

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 ( 170 , 'Payroll' , 1700);
```

```
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);
```

Solve SQL Exercises

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

```
89 • SELECT first_name, last_name, job_id, salary
90 FROM employees
91 WHERE first_name LIKE 'S%'
92 ORDER BY first_name;
93
```

Result Grid  Filter Rows: <input type="text"/> Export:  Wrap Cell Content: 				
first_name	last_name	job_id	salary	
Shanta	Vollman	ST_MAN	6500.00	
Shelli	Baida	PU_CLERK	2900.00	
Sigal	Tobias	PU_CLERK	2800.00	
Steven	Markle	ST_CLERK	2200.00	

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

```

99 • SELECT *
100 FROM Employees
101 WHERE salary = (SELECT MAX(salary) FROM Employees);
102

```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
101	Neena	Kochhar	NKOCHHAR	515.123.4568	1989-11-21	AD_VP	17000.00	NULL	100	20
102	Lex	De Haan	LDEHAAN	515.123.4569	1993-09-12	AD_VP	17000.00	NULL	100	30

3. Select employee with the second highest salary

```

103 • SELECT *
104 FROM Employees
105 WHERE salary = (
106     SELECT MAX(salary)
107     FROM Employees
108     WHERE salary < (
109         SELECT MAX(salary)
110         FROM Employees
111     )
112 );

```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
108	Nancy	Greenberg	NGREENBE	515.124.4569	1994-08-17	FI_MGR	12000.00	NULL	101	100

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

```
mysql> SELECT
->   e.employee_id AS EmployeeID,
->   e.first_name AS EmployeeFirstName,
->   e.last_name AS EmployeeLastName,
->   e.salary AS EmployeeSalary,
->   m.employee_id AS ManagerID,
->   m.first_name AS ManagerFirstName,
->   m.last_name AS ManagerLastName,
->   m.salary AS ManagerSalary
-> FROM
->   Employees e
-> LEFT JOIN
->   Employees m ON e.manager_id = m.employee_id;
```

EmployeeID	EmployeeFirstName	EmployeeLastName	EmployeeSalary	ManagerID	ManagerFirstName	ManagerLastName	ManagerSalary
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
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
120	Matthew	Weiss	8000.00	NULL	NULL	NULL	NULL
122	Payam	Kaufling	7900.00	NULL	NULL	NULL	NULL
123	Shanta	Vollman	6500.00	NULL	NULL	NULL	NULL
124	Kevin	Mourgos	5800.00	NULL	NULL	NULL	NULL
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
130	Mozhe	Atkinson	2800.00	NULL	NULL	NULL	NULL

26 rows in set (0.00 sec)

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

```
mysql> SELECT
->   e.employee_id AS EmployeeID,
->   e.first_name AS EmployeeFirstName,
->   e.last_name AS EmployeeLastName,
->   e.salary AS EmployeeSalary,
->   m.employee_id AS ManagerID,
->   m.first_name AS ManagerFirstName,
->   m.last_name AS ManagerLastName,
->   m.salary AS ManagerSalary
-> FROM
->   Employees e
-> JOIN
->   Employees m ON e.manager_id = m.employee_id;
```

EmployeeID	EmployeeFirstName	EmployeeLastName	EmployeeSalary	ManagerID	ManagerFirstName	ManagerLastName	ManagerSalary
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

13 rows in set (0.11 sec)

6. Find the count of employees in each department

```
mysql> SELECT
->     d.department_name,
->     COUNT(e.employee_id) AS employee_count
-> FROM
->     Departments d
-> LEFT JOIN
->     Employees e ON d.department_id = e.department_id
-> GROUP BY
->     d.department_name;
```

department_name	employee_count
Administration	0
Marketing	1
Purchasing	3
Human Resources	3
Shipping	5
IT	3
Public Relations	1
Sales	2
Executive	1
Finance	1
Accounting	1
Treasury	0
Corporate Tax	1
Control And Credit	0
Shareholder Services	1
Benefits	1
Manufacturing	2
Construction	0
Contracting	0
Operations	0
IT Support	0
NOC	0
IT Helpdesk	0

23 rows in set (4.32 sec)

7. Create a view for the above query

```
mysql> CREATE VIEW EmployeeCountByDepartment AS
-> SELECT
->     d.department_name,
->     COUNT(e.employee_id) AS employee_count
-> FROM
->     Departments d
-> LEFT JOIN
->     Employees e ON d.department_id = e.department_id
-> GROUP BY
->     d.department_name;
```

Query OK, 0 rows affected (0.19 sec)

```
mysql> SELECT * FROM EmployeeCountByDepartment;
```

department_name	employee_count
Administration	0
Marketing	1
Purchasing	3
Human Resources	3
Shipping	5
IT	3
Public Relations	1
Sales	2
Executive	1
Finance	1
Accounting	1
Treasury	0
Corporate Tax	1
Control And Credit	0
Shareholder Services	1
Benefits	1
Manufacturing	2
Construction	0
Contracting	0
Operations	0
IT Support	0
NOC	0
IT Helpdesk	0

23 rows in set (0.04 sec)

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

```
mysql> CREATE VIEW EmployeesUnderManagers AS
-> SELECT
->     manager_id,
->     COUNT(employee_id) AS employee_count
-> FROM
->     Employees
-> GROUP BY
->     manager_id;
```

Query OK, 0 rows affected (7.70 sec)

```
mysql> SELECT
->     manager_id,
->     employee_count
-> FROM
->     EmployeesUnderManagers
-> ORDER BY
->     employee_count DESC;
```

manager_id	employee_count
100	7
114	5
103	4
120	4
108	3
101	1
8	1
121	1

8 rows in set (0.01 sec)

9. Get the count of employees hired year wise

```
mysql> 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
1989	1
1991	1
1993	1
1994	3
1995	2
1996	1
1997	8
1998	4
1999	4
2000	1

10 rows in set (21.91 sec)

10. Select the employees whose first_name contains "an"

```
mysql> SELECT *
-> FROM Employees
-> WHERE first_name LIKE '%an%';
```

employee_id	first_name	last_name	email	phone_number	hire_date	job_id	salary	commission_pct	manager_id	department_id
107	Diana	Lorentz	DLORENTZ	590.423.5567	1999-02-09	IT_PROG	4200.00	NULL	103	40
108	Nancy	Greenberg	NGREENBE	515.124.4569	1994-08-17	FI_MGR	12000.00	NULL	101	100
109	Daniel	Faviet	DFAVIET	515.124.4169	1994-08-12	FI_ACCOUNT	9000.00	NULL	108	170
112	Jose Manuel	Urman	JMURMAN	515.124.4469	1998-06-03	FI_ACCOUNT	7800.00	NULL	8	150
115	Alexander	Khoo	AKHOO	515.127.4562	1995-05-12	PU_CLERK	3100.00	NULL	114	80
123	Shanta	Vollman	SVOLLMAN	650.123.4234	1997-10-12	ST_MAN	6500.00	NULL	100	50

6 rows in set (0.00 sec)

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

```
mysql> DELIMITER //
```

```
mysql>
```

```
mysql> CREATE PROCEDURE GetEmployeeCountByYear(  
->     IN input_year YEAR,  
->     OUT employee_count INT  
-> )  
-> BEGIN  
->     SELECT COUNT(employee_id) INTO employee_count  
->     FROM Employees  
->     WHERE YEAR(hire_date) = input_year;  
-> END //
```

```
ERROR 1304 (42000): PROCEDURE GetEmployeeCountByYear already exists
```

```
mysql>
```

```
mysql> DELIMITER ;
```

```
mysql> CALL GetEmployeeCountByYear('2023', @count);
```

```
Query OK, 1 row affected (0.21 sec)
```

```
mysql> SELECT @count AS employee_count;
```

employee_count
0

```
1 row in set (0.00 sec)
```

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

```
mysql> SELECT
->     first_name AS EmployeeFirstName,
->     CONCAT(
->         '(', SUBSTRING(phone_number, 1, 3),
->         ')-( ', SUBSTRING(phone_number, 5, 3),
->         ')-( ', SUBSTRING(phone_number, 9, 4),
->         ')'
->     ) AS FormattedPhoneNumber
-> FROM
->     Employees;
```

EmployeeFirstName	FormattedPhoneNumber
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)

26 rows in set (0.19 sec)

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

```
mysql> SELECT
->     employee_id,
->     first_name,
->     last_name,
->     hire_date
-> FROM
->     Employees
-> WHERE
->     YEAR(hire_date) = 1994
->     AND MONTH(hire_date) = 8;
+-----+-----+-----+-----+
| employee_id | first_name | last_name | hire_date |
+-----+-----+-----+-----+
|          108 | Nancy     | Greenberg | 1994-08-17 |
|          109 | Daniel    | Faviet    | 1994-08-12 |
+-----+-----+-----+-----+
2 rows in set (0.03 sec)
```


14. Find the maximum salary from each department.

```
mysql> SELECT
->     department_id,
->     MAX(salary) AS max_salary
-> FROM
->     Employees
-> GROUP BY
->     department_id;
```

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

14 rows in set (0.01 sec)

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

```
mysql> SELECT
->     employee_id,
->     first_name,
->     last_name,
->     salary
-> FROM
->     Employees
-> ORDER BY
->     salary
-> LIMIT 5;
```

employee_id	first_name	last_name	salary
128	Steven	Markle	2200.00
127	James	Landry	2400.00
119	Karen	Colmenares	2500.00
118	Guy	Himuro	2600.00
126	Irene	Mikkilineni	2700.00

5 rows in set (0.00 sec)

16. Find the employees hired in the 80s

```
mysql> SELECT
->     employee_id,
->     first_name,
->     last_name,
->     hire_date
-> FROM
->     Employees
-> WHERE
->     YEAR(hire_date) BETWEEN 1980 AND 1989;
```

employee_id	first_name	last_name	hire_date
101	Neena	Kochhar	1989-11-21

1 row in set (0.00 sec)

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

```
mysql> SELECT
->     employee_id,
->     first_name,
->     last_name,
->     hire_date
-> FROM
->     Employees
-> WHERE
->     DAY(hire_date) > 15;
```

employee_id	first_name	last_name	hire_date
101	Neena	Kochhar	1989-11-21
104	Bruce	Ernst	1991-05-21
105	David	Austin	1997-06-25
108	Nancy	Greenberg	1994-08-17
120	Matthew	Weiss	1996-07-18

5 rows in set (0.18 sec)

