N.HARIPRASAD(AB-8)(DBMS)

EmployeeInfo Table:

EmpID	EmpFname	EmpLname	Department	Project	Address	DOB	Gender
1	Sanjay	Mehra	HR	P1	Hyderabad (HYD)	01/12/19 76	M
2	Ananya	Mishra	Admin	P2	Delhi (DEL)	02/05/19 68	F
3	Rohan	Diwan	Account	P3	Mumbai (BOM)	01/01/19 80	M
4	Sonia	Kulkarni	HR	P1	Hyderabad (HYD)	02/05/19 92	F
5	Ankit	Kapoor	Admin	P2	Delhi (DEL)	03/07/19 94	M

Employee Position Table:

Emp ID	Emp Position	Date Of Joining	Salary
1	Manager	01/05/2022	500000
2	Executive	02/05/2022	75000
3	Manager	01/05/2022	90000
2	Lead	02/05/2022	85000
1	Executive	01/05/2022	300000

Creation of Structure of EmployeeInfo Table:

```
mysql> Create table EmployeeInfo(EmpID int primary
key,
    -> EmpFname varchar(30),
    -> EmpLname varchar(30),
    -> Department varchar(30),
    -> Project varchar(30),
    -> Address varchar(30),
    -> DOB datetime,
    -> Gender char(1) check(Gender='M' or
 Gender='F'));
Query OK, 0 rows affected (0.03 sec)0 rows affected (0.04 sec)
```

mysql> insert into EmployeeInfo values(1,'Sanjay','Mehra','HR','P1','Hyderabad(HYD)','1976-12-01','M');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(2, 'Ananya', 'Mishra','Admin', 'P2', 'Delhi(DEL)', '1968-05-02', 'F');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(3, 'Rohan', 'Diwan', 'Account', 'P3', 'Mumbai(BOM)', '1980-01-01', 'M');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(4, 'Sonia', 'kulkarni', 'HR','P1', 'Hyderabad(HYD)', '1992-05-02', 'F');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(5, 'Ankit', 'Kapoor', 'Admin', 'P2', 'Delhi(DEL)', '1994-07-03', 'M');
Query OK, 1 row affected (0.00 sec)

Creation of Employee Position Table:

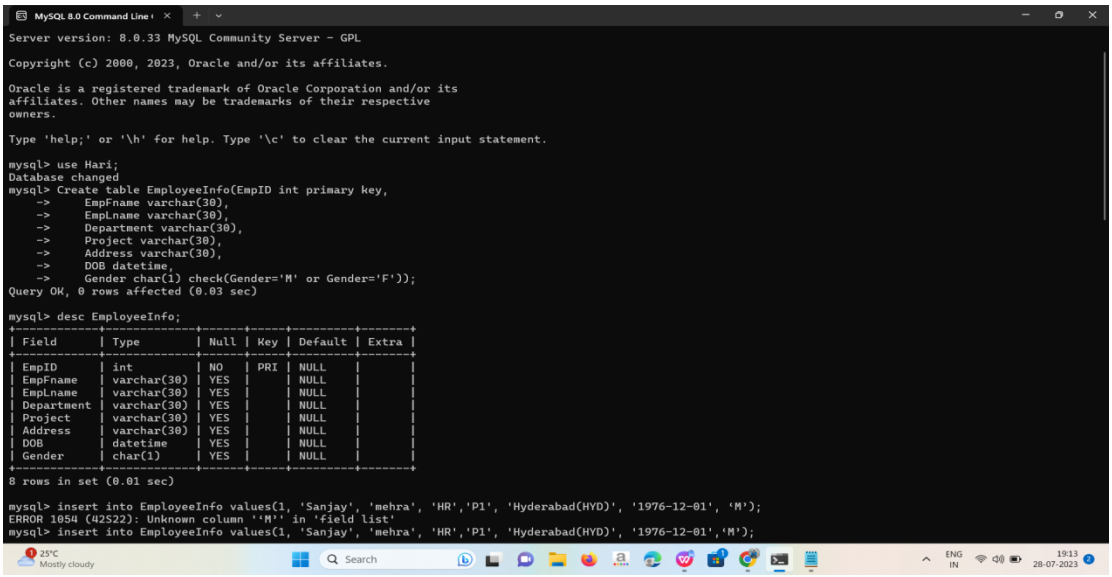
mysql> insert into employeeposition values(1, 'manager', '2022-05-01',500000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into employeeposition values(2, 'executive', '2022-05-02', 75000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employeeposition values(3, 'manager', '2022-05-01', 90000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employeeposition values(2, 'lead', '2022-05-02',85000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employeeposition values(1, 'executive', '2022-05-01', 300000);
Query OK, 1 row affected (0.00 sec)



```
MySQL 8.0 Command Line (

Server version: 8.0.33 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use Hari;
Database changed
mysql> Create table EmployeeInfo(EmpID int primary key,
    ->      EmpFname varchar(30),
    ->      EmpLname varchar(30),
    ->      Department varchar(30),
    ->      Project varchar(30),
    ->      Address varchar(30),
    ->      DOB datetime,
    ->      Gender char(1) check(Gender='M' or Gender='F'));
Query OK, 0 rows affected (0.03 sec)

mysql> desc EmployeeInfo;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| EmpID      | int         | NO   | PRI | NULL    |       |
| EmpFname   | varchar(30) | YES  |     | NULL    |       |
| EmpLname   | varchar(30) | YES  |     | NULL    |       |
| Department | varchar(30) | YES  |     | NULL    |       |
| Project    | varchar(30) | YES  |     | NULL    |       |
| Address    | varchar(30) | YES  |     | NULL    |       |
| DOB        | datetime    | YES  |     | NULL    |       |
| Gender     | char(1)     | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
8 rows in set (0.01 sec)

mysql> insert into EmployeeInfo values(1, 'Sanjay', 'mehra', 'HR','P1', 'Hyderabad(HYD)', '1976-12-01', 'M');
ERROR 1054 (42S22): Unknown column ''M'' in 'field list'
mysql> insert into EmployeeInfo values(1, 'Sanjay', 'mehra', 'HR','P1', 'Hyderabad(HYD)', '1976-12-01','M');
```
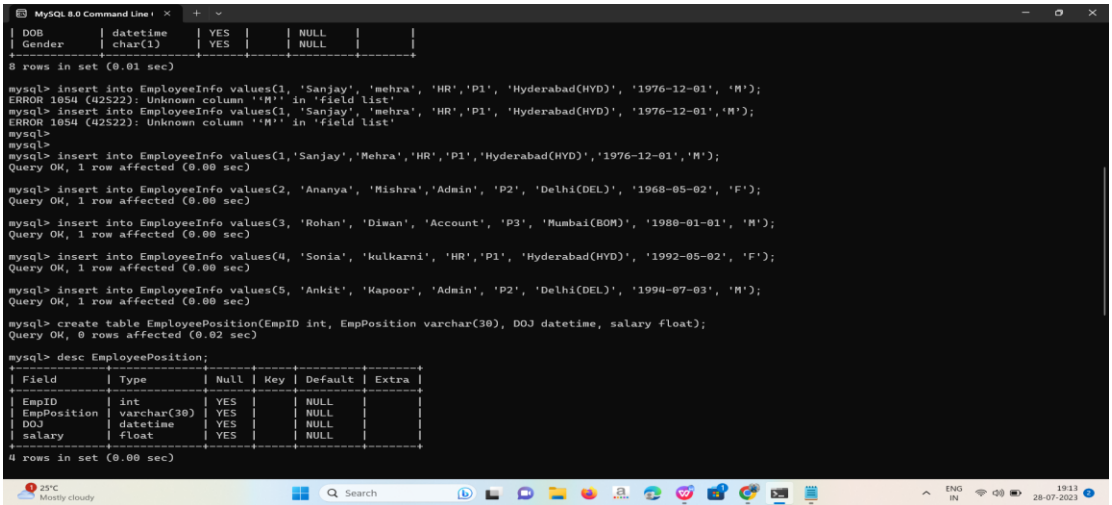
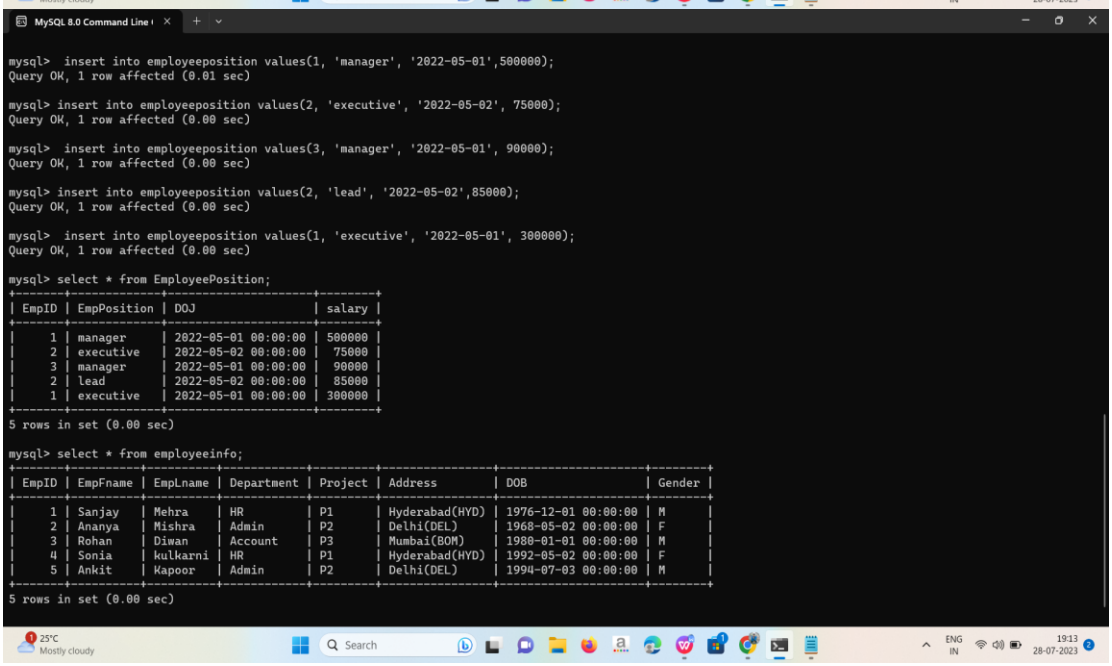



```
| DOB        | datetime    | YES  |     | NULL    |       |
| Gender     | char(1)     | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
8 rows in set (0.01 sec)

mysql> insert into EmployeeInfo values(1, 'Sanjay', 'mehra', 'HR','P1', 'Hyderabad(HYD)', '1976-12-01', 'M');
ERROR 1054 (42S22): Unknown column ''M'' in 'field list'
mysql> insert into EmployeeInfo values(1, 'Sanjay', 'mehra', 'HR','P1', 'Hyderabad(HYD)', '1976-12-01','M');
ERROR 1054 (42S22): Unknown column ''M'' in 'field list'
mysql>
mysql>
mysql> insert into EmployeeInfo values(1,'Sanjay','Mehra','HR','P1','Hyderabad(HYD)','1976-12-01','M');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(2, 'Ananya', 'Mishra','Admin', 'P2', 'Delhi(DEL)', '1968-05-02', 'F');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(3, 'Rohan', 'Diwan', 'Account', 'P3', 'Mumbai(BOM)', '1980-01-01', 'M');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(4, 'Sonia', 'kulkarni', 'HR','P1', 'Hyderabad(HYD)', '1992-05-02', 'F');
Query OK, 1 row affected (0.00 sec)

mysql> insert into EmployeeInfo values(5, 'Ankit', 'Kapoor', 'Admin', 'P2', 'Delhi(DEL)', '1994-07-03', 'M');
Query OK, 1 row affected (0.00 sec)

mysql> create table EmployeePosition(EmpID int, EmpPosition varchar(30), DOJ datetime, salary float);
Query OK, 0 rows affected (0.02 sec)

mysql> desc EmployeePosition;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| EmpID       | int         | YES  |     | NULL    |       |
| EmpPosition | varchar(30) | YES  |     | NULL    |       |
| DOJ         | datetime    | YES  |     | NULL    |       |
| salary      | float       | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

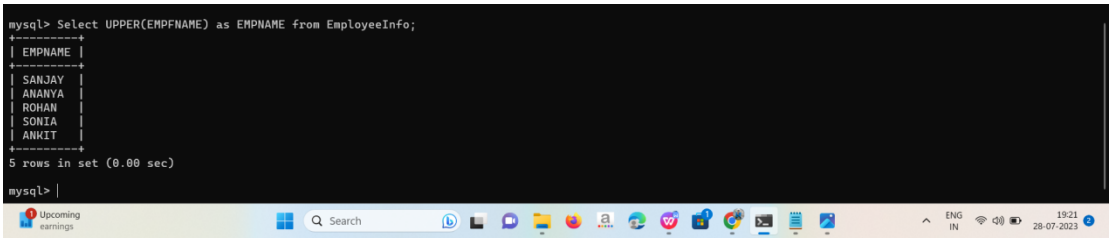


```
MySQL 8.0 Command Line (

mysql>  insert into employeeposition values(1, 'manager', '2022-05-01',500000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into employeeposition values(2, 'executive', '2022-05-02', 75000);
Query OK, 1 row affected (0.00 sec)

mysql>  insert into employeeposition values(3, 'manager', '2022-05-01', 90000);
Query OK, 1 row affected (0.00 sec)

mysql> insert into employeeposition values(2, 'lead', '2022-05-02',85000);
Query OK, 1 row affected (0.00 sec)

mysql>  insert into employeeposition values(1, 'executive', '2022-05-01', 300000);
Query OK, 1 row affected (0.00 sec)

mysql> select * from EmployeePosition;
+-------+-------------+---------------------+--------+
| EmpID | EmpPosition | DOJ                 | salary |
+-------+-------------+---------------------+--------+
|     1 | manager     | 2022-05-01 00:00:00 | 500000 |
|     2 | executive   | 2022-05-02 00:00:00 |  75000 |
|     3 | manager     | 2022-05-01 00:00:00 |  90000 |
|     2 | lead        | 2022-05-02 00:00:00 |  85000 |
|     1 | executive   | 2022-05-01 00:00:00 | 300000 |
+-------+-------------+---------------------+--------+
5 rows in set (0.00 sec)

mysql> select * from employeeinfo;
+-------+----------+----------+------------+---------+---------------+---------------------+--------+
| EmpID | EmpFname | EmpLname | Department | Project | Address       | DOB                 | Gender |
+-------+----------+----------+------------+---------+---------------+---------------------+--------+
|     1 | Sanjay   | Mehra    | HR         | P1      | Hyderabad(HYD) | 1976-12-01 00:00:00 | M      |
|     2 | Ananya   | Mishra   | Admin      | P2      | Delhi(DEL)    | 1968-05-02 00:00:00 | F      |
|     3 | Rohan    | Diwan    | Account    | P3      | Mumbai(BOM)   | 1980-01-01 00:00:00 | M      |
|     4 | Sonia    | kulkarni | HR         | P1      | Hyderabad(HYD) | 1992-05-02 00:00:00 | F      |
|     5 | Ankit    | Kapoor   | Admin      | P2      | Delhi(DEL)    | 1994-07-03 00:00:00 | M      |
+-------+----------+----------+------------+---------+---------------+---------------------+--------+
5 rows in set (0.00 sec)
```

Questions:

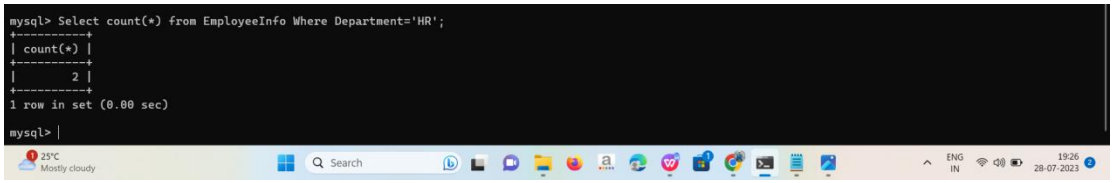
1. Write a query to fetch the EmpFname from the EmployeeInfo table in the upper case and use the ALIAS name as EmpName.

Query: Select UPPER(EMPFNAME) as EMPNAME from EmployeeInfo;



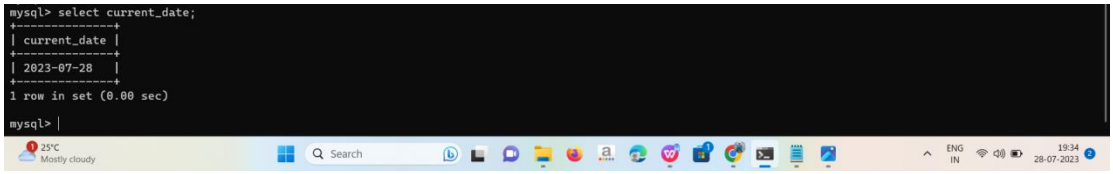
2. Write a query to fetch the number of employees working in the department 'HR'.

Query: Select count(*) from EmployeeInfo Where Department='HR';



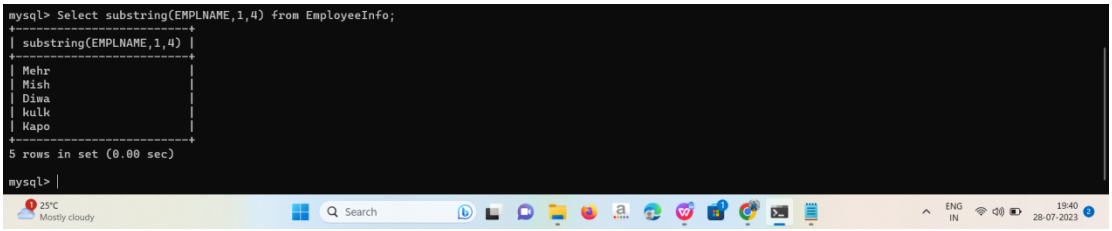
3. Write a query to get the current date.

Query: select current_date;



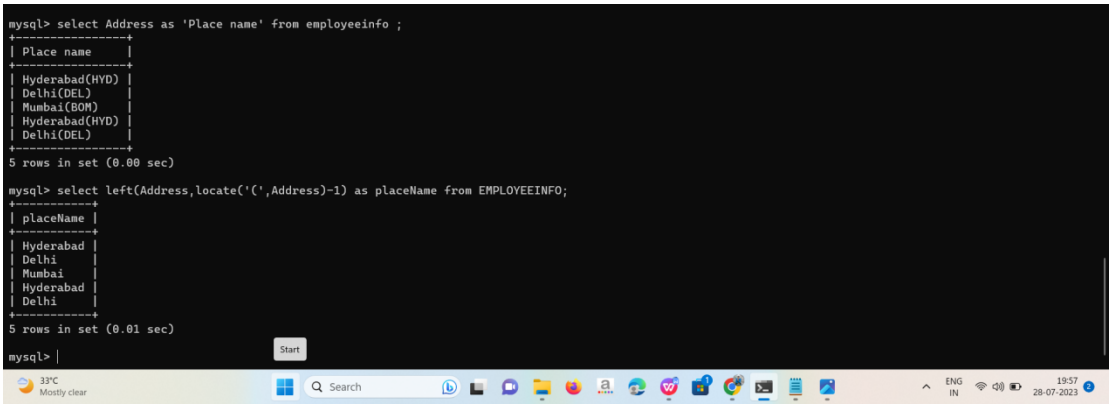
4. Write a query to retrieve the first four characters of EmpLname fromthe EmployeeInfo table.

Query:Select substring(EMPLNAME,1,4) from EmployeeInfo;



5. Write a query to fetch only the place name(string before brackets) fromthe Address column of EmployeeInfo table.

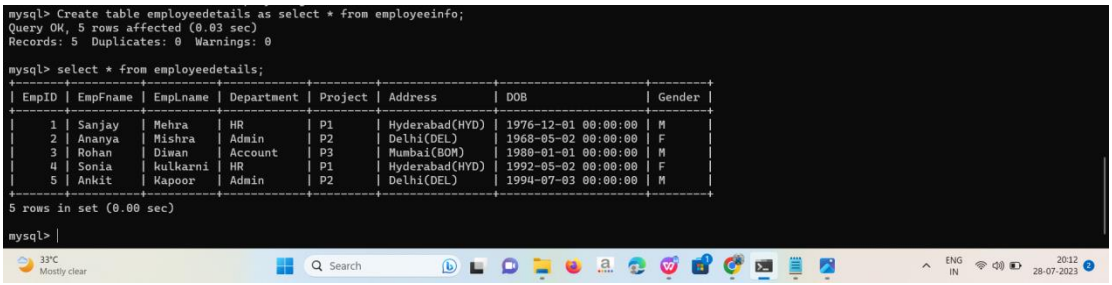
Query:select Address as 'Place name' from employeeinfo ;
(or)
Query:select left(Address,locate('(',Address)-1) as placeName fromEMPLOYEEINFO;

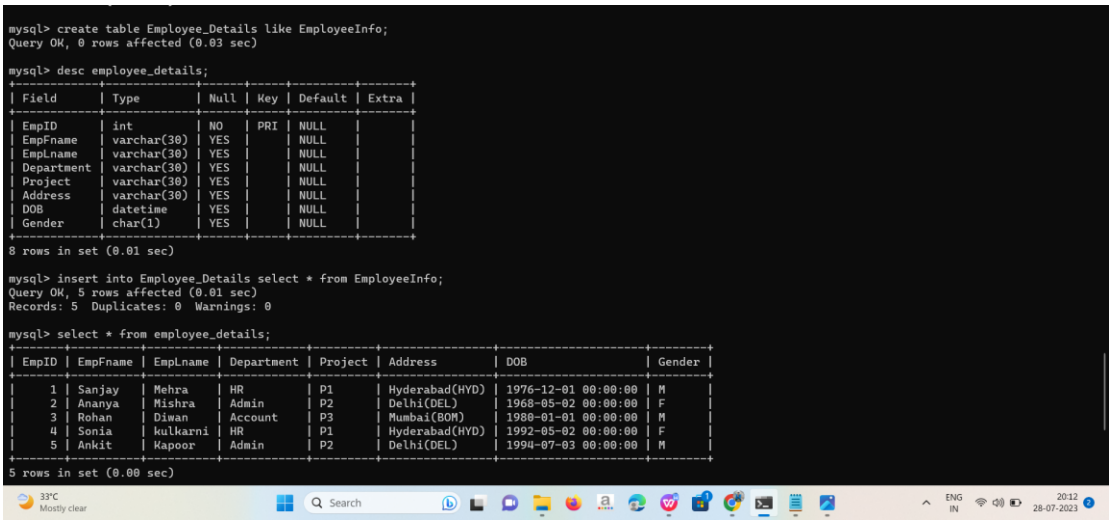


6. Write a query to create a new table that consists of data and structurecopied from the other table.

Query:Create table employeedetails as select * from employeeinfo;
(or)
Query:create table Employee_Details like EmployeeInfo;

insert into Employee_Details select * from EmployeeInfo;



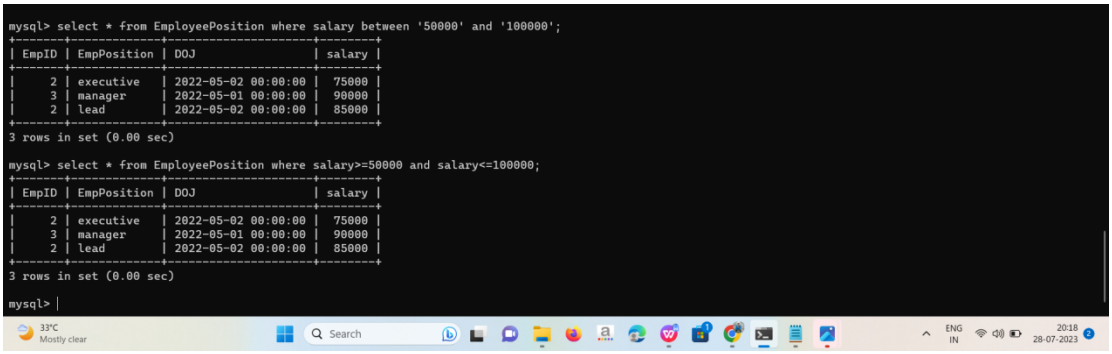


7. Write query to find all the employees whose salary is between 50000 to 100000.

Query: select * from EmployeePosition where salary>=50000 and salary<=100000;

(or)

select * from EmployeePosition where salary between '50000' and '100000';

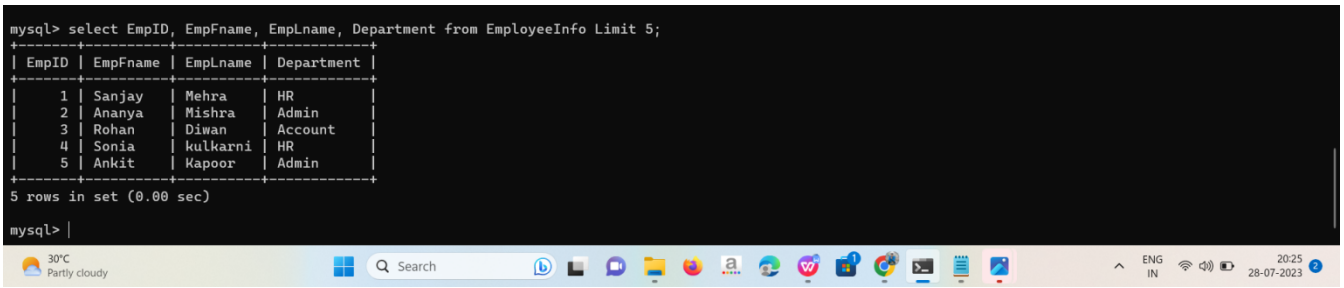


8. Write a query to find the names of employees that begin with ‘S’.

Query: select * from EMPLOYEEINFO where EMPFNAME like 's%';

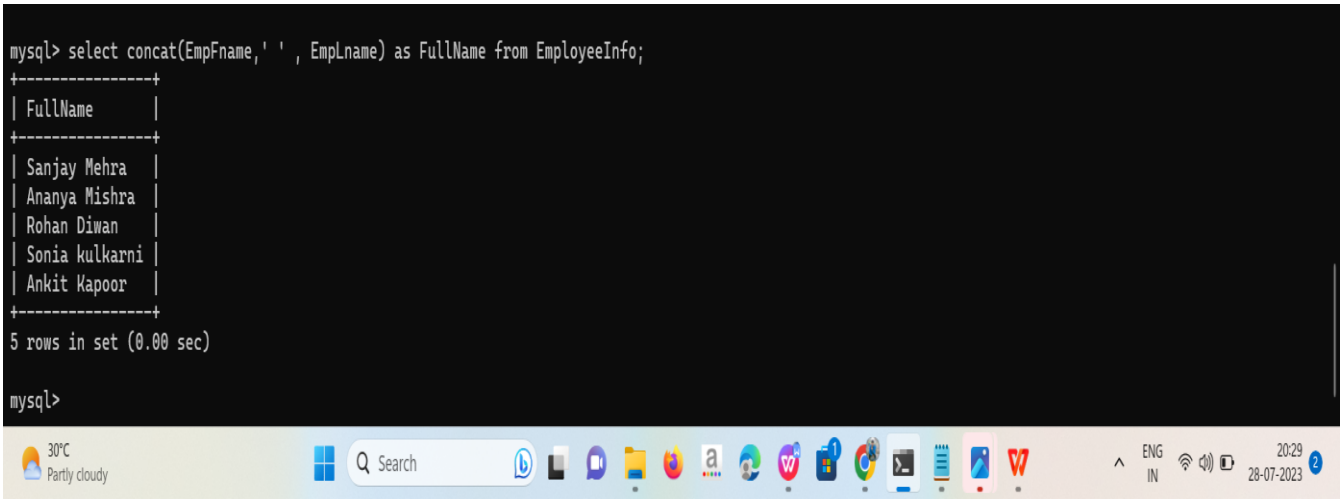
9.Write a query to fetch top N records.

Query:select EmpID, EmpFname, EmpLname, Department from EmployeeInfo Limit 5;



10.Write a query to retrieve the EmpFname and EmpLname in a single column as "FullName". The first name and the last name must be separated with space.

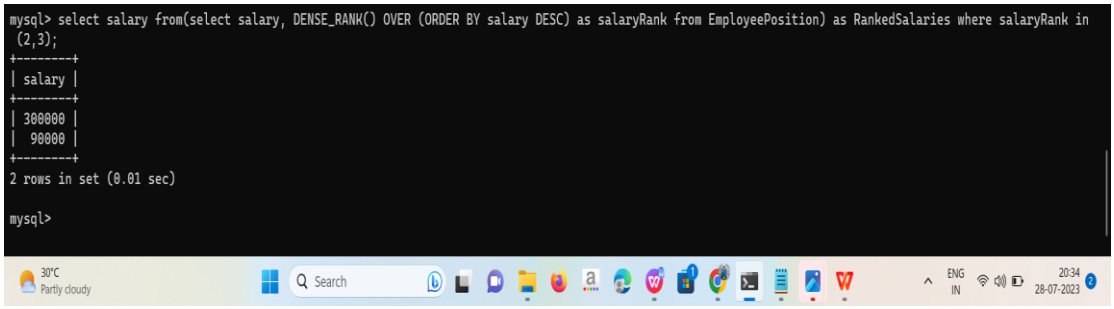
Query: select concat(EmpFname,' ' , EmpLname) as FullName from EmployeeInfo;



1. **11.To Find second and Third Highest salary in a table? Example:**

	ID	SALARY	NAME	DEPT_ID
1	1	34000	ANURAG	UI DEVELOPERS
2	2	33000	HARSH	BAKEND DEVELOPERS
3	3	36000	SUMIT	BACKEND DEVELOPERS
4	4	36000	RUSHI	UI DEVELOPERS
5	5	37000	KAE	UI DEVELOPERS

Query: select salary from(select salary, DENSE_RANK() OVER (ORDER BY salary DESC) as salaryRank from EmployeePosition) as RankedSalaries where salaryRank in (2,3);



12. Explain with example Unique Key Primary Key Foreign Key.

Unique Key:

A unique key is a column or a set of columns in a table that ensures each value in that column(s) is unique and not duplicated. It allows a table to have unique records for the specified column(s). Unlike the primary key, a unique key can allow NULL values. A table can have multiple unique keys.

Example:

Create table students (studentid int , name varchar(30) unique,age int);

Primary Key:

A primary key is a column or a set of columns in a table that uniquely identifies each record in the table. It ensures that each value in the primary key column(s) is unique and not NULL. A table can have only one primary key.

Example:

Create table students(studentid int primary key, name varchar(30),age int);

Foreign Key:

A foreign key is a column or a set of columns in a table that establishes a link or relationship between two tables. It refers to the primary key of another table, creating a link between the two tables. It helps to maintain referential integrity in the database, ensuring that the data in the foreign key column(s) corresponds to the data in the primary key column of the referenced table.

Example:

```
CREATE TABLE Courses (
    CourseID INT PRIMARY KEY,
    CourseName VARCHAR(100),
    Instructor VARCHAR(50)
);

CREATE TABLE Students (
    StudentID INT PRIMARY KEY,
    Name VARCHAR(50),
    Email VARCHAR(100) UNIQUE,
    Age INT,
    CourseEnrolled INT,
    FOREIGN KEY (CourseEnrolled) REFERENCES Courses(CourseID)
);
```