```sql
select * from [dbo].[employee]

select * from [dbo].[dept]
```

	emp_id	emp_name	dept_id	salary	manager_id	emp_age
1	1	Ankit	100	10000	4	39
2	2	Mohit	100	15000	5	48
3	3	Vikas	100	10000	4	37
4	4	Rohit	100	5000	2	16
5	5	Mudit	200	12000	6	55
6	6	Agam	200	12000	2	14
7	7	Sanjay	200	9000	2	13
8	8	Ashish	200	5000	2	12
9	9	Mukesh	300	6000	6	51
10	10	Rakesh	500	7000	6	50

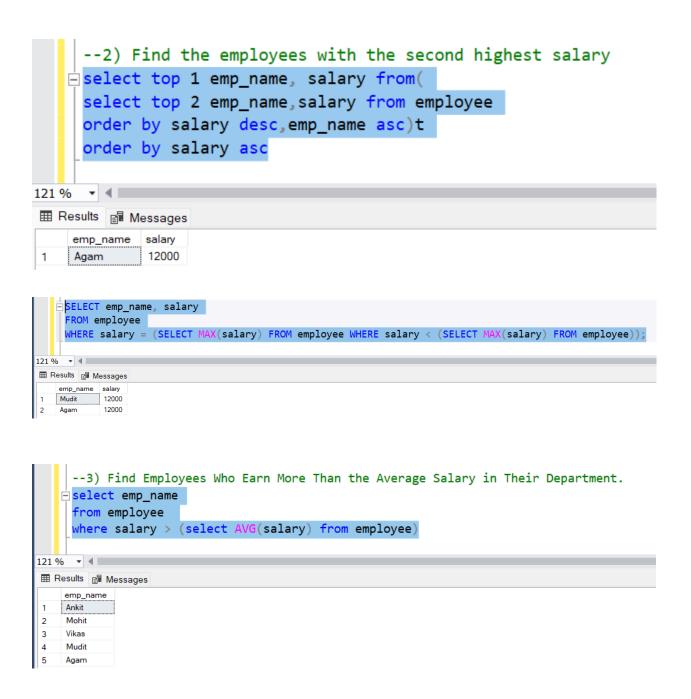|	dep_id	dep_name
1	100	Analytics
2	200	IT
3	300	HR
4	400	Text Analytics

```sql
--1) write a query to print dep name and average salary of employees in that dep .
select d.dep_name,AVG(salary) as avg_salary from employee  e
inner join dept d on d.dep_id = e.dept_id
group by dep_name
```

121 %

Results | Messages

	dep_name	avg_salary
1	Analytics	10000
2	HR	6000
3	IT	9500

```sql
--2) Imp write a query to print dep names where none of the emplyees have same salary.
select d.dep_name
from employee  e
inner join dept d on d.dep_id = e.dept_id
group by d.dep_name
having count(salary) = count(distinct salary)
```

121 %

Results | Messages

	dep_name
1	HR

```sql
--3) write a query to print dep name for which there is no employee.
select d.dep_name
from employee  e
right join dept d on d.dep_id = e.dept_id
where emp_name is null
```

121 % ◄

⊞ Results 🗐 Messages

	dep_name
1	Text Analytics

```sql
--4) write a query to print employees name for which dep id is not present in dept table
select emp_name
from employee  e
left join dept d on d.dep_id = e.dept_id
where d.dep_id is null
```

121 % ◄

⊞ Results 🗐 Messages

	emp_name
1	Rakesh

```sql
--sub query

--1) Find employees who are managed by 'Rohit'
select *
from employee  e
where manager_id = (select emp_id from employee where emp_name = 'Rohit')
```

121 % ◄

⊞ Results 🗐 Messages

	emp_id	emp_name	dept_id	salary	manager_id	emp_age
1	1	Ankit	100	10000	4	39
2	3	Vikas	100	10000	4	37

```sql
--2) Find the employees with the second highest salary
select top 1 emp_name, salary from(
select top 2 emp_name,salary from employee
order by salary desc,emp_name asc)t
order by salary asc
```

121 %

Results | **Messages**

	emp_name	salary
1	Agam	12000

```sql
SELECT emp_name, salary
FROM employee
WHERE salary = (SELECT MAX(salary) FROM employee WHERE salary < (SELECT MAX(salary) FROM employee));
```

121 %

Results | **Messages**

	emp_name	salary
1	Mudit	12000
2	Agam	12000

```sql
--3) Find Employees Who Earn More Than the Average Salary in Their Department.
select emp_name
from employee
where salary > (select AVG(salary) from employee)
```

121 %

Results | **Messages**

	emp_name
1	Ankit
2	Mohit
3	Vikas
4	Mudit
5	Agam

```sql
--4) Find Employees Who Have the Highest Salary in Their Department
SELECT e.emp_name, e.salary, d.dep_name
FROM employee e
JOIN dept d ON e.dept_id = d.dep_id
WHERE e.salary = (
    SELECT MAX(salary)
    FROM employee e1
    WHERE e1.dept_id = d.dep_id
);
```

121 %

Results | Messages

	emp_name	salary	dep_name
1	Mukesh	6000	HR
2	Mudit	12000	IT
3	Agam	12000	IT
4	Mohit	15000	Analytics

```sql
-- with rank
select * from(
select emp_name,salary,dept_id, rank() over(partition by dept_id order by salary desc) rk from employee) t
where rk = 1
```

121 %

Results | Messages

	emp_name	salary	dept_id	rk
1	Mohit	15000	100	1
2	Mudit	12000	200	1
3	Agam	12000	200	1
4	Mukesh	6000	300	1
5	Rakesh	7000	500	1

```sql
--on employee table only
SELECT emp_name, salary, dept_id
FROM employee e
WHERE salary = (
    SELECT MAX(salary)
    FROM employee e1
    WHERE e1.dept_id = e.dept_id
);
```

121 %

Results | Messages

	emp_name	salary	dept_id
1	Rakesh	7000	500
2	Mukesh	6000	300
3	Mudit	12000	200
4	Agam	12000	200
5	Mohit	15000	100

```sql
--5) Find Departments With More Than 2 Employees

SELECT dep_name
FROM dept d
WHERE dep_id IN (
    SELECT dept_id
    FROM employee
    GROUP BY dept_id
    HAVING COUNT(emp_id) > 2);
```

121 % ▾ ◂

⊞ Results ᗕ Messages

	dep_name
1	Analytics
2	IT

```sql
-- with join
SELECT d.dep_name, count(*) cn
FROM employee e
join dept d on d.dep_id = e.dept_id
group by d.dep_name
having count(*) >2
```

121 % ▾ ◂

⊞ Results ᗕ Messages

	dep_name	cn
1	Analytics	4
2	IT	4

```sql
--6)  Find Employees Who Do Not Have Any Managers.
SELECT emp_name
FROM employee
WHERE emp_id NOT IN (SELECT DISTINCT manager_id FROM employee);
```

	emp_name
1	Ankit
2	Vikas
3	Sanjay
4	Ashish
5	Mukesh
6	Rakesh

```sql
-- 7)Find Employees Who Earn More Than the Employee Named 'Vikas'.
SELECT emp_name
FROM employee
where  salary > (select salary from employee
                 where emp_name = 'Vikas')
```

	emp_name
1	Mohit
2	Mudit
3	Agam

```sql
-- 8) Find the Department with the Lowest Average Salary.
SELECT dept_id
FROM employee e
where salary < (select avg(salary) from employee
                where dept_id = e.dept_id)
```

	dept_id
1	100
2	200
3	200

```sql
--9) Find Employees Who Have a Salary Higher Than the Average Salary of Their Department,
--    but Less Than the Department's Maximum Salary.
SELECT emp_name, salary, dep_name
FROM employee e
JOIN dept d ON e.dept_id = d.dep_id
WHERE salary > (
    SELECT AVG(salary)
    FROM employee
    WHERE dept_id = e.dept_id)
AND salary < (
    SELECT MAX(salary)
    FROM employee
    WHERE dept_id = e.dept_id
)
```

1 %

Results | Messages

emp_name | salary | dep_name

				avg		max
Ankit	100	10000		10000		15000
Mohit	100	15000				
Vikas	100	10000				
Rohit	100	5000				
Mudit	200	12000		9500		12000
Agam	200	12000				
Sanjay	200	9000				
Ashish	200	5000				
Mukesh	300	6000		6000		6000
Rakesh	500	7000		7000		7000

```sql
--10) Find Employees Who Are Managed by the Employee with the Lowest Salary.
SELECT emp_name
FROM employee
WHERE manager_id in (
    SELECT emp_id
    FROM employee
    WHERE salary = (
        SELECT MIN(salary)
        FROM employee
    )
);
```

121 %

Results | Messages

	emp_name
1	Ankit
2	Vikas

```sql
SELECT emp_name
FROM employee
WHERE manager_id  = (
    SELECT emp_id
    FROM employee
    WHERE salary = (
        SELECT MIN(salary)
        FROM employee
    )
);
```

121 %

Results   Messages

Msg 512, Level 16, State 1, Line 18
Subquery returned more than 1 value. This is not permitted when the subquery follows =, !=, <, <= , >, >= or when the subquery is used as an expression.

```sql
SELECT emp_name
FROM employee
WHERE manager_id  = (
    SELECT emp_id
    FROM employee
    WHERE salary = (
        SELECT MIN(salary)
        FROM employee
    )
);
```

121 %

Results   Messages

	emp_id
1	4
2	8

Note - we can use IN here instead =