Name: Pushkaraj Yadav

Roll No.: BTB43

PRN: 2122000755

Subject: Advanced Database Systems Labs

Experiment No.: 3

Problem Statement

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)

CODE:

```
CREATE TABLE emp (
   eno INT PRIMARY KEY,
   ename VARCHAR(50),
   city VARCHAR(50),
   salary DECIMAL(10, 2)
);

INSERT INTO emp (eno, ename, city, salary) VALUES (1, 'Pushkaraj', 'Pune', 12000);
INSERT INTO emp (eno, ename, city, salary) VALUES (2, 'Aryan', 'Mumbai', 18000);
INSERT INTO emp (eno, ename, city, salary) VALUES (3, 'Rohan', 'Bangalore', 9000);
INSERT INTO emp (eno, ename, city, salary) VALUES (4, 'Ankita', 'Hyderabad', 22000);
```

INSERT INTO emp (eno, ename, city, salary) VALUES (5, 'Kiran', 'Chennai', 15000);

INSERT INTO emp (eno, ename, city, salary) VALUES (6, 'Avdhut', 'Pune', 17000);

INSERT INTO emp (eno, ename, city, salary) VALUES (7, 'Ritesh', 'Kolkata', 13000);

INSERT INTO emp (eno, ename, city, salary) VALUES (8, 'Dhairyasheel', 'Jaipur', 25000);

INSERT INTO emp (eno, ename, city, salary) VALUES (9, 'Ishaan', 'Lucknow', 8000);

INSERT INTO emp (eno, ename, city, salary) VALUES (10, 'Atharv', 'Ahmedabad', 16000);

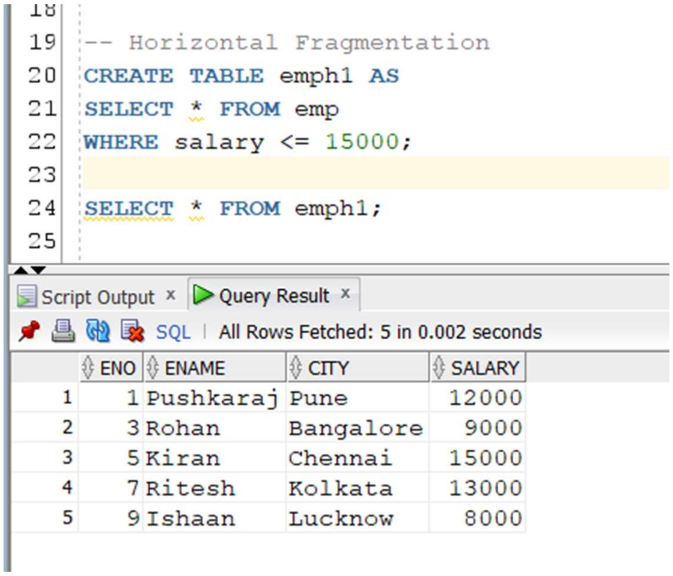
-- Horizontal Fragmentation

CREATE TABLE emph1 AS

SELECT * FROM emp

WHERE salary <= 15000;

SELECT * FROM emph1;



```
-- Horizontal Fragmentation
CREATE TABLE emph1 AS
SELECT * FROM emp
WHERE salary <= 15000;

SELECT * FROM emph1;
```

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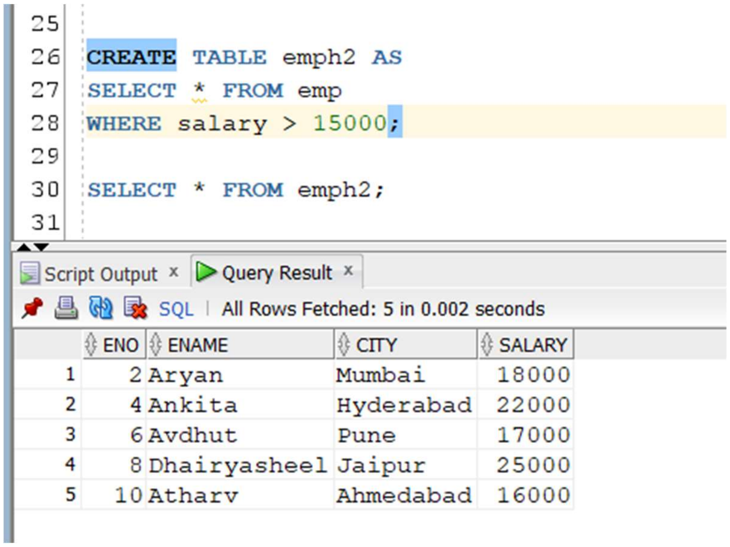
	ENO	ENAME	CITY	SALARY
1	1	Pushkaraj	Pune	12000
2	3	Rohan	Bangalore	9000
3	5	Kiran	Chennai	15000
4	7	Ritesh	Kolkata	13000
5	9	Ishaan	Lucknow	8000

CREATE TABLE emph2 AS

SELECT * FROM emp

WHERE salary > 15000;

SELECT * FROM emph2;



```
CREATE TABLE emph2 AS
SELECT * FROM emp
WHERE salary > 15000;

SELECT * FROM emph2;
```

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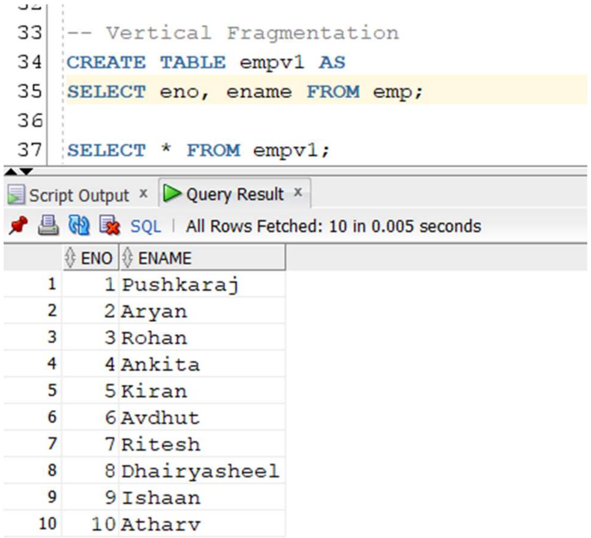
	ENO	ENAME	CITY	SALARY
1	2	Aryan	Mumbai	18000
2	4	Ankita	Hyderabad	22000
3	6	Avdhut	Pune	17000
4	8	Dhairyasheel	Jaipur	25000
5	10	Atharv	Ahmedabad	16000

-- Vertical Fragmentation

CREATE TABLE empv1 AS

SELECT eno, ename FROM emp;

SELECT * FROM empv1;



```
-- Vertical Fragmentation
CREATE TABLE empv1 AS
SELECT eno, ename FROM emp;

SELECT * FROM empv1;
```

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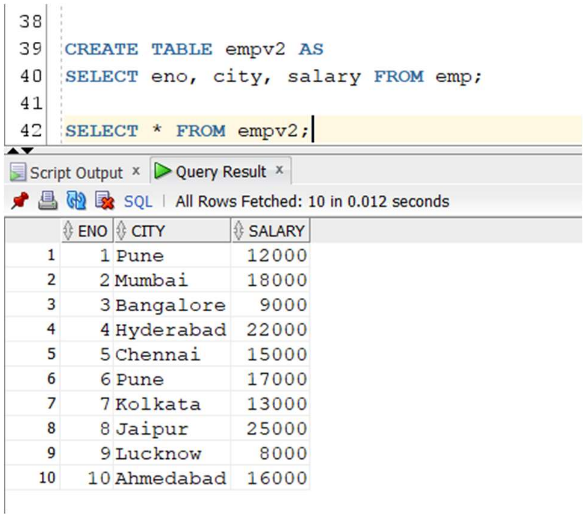
	ENO	ENAME
1	1	Pushkaraj
2	2	Aryan
3	3	Rohan
4	4	Ankita
5	5	Kiran
6	6	Avdhut
7	7	Ritesh
8	8	Dhairyasheel
9	9	Ishaan
10	10	Atharv

CREATE TABLE empv2 AS

SELECT eno, city, salary FROM emp;

SELECT * FROM empv2;



```
CREATE TABLE empv2 AS
SELECT eno, city, salary FROM emp;

SELECT * FROM empv2;
```

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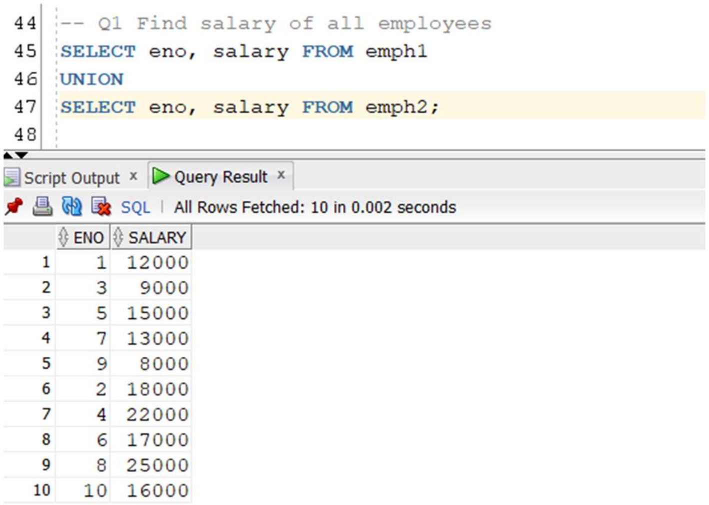
```
      ENO CITY       SALARY
 1      1 Pune        12000
 2      2 Mumbai      18000
 3      3 Bangalore    9000
 4      4 Hyderabad   22000
 5      5 Chennai     15000
 6      6 Pune        17000
 7      7 Kolkata     13000
 8      8 Jaipur      25000
 9      9 Lucknow      8000
10     10 Ahmedabad   16000
```

-- Q1 Find salary of all employees

SELECT eno, salary FROM emph1

UNION

SELECT eno, salary FROM emph2;



```
-- Q1 Find salary of all employees
SELECT eno, salary FROM emph1
UNION
SELECT eno, salary FROM emph2;
```

All Rows Fetched: 10 in 0.002 seconds

```
     ENO SALARY
 1     1  12000
 2     3   9000
 3     5  15000
 4     7  13000
 5     9   8000
 6     2  18000
 7     4  22000
 8     6  17000
 9     8  25000
10    10  16000
```

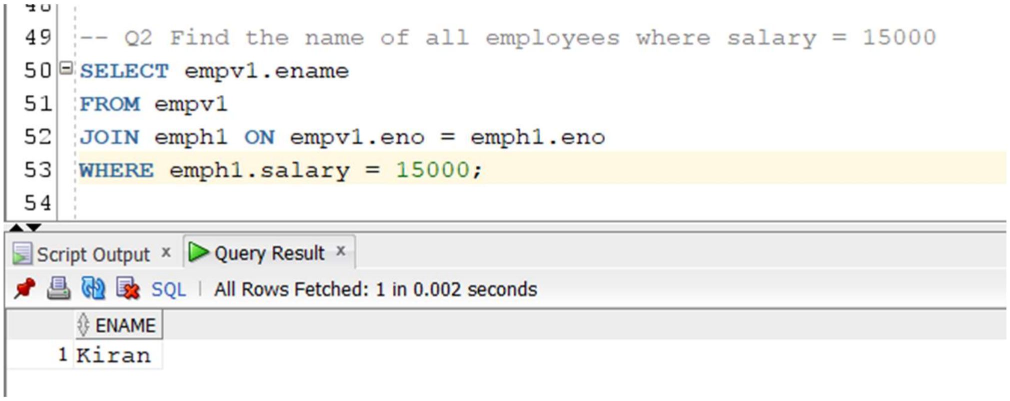
-- Q2 Find the name of all employees where salary = 15000

SELECT empv1.ename

FROM empv1

JOIN emph1 ON empv1.eno = emph1.eno

WHERE emph1.salary = 15000;



```
-- Q2 Find the name of all employees where salary = 15000
SELECT empv1.ename
FROM empv1
JOIN emph1 ON empv1.eno = emph1.eno
WHERE emph1.salary = 15000;
```

All Rows Fetched: 1 in 0.002 seconds

```
  ENAME
1 Kiran
```

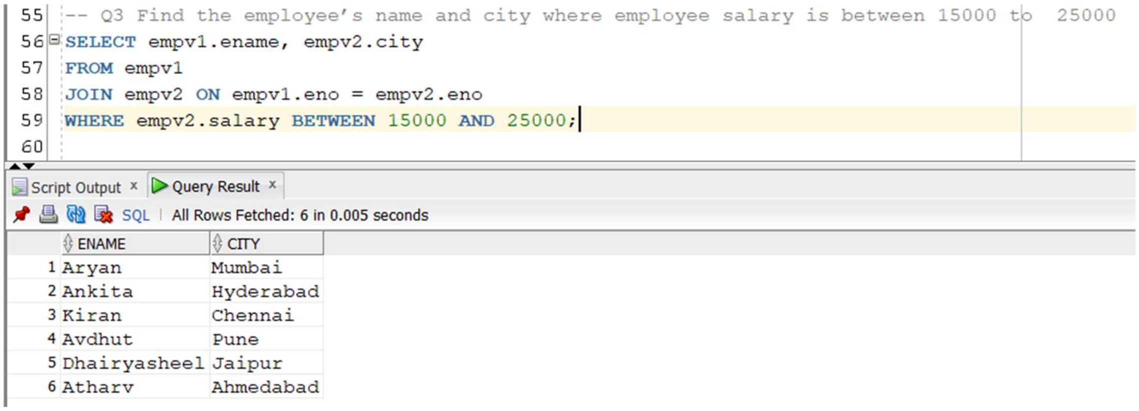
-- Q3 Find the employee's name and city where employee salary is between 15000 to 25000

SELECT empv1.ename, empv2.city

FROM empv1

JOIN empv2 ON empv1.eno = empv2.eno

WHERE empv2.salary BETWEEN 15000 AND 25000;



```
-- Q3 Find the employee's name and city where employee salary is between 15000 to  25000
SELECT empv1.ename, empv2.city
FROM empv1
JOIN empv2 ON empv1.eno = empv2.eno
WHERE empv2.salary BETWEEN 15000 AND 25000;
```

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```
  ENAME        CITY
1 Aryan        Mumbai
2 Ankita       Hyderabad
3 Kiran        Chennai
4 Avdhut       Pune
5 Dhairyasheel Jaipur
6 Atharv       Ahmedabad
```

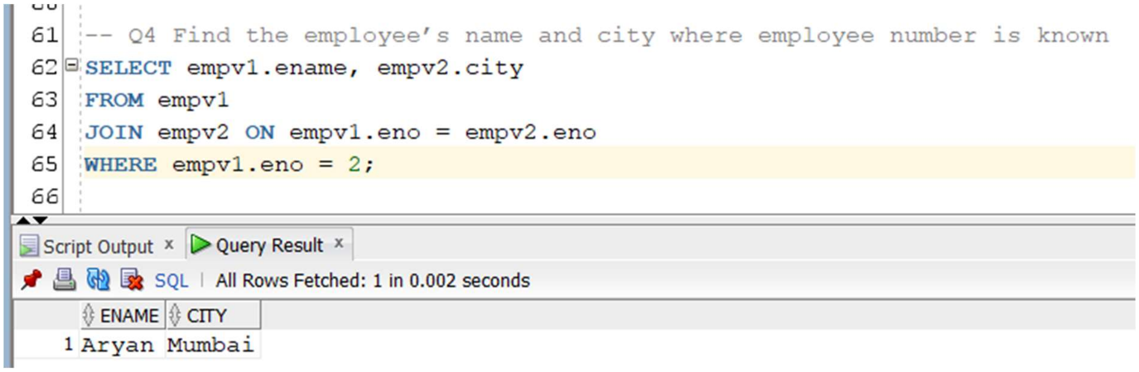
-- Q4 Find the employee’s name and city where employee number is known

SELECT empv1.ename, empv2.city

FROM empv1

JOIN empv2 ON empv1.eno = empv2.eno

WHERE empv1.eno = 2;



```
-- Q4 Find the employee’s name and city where employee number is known
SELECT empv1.ename, empv2.city
FROM empv1
JOIN empv2 ON empv1.eno = empv2.eno
WHERE empv1.eno = 2;
```

```
All Rows Fetched: 1 in 0.002 seconds

   ENAME  CITY
 1 Aryan  Mumbai
```