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);

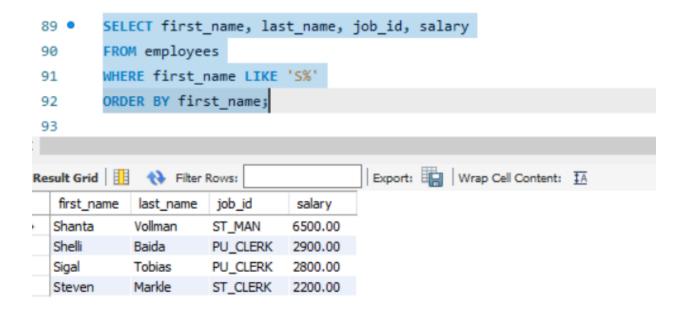
INSERT INTO employees VALUES (127, 'James', 'Landry', 'JLANDRY',
'650.124.1334', '1999-01-02', 'ST_CLERK', 2400, NULL, 120, 90);

INSERT INTO employees VALUES (128, 'Steven', 'Markle', 'SMARKLE',
'650.124.1434', '2000-03-04', 'ST_CLERK', 2200, NULL, 120, 50);

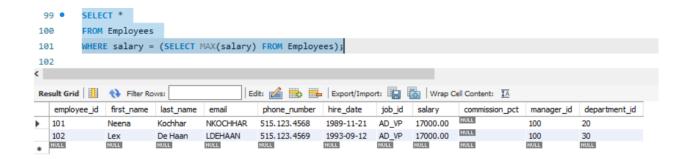
INSERT INTO employees VALUES (130, 'Mozhe', 'Atkinson', 'MATKINSO',
'650.124.6234', '1997-10-12', 'ST_CLERK', 2800, NULL, 121,
110);
```

Solve SQL Exercises

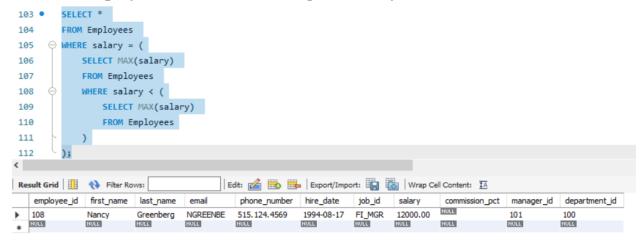
1. Select employees first name, last name, job_id and salary whose first name starts with alphabet S



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



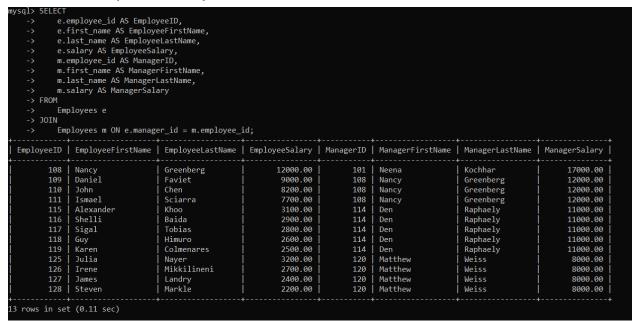
3. Select employee with the second highest salary



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

	employee_id AS Employ						
	e.first_name AS EmployeeFirstName, e.last name AS EmployeeLastName,						
	salary AS EmployeeSa						
	employee_id AS Manag						
	first name AS Manage						
	last name AS Manager						
	salary AS ManagerSal						
-> FROM	satary As Hariagersati	ui y					
	olovees e						
-> LEFT JC							
	oloyees m ON e.manag	er id = m.emplovee	id:				
	+	+	, +	+	+	+	+
EmployeeID	EmployeeFirstName	EmployeeLastName	EmploveeSalary	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	NULI
105	David	Austin	4800.00	NULL	NULL	NULL	NULL
106	Valli	Pataballa	4800.00	NULL	NULL	NULL	NULI
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	NULI
123	Shanta	Vollman	6500.00	NULL	NULL	NULL	NULI
124	Kevin	Mourgos	5800.00	NULL	NULL	NULL	NULI
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	l NULL	NULL	NULL	NULL

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



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;
                   employee count
 department_name
 Administration
                                      0
 Marketing
                                     1
 Purchasing
                                      3
 Human Resources
                                      3
                                     5
 Shipping
                                      3
 IT
 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
 IT Helpdesk
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
                                      3
 Human Resources
                                      5
 Shipping
 IT
                                      3
 Public Relations
                                      1
 Sales
                                      2
 Executive
                                      1
 Finance
                                      1
 Accounting
                                      1
 Treasury
                                      0
                                      1
 Corporate Tax
 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 l
                            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
                           1
       1993
                           3
       1994
                           2
       1995
       1996
                           1
       1997
                           8
       1998
                           4
       1999
                           4
       2000
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		
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	AKH00	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

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
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)
                       (590)-(423)-(4568)
 Bruce
 David
                      (590)-(423)-(4569)
 Valli
                       (590)-(423)-(4560)
 Diana
                       (590)-(423)-(5567)
                       (515)-(124)-(4569)
 Nancy
 Daniel
                       (515)-(124)-(4169)
                       (515)-(124)-(4269)
 John
 Ismael
                       (515)-(124)-(4369)
 Jose Manuel
                      (515)-(124)-(4469)
 Den
                       (515)-(127)-(4561)
 Alexander
                       (515)-(127)-(4562)
 Shelli
                       (515)-(127)-(4563)
                       (515)-(127)-(4564)
 Sigal
                      (515)-(127)-(4565)
 Guy
 Karen
                       (515)-(127)-(4566)
 Matthew
                      (650)-(123)-(1234)
                       (650)-(123)-(3234)
 Payam
 Shanta
                       (650)-(123)-(4234)
 Kevin
                       (650)-(123)-(5234)
 Julia
                       (650)-(124)-(1214)
 Irene
                      (650)-(124)-(1224)
 James
                       (650)-(124)-(1334)
 Steven
                       (650)-(124)-(1434)
                      (650)-(124)-(6234)
 Mozhe
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
                             Greenberg
                                         1994-08-17
          108
              Nancy
          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
               James
                             Landry
          127
                                           2400.00
                             Colmenares
          119
               Karen
                                           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
                             Kochhar
          101
               Neena
                                         1989-11-21
          104
               Bruce
                             Ernst
                                         1991-05-21
                             Austin
          105
               David
                                         1997-06-25
          108 Nancy
                             Greenberg
                                        1994-08-17
          120 | Matthew
                             Weiss
                                         1996-07-18
 rows in set (0.18 sec)
```