Assignment 1

Create a Database name entri_assignment

Create a Table with name `departments`

```
Department_id (pk) Department_name Location_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
```

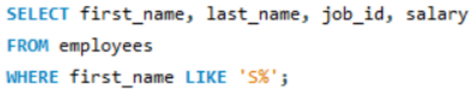
```
## Insert into Departments table
 INSERT INTO departments VALUES ( 20,'Marketing', 180);

 INSERT INTO departments VALUES ( 30,'Purchasing', 1700);

 INSERT INTO departments VALUES ( 40, 'Human Resources', 2400);

 INSERT INTO departments VALUES ( 50, 'Shipping', 1500);

 INSERT INTO departments VALUES ( 60 , 'IT', 1400);

 INSERT INTO departments VALUES ( 70, 'Public Relations', 2700);

 INSERT INTO departments VALUES ( 80 , 'Sales', 2500 );
 INSERT INTO departments VALUES ( 90 , 'Executive', 1700);

 INSERT INTO departments VALUES ( 100 , 'Finance', 1700);

 INSERT INTO departments VALUES ( 110 , 'Accounting', 1700);

 INSERT INTO departments VALUES ( 120 , 'Treasury' , 1700);

 INSERT INTO departments VALUES ( 130 , 'Corporate Tax' , 1700 );

 INSERT INTO departments VALUES ( 140, 'Control And Credit' , 1700);

 INSERT INTO departments VALUES ( 150 , 'Shareholder Services',
1700);

 INSERT INTO departments VALUES ( 160 , 'Benefits', 1700);

 INSERT INTO departments VALUES ( 170 , 'Payroll' , 1700);
```

employees table

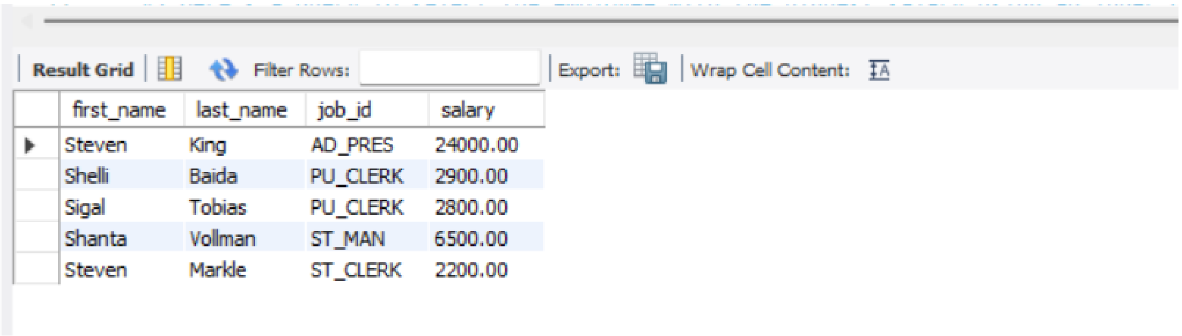
```
INSERT INTO employees VALUES (100, 'Steven', 'King', 'SKING',
'515.123.4567', '1987-06-17' , 'AD_PRES', 24000 , NULL, NULL, 20);

 Insertinto 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);
```

Solve SQL Exercises

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

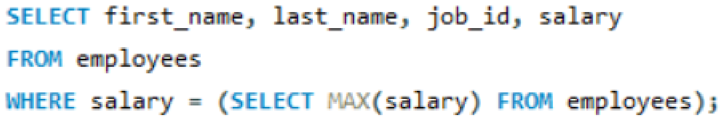


```
SELECT first_name, last_name, job_id, salary
FROM employees
WHERE first_name LIKE 'S%';
```

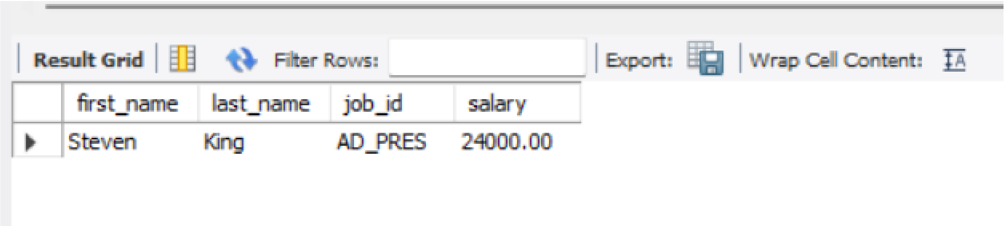


first_name	last_name	job_id	salary
Steven	King	AD_PRES	24000.00
Shelli	Baida	PU_CLERK	2900.00
Sigal	Tobias	PU_CLERK	2800.00
Shanta	Vollman	ST_MAN	6500.00
Steven	Markle	ST_CLERK	2200.00

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

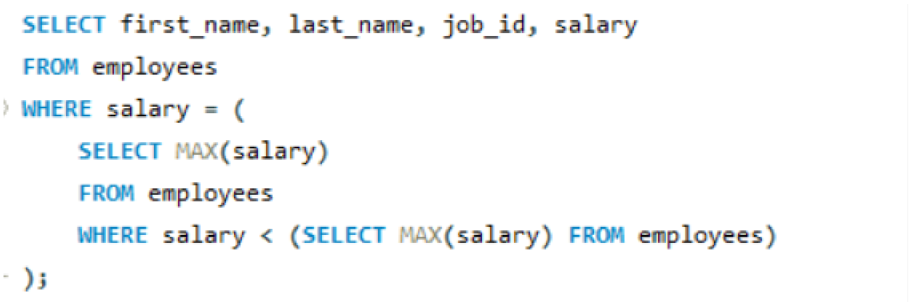


```
SELECT first_name, last_name, job_id, salary
FROM employees
WHERE salary = (SELECT MAX(salary) FROM employees);
```

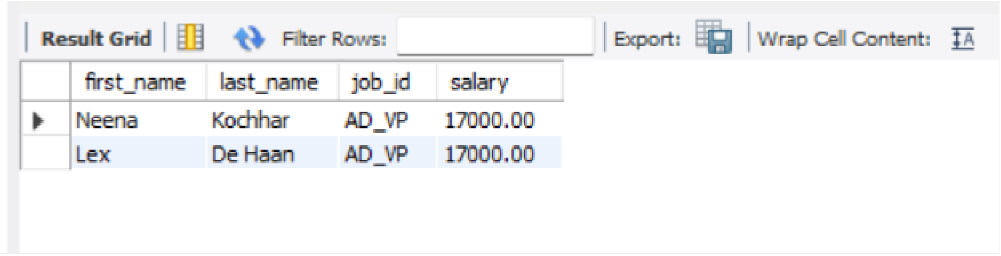


first_name	last_name	job_id	salary
Steven	King	AD_PRES	24000.00

3. Select employee with the second highest salary.

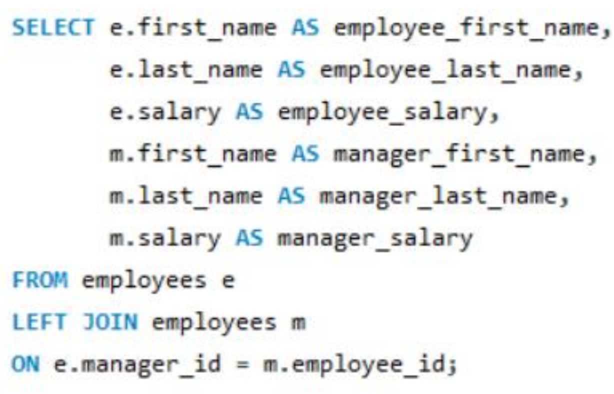


```sql
SELECT first_name, last_name, job_id, salary
FROM employees
WHERE salary = (
    SELECT MAX(salary)
    FROM employees
    WHERE salary < (SELECT MAX(salary) FROM employees)
);
```

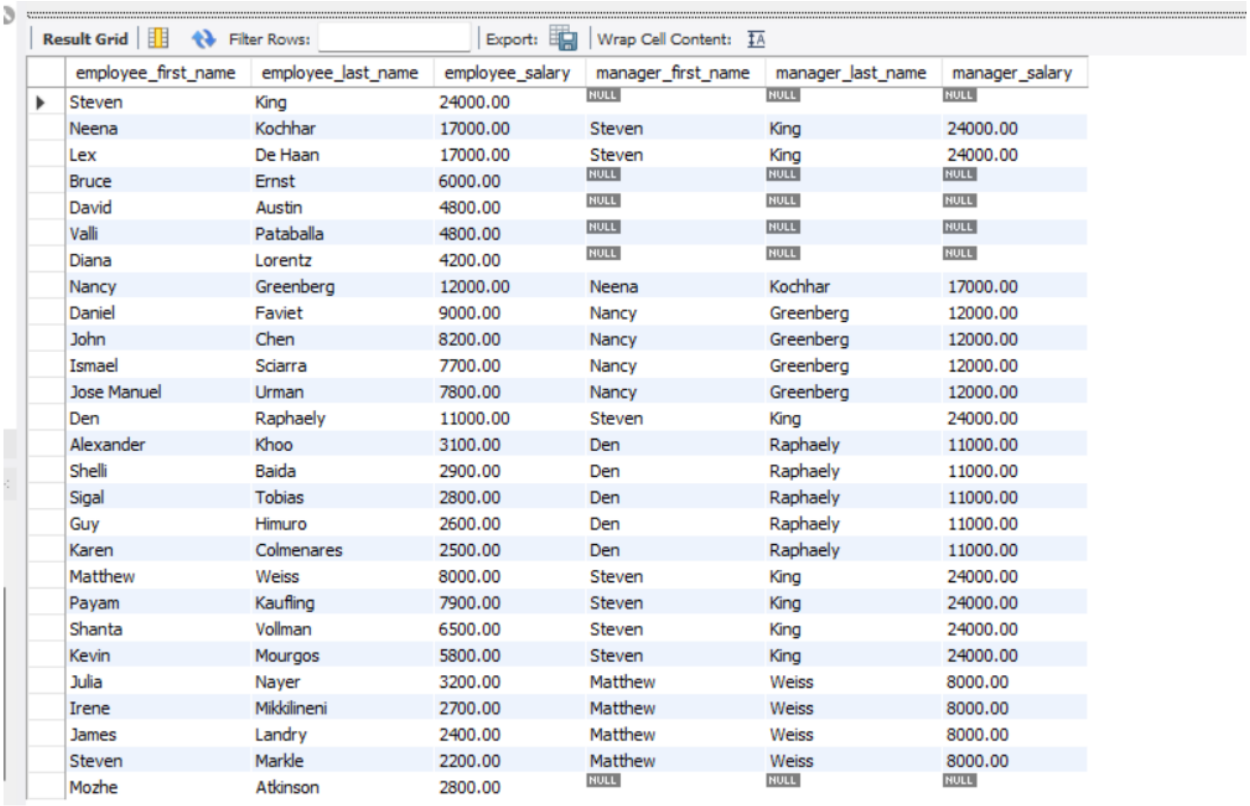


first_name	last_name	job_id	salary
Neena	Kochhar	AD_VP	17000.00
Lex	De Haan	AD_VP	17000.00

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

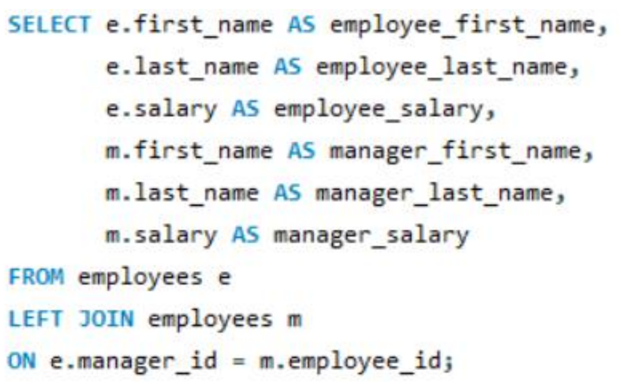


```sql
SELECT e.first_name AS employee_first_name,
       e.last_name AS employee_last_name,
       e.salary AS employee_salary,
       m.first_name AS manager_first_name,
       m.last_name AS manager_last_name,
       m.salary AS manager_salary
FROM employees e
LEFT JOIN employees m
ON e.manager_id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

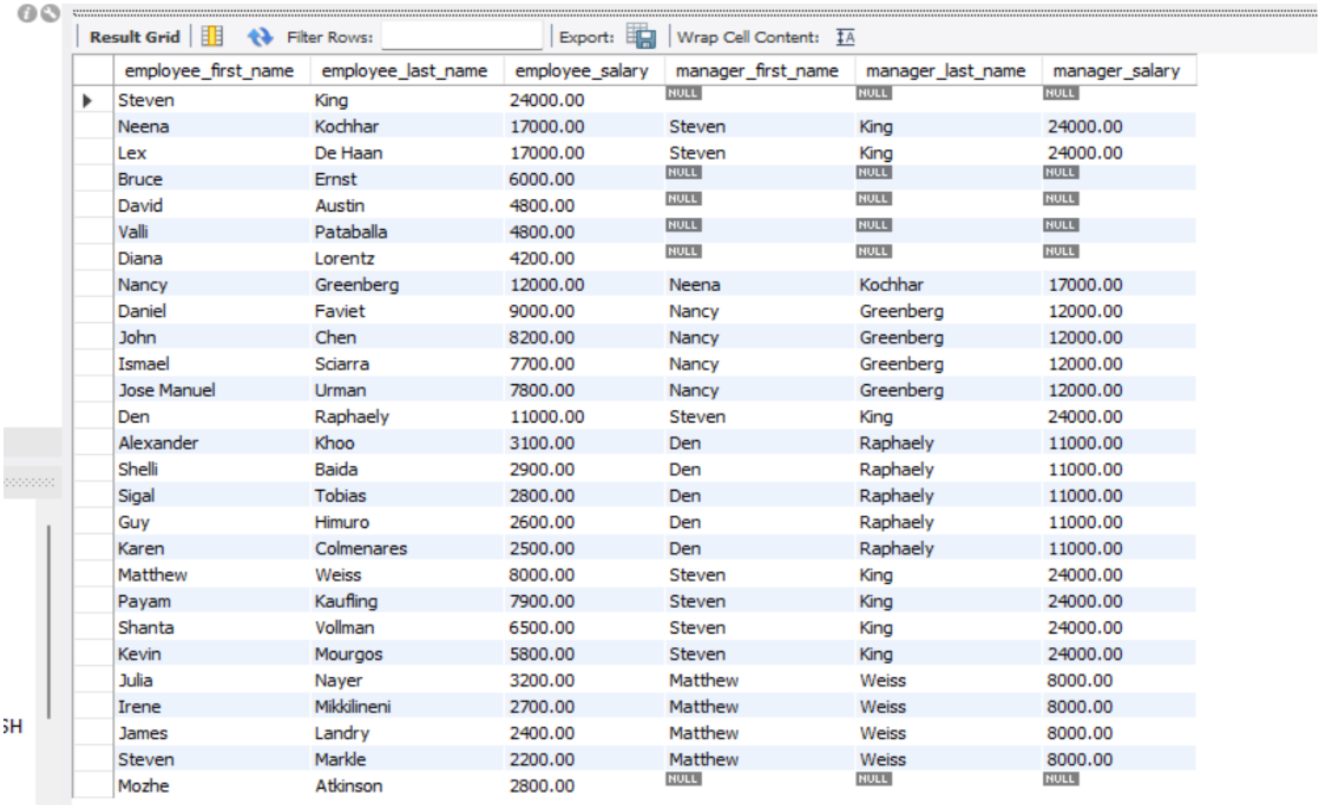


employee_first_name	employee_last_name	employee_salary	manager_first_name	manager_last_name	manager_salary
Steven	King	24000.00	NULL	NULL	NULL
Neena	Kochhar	17000.00	Steven	King	24000.00
Lex	De Haan	17000.00	Steven	King	24000.00
Bruce	Ernst	6000.00	NULL	NULL	NULL
David	Austin	4800.00	NULL	NULL	NULL
Valli	Pataballa	4800.00	NULL	NULL	NULL
Diana	Lorentz	4200.00	NULL	NULL	NULL
Nancy	Greenberg	12000.00	Neena	Kochhar	17000.00
Daniel	Faviet	9000.00	Nancy	Greenberg	12000.00
John	Chen	8200.00	Nancy	Greenberg	12000.00
Ismael	Sciarra	7700.00	Nancy	Greenberg	12000.00
Jose Manuel	Urman	7800.00	Nancy	Greenberg	12000.00
Den	Raphaely	11000.00	Steven	King	24000.00
Alexander	Khoo	3100.00	Den	Raphaely	11000.00
Shelli	Baida	2900.00	Den	Raphaely	11000.00
Sigal	Tobias	2800.00	Den	Raphaely	11000.00
Guy	Himuro	2600.00	Den	Raphaely	11000.00
Karen	Colmenares	2500.00	Den	Raphaely	11000.00
Matthew	Weiss	8000.00	Steven	King	24000.00
Payam	Kaufling	7900.00	Steven	King	24000.00
Shanta	Vollman	6500.00	Steven	King	24000.00
Kevin	Mourgos	5800.00	Steven	King	24000.00
Julia	Nayer	3200.00	Matthew	Weiss	8000.00
Irene	Mikkilineni	2700.00	Matthew	Weiss	8000.00
James	Landry	2400.00	Matthew	Weiss	8000.00
Steven	Markle	2200.00	Matthew	Weiss	8000.00
Mozhe	Atkinson	2800.00	NULL	NULL	NULL

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

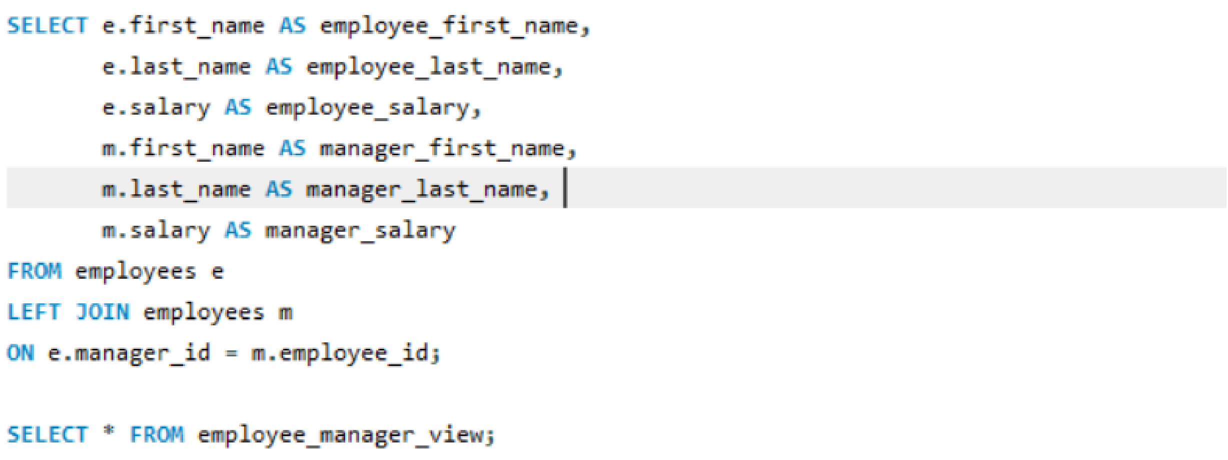


```
SELECT e.first_name AS employee_first_name,
       e.last_name AS employee_last_name,
       e.salary AS employee_salary,
       m.first_name AS manager_first_name,
       m.last_name AS manager_last_name,
       m.salary AS manager_salary
FROM employees e
LEFT JOIN employees m
ON e.manager_id =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



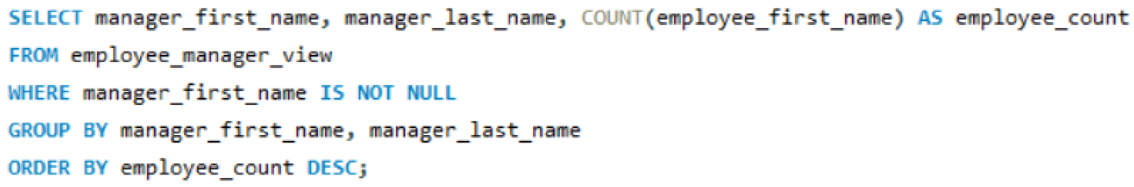
employee_first_name	employee_last_name	employee_salary	manager_first_name	manager_last_name	manager_salary
Steven	King	24000.00	NULL	NULL	NULL
Neena	Kochhar	17000.00	Steven	King	24000.00
Lex	De Haan	17000.00	Steven	King	24000.00
Bruce	Ernst	6000.00	NULL	NULL	NULL
David	Austin	4800.00	NULL	NULL	NULL
Valli	Pataballa	4800.00	NULL	NULL	NULL
Diana	Lorentz	4200.00	NULL	NULL	NULL
Nancy	Greenberg	12000.00	Neena	Kochhar	17000.00
Daniel	Faviet	9000.00	Nancy	Greenberg	12000.00
John	Chen	8200.00	Nancy	Greenberg	12000.00
Ismael	Sciarra	7700.00	Nancy	Greenberg	12000.00
Jose Manuel	Urman	7800.00	Nancy	Greenberg	12000.00
Den	Raphaely	11000.00	Steven	King	24000.00
Alexander	Khoo	3100.00	Den	Raphaely	11000.00
Shelli	Baida	2900.00	Den	Raphaely	11000.00
Sigal	Tobias	2800.00	Den	Raphaely	11000.00
Guy	Himuro	2600.00	Den	Raphaely	11000.00
Karen	Colmenares	2500.00	Den	Raphaely	11000.00
Matthew	Weiss	8000.00	Steven	King	24000.00
Payam	Kaufling	7900.00	Steven	King	24000.00
Shanta	Vollman	6500.00	Steven	King	24000.00
Kevin	Mourgos	5800.00	Steven	King	24000.00
Julia	Nayer	3200.00	Matthew	Weiss	8000.00
Irene	Mikkilineni	2700.00	Matthew	Weiss	8000.00
James	Landry	2400.00	Matthew	Weiss	8000.00
Steven	Markle	2200.00	Matthew	Weiss	8000.00
Mozhe	Atkinson	2800.00	NULL	NULL	NULL

6. Create a view for the above query.

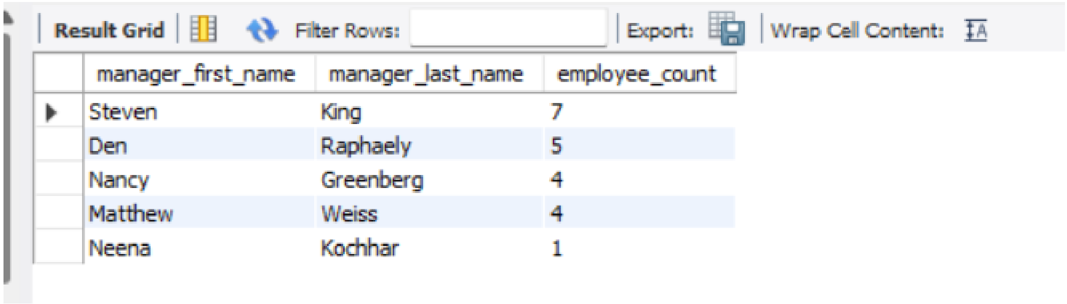


```
SELECT e.first_name AS employee_first_name,
       e.last_name AS employee_last_name,
       e.salary AS employee_salary,
       m.first_name AS manager_first_name,
       m.last_name AS manager_last_name,
       m.salary AS manager_salary
FROM employees e
LEFT JOIN employees m
ON e.manager_id =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

SELECT * FROM employee_manager_view;
```

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

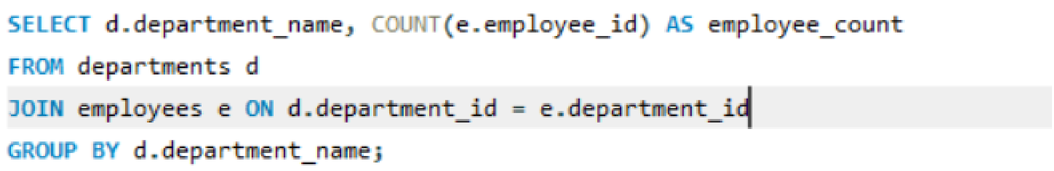


```
SELECT manager_first_name, manager_last_name, COUNT(employee_first_name) AS employee_count
FROM employee_manager_view
WHERE manager_first_name IS NOT NULL
GROUP BY manager_first_name, manager_last_name
ORDER BY employee_count DESC;
```

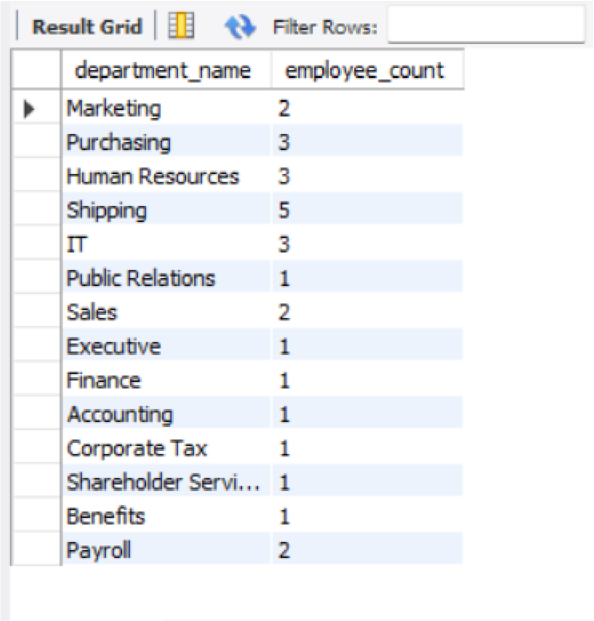


manager_first_name	manager_last_name	employee_count
Steven	King	7
Den	Raphaely	5
Nancy	Greenberg	4
Matthew	Weiss	4
Neena	Kochhar	1

8. Find the count of employees in each department.

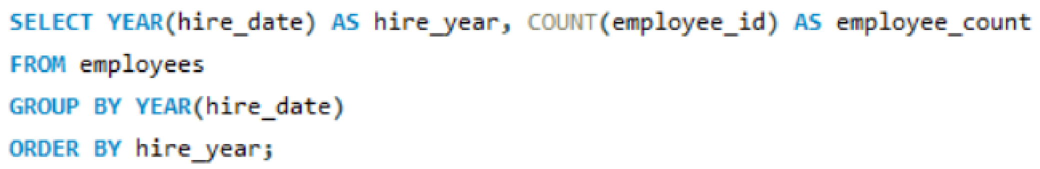


```
SELECT d.department_name, COUNT(e.employee_id) AS employee_count
FROM departments d
JOIN employees e ON d.department_id = e.department_id
GROUP BY d.department_name;
```

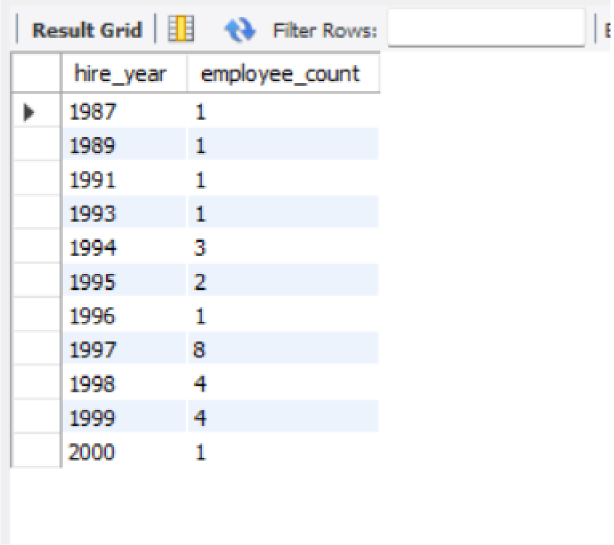


department_name	employee_count
Marketing	2
Purchasing	3
Human Resources	3
Shipping	5
IT	3
Public Relations	1
Sales	2
Executive	1
Finance	1
Accounting	1
Corporate Tax	1
Shareholder Servi...	1
Benefits	1
Payroll	2

9. Get the count of employees hired year wise.

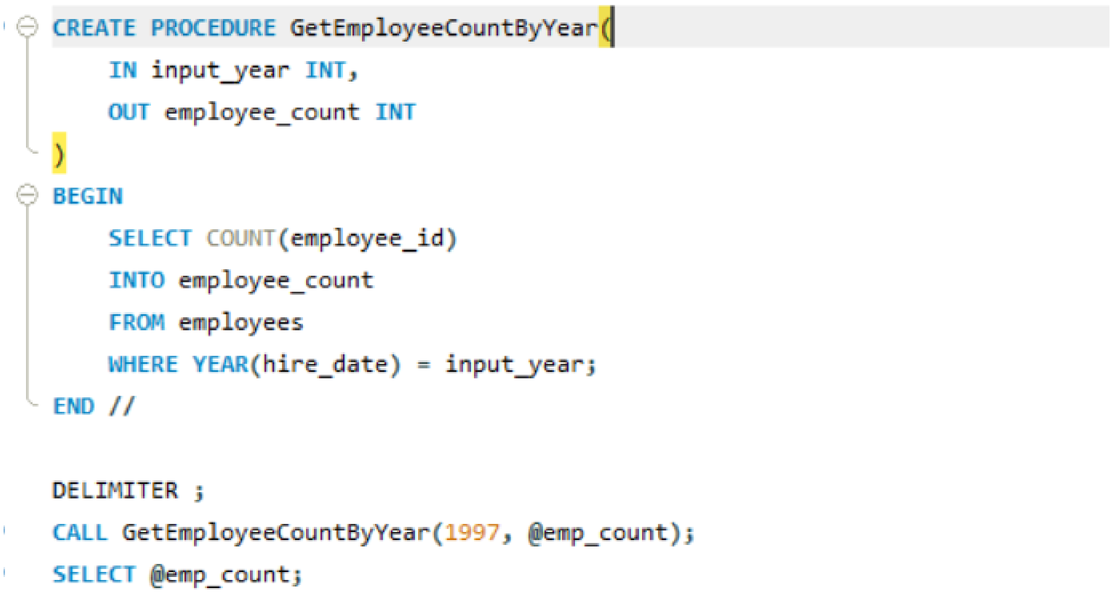


```
SELECT YEAR(hire_date) AS hire_year, COUNT(employee_id) AS employee_count
FROM employees
GROUP BY YEAR(hire_date)
ORDER BY hire_year;
```



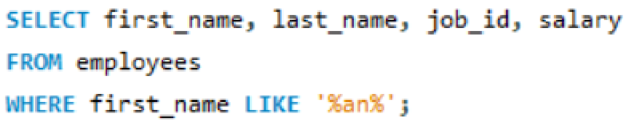
hire_year	employee_count
1987	1
1989	1
1991	1
1993	1
1994	3
1995	2
1996	1
1997	8
1998	4
1999	4
2000	1

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

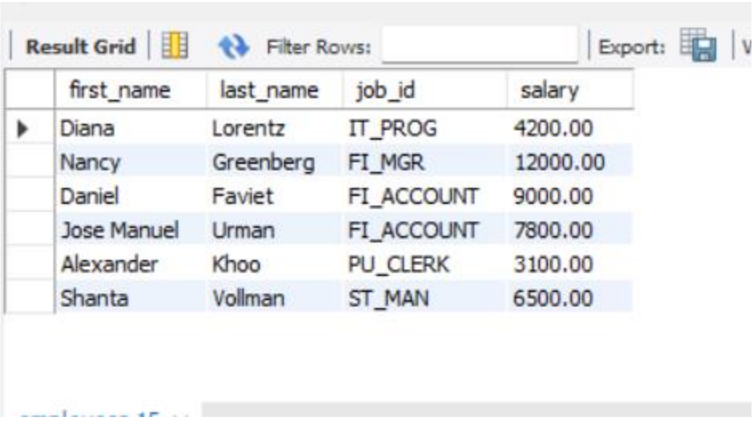


```
DELIMITER //

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, @emp_count);
SELECT @emp_count;
```

11.Select the employees whose first_name contains “an”.

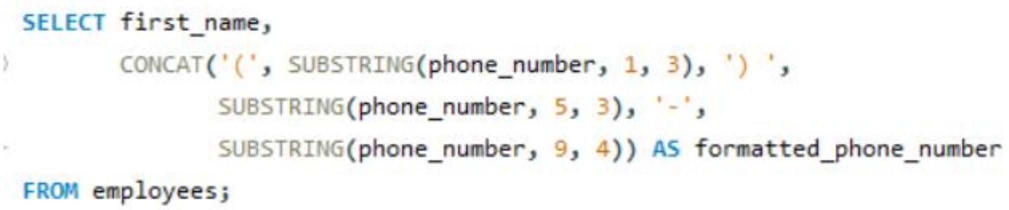


```
SELECT first_name, last_name, job_id, salary
FROM employees
WHERE first_name LIKE '%an%';
```

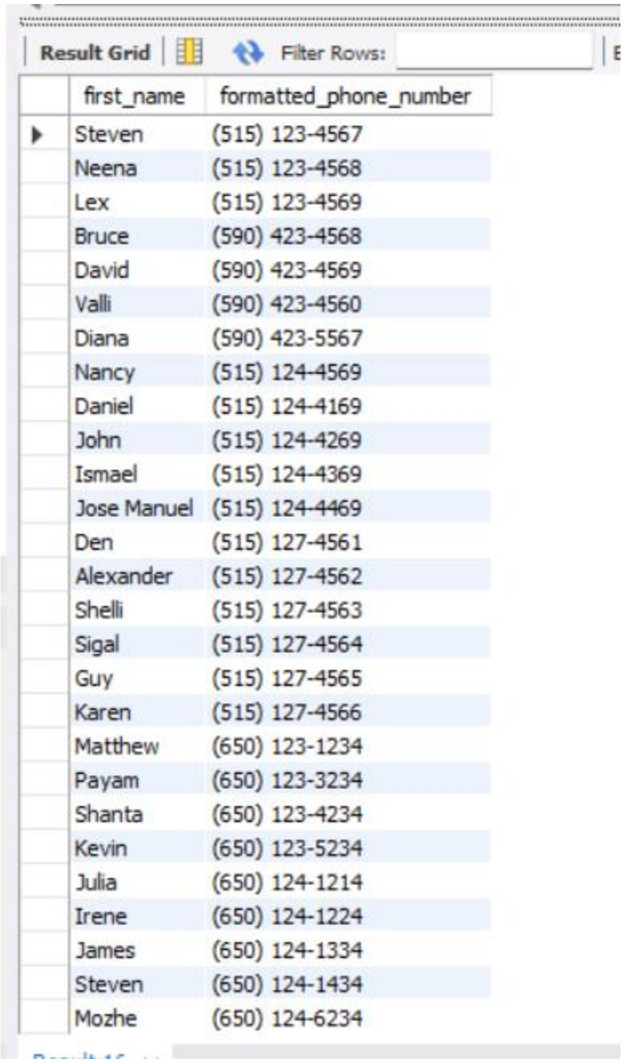


first_name	last_name	job_id	salary
Diana	Lorentz	IT_PROG	4200.00
Nancy	Greenberg	FI_MGR	12000.00
Daniel	Faviet	FI_ACCOUNT	9000.00
Jose Manuel	Urman	FI_ACCOUNT	7800.00
Alexander	Khoo	PU_CLERK	3100.00
Shanta	Vollman	ST_MAN	6500.00

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

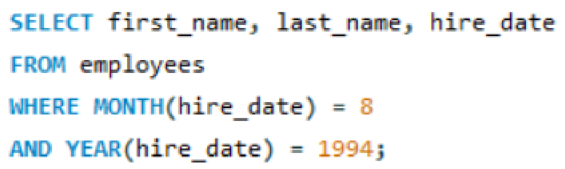


```sql
SELECT first_name,
       CONCAT('(', SUBSTRING(phone_number, 1, 3), ') ',
              SUBSTRING(phone_number, 5, 3), '-',
              SUBSTRING(phone_number, 9, 4)) AS formatted_phone_number
FROM employees;
```

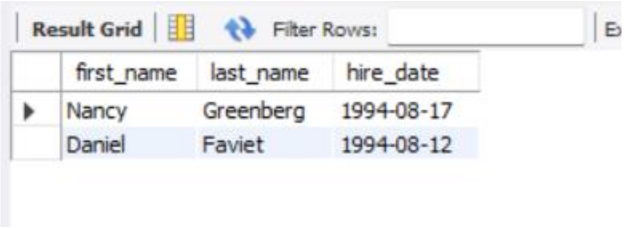


first_name	formatted_phone_number
Steven	(515) 123-4567
Neena	(515) 123-4568
Lex	(515) 123-4569
Bruce	(590) 423-4568
David	(590) 423-4569
Valli	(590) 423-4560
Diana	(590) 423-5567
Nancy	(515) 124-4569
Daniel	(515) 124-4169
John	(515) 124-4269
Ismael	(515) 124-4369
Jose Manuel	(515) 124-4469
Den	(515) 127-4561
Alexander	(515) 127-4562
Shelli	(515) 127-4563
Sigal	(515) 127-4564
Guy	(515) 127-4565
Karen	(515) 127-4566
Matthew	(650) 123-1234
Payam	(650) 123-3234
Shanta	(650) 123-4234
Kevin	(650) 123-5234
Julia	(650) 124-1214
Irene	(650) 124-1224
James	(650) 124-1334
Steven	(650) 124-1434
Mozhe	(650) 124-6234

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

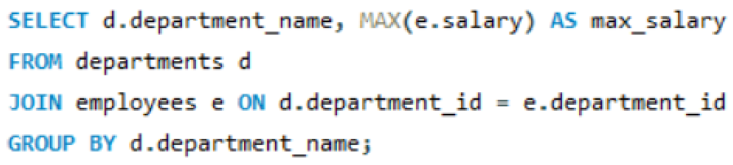


```
SELECT first_name, last_name, hire_date
FROM employees
WHERE MONTH(hire_date) = 8
AND YEAR(hire_date) = 1994;
```

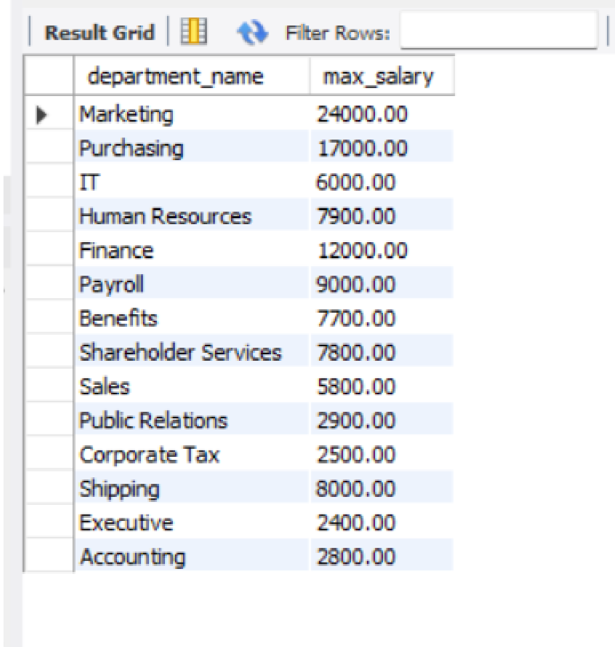


	first_name	last_name	hire_date
▶	Nancy	Greenberg	1994-08-17
	Daniel	Faviet	1994-08-12

14. Find the maximum salary from each department.



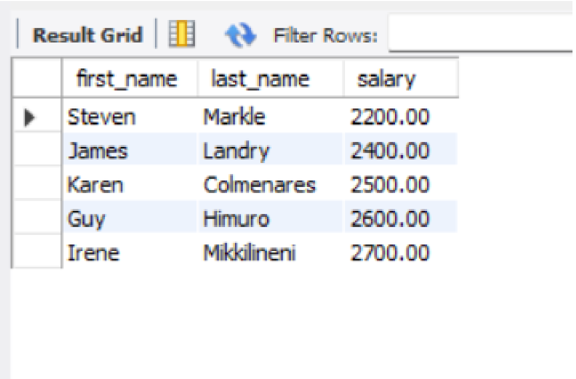
```
SELECT d.department_name, MAX(e.salary) AS max_salary
FROM departments d
JOIN employees e ON d.department_id = e.department_id
GROUP BY d.department_name;
```



department_name	max_salary
Marketing	24000.00
Purchasing	17000.00
IT	6000.00
Human Resources	7900.00
Finance	12000.00
Payroll	9000.00
Benefits	7700.00
Shareholder Services	7800.00
Sales	5800.00
Public Relations	2900.00
Corporate Tax	2500.00
Shipping	8000.00
Executive	2400.00
Accounting	2800.00

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

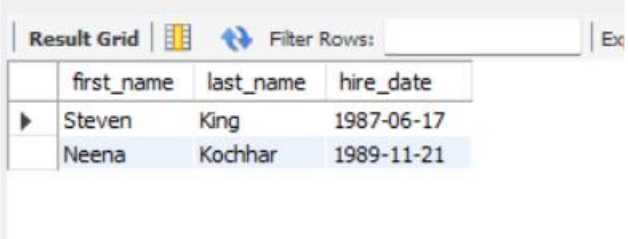
```
SELECT first_name, last_name, salary
FROM employees
ORDER BY salary ASC
LIMIT 5;
```



	first_name	last_name	salary
▶	Steven	Markle	2200.00
	James	Landry	2400.00
	Karen	Colmenares	2500.00
	Guy	Himuro	2600.00
	Irene	Mikkilineni	2700.00

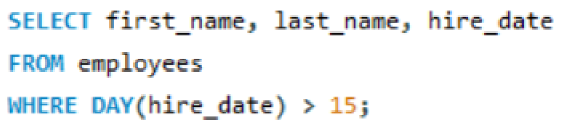
16. Find the employees hired in the 80s.

```
SELECT first_name, last_name, hire_date
FROM employees
WHERE YEAR(hire_date) BETWEEN 1980 AND 1989;
```

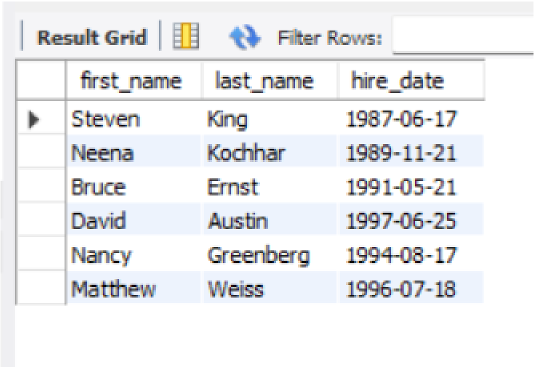


	first_name	last_name	hire_date
▶	Steven	King	1987-06-17
	Neena	Kochhar	1989-11-21

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



```sql
SELECT first_name, last_name, hire_date
FROM employees
WHERE DAY(hire_date) > 15;
```



first_name	last_name	hire_date
Steven	King	1987-06-17
Neena	Kochhar	1989-11-21
Bruce	Ernst	1991-05-21
David	Austin	1997-06-25
Nancy	Greenberg	1994-08-17
Matthew	Weiss	1996-07-18