Assignment 1

Create a Database name entri_assignment

```
CREATE DATABASE entri_assignment;
```

Create a Table with name `departments`

`Department_id  (pk) Department_name Location_id+`

```
CREATE TABLE departments(
    department_id INT NOT NULL auto_increment,
   department_name VARCHAR(100) NOT NULL,
   location_id INT NOT NULL,
   PRIMARY KEY(department_id)
);
```

Create a Table with name `employees`

`Employee_id  (pk)  ,first_name,last_name ,email,phone_number,hire_date,`

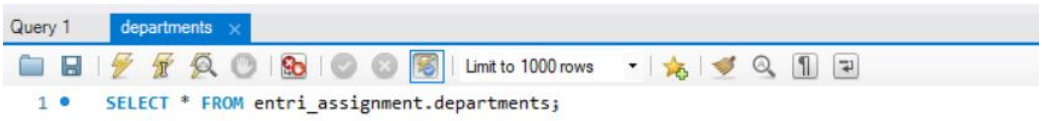
`job_id, salary, commission_pct, manager_id, department_id (fk reference`

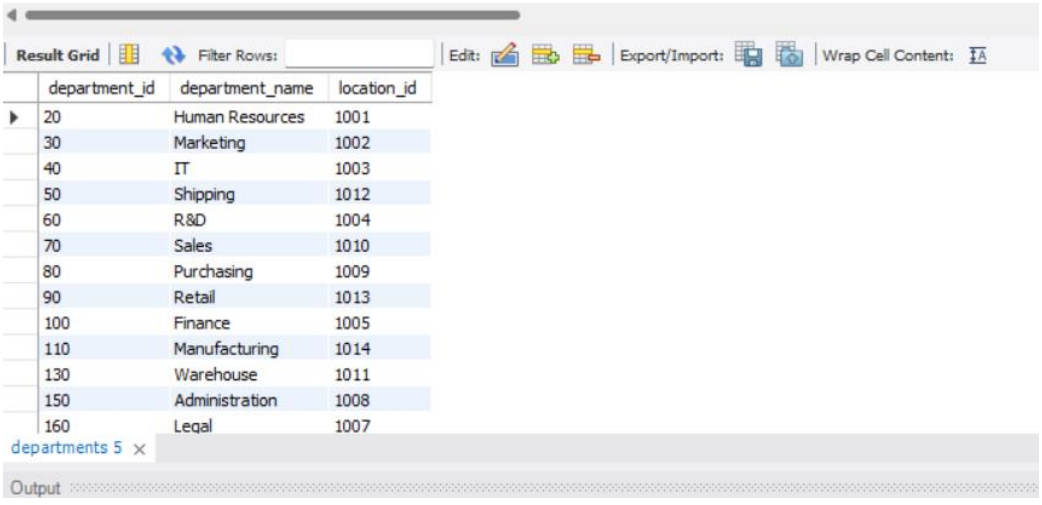
```
CREATE TABLE employees(
    Employee_id INT NOT NULL auto_increment,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    email VARCHAR(100) NOT NULL,
    phone_number VARCHAR(100) NOT NULL,
    hire_date  DATE NOT NULL,
    job_id VARCHAR(20) NOT NULL,
    salary DECIMAL(10,2) NOT NULL,
    commision_pct DECIMAL(5,2),
```

```
    manager_id INT,
    department_id INT,
    PRIMARY KEY(Employee_id),
    FOREIGN KEY (department_id) REFERENCES departments(department_id)
);
```

```
## Insert into Departments table
 INSERT INTO departments VALUES ( 170 , 'Payroll' , 1700);
```

```
INSERT INTO departments VALUES(20, 'Human Resources', 1001),(30,
'Marketing', 1002),(40, 'IT', 1003),(60, 'R&D', 1004),(100, 'Finance',
1005),(170, 'Accounting', 1006),(160, 'Legal', 1007),(150,
'Administration', 1008),(80, 'Purchasing', 1009),(70, 'Sales',
1010),(130, 'Warehouse', 1011),(50, 'Shipping', 1012),(90, 'Retail',
1013),(110, 'Manufacturing', 1014);
```





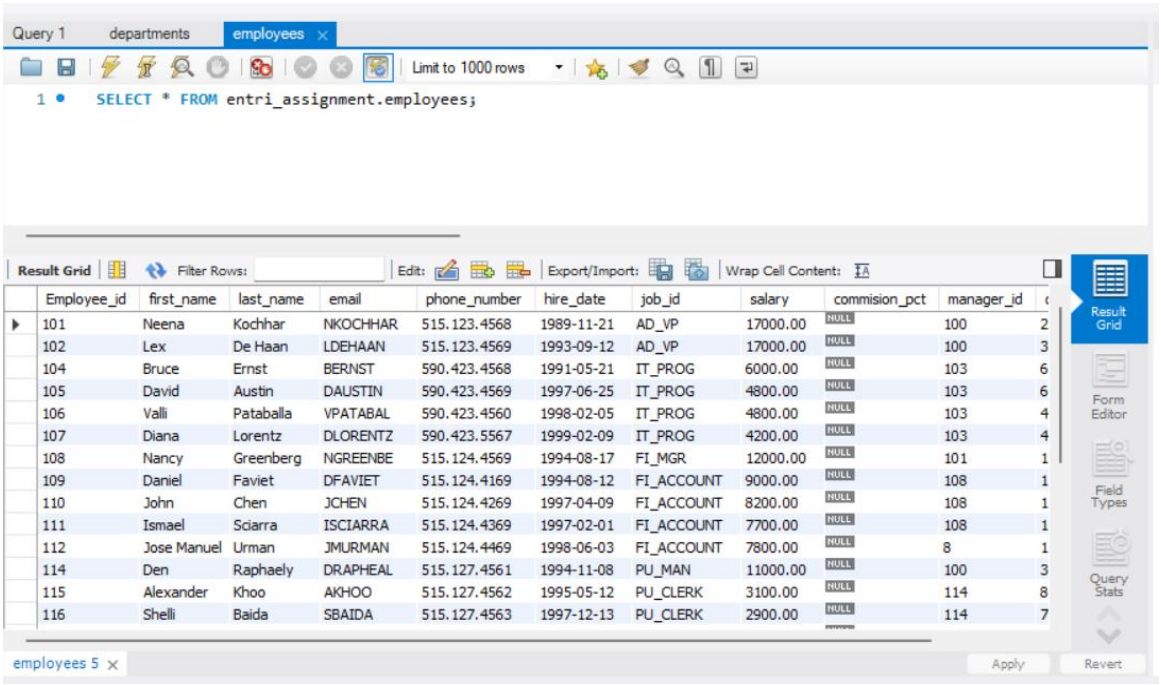
employees table

; INSERT INTO employees V

```
## Insert into employees VALUES (101, 'Neena' , 'Kochhar' , 'NKOCHHAR'
, '515.123.4568' , '1989-11-21' , 'AD_VP' , 17000 , NULL , 100 , 20);

INSERT INTO employees VALUES (102 , 'Lex' , 'De Haan' , 'LDEHAAN' ,
'515.123.4569' , '1993-09-12' , 'AD_VP' , 17000 , NULL , 100 , 30);

INSERT INTO employees VALUES (104 , 'Bruce' , 'Ernst' , 'BERNST' ,
'590.423.4568' , '1991-05-21',  'IT_PROG' , 6000 , NULL , 103 , 60);

INSERT INTO employees VALUES (105 , 'David' , 'Austin' , 'DAUSTIN' ,
'590.423.4569' , '1997-06-25',  'IT_PROG' , 4800 , NULL , 103 , 60);

INSERT INTO employees VALUES (106 , 'Valli' , 'Pataballa' , 'VPATABAL'
, '590.423.4560' , '1998-02-05',  'IT_PROG' , 4800 , NULL , 103 , 40);

INSERT INTO employees VALUES (107 , 'Diana' , 'Lorentz' , 'DLORENTZ' ,
'590.423.5567' , '1999-02-09',  'IT_PROG' , 4200 , NULL , 103 , 40);

INSERT INTO employees VALUES (108 , 'Nancy' , 'Greenberg' , 'NGREENBE'
, '515.124.4569' , '1994-08-17',  'FI_MGR' , 12000 , NULL , 101 ,
100);

INSERT INTO employees VALUES (109 , 'Daniel' , 'Faviet' , 'DFAVIET' ,
'515.124.4169' , '1994-08-12',  'FI_ACCOUNT' , 9000 , NULL , 108 ,
170);

INSERT INTO employees VALUES (110 , 'John' , 'Chen' , 'JCHEN' ,
'515.124.4269' , '1997-04-09',  'FI_ACCOUNT' , 8200 , NULL , 108 ,
170);
```

```
INSERT INTO employees VALUES (111 , 'Ismael' , 'Sciarra' , 'ISCIARRA'
, '515.124.4369' , '1997-02-01',  'FI_ACCOUNT' , 7700 , NULL , 108 ,
160);

INSERT INTO employees VALUES (112 , 'Jose Manuel' , 'Urman' ,
'JMURMAN' , '515.124.4469' , '1998-06-03', 'FI_ACCOUNT' , 7800 , NULL
8 , 150);

INSERT INTO employees VALUES (114 , 'Den' , 'Raphaely' , 'DRAPHEAL' ,
'515.127.4561' , '1994-11-08',  'PU_MAN' , 11000 , NULL , 100 , 30);

INSERT INTO employees VALUES (115 , 'Alexander' , 'Khoo' , 'AKHOO' ,
'515.127.4562' , '1995-05-12',  'PU_CLERK' , 3100 , NULL , 114 , 80);

INSERT INTO employees VALUES (116 , 'Shelli' , 'Baida' , 'SBAIDA' ,
'515.127.4563' ,'1997-12-13', 'PU_CLERK' , 2900 , NULL , 114 , 70);

INSERT INTO employees VALUES (117 , 'Sigal' , 'Tobias' , 'STOBIAS' ,
'515.127.4564' , '1997-09-10', 'PU_CLERK' , 2800 , NULL , 114 , 30);

INSERT INTO employees VALUES (118 , 'Guy' , 'Himuro' , 'GHIMURO' ,
'515.127.4565' , '1998-01-02',  'PU_CLERK' , 2600 , NULL , 114 , 60);

INSERT INTO employees VALUES (119 , 'Karen' , 'Colmenares' ,
'KCOLMENA' , '515.127.4566' , '1999-04-08',  'PU_CLERK' , 2500 , NULL
, 114 , 130);INSERT INTO employees VALUES (120 , 'Matthew' , 'Weiss' ,
'MWEISS' , '650.123.1234' ,'1996-07-18',  'ST_MAN' , 8000 , NULL , 100
, 50);INSERT INTO employees VALUES (122 , 'Payam' , 'Kaufling' ,
'PKAUFLIN' , '650.123.3234' ,'1995-05-01',  'ST_MAN' , 7900 , NULL ,
100 , 40);INSERT INTO employees VALUES (123 , 'Shanta' , 'Vollman' ,
'SVOLLMAN' , '650.123.4234' , '1997-10-12',  'ST_MAN' , 6500 , NULL ,
100 , 50);INSERT INTO employees VALUES (124, 'Kevin' , 'Mourgos' ,
'KMOURGOS' , '650.123.5234' , '1999-11-12',  'ST_MAN' , 5800 , NULL ,
```

```
100 , 80);INSERT INTO employees VALUES (125, 'Julia' , 'Nayer' ,
'JNAYER' , '650.124.1214' , '1997-07-02',  'ST_CLERK' , 3200 , NULL ,
120 , 50);INSERT INTO employees VALUES (126, 'Irene' , 'Mikkilineni' ,
'IMIKKILI' , '650.124.1224' , '1998-11-12', 'ST_CLERK' , 2700 , NULL ,
120 , 50);INSERT INTO employees VALUES (127, 'James' , 'Landry' ,
'JLANDRY' , '650.124.1334' , '1999-01-02' , 'ST_CLERK' , 2400 , NULL ,
120 , 90);INSERT INTO employees VALUES (128, 'Steven' , 'Markle' ,
'SMARKLE' , '650.124.1434' , '2000-03-04' , 'ST_CLERK' , 2200 , NULL ,
120 , 50);INSERT INTO employees VALUES (130, 'Mozhe' , 'Atkinson' ,
'MATKINSO' , '650.124.6234' , '1997-10-12' , 'ST_CLERK' , 2800 , NULL
, 121 , 110);
```

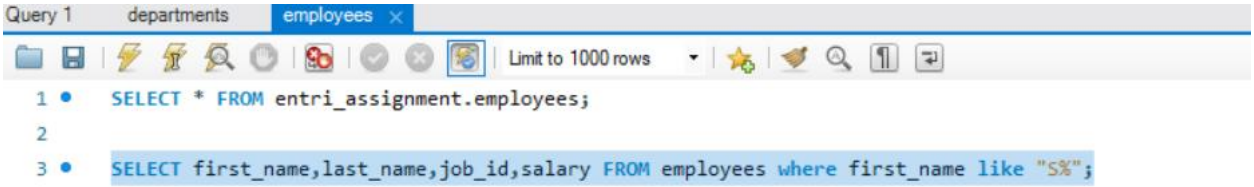


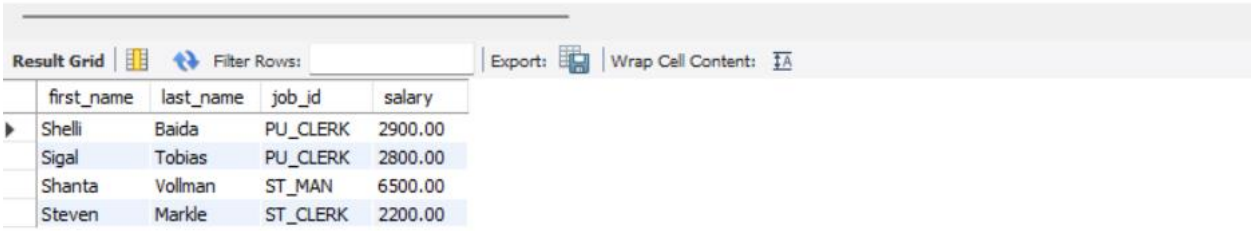
Employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commision_pct	manager_id	
101	Neena	Kochhar	NKOCHHAR	515.123.4568	1989-11-21	AD_VP	17000.00	NULL	100	2
102	Lex	De Haan	LDEHAAN	515.123.4569	1993-09-12	AD_VP	17000.00	NULL	100	3
104	Bruce	Ernst	BERNST	590.423.4568	1991-05-21	IT_PROG	6000.00	NULL	103	6
105	David	Austin	DAUSTIN	590.423.4569	1997-06-25	IT_PROG	4800.00	NULL	103	6
106	Valli	Pataballa	VPATABAL	590.423.4560	1998-02-05	IT_PROG	4800.00	NULL	103	4
107	Diana	Lorentz	DLORENTZ	590.423.5567	1999-02-09	IT_PROG	4200.00	NULL	103	4
108	Nancy	Greenberg	NGREENBE	515.124.4569	1994-08-17	FI_MGR	12000.00	NULL	101	1
109	Daniel	Faviet	DFAVIET	515.124.4169	1994-08-12	FI_ACCOUNT	9000.00	NULL	108	1
110	John	Chen	JCHEN	515.124.4269	1997-04-09	FI_ACCOUNT	8200.00	NULL	108	1
111	Ismael	Sciarra	ISCIARRA	515.124.4369	1997-02-01	FI_ACCOUNT	7700.00	NULL	108	1
112	Jose Manuel	Urman	JMURMAN	515.124.4469	1998-06-03	FI_ACCOUNT	7800.00	NULL	8	1
114	Den	Raphaely	DRAPHEAL	515.127.4561	1994-11-08	PU_MAN	11000.00	NULL	100	3
115	Alexander	Khoo	AKHOO	515.127.4562	1995-05-12	PU_CLERK	3100.00	NULL	114	8
116	Shelli	Baida	SBAIDA	515.127.4563	1997-12-13	PU_CLERK	2900.00	NULL	114	7

Solve SQL Exercises

1. Select employees first name, last name, job_id and salary whose first name starts with alphabet S

SELECT first_name,last_name,job_id,salary FROM employees where first_name like "S%";

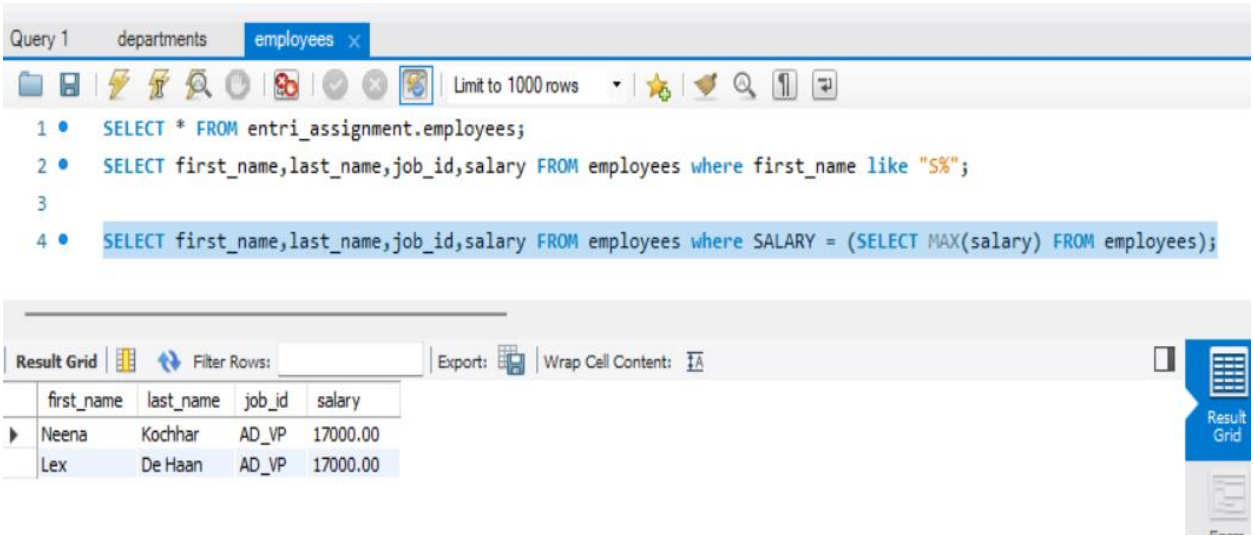




first_name	last_name	job_id	salary
Shelli	Baida	PU_CLERK	2900.00
Sigal	Tobias	PU_CLERK	2800.00
Shanta	Vollman	ST_MAN	6500.00
Steven	Markle	ST_CLERK	2200.00

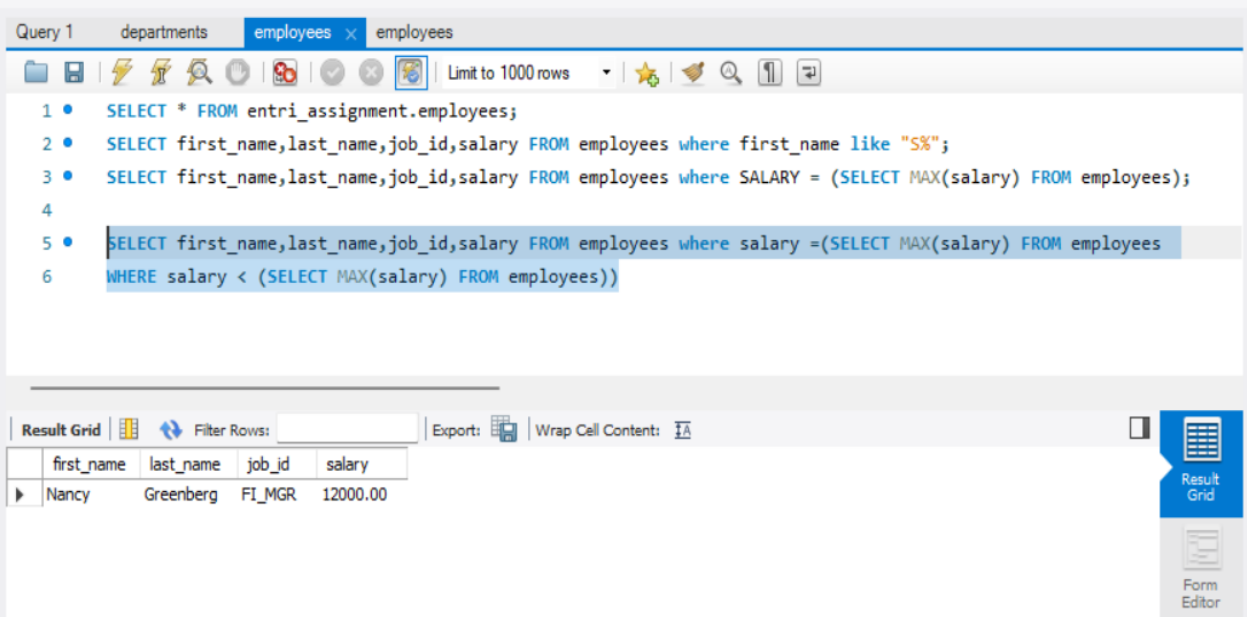
2. **Write a query to select employee with the highest salary (using an inner query)**

SELECT first_name,last_name,job_id,salary FROM employees where SALARY = (SELECT MAX(salary) FROM employees);



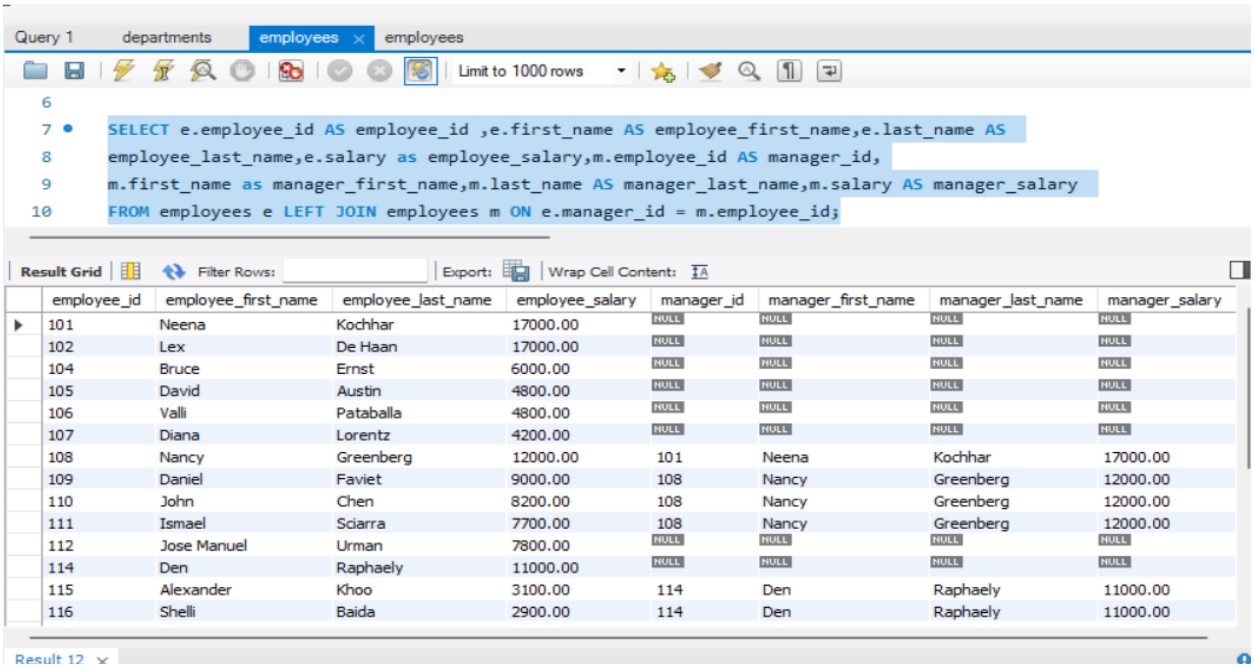
3. Select employee with the second highest salary

SELECT first_name,last_name,job_id,salary FROM employees where salary =(SELECT MAX(salary) FROM employees WHERE salary < (SELECT MAX(salary) FROM employees))



4. **Write a query to select employees and their corresponding managers and their salaries**

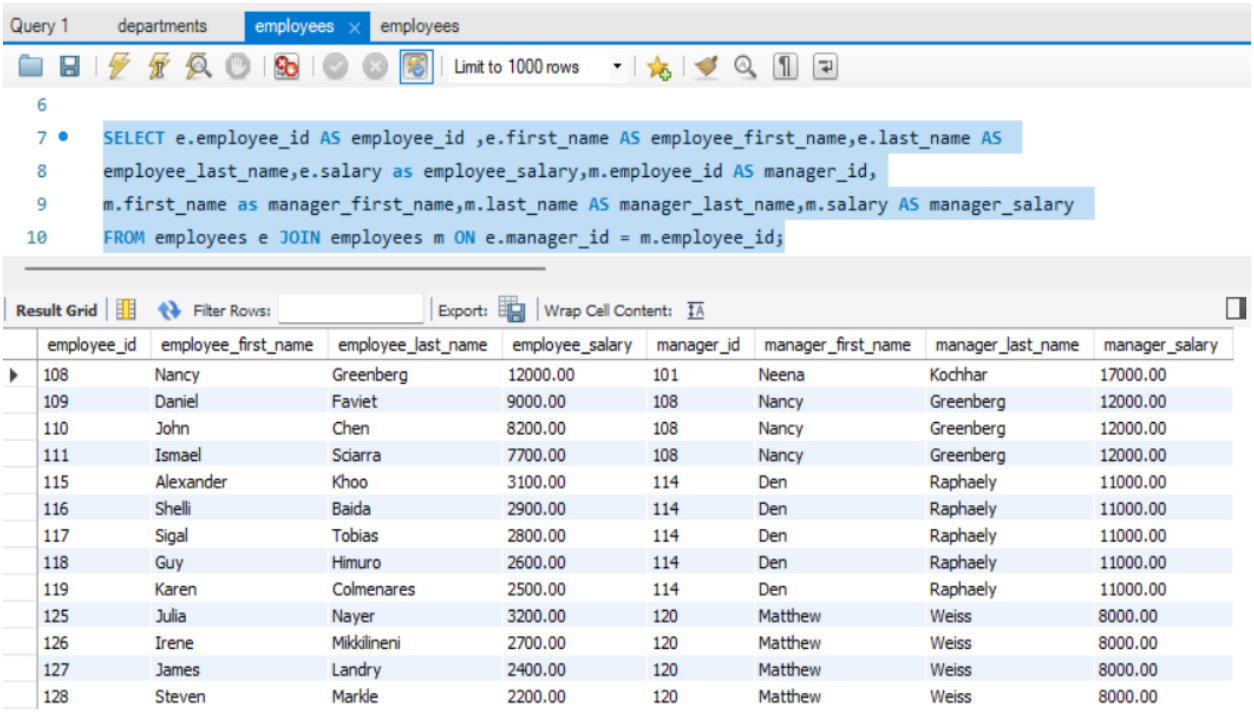
SELECT e.employee_id AS employee_id ,e.first_name AS employee_first_name,e.last_name AS employee_last_name,e.salary as employee_salary,m.employee_id AS manager_id,m.first_name as manager_first_name,m.last_name AS manager_last_name,m.salary AS manager_salary FROM employees e LEFT JOIN employees m ON e.manager_id = m.employee_id;



employee_id	employee_first_name	employee_last_name	employee_salary	manager_id	manager_first_name	manager_last_name	manager_salary
101	Neena	Kochhar	17000.00	NULL	NULL	NULL	NULL
102	Lex	De Haan	17000.00	NULL	NULL	NULL	NULL
104	Bruce	Ernst	6000.00	NULL	NULL	NULL	NULL
105	David	Austin	4800.00	NULL	NULL	NULL	NULL
106	Valli	Pataballa	4800.00	NULL	NULL	NULL	NULL
107	Diana	Lorentz	4200.00	NULL	NULL	NULL	NULL
108	Nancy	Greenberg	12000.00	101	Neena	Kochhar	17000.00
109	Daniel	Faviet	9000.00	108	Nancy	Greenberg	12000.00
110	John	Chen	8200.00	108	Nancy	Greenberg	12000.00
111	Ismael	Sciarra	7700.00	108	Nancy	Greenberg	12000.00
112	Jose Manuel	Urman	7800.00	NULL	NULL	NULL	NULL
114	Den	Raphaely	11000.00	NULL	NULL	NULL	NULL
115	Alexander	Khoo	3100.00	114	Den	Raphaely	11000.00
116	Shelli	Baida	2900.00	114	Den	Raphaely	11000.00

5. Write a query to select employees and their corresponding managers and their salaries (SELF Join)

SELECT e.employee_id AS employee_id ,e.first_name AS employee_first_name,e.last_name AS employee_last_name,e.salary as employee_salary,m.employee_id AS manager_id,m.first_name as manager_first_name,m.last_name AS manager_last_name,m.salary AS manager_salary FROM employees e JOIN employees m ON e.manager_id = m.employee_id;

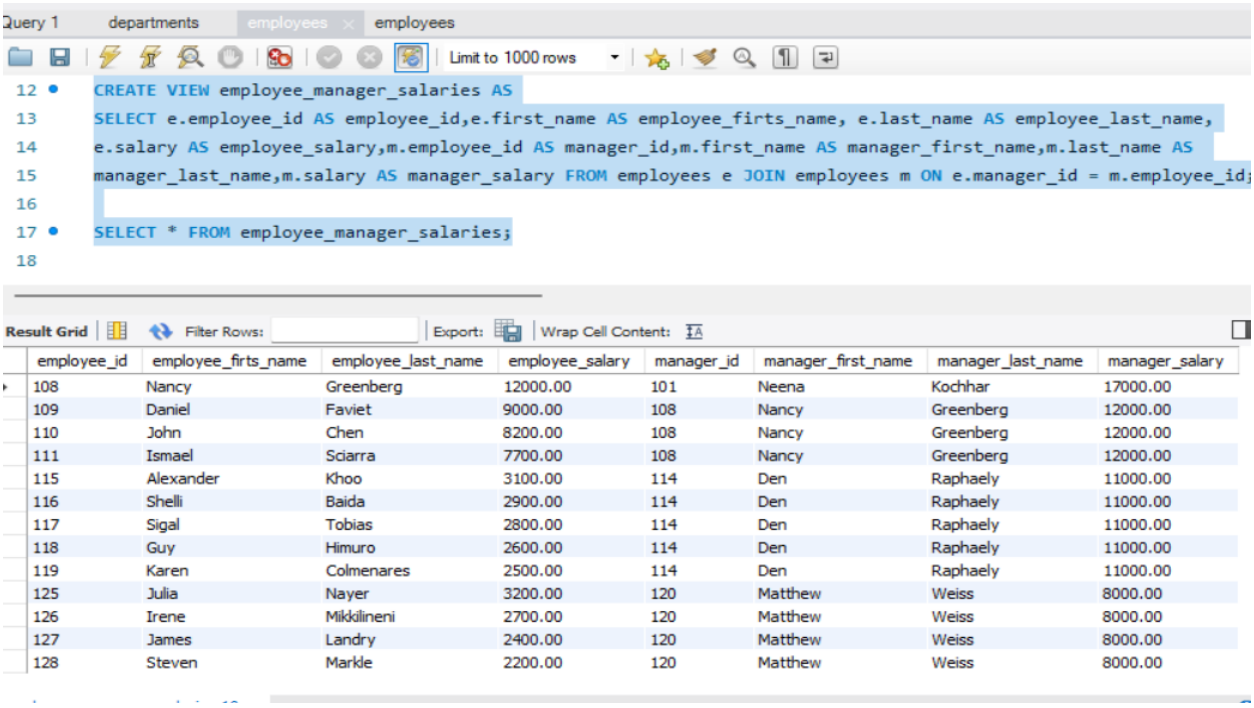


employee_id	employee_first_name	employee_last_name	employee_salary	manager_id	manager_first_name	manager_last_name	manager_salary
108	Nancy	Greenberg	12000.00	101	Neena	Kochhar	17000.00
109	Daniel	Faviet	9000.00	108	Nancy	Greenberg	12000.00
110	John	Chen	8200.00	108	Nancy	Greenberg	12000.00
111	Ismael	Sciarra	7700.00	108	Nancy	Greenberg	12000.00
115	Alexander	Khoo	3100.00	114	Den	Raphaely	11000.00
116	Shelli	Baida	2900.00	114	Den	Raphaely	11000.00
117	Sigal	Tobias	2800.00	114	Den	Raphaely	11000.00
118	Guy	Himuro	2600.00	114	Den	Raphaely	11000.00
119	Karen	Colmenares	2500.00	114	Den	Raphaely	11000.00
125	Julia	Nayer	3200.00	120	Matthew	Weiss	8000.00
126	Irene	Mikkilineni	2700.00	120	Matthew	Weiss	8000.00
127	James	Landry	2400.00	120	Matthew	Weiss	8000.00
128	Steven	Markle	2200.00	120	Matthew	Weiss	8000.00

6. Create a view for the above query

CREATE VIEW employee_manager_salaries AS SELECT e.employee_id AS employee_id,e.first_name AS employee_firts_name, e.last_name AS employee_last_name,e.salary AS employee_salary,m.employee_id AS manager_id,m.first_name AS manager_first_name,m.last_name AS manager_last_name,m.salary AS manager_salary FROM employees e JOIN employees m ON e.manager_id = m.employee_id;

SELECT * FROM employee_manager_salaries;



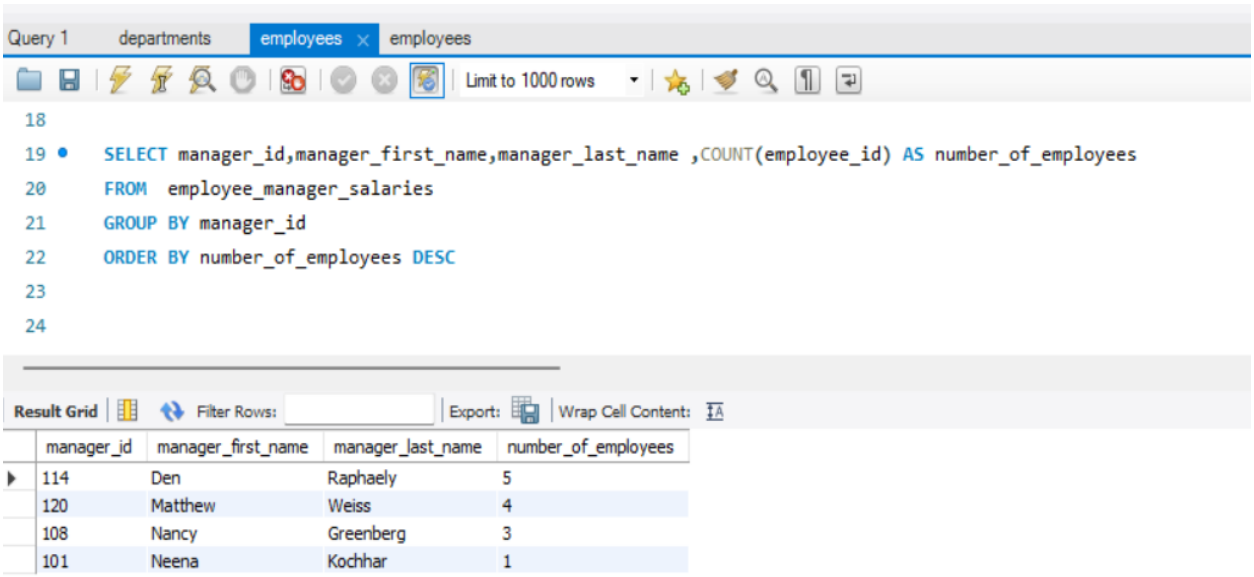
employee_id	employee_firts_name	employee_last_name	employee_salary	manager_id	manager_first_name	manager_last_name	manager_salary
108	Nancy	Greenberg	12000.00	101	Neena	Kochhar	17000.00
109	Daniel	Faviet	9000.00	108	Nancy	Greenberg	12000.00
110	John	Chen	8200.00	108	Nancy	Greenberg	12000.00
111	Ismael	Sciarra	7700.00	108	Nancy	Greenberg	12000.00
115	Alexander	Khoo	3100.00	114	Den	Raphaely	11000.00
116	Shelli	Baida	2900.00	114	Den	Raphaely	11000.00
117	Sigal	Tobias	2800.00	114	Den	Raphaely	11000.00
118	Guy	Himuro	2600.00	114	Den	Raphaely	11000.00
119	Karen	Colmenares	2500.00	114	Den	Raphaely	11000.00
125	Julia	Nayer	3200.00	120	Matthew	Weiss	8000.00
126	Irene	Mikkilineni	2700.00	120	Matthew	Weiss	8000.00
127	James	Landry	2400.00	120	Matthew	Weiss	8000.00
128	Steven	Markle	2200.00	120	Matthew	Weiss	8000.00

7. **Write a query to show the count of employees under each manager in descending order (from view)**

SELECT manager_id,manager_first_name,manager_last_name ,COUNT(employee_id) AS number_of_employees FROM employee_manager_salaries

GROUP BY manager_id

ORDER BY number_of_employees DESC

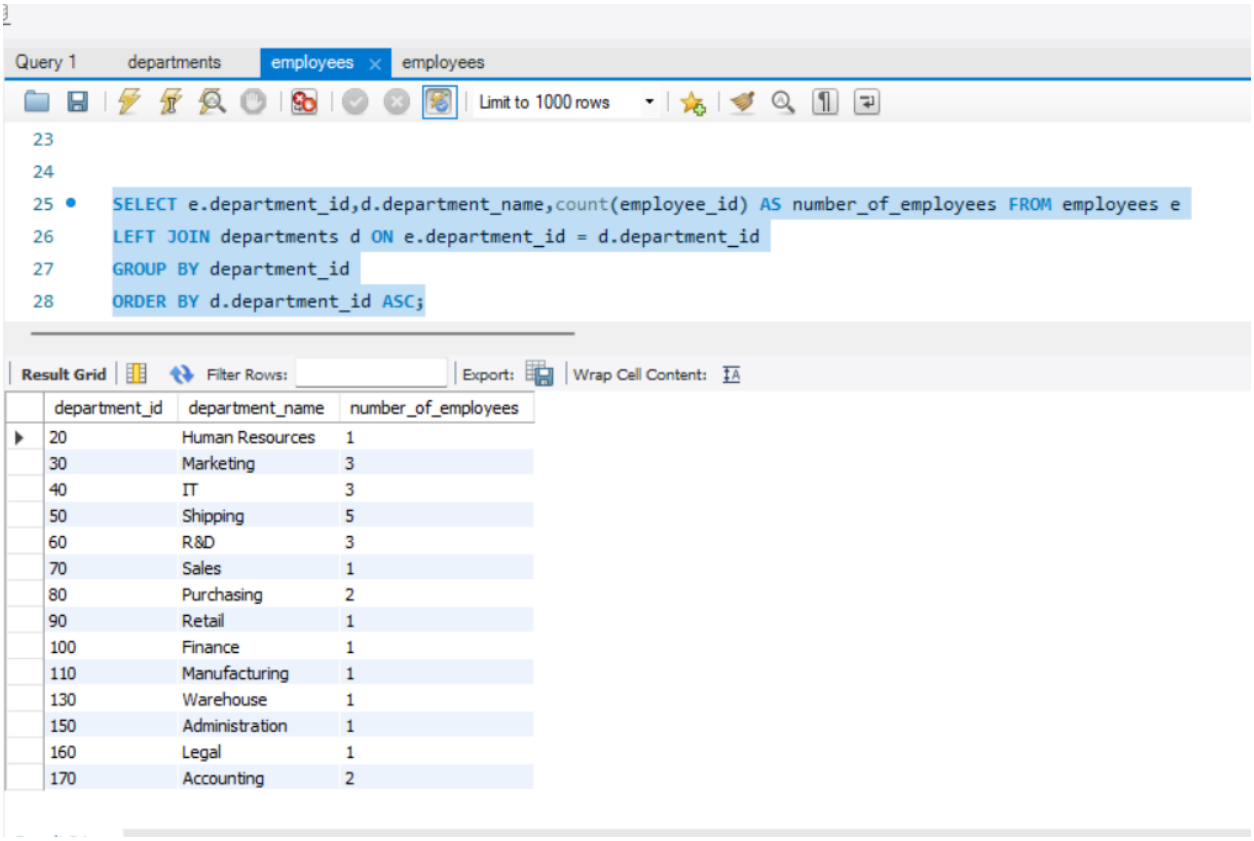


8. Find the count of employees in each department

SELECT e.department_id,d.department_name,count(employee_id) AS number_of_employees
FROM employees e LEFT JOIN departments d ON e.department_id = d.department_id

GROUP BY department_id

ORDER BY d.department_id ASC;



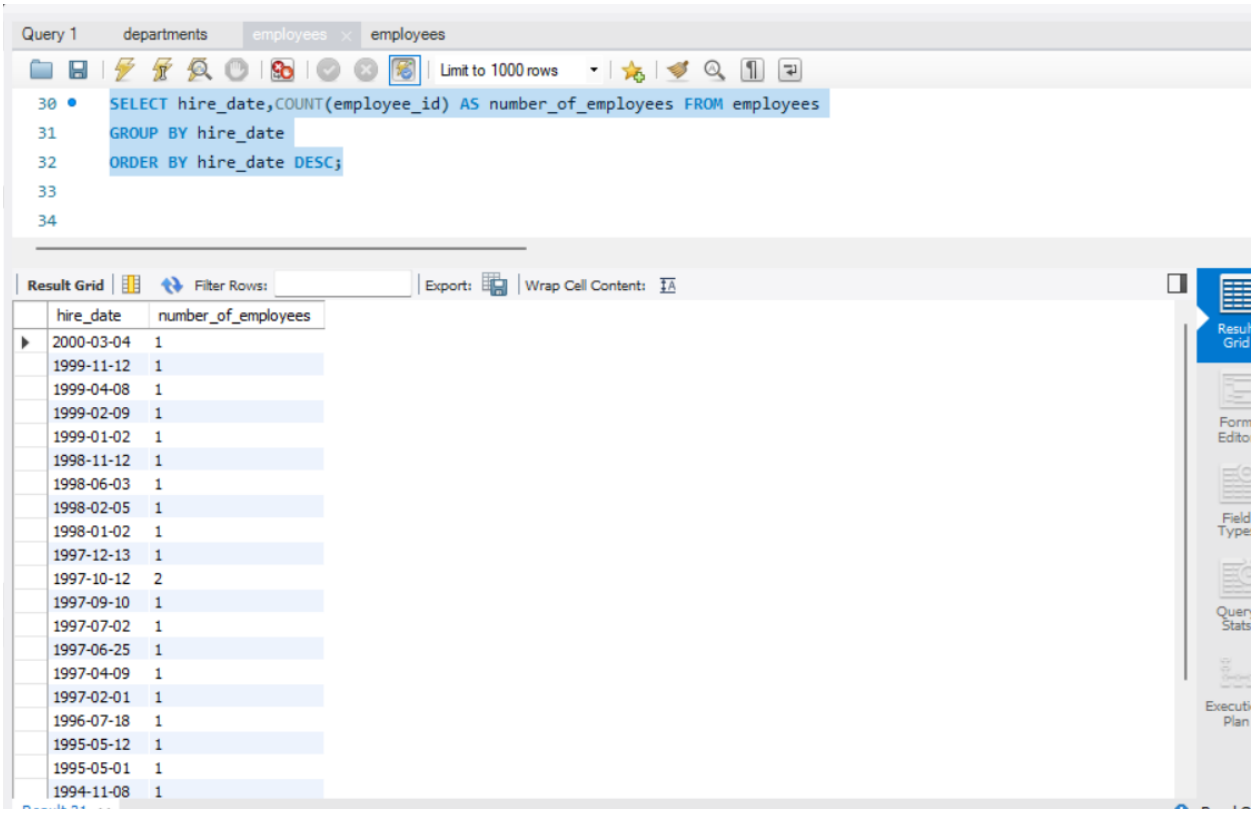
department_id	department_name	number_of_employees
20	Human Resources	1
30	Marketing	3
40	IT	3
50	Shipping	5
60	R&D	3
70	Sales	1
80	Purchasing	2
90	Retail	1
100	Finance	1
110	Manufacturing	1
130	Warehouse	1
150	Administration	1
160	Legal	1
170	Accounting	2

9. Get the count of employees hired year wise

SELECT hire_date,COUNT(employee_id) AS number_of_employees FROM employees

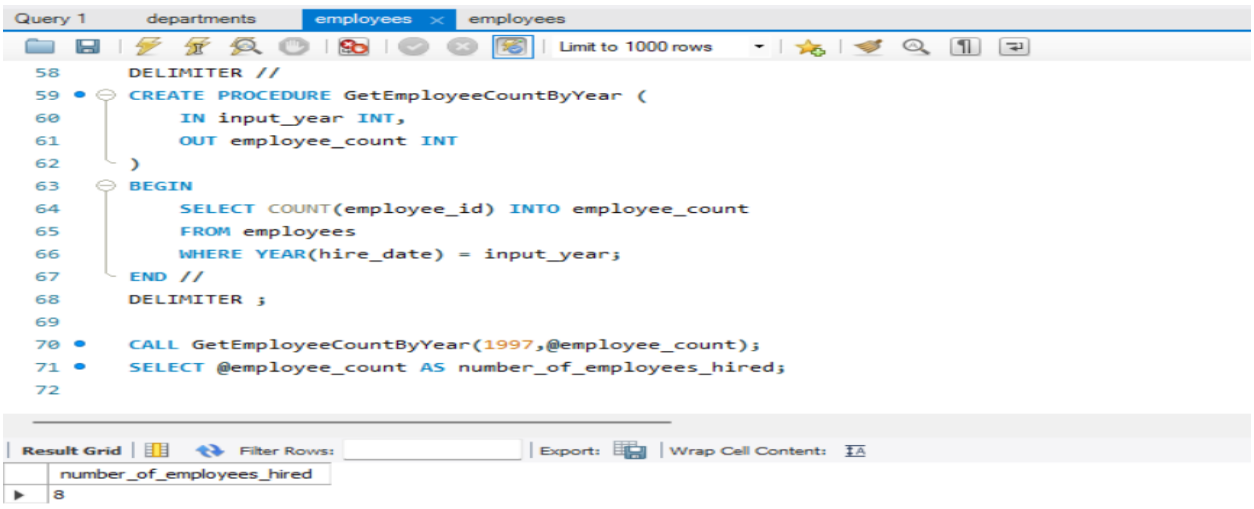
GROUP BY hire_date

ORDER BY hire_date DESC;



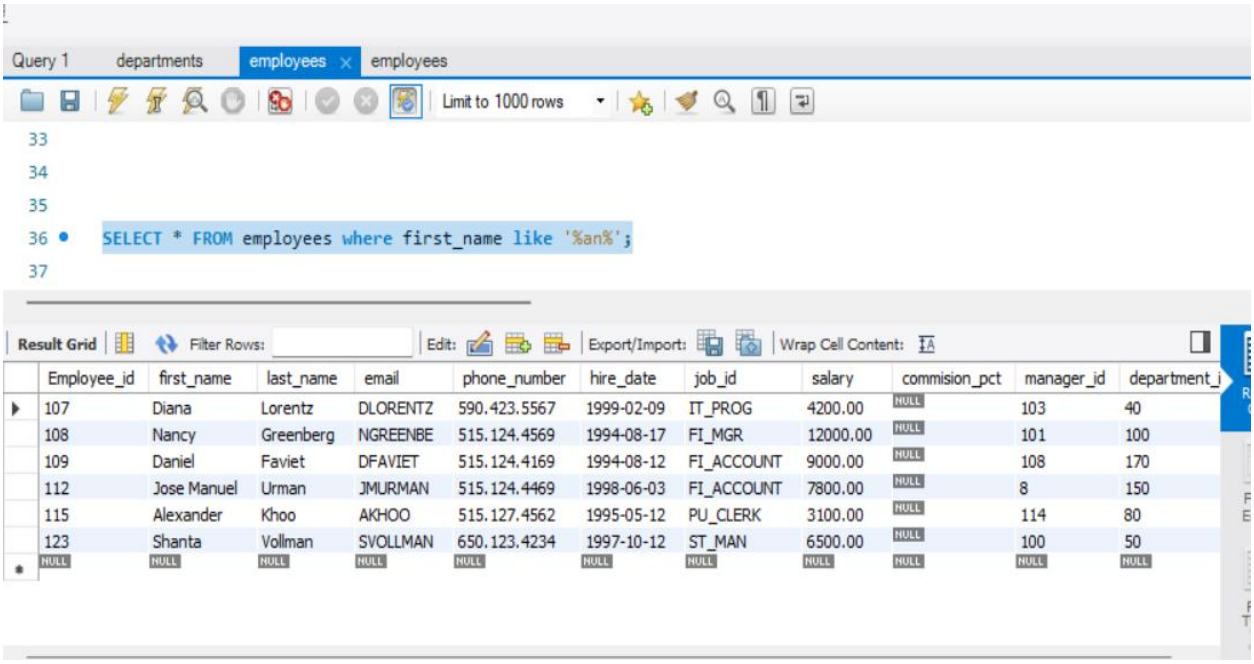
10 . create a stored procedure to get the “ Get the count of employees hired in the input year”(IN year , OUT count)

```
DELIMITER //

CREATE PROCEDURE GetEmployeeCountByYear (

   IN input_year INT,

   OUT employee_count INT

)

BEGIN

   SELECT COUNT(employee_id) INTO employee_count

   FROM employees

   WHERE YEAR(hire_date) = input_year;

END //

DELIMITER ;

CALL GetEmployeeCountByYear(1997,@employee_count);

SELECT @employee_count AS number_of_employees_hired;
```



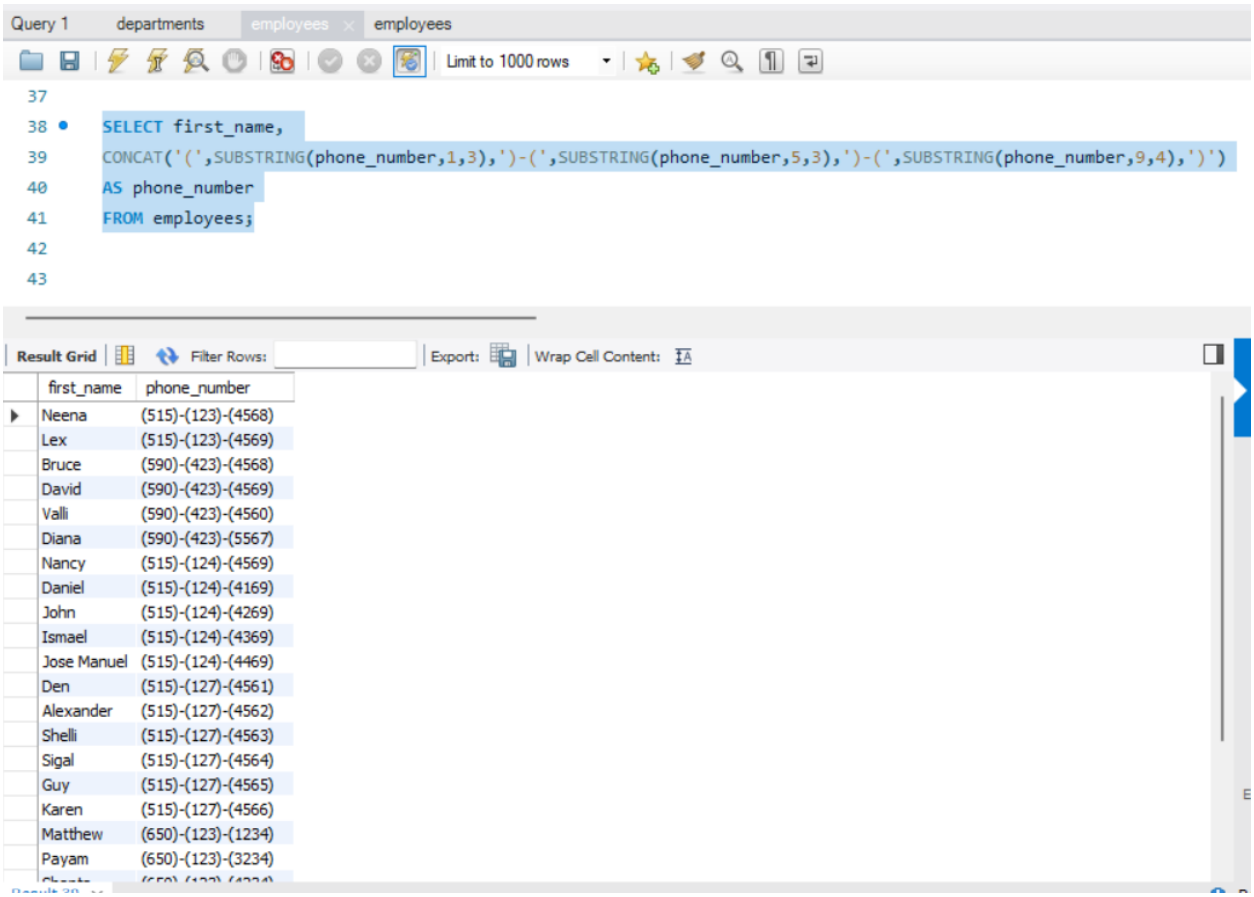
11.Select the employees whose first_name contains “an”

SELECT * FROM employees where first_name like '%an%';



12. Select employee first name and the corresponding phone number in the format (_ _ _)-(_ _ _)-(_ _ _ _)

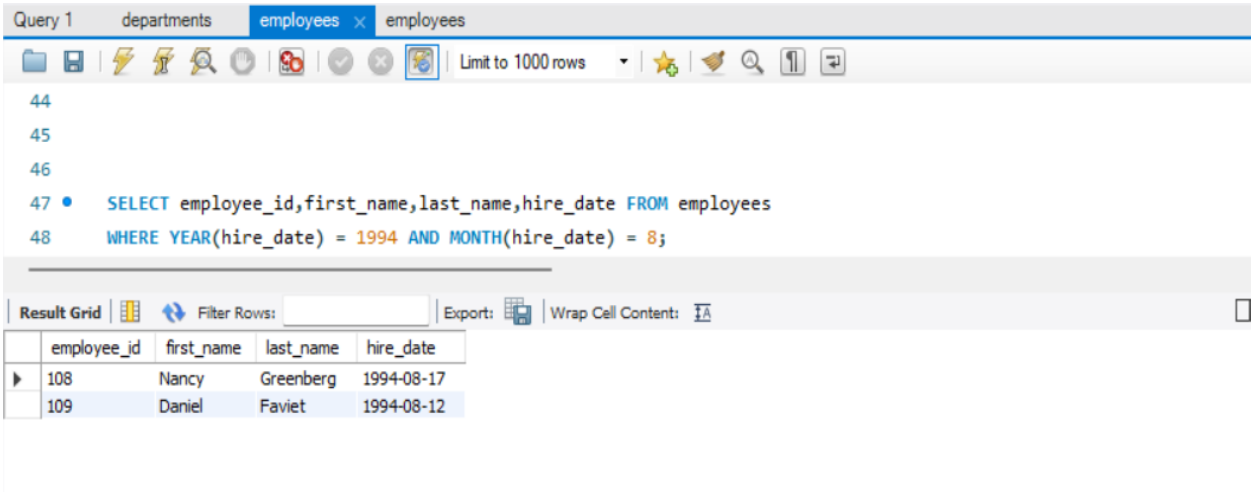
SELECT first_name, CONCAT('(',SUBSTRING(phone_number,1,3),')-('
,SUBSTRING(phone_number,5,3),')-(',SUBSTRING(phone_number,9,4),')') AS phone_number FROM employees;



13. **Find the employees who joined in August, 1994.**

SELECT employee_id,first_name,last_name,hire_date FROM employees

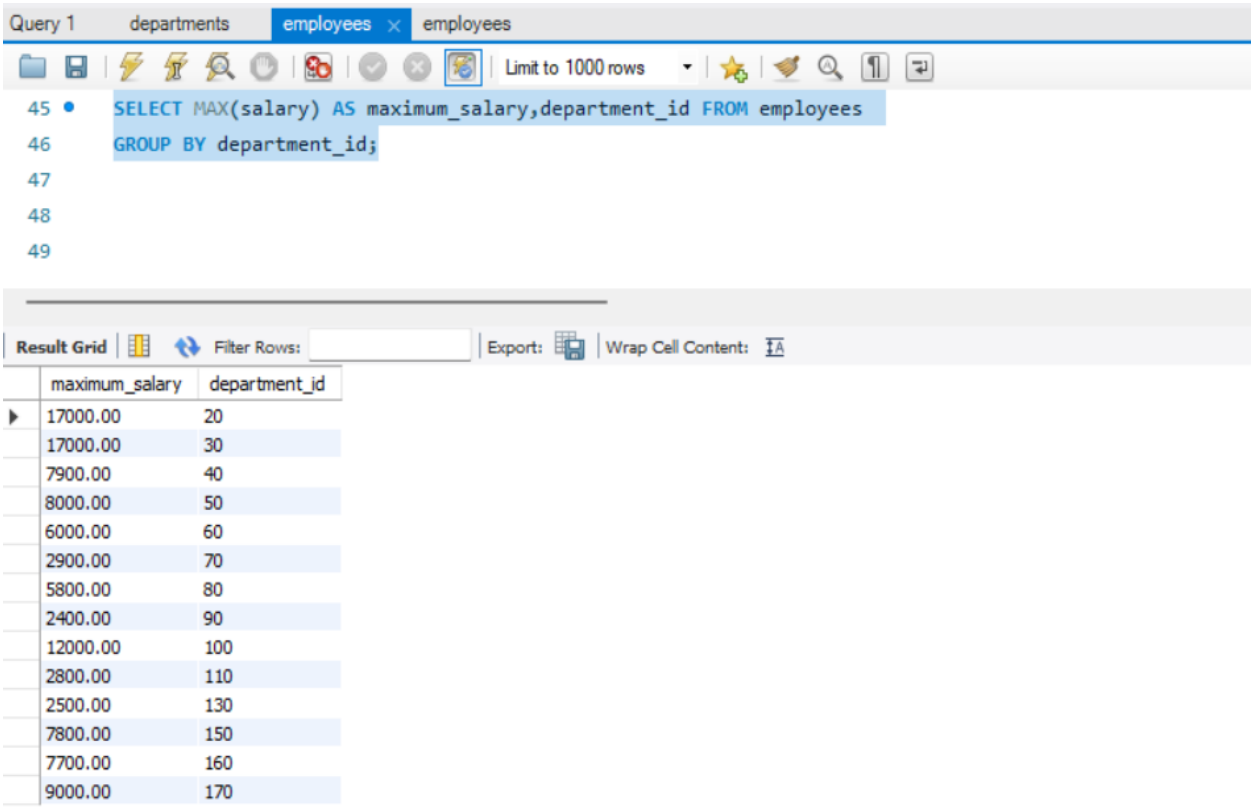
WHERE YEAR(hire_date) = 1994 AND MONTH(hire_date) = 8;



14. Find the maximum salary from each department.

SELECT MAX(salary) AS maximum_salary,department_id FROM employees

GROUP BY department_id;



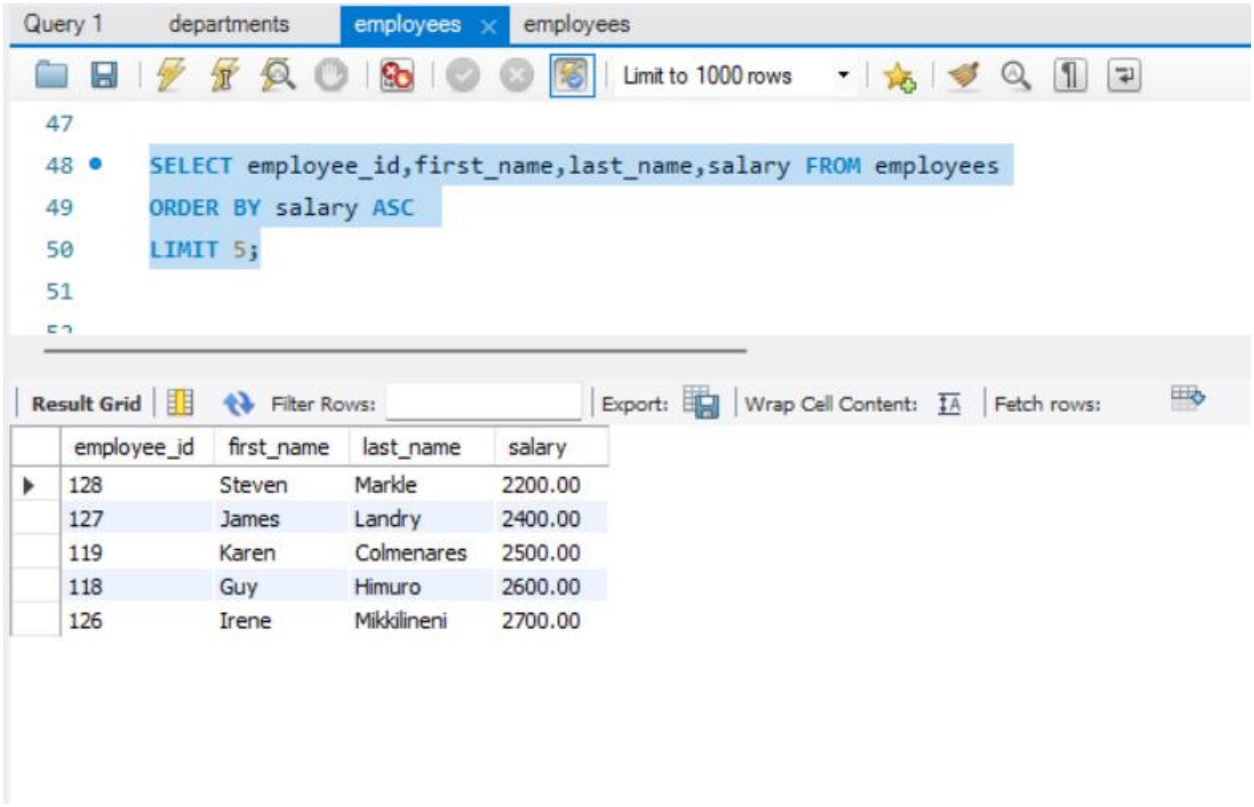
maximum_salary	department_id
17000.00	20
17000.00	30
7900.00	40
8000.00	50
6000.00	60
2900.00	70
5800.00	80
2400.00	90
12000.00	100
2800.00	110
2500.00	130
7800.00	150
7700.00	160
9000.00	170

15.Write a SQL query to display the 5 least earning employees

SELECT employee_id,first_name,last_name,salary FROM employees

ORDER BY salary ASC

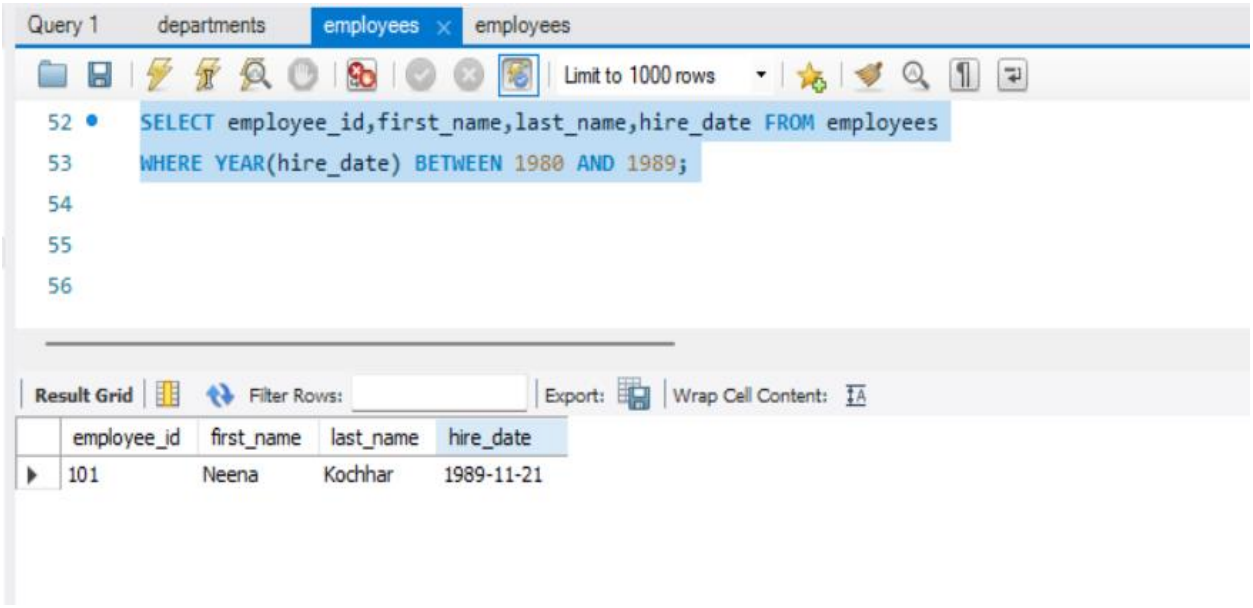
LIMIT 5;



16. Find the employees hired in the 80s

SELECT employee_id,first_name,last_name,hire_date FROM employees

WHERE YEAR(hire_date) BETWEEN 1980 AND 1989;



17. Find the employees who joined the company after 15th of the month

SELECT employee_id,first_name,last_name,hire_date FROM employees

WHERE DAY(hire_date) > 15;