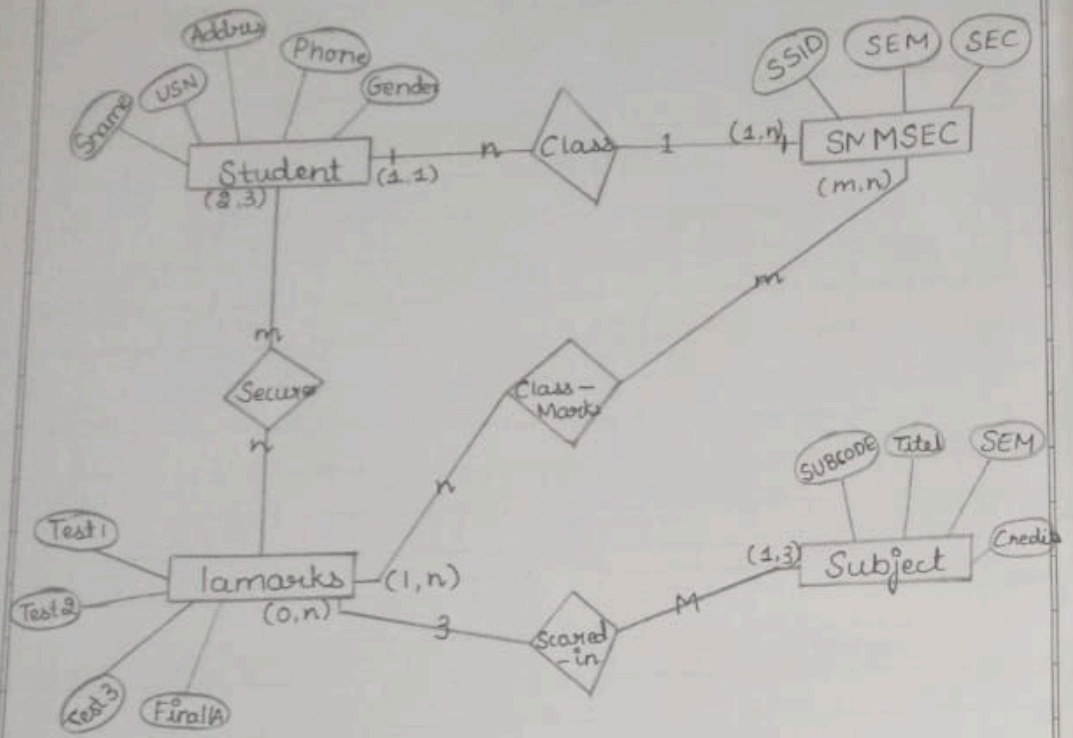
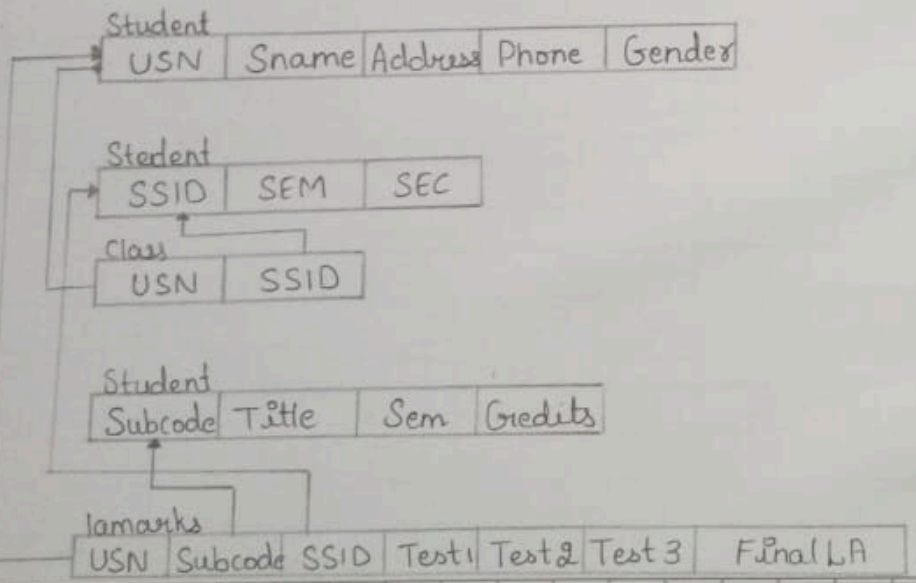
Draw E-R diagram and convert entities and relationships to relation table for a given scenario.





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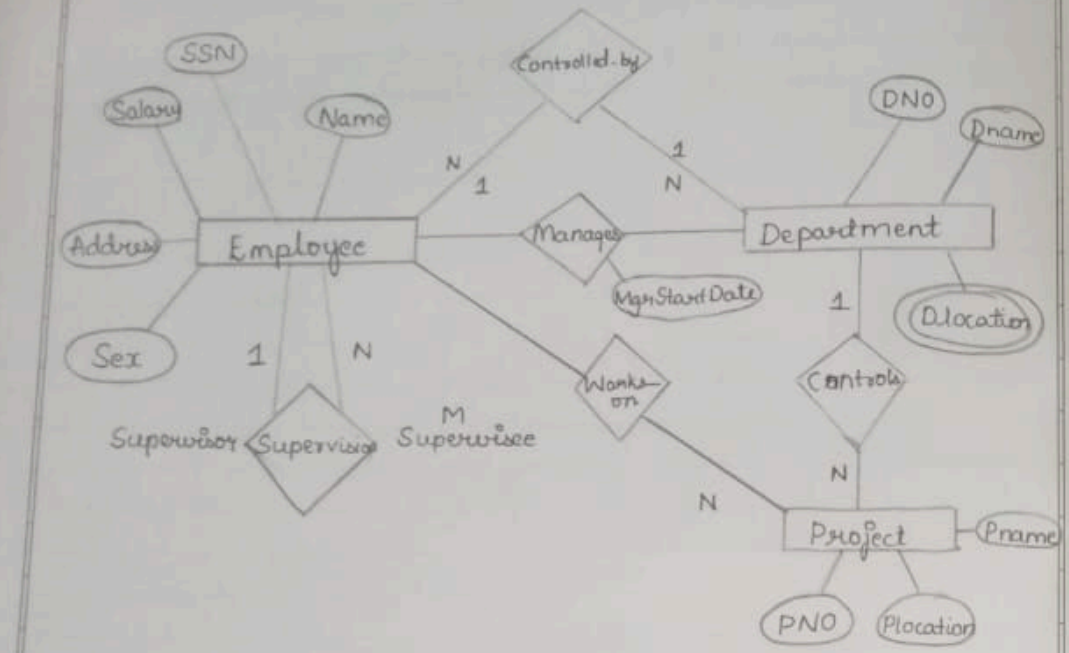

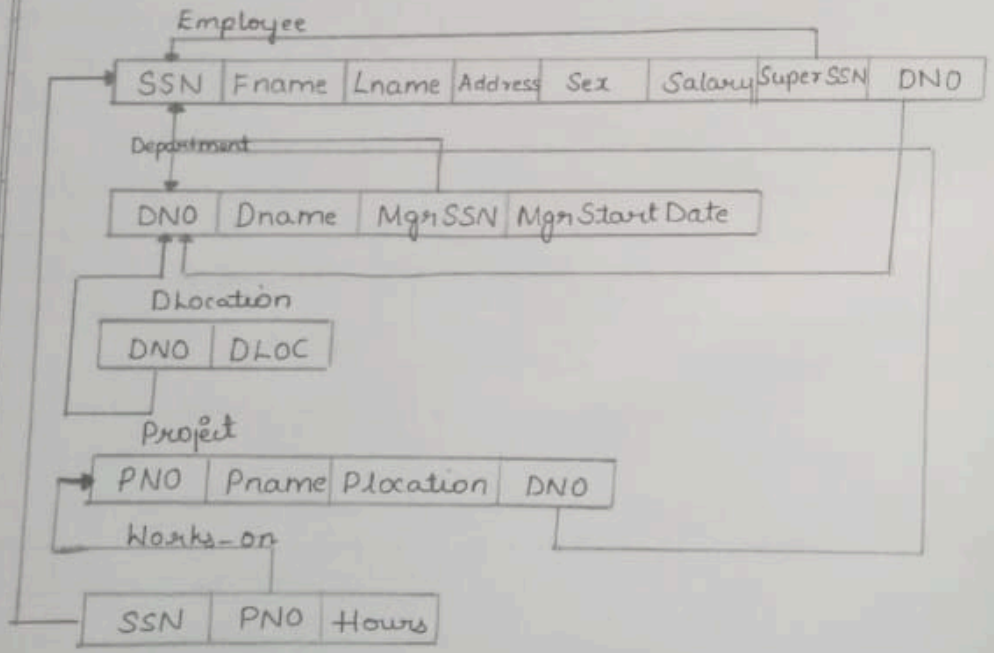

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Consider the inventory database with the following tables.

Product (PID : Number ; Name : Text ; Price : Number)
Purchase (PO : Number ; PID : Number : Qty : Number)

Steps

1. Create database Inventory
2. Create tables Product and Purchase with and without constraint
3. View all tables in Inventory Database
4. Insert five tuples into each relation
5. Display all the tuples in the Product and Purchase table
6. Update the product name for the PID = 40 as CAMERA.
7. Delete information about the product whose PID = 50.
8. Perform saving and undoing.

Step 01 : Create tables Product and Purchase with and without constraints.

Create table Product (PID Number(10) Primary key, Name varchar2(20) Not Null, Price Number (8,2));
Table created.

Create table Purchase (PO Number (10) Primary key, PRODUCT-ID Number(10) refrences Product (PID), Qty Number(5));
Table created.

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Step 1 :-

Name	Null?	Type
PID	NOT NULL	NUMBER(10)
Name	NOT NULL	VARCHAR2(20)
PRICE		NUMBER(8,2)

Name	Null?	Type
PO	NOTNULL	NUMBER(10)
PRODUCT_ID		NUMBER(10)
QTY		NUMBER(8,2)

Step 2 :-

TABLE-NAME	STATUS
PRODUCT	VALID
PURCHASE	VALID

Step 4 :-

PID	NAME	PRILE
10	PRINTER	20000
20	KEYBOARD	30000
30	MONITOR	150000
40	TABLE	25000
50	SCANNER	14000

PO	PRODUCT_ID	QTY
101	40	25
102	50	30
107	44	60
104	46	70
105	46	70.

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```
desc Product;

desc Purchase;
```

Step 02 :- View all tables in Inventory Database

```
select table_name , status from user_tables;
```

Step 03 :- Insert five tuples into each relation

```
Insert into Product (PID , NAME , PRICE ) values (10,'PRINTER', 20000);
Insert into Product (PID, NAME, PRICE) values (20,'KEYBOARD',3000);
Insert into Product (PID, NAME, PRICE) values (30,'MONITOR', 40000);
Insert into Product (PID, NAME , PRICE) values (40,'TABLE', 50000);
Insert into Product (PID, NAME , PRICE) values (50,'SCANNER', 60000);
Insert into Purchase (PO,PURCHASE_ID , Qty) values (101, 40, 25);
Insert into Purchase (PO, PURCHASE_ID, Qty ) values (102, 50, 30);
Insert into Purchase (PO , PURCHASE_ID, Qty) values (103 ,44, 60);
Insert into Purchase (PO, PURCHASE_ID, Qty) values (104, 46, 70);
Insert into Purchase (PO, PURCHASE_ID, Qty ) values (105, 46, 70);
```

Step 04 :- Display all the tuples in Product and Purchase table

```
select * from Product ;

select * from Purchase ;
```

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Step 5 :-

PID	NAME	PRICE
10	PRINTER	80000
20	KEYBOARD	20000
30	MONITOR	15000
40	CAMERA	25000
50	SCANNER	14000

Step 6 :-

PID	NAME	PRICE
10	PRINTER	20000
20	KEYBOARD	20000
30	MONITOR	150000
40	CAMERA	25000

Step 7 :-

PID	NAME	PRICE
10	PRINTER	20000
20	KEYBOARD	20000
30	MONITOR	15000
40	CAMERA	25000
50	MOBILE	35000
60	LAPTOP	70000

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Step 5 :- Update the product name for the PID = 40 as CAMERA.

```
Update Product set Name = 'CAMERA' where PID=40;

select * from product;
```

Step 6 :- Delete information about the product whose PID = 50.

```
Delete from Product where PID = 50;

select * from Product;
```

Step 7 :- Perform Saving and undoing.

```
Insert into Product (PID, Name, Price) values (50, 'MOBILE', 35000);
Insert into Product (PID, Name, Price) values (60, 'LAPTOP', 65000);

commit;

select * from Product;
```

Teacher's Signature _____

Name	Null?	Type
BID	Not null	VARCHAR 2(8)
TITLE	Not null	varchar2(20)
AUTHOR		varchar2(20)
PUBLICATION		varchar2(20)
YEAR_OF_PUBLICATION		Number (4)

Date:

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Consider the Library Database with the following data and execute the queries.

Lib (BID : Number ; Title : Text ; Author : Text ; Publication : Text ; Year-of-Publication : Text)

Steps :-

1. Create Lib table by properly specifying the constraint
2. Rename Lib as library.
3. Add a new column Price with NOT NULL constraint to the existing table library.
4. All the constraints and views that references the column are dropped automatically along with the column.
5. Rename the BID to BOOKID in the library table
6. Change the datatype of the column Year-of-publication as Text with size 15.
7. Insert data into library table
8. Truncate table to delete the records
9. Drop table.

Step 1 :- Create Lib table by properly specifying the constraint

Creta table Lib (BID varchar2(8) primary key , title varchar2(20) NOT NULL , author varchar2(20), publication varchar 2(20) , year-of-publication number(4));

DESC Lib;

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Step 2 :

Name	Null?	Type
BID	NOT NULL	varchar2(8)
TITLE	NOT NULL	varchar2(20)
AUTHOR		varchar2(20)
PUBLICATION		varchar2(20)
YEAR_OF_PUBLICATI		number(4)

Step 3 :

Name	Null?	Type
BID	NOT NULL	varchar2(8)
TITLE	NOT NULL	varchar2(20)
AUTHOR		varchar2(20)
PUBLICATION		varchar2(20)
YEAR_OF_PUBLICATIO		number(8)
PRICE	NOT NULL	number(8,2)

Step 4 :

Name	Null	Type
BID	NOT NULL	VARCHAR2(8)
TITLE	NOT NULL	VARCHAR2(20)
PUBLICATION		VARCHAR2(8)
YEAR_OF_PUBLICATION		NUMBER(8,2)

Step 5 :

Name	Null	Type
BookID	NOT NULL	varchar2(8)
TITLE	NOT NULL	Varchar2(30)
PUBLICATION		varchar2(30)
YEAR_OF_PUBL		varchar2(20)
PRICE	NOT NULL	number(8,2)

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Step 2 : Rename the lib as library

Alter table lib rename to library ;

Desc library ;

Step 3 : Add a new column Price with NOT NULL constraints to the existing table library

Alter table library Add Price number(8,2) NOT NULL ;

Desc library ;

Step 4 : All the constraints and views that reference the column are dropped automatically along with the column

Alter table library Drop column Author cascade constraints ;

Desc library ;

Step 5 : Rename the BID to BookID in the library table

Alter table library rename column BID To BookID

DESC LIBRARY;

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Step 6 :

Name	Null	Type
BOOKID	NOT NULL	VARCHAR2(8)
TITLE	NOT NULL	VARCHAR2(30)
PUBLICATION		VARCHAR2(30)
YEAR-OF-PBLICATION		VARCHAR(15)
PRICE	NOTNULL	NUMBER(9,2)

Step 7 :

Name	Null	Type
BOOKID	NOT NULL	VARCHAR2(8)
TITLE	NOT NULL	VARCHAR2(30)
PUBLICATION		VARCHAR2(30)
YEAR-OF-PUBLICATION		VARCHAR2(15)
PRICE	NOT NULL	NUMBER(8,2)

Step 8 :

Name	Null	Type
BOOKID	NOT NULL	VARCHAR2(8)
TITLE	NOT NULL	VARCHAR2(30)
PUBLICATION		VARCHAR2(15)
YEAR-OF-PUBLICATION		VACHAR2(8)
PRICE	NOT NULL	NUMBER(8,2)

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Step 6 :- Change the datatype of the column Year-of-publication as text with size 15

Alter table library MODIFY YEAR_OF_PUBLICATION VARCHAR2(15);

DESC LIBRARY;

Step 7 :- Insert data into library table

insert into library values ('SP001', 'DBMS', 'SKYWARD PUBLISHERS', '2022', 300);

DESC LIBRARY;

Step 8 :- Truncate table to delete the records

TRUNCATE TABLE LIBRARY;

DESC Library;

Step 9 :- Drop table

Drop table library;

DESC Library

Step 10 :-

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Step 1 :-

Name	Null	Type
ENO	NOT NULL	VARCHAR2(8)
NAME	NOT NULL	VARCHAR2(15)
DEPT		VARCHAR2(10)
DOJ		DATE
SALARY		NUMBER(10,2)

Date:

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Consider the salary database and execute the following simple queries.

SALARYDB (EID : String ; NAME : text ; DEPT : String ; DOJ : DATE ; SALARY : Number)

Steps

1. Create table salary.
2. Enter five tuples into the table.
3. Display employee number and their salary.
4. Find the sum of salaries of all the employees.
5. Find the sum and average salaries of employees of a particular department.
6. Find the number of employees working for each department.
7. Display employee information in ascending and descending order of their date of joining.
8. Find the highest salary that an employee draws.
9. Find the least salary that an employee draws.
10. Display the details of employee whose name is Rushank and salary is greater than 50,000.

Step 1 :- Create table salary.

```
CREATE TABLE SALARYDB (ENO VARCHAR2(8) primary key,
NAME VARCHAR2(15) NOT NULL , DEPT VARCHAR2(10) ,
DOJ DATE , SALARY NUMBER(10,2));

DESC SALARYDB ;
```

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Step 2: Enter five tuples into the table

```
INSERT INTO SALARYDB VALUES (&ENO, &NAME, &DEPT,
    &DOJ, &SARARY);
Enter values for eno : 'SC1010'
Enter value for name : 'AHANA'
Enter value for dept : 'HR'
Enter value for doj : '15-FEB-2010'
Enter value for salary : 60000
SQL>/
Enter values for eno : 'SC1012'
Enter values for name : 'NAVEEN'
Enter values for dept : 'MARKETING'
Enter values for doj : '8-JAN-2019'
Enter values for salary : 60000
SQL>/
Enter values for eno : 'SC1013'
Enter values for name : 'ANAGA'
Enter values for dept : 'HR'
Enter values for doj : '14-APR-2012'
Enter values for salary : 35000
SQL>/
Enter value for eno : 'SC1015'
Enter values for name 'RUSHANK'
Enter values for dept 'ADMIN'
Enter values for doj : '16-MAY-2011'
SQL>/
Enter values for eno : 'SC1016'
Enter values for name : 'RAMESH'
```

Teacher's Signature .....

Step 2 -

ENO	NAME	DEPT	DOJ	SALARY
SC1010	AHANA	HR	15-FEF-10	60000
SC1011	RAMESH	FINANCE	10-MAR-12	450000
SC1013	NAVEEN	ADMIN	18-JAN-09	35000
SC1014	ANAGHA	HR	14-APR-12	55000
SC1015	RUSHANI	MARKETING	16-MAY-11	25000
SC1016	RUSHANI	FINANCE	04-JUN-08	45000

Step 3 :-

ENO	SALARY
SC1010	60000
SC1011	45000
SC1012	55000
SC1014	35000
SC1015	55000
SC1016	85000

Step 4 :-

TOTAL-SALARY
275000

Step 5 :-

DEPT	TOTAL SALA	AVG-SALAY
ADMIN	55000	55000
FINANCE	70000	35000
HR	95000	47500
MARKETING	55000	55000

Step 6 :-

DEPT	NUMBER-OF-EMPLOYEES
ADMIN	1
HR	2
FINANCE	2
MARKETING	1

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Enter the value for dept : 'FINANCE'
Enter the value for doj : '10-MAR-2012'
Enter value for salary : 45000

```
SELECT * FROM SALARYDB;
```

Step 3 :- Display employee number and their Salary

```
SELECT ENO, SALARY FROM SALARY DB;
```

Step 4 :- Find the sum of salaries of all the employees

```
SELECT SUM(SALARY) AS "TOTAL-SALARY" FROM
SALARYDB;
```

Step 5 :- Find the sum and average salaries of employees of a particular department.

```
SELECT DEPT, SUM (SALARY) AS "TOTAL-SALARY",
    AVG(SALARY) AS 'AVERAGE SALARY" FROM SALARYDB
GROUP BY DEPT;
```

Step 6 :- Find the number of employees working for each department.

```
SELECT DEPT, COUNT (*) AS 'NUMBER_OF-EMPLOYEES"
FROM SALARYDB GROUP BY DEPT;
```

Teacher's Signature _____

Step 7 :

ENO	NAME	DEPT	DOJ	SALARY
SC1016	RUSHANK	FINANCE	04-JUN-8	85000
SC1013	NAVEEN	MARKETING	08-JAN-9	55000
SC1010	AHANA	HR	15-FEB-10	60000
SC1015	RUSHANK	ADMIN	16-MAY-11	55000
SC1011	RAMESH	FINANCE	10-MAR-12	45000
SC1014	ANAGHA	HR	14-APR-12	35000

ENO	NAME	DEPT	DOJ	SALARY
SC1014	ANAGHA	HR	14-APR-12	35000
SC1011	RAMESH	FINANCE	10-MAR-12	45000
SC1015	RUSHANK	ADMIN	16-MAY-11	55000
SC1010	AHANA	HR	15-FEB-10	60000
SC1013	NAVEEN	MARKETING	08-JAN-09	55000
SC1016	RUSHANK	FINANCE	08-JUN-08	85000

Step 8 :

HIGHEST_SALARY
- - - - -
60000

Step 9 :

LEAST_SALARY
- - - - -
85000

Step 10 :

ENO	NAME	DEPT	DOJ	SALARY
SC1015	RUSHANK	ADMIN	16-MAY-11	55000

Date :

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Step 7 : Display employee information in ascending and descending order of their date of joining

```
SELECT * FROM SALARYDB ORDER BY DOJ ASC;

SELECT * FROM SALARYDB ORDER BY DOJ DESC;
```

Step 8 :- Find the highest salary that an employee draws

```
SELECT MAX (SALARY) AS "HIGHEST_SALARY" FROM
SALARYDB
```

Step 9 : Find the least salary that an employee draws

```
SELECT MIN (SALARY) AS "LEAST_SALARY" FROM
SALARYDB;
```

Step 10 :- Display the details of employee whose name is Rushank and salary is greater than 50000

```
SELECT * FROM SALARYDB
WHERE NAME = 'RUSHANK' AND SALAYY >50000;
```

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Name	Null?	Type
DNO	NOT NULL	NUMBER(4)
DNAME	NOT NULL	VARCHAR2(20)
DLOCATION		VARCHAR2(20)

NAME	NULL?	Type
ENO	NOT NULL	NUBER(6)
ENAME	NOT NULL	VARCHAR2(20)
EBDATE		DATE
ADDRESS		VARCHAR2(20)
GENDER		CHAR(1)
SALARY	NOT NULL	NUMBER(10)
DEPTNO		NUMBER(4)

ENO	ENAME	DNAME	INC-SALARY
1001	ANIRUDH	RESEARCH	49500
1004	LAKSHM	RESEARCH	60500
1007	PRASHANT	RESEARCH	22000
1005	VIDYA	RESEARCH	38500

MAX(E.SALARY)	MIN(E.SALARY)	SUM(E.SALARY)	AVG(E.SALARY)
50000	25000	105000	35000

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Create employee and department with the following attributes

Create table Dept (DNO NUMBER(4) PRIMARY KEY, DNAME VARCHAR2(20) NOT NULL, DLOCATION VARCHAR2(20));

Create table Emp (ENO NUMBER(6) PRIMARY KEY, ENAME VARCHAR2(20) NOT NULL, EBDATE DATE, ADDRESS VARCHAR2(20), GENDER CHAR, SALARY NUMBER(10) NOT NULL, DEPTNO NUMBER(4) REFERENCES DEPT);

DESC DEPT;

DESC EMP;

(a) How the resulting salaries if every employees working on the 'Research' Department is given a 10 percent raise

SELECT E.ENO, E.ENAME, D.DNAME, 1.1*E.SALARY AS "INC-SALARY" FROM EMP E, DEPT D WHERE E.DEPTNO = D.DNO AND D.DNAME = 'RESEARCH';

(b) Find the sum of the salaries of all employees of the 'Accounts' department as well as the maximum salary and the average salary in this department.

SELECT MAX(E.SALARY), MIN(E.SALARY), SUM(E.SALARY), AVG(E.SALARY) FROM EMP E, DEPT D WHERE E.DEPTNO = D.DNO AND D.DNAME = "ACCOUNTS";

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DESC DEPT :-

Name	Null?	Type
DNO	NOT NULL	NUMBER(4)
DNAME	NOT NULL	VARCHAR2(20)
DLOCATION		VARCHAR2(20)

SELECT * FROM DEPT

DNO	DNAME	DLOCATION
2	ACCOUNTS	JAYANAGAR
4	RESEARCH	KENGERI
5	ADMIN	SOUTHEND

DESC EMP;

Name	Null?	Type
ENO	NOT NULL	NUMBER(6)
ENAME	NOT NULL	VARCHAR2(20)
EBDATE		DATE
ADDRESS		VARCHAR2(20)
GENDER		CHAR(1)
SALARY	NOT NULL	NUMBER(10)
DEPT NO		NUMBER(4)

SELECT * FROM EMP;

ENO	ENAME	EBDATE	ADDRESS	G	SALARY	DEPT NO
1001	ANIRUDH	14-JAN-90	BANGALORE	M	45000	4
1004	LAKSHMI	04-MAR-98	MYSORE	F	5500	4
1002	SINCHANA	22-DEC-90	MANGALORE	F	5000	2
1007	PRASHANT	26-JAN-89	DHARWAD	M	20000	4
1003	VINAY	26-NOV-90	HUBLI	M	3000	2
1005	VIDYA	26-NOV-78	HUBLI	F	35000	4
1006	PRAJWAL	02-Feb-14	BANGALORE	M	65000	5
1008	RAJESH	08-Feb-10	BANGALORE	M	25000	2

Date:

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Create emp and dept with the following attributes

```
CREATE TABLE DEPT (DNO NUMBER(4) PRIMARY KEY, DNAME
  VARCHAR2(20) NOT NULL, DLOCATION (20));

DESC DEPT;

INSERT INTO DEPT VALUES(2,'ACCOUNTS','JAYANAGAR');
INSERT INTO DEPT VALUES(4,'RESEARCH','KENGERI');
INSERT INTO DEPT VALUES(5,'ADMIN','SOUTHEND');

SELECT * FROM DEPT;

CREATE TABLE EMP(ENO NUMBER(6) PRIMARY KEY, ENAME
  VARCHAR2(20) NOT NULL, EBDATE DATE, ADDRESS VARCHAR2(20),
  GENDER CHAR, SALARY NUMBER(10) NOT NULL, DEPT NO NUMBER
  (4));

DESC EMP;

INSERT INTO EMP VALUES(1001,'LAKSHMI','4-MAR-1998','MYSORE',
  'F',55000,4);
INSERT INTO EMP VALUES(1002,'ANIRUDH','14-JAN-1990',
  'BANGALORE',M,45000,2);
INSERT INTO EMP VALUES(1006,'PRAJWAL','2-FEB-20','BLR',
  'M',65000,5);

SELECT * FROM EMP;
```

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Step(a) :-

ENAME
PRAMJAL

Step(b) :-

DNAME	COUNT(*)
ACCOUNTS	3
RESEARCH	4.

Date:

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(a) Retrieve the name of each employee controlled by department number 5 (use EXISTS operator).

```
SELECT E.ENAME FROM EMP E WHERE EXISTS (SELECT
D.DNO FROM DEPT D WHERE E.DEPT NO =DNO AND
E.DEPTNO = 5);
```

(b) Retrieve the name of each dept and no of employees working in each department which has atleast 2 employees

```
SELECT D.DNAME, COUNT(*) FROM EMP E, DEPT D
WHERE E.DEPTNO = D.DNO GROUP BY D.DNAME HAVING
COUNT(*) >= 2;
```

Teacher's Signature _____

DESC EMP;

Name	Null?	Type
END	NOT NULL	NUMBER(6)
ENAME	NOT NULL	VARCHAR2(20)
EBDATE		DATE
ADDRESS		VARCHAR2(30)
GENDER		CHAR(1)
SALARY	NOT NULL	NUMBER(10)
DEPTNO		NUMBER(4)
NO_OF_EMP		NUMBER(4)

SELECT * FROM EMP;

END	ENAME	EBDATE	ADDRESS	G	SALARY	DEPTNO	NO_OF_EMP
1001	ANIRUBH	14-JAN-1990	BANGALORE	M	45000	4	4
1004	LAKSHMI	24-MAR-98	MYSORE	F	5000	4	4
1002	SINHCHANA	28-DEC-90	MANGALORE	F	5500	2	2
1007	PRASHANT	26-JAN-89	DHARWAD	M	20000	4	4
1003	VINAY	26-NOV-90	HUBLI	M	30000	2	2
1005	VIDYA	26-NOV-98	HUBLI	F	35000	4	4
1006	PRAJWAL	28-FEB-74	BANGALORE	M	45000	5	5
1008	RAJESH	02-FEB-10	BANGALORE	M	25000	2	2

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Create emp, work on and project table with the following attributes :

```
CREATE TABLE EMP(END NUMBER(6) PRIMARY KEY, ENAME
VARCHAR2(20) NOT NULL, EBDATE DATE, ADDRESS VARCHAR2(30),
GENDER CHAR, SALARY NUMBER(10) NOT NULL, DEPTNO NUMBER(4),
NO_OF_EMP NUMBER(4));

DESC EMP;

INSERT INTO EMP VALUES(1001,'ANIRUDH','14-JAN-1990','BANGALORE',
'M',45000,4);
INSERT INTO EMP VALUES(1002,'LAKSHMI','4-MAR-1998','MYSORE',
'F',55000,4);
INSERT INTO EMP VALUES(1004,'SINHCHANA','28-DEC-1990','HUBLI',
'F',50000,2);
INSERT INTO EMP VALUES(1007,'PRASHANT','26-JAN-1989','DHARWAD',
'M',20000,4);
INSERT INTO EMP VALUES(1003,'VINAY','26-NOV-1990','HUBLI','M',
30000,2);
INSERT INTO EMP VALUES(1005,'VIDYA','26NOV-1998','HUBLI'
'F',35000,4);
INSERT INTO EMP VALUES(1006,'PRAWJAL','2-Feb-2100','BANGALORE',
'M',45000,5);
INSERT INTO EMP VALUES(1008,'RAJESH','2-Feb-210','BANGALORE',
'M',25000,2);

SELECT * FROM EMP;
```

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DESC PROJECT;

Name	Null?	Type
PNO	NOT NULL	NUMBER(10)
PNAME	NOT NULL	VARCHAR2(20)
PNUM		NUMBER(4)

SELECT * FROM PROJECT

PNO	PNAME	PNUM
10	ERP	5
20	BANKING	2
30	CONNECT-TECH	4
40	SMART-SEEK	5
50	FINANCE	2
60	ANALYTICA	4
70	MARKET-RESEARCH	4
80	SMART-SEARCH	4

DESC WORKS_ON;

Name	Null?	Type
ENO	NOT NULL	NUMBER(6)
PNUM	NOT NULL	NUMBER(10)
HOURS	NOT NULL	NUMBER(3,1)

SELECT * FROM WORKS_ON;

ENO	PNUM	HOURS
1001	10	4.5
1002	10	6
1008	10	4
1006	20	4
1004	20	8
1005	40	8
1003	50	8
1007	60	5

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```
CREATE TABLE PROJECT( PNO NUMBER(10) PRIMARY KEY,
 PNAME VARCHAR2(20) NOT NULL, PNUM NUMBER(4));

DESC PROJECT;

INSERT INTO PROJECT VALUES (10,'ERP',5);
INSERT INTO PROJECT VALUES (20,'BANKING',2);
INSERT INTO PROJECT VALUES (30,'CONNECT-TECH',4);
INSERT INTO PROJECT VALUES (40,'SMART_SEEK',5);
INSERT INTO PROJECT VALUES (50,'FINANCE',2);
INSERT INTO PROJECT VALUES (60,'ANALYTICA',4);
INSERT INTO PROJECT VALUES(70,'MARKET-RESEARCH',4);
INSERT INTO PROJECT VALUES( 80,'SMART-SEARCH',4);

SELECT * FROM PROJECT;

CREATE TABLE WORKS_ON (ENO NUMBER(6) REFRENCES NOT NULL,
PNUM NUMBER(10) REFRENCES PROJECT NOT NULL, HOURS
NUMBER (3,1) NOT NULL, PRIMARY KEY (ENO, PNUM));

DESC WORKS-ON;

INSERT INTO WORKS-ON VALUES (1001,10,4.5);
INSERT INTO WORKS-ON VALUES (1002, 10, 6);
INSERT INTO WORKS_ON VALUES(1008, 10, 4);
INSERT INTO WORKS-ON VALUES(1006,20,4);
INSERT INTO WORKS-ON VALUES (1004,20,8);
INSERT INTO WORKS-ON VALUES (1005, 40,8);
INSERT INTO WORKS_ON VALUES (1003, 50, 8);
INSERT INTO WORKS_ON VALUES (1009, 60,5);
```

Teacher's Signature .....

Step (a):

PNO	PNAME	NO_OF_EMP
10	ERP	3
60	ANALYTICA	1
80	BANKING	2
40	SMART SEEK	1
50	FINANCE	1

Step (b):-

ENAME	EBDATE
ANIRUDH	14-JAN-90
SINHCANA	22-DEC-90
VINAY	26-NOV-90

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SELECT * FROM WORKS-ON;

(a) For each project, retrieve the project number, the project name, and the number of employee who work on that project. (use GROUP BY).

SELECT P.PNO, P.PNAME, COUNT(*) AS "NO-OF-EMP" FROM PROJECT P, WORKS-ON W WHERE P.PNO = W.PNUM GROUP BY P.PNO, P.PNAME;

(b) Retrieve the name of employees who born in the year 1990.

SELECT ENAME, EBDATE FROM EMP WHERE EBDATE LIKE '%/%/-90';

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DESC DEPT;

Name	Null?	Type
DNO	NOT NULL	NUMBER(4)
DNAME	NOT NULL	VARCHAR2(20)
DLOCATION		VARCHAR2(60)

SELECT * FROM DESC;

Name	Null?	Type
ENO	NOT NULL	NUMBER(6)
ENAME	NOT NULL	VARCHAR2(20)
EBDATE		DATE
ADDRESS		VARCHAR2(30)
GENDER		CHAR(1)
SALARY	NOT NULL	NUMBER(10)
DEPTNO		NUMBER(4)
NO-OF-EMP		NUMBER(4)

SELECT * FROM DESC;

DNO	DNAME	DLOCATION
2	ACCOUNTS	JAYANAGAR
4	RESEARCH	KENGERI
5	ADMIN	SOUTHEND

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Create employee and department table with the following attributes

```
CREATE TABLE DEPT(DNO NUMBER(4) PRIMARY KEY, DNAME VARCHAR
2(20) NOT NULL, DLOCATION VARCHAR2(60));

DESC DEPT;

CREATE TABLE EMP(ENO NUMBER(6) PRIMARY KEY, ENAME
VARCHAR2(20) NOT NULL, EBDATE DATE, ADDRESS VARCHAR2(30),
GENDER CHAR, SALARY NUMBER(10) NOT NULL, DEPTNO NUMBER(4)
REFRENCES DEPT, NO-OF-EMP VARCHAR2(20));

DESC EMP;

INSERT INTO DEPT VALUES(2,'ACCOUNTS','JAYANAGAR');
INSERT INTO DEPT VALUES(4,'RESEARCH','KENGERI');
INSERT INTO DEPT VALUES(5,'ADMIN','SOUTHEND');

SELECT * FROM DEPT;

INSERT INTO EMP VALUES(1001,'ANIRUDH','14-JAN-1990','BLR',
'M',45000,4,3);
INSERT INTO EMP VALUES(1004,'LAKSHMI','4-MAR-1998','MYSORE',
'F',55000,4,2);
INSERT INTO EMP VALUES(1008,'SINHCHANA','22-DEC-1990','MANGLORE',
'F',50000,2,1);
INSERT INTO EMP VALUES(1007,'PRASHANT','26-JAN-1987','DHARWAD'
,'M',20000,4,2);
```

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SELECT * FROM EMP;

ENO	ENAME	EDOJTE	ADDRESS	G	SALARY	DEPTNO	NO.OF.LA
1001	ANIRUDH	14-JAN-90	BANGALORE	M	45000	4	3
1004	LAKSHMI	04-MAR-98	MYSORE	F	5500	4	2
1002	SINCHANA	22-DEC-70	MANGALOR	F	5000	2	1
1007	PRASHANT	25-NOV-90	DHARWAD	M	20000	4	2
1003	VINAY	26-NO-98	HUBLI	M	3000	2	2
1005	VIDYA	08-Feb-14	HUBLI	F	35000	4	3
1006	PRATHAL	2-Feb-1974	BLR	M	65000	5	1
1008	RAJESH	06-JAN-86	BLR	M	35000	2	2

(b)

DNAME	DNO	COUNT(*)
ACCOUNTS	2	1
RESEARCH	4	2

Date:

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```
INSERT INTO EMP VALUES(1003,'VINAY','26-NOV-1990','HUBLI',
'M',30000,2,1);
INSERT INTO EMP VALUES(1005,'VIDYA','26-NO-1998','HUBLI',
'F',35000,4,3);
INSERT INTO EMP VALUES(1006,'PRATHAL','2-Feb-1974','BLR',
'M',65000,5,1);
INSERT INTO EMP VALUES(1008,'RAJESH','2-Feb-2010','BLR',
M,25000,2,2);

SELEC * FROM EMP;
```

a. For each department that has more than five employees retrieve the department number and no of employees who are making salary more than 40000.

```
SELECT D.DNAME, D.DNO ,COUNT(*) AS'NO.OF.EMP' FROM EMP E,
DEPT D WHERE E.DEPTNO = D.DNO AND E.SALARY >40000 AND
D.DNO IN(SELECT DEPTNO FROM EMP GROUP BY DEPTNO
HAVING COUNT (*) >=5) GROUP BY D.DNO, D.DNAME ;
```

b. For each department that has more than two employees retrieve the department number and no of employees who are making salary more than 40000.

```
SELECT D.DNAME , D.DNO , COUNT (*) FROM EMP E, DEPT D
WHERE E.DEPTNO = D.DNO AND E.SALARY > 40000 AND
D.DNO IN (SELECT DEPTNO FROM EMP GROUP BY
DEPTNO HAVING COUNT (*) > 2) GROUP BY D.DNO , D.DNAME;
```

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DESC EMP;

Name	Null?	Type
ENO	NOT NULL	NUMBER(6)
ENAME	NOT NULL	VARCHAR2(20)
EBDATE		DATE
ADDRESS		VARCHAR2(20)
GENDER		CHAR(1)
SALARY	NOT NULL	NUMBER(10)
DEPTNO		NUMBER(4)

SELECT * FROM EMP;

ENO	ENAME	EBDATE	ADDRESS	G	SALARY	DEPTNO	EMP
1001	ANIRUDH	14-JAN-90	BANGALORE	M	45000	4	3
1004	LAKSHMI	04-MAR-98	MYSORE	F	5500	4	2
1008	SINHCANA	22-DEC-90	MANGALORE	F	5000	2	1
1007	PRASHANT	26-JAN-89	DHARWAD	M	20000	4	3
1003	VINAY	26-NOV-90	HUBLI	M	3000	2	1
1005	VIDYA	26-NOV-78	HUBLI	F	35000	4	2
1006	PRAJWAL	02-FEB-74	BANGALORE	M	60000	5	1
1008	RAJESH	02-FEB-10	BANGALORE	M	25000	2	1

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Create emp and project table with its following attributes :-

```
CREATE TABLE EMP(ENO NUMBER(6) PRIMARY KEY, ENAME
VARCHAR2(20) NOT NULL, EBDATE DATE, ADDRESS VARCHAR2(20)
GENDER CHAR, SALARY NUMBER(10) NOT NULL, DEPNO
NUMBER(4), NO_OF_EMP VARCHAR2(20));

DESC EMP;

INSERT INTO EMP VALUES(1001,'ANIRUDH','14-JAN-1990','BLR',
'M',45000,4,3);
INSERT INTO EMP VALUES( (1004,'LAKSHMI','4-MAR-1998',
'MYSORE','F',55000,4,2);
INSERT INTO EMP VALUES(1008,'SINHCANA','22-DEC-1990','MANGALORE',
'F',5000,2,1);
INSERT INTO EMP VALUES(1007,'PRASHANT','26-JAN-1998','DHARWAD',
'M',20000,4,3);
INSERT INTO EMP VALUES(1003,'VINAY','26-NOV-1990','HUBLI','M',
3000,2,1);
INSERT INTO EMP VALUES(1005,'VIDYA','26-NOV-1978','HUBLI',
'F',35000,4,2);
INSERT INTO EMP VALUES(1006,'PRAJWAL','2-FEB-1974','BLR'
'M',65000,5,1);
INSERT INTO EMP VALUES(1008,'RAJESH','2-FEB-2010','BLR',
'M',25000,2,1);

SELECT * FROM EMP;
```

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DESC PROJECT;

Name	Null?	Type
PNO	NOT NULL	NUMBER(10)
PNAME	NOT NULL	VARCHAR2(20)
PNUM		NUMBER(4)

SELECT * FROM PROJECT;

PNO	PNAME	PNUM
10	ERP	5
20	BANKING	3
30	CONNECT_TECH	4
40	SMART_SEEK	5
50	FINANCE	3
60	ANALYTICA	4
70	MARKET_RESEARCH	4
80	SMART_SEARCH	4

PNO	PNAME	NO_OF_EMP_WORKING
10	ERP	3

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```
CREATE TABLE PROJECT(PNO NUMBER(10) PRIMARY KEY, PNAME
VARCHAR2(20) NOT NULL, PNUM NUMBER(4));

DESC PROJECT;

INSERT INTO PROJECT VALUES(10,'ERP',5);
INSERT INTO PROJECT VALUES(20,'BANKING',3);
INSERT INTO PROJECT VALUES(30,'CONNECT_TECH',4);
INSERT INTO PROJECT VALUES(40,'SMART_SEEK',5);
INSERT INTO PROJECT VALUES(50,'FINANCE',3);
INSERT INTO PROJECT VALUES(60,'ANALYTICA',4);
INSERT INTO PROJECT VALUES(70,'MARKET_RESEARCH',4);
INSERT INTO PROJECT VALUES(80,'SMART_SEARCH',4);

SELECT * FROM PROJECT;
```

For each project on which more than two employees work, retrieve the project number, project name and the number of employees who work on that project

```
SELECT P.PNO, P.PNAME, COUNT(*) AS "NO_OF_EMP_
WORKING" FROM PROJECT P, WORKS_ON W WHERE
P.PNO = W.PNUM GROUP BY P.PNO, P.PNAME HAVING
COUNT(*)>2;
```

Teacher's Signature _____