Advanced Database System (Lab)

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Problem Statement 1:

Create a global conceptual schema emp (eno, ename, city, salary) wit eno as a primary key and insert 10 records.

Horizontal Fragmentation:

Divide emp into horizontal fragments using the condition that emph1 contains the tuples with salary<=15000 and emph2 with salary>15000.

Vertical Fragmentation:

Divide emp into vertical fragments using the condition that empv1 contains the attributes (eno, ename) and empv2 contains the attributes (eno, city, salary)

Answer below queries.

1. Find the salary of all employees.
2. Find the name of all employees where salary = 15000.
3. Find the employee's name and city where employee salary is between 15000 to 25000.
4. Find the employee's name and city where employee number is known.

-- Create Empl Table

```
CREATE TABLE Empll (
   eno NUMBER NOT NULL PRIMARY KEY,
   ename VARCHAR(60),
   city VARCHAR(60),
   salary NUMBER
);
```

--Insert Data into the Employee Table

```
INSERT INTO Empl (eno, ename, city, salary) VALUES (1, 'Aryan', 'Aurangabad', 10000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (2, 'Binod', 'Bhopal', 15000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (3, 'Chandan', 'Calicut', 18000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (4, 'David', 'Dhanbad', 20000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (5, 'Eshwar','Ellapuram', 22000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (6, 'Farhan', 'Farhanabad', 23000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (7, 'Ganesh', 'Gangapur', 25000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (8, 'Harsh', 'Hyderabad', 26000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (9, 'Isha', 'Ichalkaranji', 27000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (10, 'Jason', 'Jaisalmer', 9000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (11, 'Karan', 'Kalyan', 15000);
INSERT INTO Empl (eno, ename, city, salary) VALUES (12, 'Laxman', 'Lajpatnagar', 15000);
```

--1. Find the salary of all Employees.

SELECT * FROM Empl;

Script Output | Query Result

SQL | All Rows Fetched: 12 in 0.008 se

	ENO	ENAME	CITY	SALARY
1	1	Aryan	Aurangabad	10000
2	2	Binod	Bhopal	15000
3	3	Chandan	Calicut	18000
4	4	David	Dhanbad	20000
5	5	Eshwar	Ellapuram	22000
6	6	Farhan	Farhanabad	23000
7	7	Ganesh	Gangapur	25000
8	8	Harsh	Hyderabad	26000
9	9	Isha	Ichalkaranji	27000
10	10	Jason	Jaisalmer	9000
11	11	Karan	Kalyan	15000
12	12	Laxman	Lajpatnagar	15000

--2. Find the name of all Employees where salary = 15000.

SELECT * FROM Empl WHERE salary = 15000;

Script Output | Query Result

SQL | All Rows Fetched: 3 in 0.006 sec

	ENO	ENAME	CITY	SALARY
1	2	Binod	Bhopal	15000
2	11	Karan	Kalyan	15000
3	12	Laxman	Lajpatnagar	15000

--3. Find the Employee's name and city where Employee salary is between 15000 to 25000.

SELECT ename, city

FROM Empl

WHERE salary BETWEEN 15000 AND 25000;

Script Output | Query Result

SQL | All Rows Fetc

	ENAME	CITY
1	Binod	Bhopal
2	Chandan	Calicut
3	David	Dhanbad
4	Eshwar	Ellapuram
5	Farhan	Farhanabad
6	Ganesh	Gangapur
7	Karan	Kalyan
8	Laxman	Lajpatnagar

--4. Find the Employee's name and city where Employee salary is between 15000 to 25000.

SELECT ename, city FROM Empl WHERE eno = 7;

Script Output | Query Result

SQL | All Rows Fetched: 1

	ENAME	CITY
1	Ganesh	Gangapur

--Horizontal Fragmentation:

--Divide emp into horizontal fragments using the condition that emph1 contains the tuples with salary<=15000 and emph2 with salary>15000.

CREATE TABLE hfrag1 AS (SELECT * FROM empl WHERE salary <= 15000);

SELECT * FROM hfrag1;

Script Output | Query Result | SQL | All Rows Fetched: 5 in 0.009 se

	ENO	ENAME	CITY	SALARY
1	1	Aryan	Aurangabad	10000
2	2	Binod	Bhopal	15000
3	10	Jason	Jaisalmer	9000
4	11	Karan	Kalyan	15000
5	12	Laxman	Lajpatnagar	15000

CREATE TABLE hfrag1 AS (SELECT * FROM empl WHERE salary <= 15000);

SELECT * FROM hfrag1;

Script Output | Query Result | SQL | All Rows Fetched: 7 in 0.009 sec

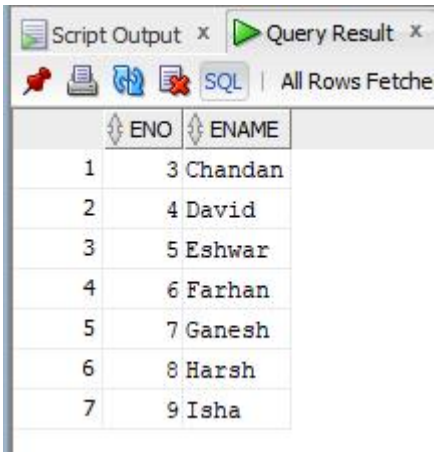
	ENO	ENAME	CITY	SALARY
1	3	Chandan	Calicut	18000
2	4	David	Dhanbad	20000
3	5	Eshwar	Ellapuram	22000
4	6	Farhan	Farhanabad	23000
5	7	Ganesh	Gangapur	25000
6	8	Harsh	Hyderabad	26000
7	9	Isha	Ichalkaranji	27000

--Vertical Fragmentation:

--Divide emp into vertical fragments using the condition that empv1 contains the attributes (eno, ename) and empv2 contains the attributes (eno, city, salary)

CREATE TABLE vfrag1 AS (SELECT eno, ename FROM empl WHERE salary > 15000);

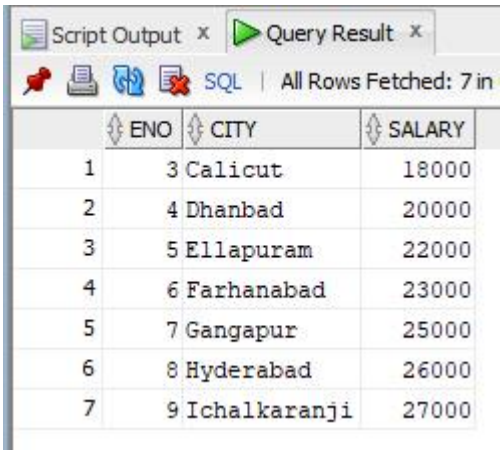
SELECT * FROM vfrag1;



	ENO	ENAME
1	3	Chandan
2	4	David
3	5	Eshwar
4	6	Farhan
5	7	Ganesh
6	8	Harsh
7	9	Isha

CREATE TABLE vfrag2 AS (SELECT eno, city, salary FROM empl WHERE salary > 15000);

SELECT * FROM vfrag2;



	ENO	CITY	SALARY
1	3	Calicut	18000
2	4	Dhanbad	20000
3	5	Ellapuram	22000
4	6	Farhanabad	23000
5	7	Gangapur	25000
6	8	Hyderabad	26000
7	9	Ichalkaranji	27000