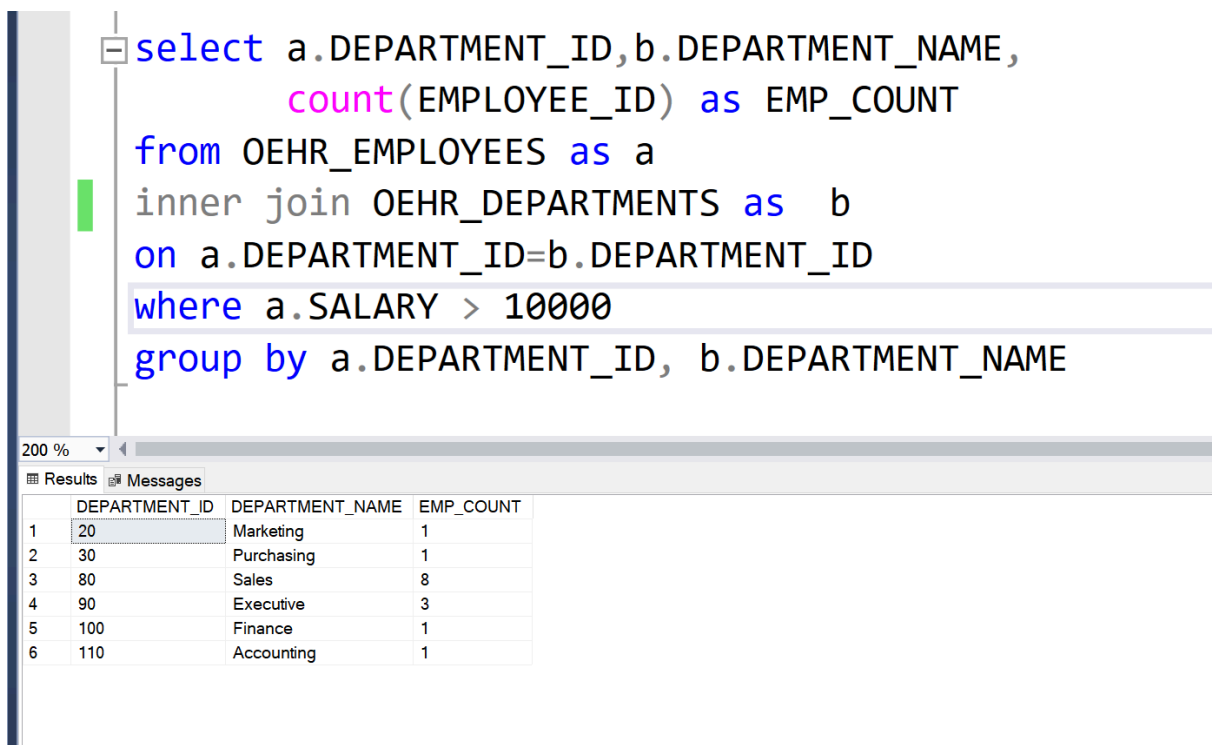# DMV Assignment 4 - Queries

Shayan - 27027

1. Write a SQL query to find the department name, department ID, and number of employees in each department whose salary is greater than 10,000.

select a.DEPARTMENT_ID,b.DEPARTMENT_NAME,
  count(EMPLOYEE_ID) as EMP_COUNT
from OEHR_EMPLOYEES as a
inner join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
where a.SALARY > 10000
group by a.DEPARTMENT_ID, b.DEPARTMENT_NAME

```
select a.DEPARTMENT_ID,b.DEPARTMENT_NAME,
       count(EMPLOYEE_ID) as EMP_COUNT
from OEHR_EMPLOYEES as a
inner join OEHR_DEPARTMENTS as  b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
where a.SALARY > 10000
group by a.DEPARTMENT_ID, b.DEPARTMENT_NAME
```
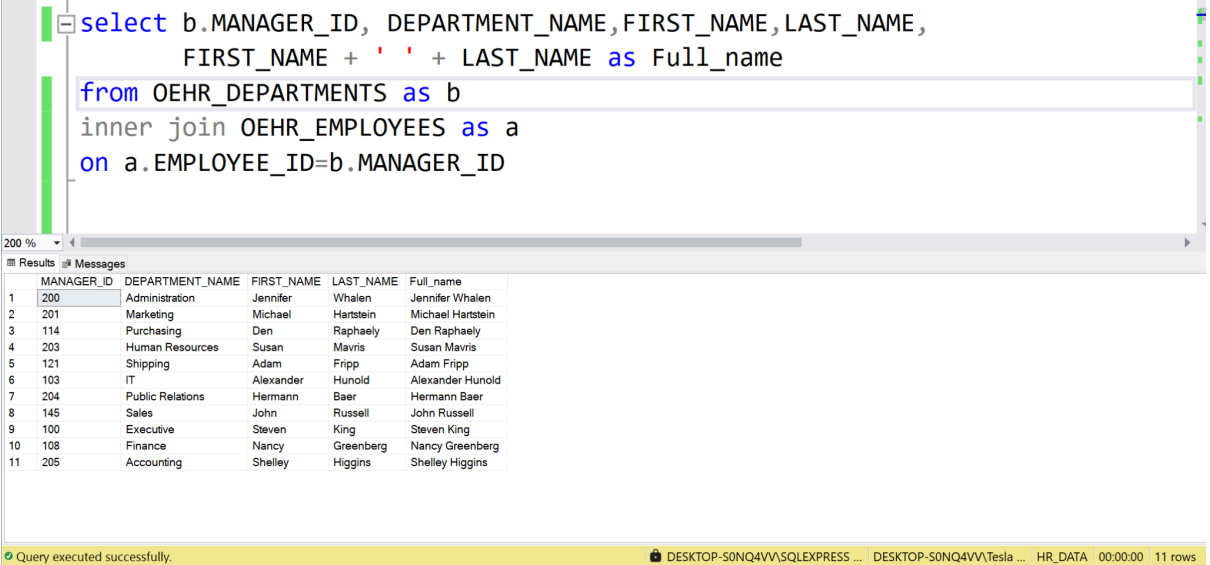
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Results | Messages

	DEPARTMENT_ID	DEPARTMENT_NAME	EMP_COUNT
1	20	Marketing	1
2	30	Purchasing	1
3	80	Sales	8
4	90	Executive	3
5	100	Finance	1
6	110	Accounting	1

2. Write a SQL query to find the department name and first and last name of the manager.

select b.MANAGER_ID, DEPARTMENT_NAME,FIRST_NAME,LAST_NAME,
    FIRST_NAME + ' ' + LAST_NAME as Full_name
from OEHR_DEPARTMENTS as b
inner join OEHR_EMPLOYEES as a
on a.EMPLOYEE_ID=b.MANAGER_ID

```sql
select b.MANAGER_ID, DEPARTMENT_NAME,FIRST_NAME,LAST_NAME,
       FIRST_NAME + ' ' + LAST_NAME as Full_name
from OEHR_DEPARTMENTS as b
inner join OEHR_EMPLOYEES as a
on a.EMPLOYEE_ID=b.MANAGER_ID
```

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Results   Messages

	MANAGER_ID	DEPARTMENT_NAME	FIRST_NAME	LAST_NAME	Full_name
1	200	Administration	Jennifer	Whalen	Jennifer Whalen
2	201	Marketing	Michael	Hartstein	Michael Hartstein
3	114	Purchasing	Den	Raphaely	Den Raphaely
4	203	Human Resources	Susan	Mavris	Susan Mavris
5	121	Shipping	Adam	Fripp	Adam Fripp
6	103	IT	Alexander	Hunold	Alexander Hunold
7	204	Public Relations	Hermann	Baer	Hermann Baer
8	145	Sales	John	Russell	John Russell
9	100	Executive	Steven	King	Steven King
10	108	Finance	Nancy	Greenberg	Nancy Greenberg
11	205	Accounting	Shelley	Higgins	Shelley Higgins

Query executed successfully.   DESKTOP-S0NQ4VV\SQLEXPRESS ...   DESKTOP-S0NQ4VV\Tesla ...   HR_DATA   00:00:00   11 rows

3. Write a SQL query to display the department name, city, and state province for each department. Show the results from both the tables even if you don't find their matching results in the tables.

Select DEPARTMENT_NAME, CITY, STATE_PROVINCE
from OEHR_DEPARTMENTS as a
full outer join OEHR_LOCATIONS as b
on a.LOCATION_ID=b.LOCATION_ID

```sql
Select DEPARTMENT_NAME, CITY, STATE_PROVINCE
from OEHR_DEPARTMENTS as a
full outer join OEHR_LOCATIONS as b
on a.LOCATION_ID=b.LOCATION_ID
```

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Results Messages

	DEPARTMENT_NAME	CITY	STATE_PROVINCE
1	Administration	Seattle	Washington
2	Marketing	Toronto	Ontario
3	Purchasing	Seattle	Washington
4	Human Resources	London	NULL
5	Shipping	South San Francisco	California
6	IT	Southlake	Texas
7	Public Relations	Munich	Bavaria
8	Sales	Oxford	Oxford
9	Executive	Seattle	Washington
10	Finance	Seattle	Washington
11	Accounting	Seattle	Washington
12	Treasury	Seattle	Washington
13	Corporate Tax	Seattle	Washington

Query executed successfully.

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4. Show the number of employees in each department, but only for departments with more than 3 employees.

select b.DEPARTMENT_NAME,count(employee_id) as count_emp
from OEHR_EMPLOYEES as a
inner join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
group by b.DEPARTMENT_NAME
having count(employee_id)>3

```
select b.DEPARTMENT_NAME,count(employee_id) as count_emp
from OEHR_EMPLOYEES as a
inner join OEHR_DEPARTMENTS as  b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
group by b.DEPARTMENT_NAME
having count(employee_id)>3
```

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Results | Messages

	DEPARTMENT_NAME	count_emp
1	Finance	6
2	IT	5
3	Purchasing	6
4	Sales	34
5	Shipping	45

5. Show each department's name along with the count of employees per department. In the count of employees, only those employees should be considered who earn more than $5000,

select a.DEPARTMENT_NAME,count(b.employee_id) as count_emp
from OEHR_DEPARTMENTS as a
right join OEHR_EMPLOYEES as b
on a.department_id=b.DEPARTMENT_ID
where salary>5000 -- Observation --> QS: all joins work same why?
group by a.DEPARTMENT_NAME

```
select a.DEPARTMENT_NAME,count(b.employee_id) as count_emp
from OEHR_DEPARTMENTS as a
right join OEHR_EMPLOYEES as b
on a.department_id=b.DEPARTMENT_ID
where salary>5000 -- Observation --> QS: all joins work same why?
group by a.DEPARTMENT_NAME
```

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Results Messages

	DEPARTMENT_NAME	count_emp
1	NULL	1
2	Accounting	2
3	Executive	3
4	Finance	6
5	Human Resources	1
6	IT	2
7	Marketing	2
8	Public Relations	1
9	Purchasing	1
10	Sales	34
11	Shipping	5

Query executed successfully. DESKTOP-S0NO4VV\SQLEXPRESS ... DESKTOP-S0NO4VV\Tesla ... HR_DATA 00:00:00 11 rows

6. Find the highest salary in the 'IT' department. Do not use the department ID of 'IT' Department. Use joins to figure it out.\

select max(salary)
from OEHR_EMPLOYEES as a
full outer join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
where DEPARTMENT_NAME='IT'

```sql
select max(salary)
from OEHR_EMPLOYEES as a
full outer join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
where DEPARTMENT_NAME='IT'
--where statement leads to all joins doing
```

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Results Messages

	(No column name)
1	9000

7. Write a SQL query to calculate the average salary, and total employees. Return department name (Not department ID), average salary of that department and number of employees in that department. Only those departments should be displayed which departments have the average salary greater than $5000.

**select department_name, avg(salary) as avg, count(employee_id) as count
from OEHR_EMPLOYEES as a
left join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
group by DEPARTMENT_NAME
having avg(salary)>5000**

```sql
select department_name, avg(salary) as avg, count(employee_id) as count
from OEHR_EMPLOYEES as a
left join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
group by DEPARTMENT_NAME
having avg(salary)>5000
```
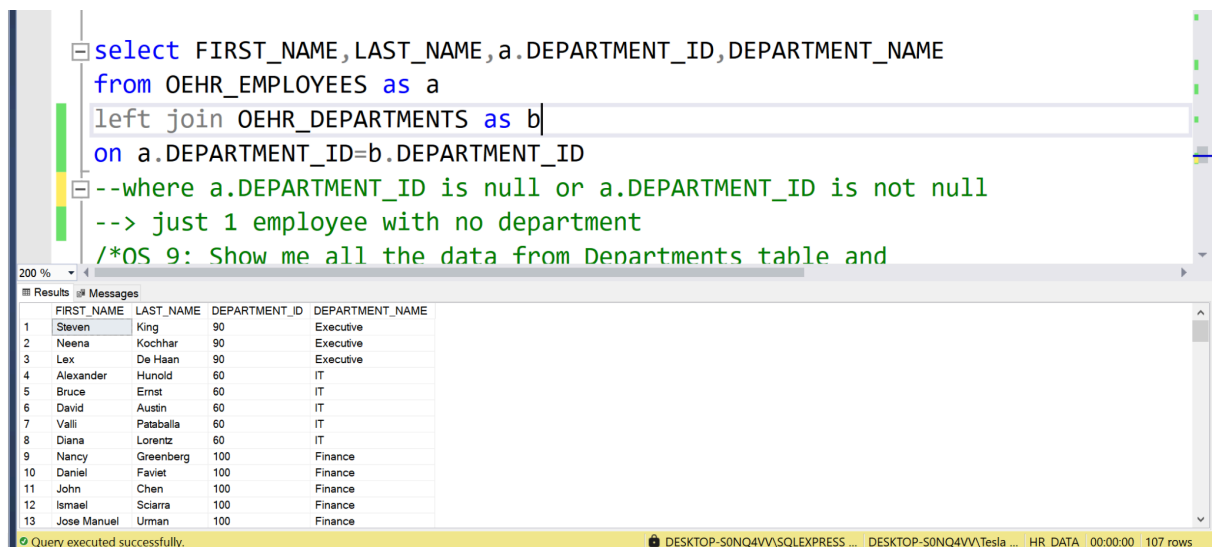
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Results Messages

	department_name	avg	count
1	NULL	7000	1
2	Accounting	10150	2
3	Executive	19333	3
4	Finance	8600	6
5	Human Resources	6500	1
6	IT	5760	5
7	Marketing	9500	2
8	Public Relations	10000	1
9	Sales	8955	34

Query executed successfully.

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8. Write a SQL query to find out which employees have or do not have a department. Return first name, last name, department ID, department name.

select FIRST_NAME,LAST_NAME,a.DEPARTMENT_ID,DEPARTMENT_NAME
from OEHR_EMPLOYEES as a
left join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID

```
select FIRST_NAME,LAST_NAME,a.DEPARTMENT_ID,DEPARTMENT_NAME
from OEHR_EMPLOYEES as a
left join OEHR_DEPARTMENTS as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
--where a.DEPARTMENT_ID is null or a.DEPARTMENT_ID is not null
--> just 1 employee with no department
/*OS 9: Show me all the data from Departments table and
```

	FIRST_NAME	LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
1	Steven	King	90	Executive
2	Neena	Kochhar	90	Executive
3	Lex	De Haan	90	Executive
4	Alexander	Hunold	60	IT
5	Bruce	Ernst	60	IT
6	David	Austin	60	IT
7	Valli	Pataballa	60	IT
8	Diana	Lorentz	60	IT
9	Nancy	Greenberg	100	Finance
10	Daniel	Faviet	100	Finance
11	John	Chen	100	Finance
12	Ismael	Sciarra	100	Finance
13	Jose Manuel	Urman	100	Finance

Query executed successfully.   DESKTOP-S0NQ4VV\SQLEXPRESS ...   DESKTOP-S0NQ4VV\Tesla ...   HR_DATA   00:00:00   107 rows

9. Show me all the data from Departments table and all the data from employees table. Even if a department does not have an employee, I want the its data. But if an employee does not have a department, I dont want its data.

select *
from OEHR_DEPARTMENTS as a
LEFT join OEHR_EMPLOYEES as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
Where a.department_id is not null

```sql
select *
from   OEHR_DEPARTMENTS  as a  -- all departments irrespective of employee du
LEFT join  OEHR_EMPLOYEES  as b
on a.DEPARTMENT_ID=b.DEPARTMENT_ID
--where a.DEPARTMENT_ID is not null
-- where   a.DEPARTMENT_ID is not null  -- employee doesn't have a department
```

200 %

Results | Messages

	DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANA
1	10	Administration	200	1700	200	Jennifer	Whalen	JWHALEN	515.123.4444	2008-03-08	AD_ASST	4400	NULL	101
2	20	Marketing	201	1800	201	Michael	Hartstein	MHARTSTE	515.123.5555	2016-08-08	MK_MAN	13000	NULL	100
3	20	Marketing	201	1800	202	Pat	Fay	PFAY	603.123.6666	2018-02-06	MK_REP	6000	NULL	201
4	30	Purchasing	114	1700	114	Den	Raphaely	DRAPHEAL	515.127.4561	2015-05-29	PU_MAN	11000	NULL	100
5	30	Purchasing	114	1700	115	Alexander	Khoo	AKHOO	515.127.4562	2015-11-07	PU_CLERK	3100	NULL	114
6	30	Purchasing	114	1700	116	Shelli	Baida	SBAIDA	515.127.4563	2018-06-15	PU_CLERK	2900	NULL	114
7	30	Purchasing	114	1700	117	Sigal	Tobias	STOBIAS	515.127.4564	2018-01-13	PU_CLERK	2800	NULL	114
8	30	Purchasing	114	1700	118	Guy	Himuro	GHIMURO	515.127.4565	2019-05-07	PU_CLERK	2600	NULL	114
9	30	Purchasing	114	1700	119	Karen	Colmenares	KCOLMENA	515.127.4566	2020-01-30	PU_CLERK	2500	NULL	114
10	40	Human Resources	203	2400	203	Susan	Mavris	SMAVRIS	515.123.7777	2014-11-27	HR_REP	6500	NULL	101
11	50	Shipping	121	1500	120	Matthew	Weiss	MWEISS	650.123.1234	2017-01-07	ST_MAN	8000	NULL	100
12	50	Shipping	121	1500	121	Adam	Fripp	AFRIPP	650.123.2234	2017-09-30	ST_MAN	8200	NULL	100

Query executed successfully.

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