

Advanced SQL - II

Demo 1 – Company Database



edureka!

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Company Database

Problem Statement: Jim is an intern at an IT Company. During the initial phase of his training, he is assigned to create a Company Database named Company_DB and then create three tables, namely employee, department, and payscale_data.

Database description:

1) employee

- **emp_no:** This attribute contains the unique employee numbers.
- **ename:** This attribute contains the name of the employees.
- **designation:** This attribute has the designation of employees.
- **salary:** This attribute contains the salary of employees.
- **dept_no:** This attribute shows the department no. of employees.
- **Band:** This attribute reflects the Band of employees according to their pay scale.

2) department

- **dept_no:** This attribute shows the department no. of employees.
- **dname:** This attribute shows the department name.
- **Location:** This attribute contains the location of the department.

3) payscale_data

- **Band:** This attribute reflects the Band of employees according to their pay scale.
- **Tax:** This attribute shows the tax of employees according to their Band.

Help Jim in performing the assigned conditions:

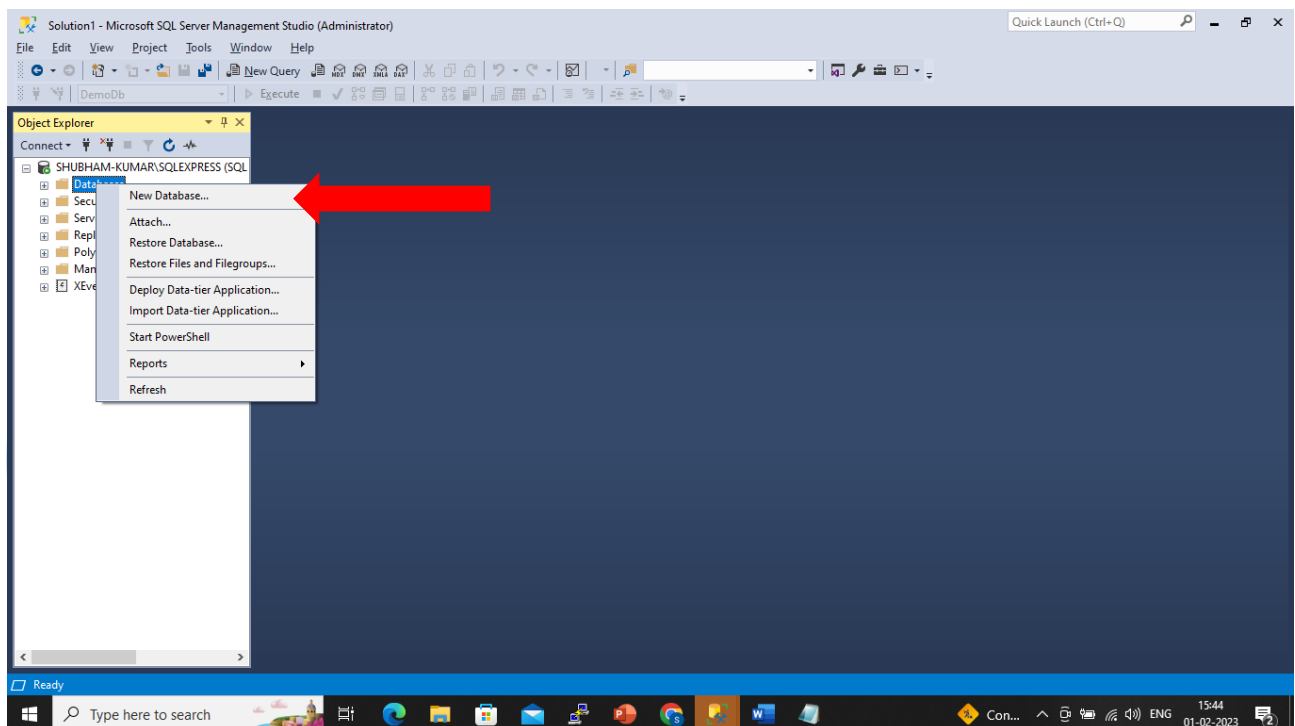
1. Amongst managers who gets the highest salary.
2. Get the details of SalesHead earning 70000.
3. What is the second highest salary?
4. Who gets the second-highest salary?
5. How many employees work in department number 12?
6. How many employees work in Delhi?
7. In which 'department name' does the employee Smith work?
8. What is the average salary of an employee working in the Sales department?
9. How many employees of the Sales department earn more than 25000?
10. How many employees are present in Delhi per job?
11. How many employees earn more than employee no. 142?
12. Details of employees paying a tax of 10000.

Note: For inserting the values in all the respective tables.
For your reference, the database 'Company_DB' file has been attached.

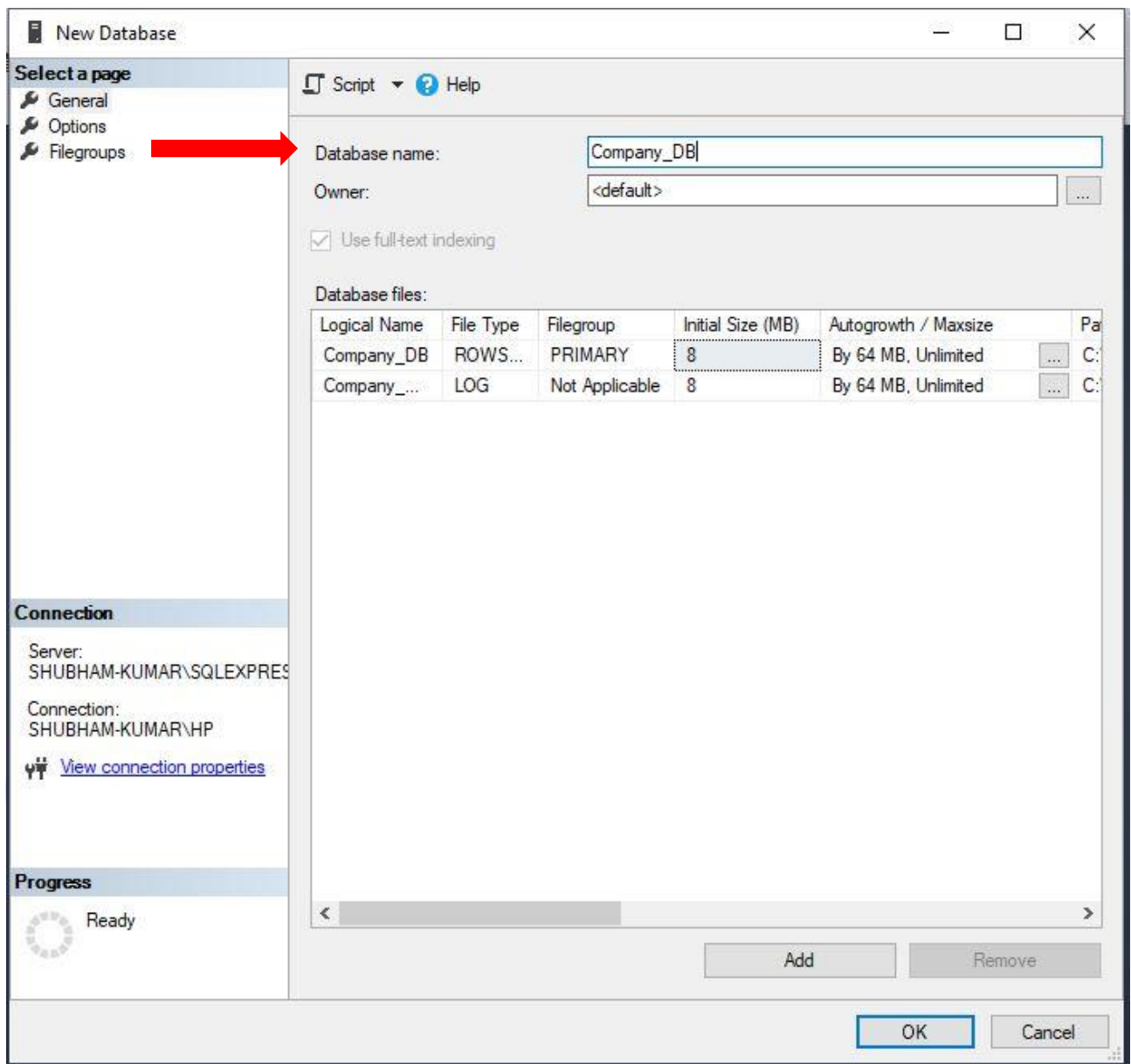


Working on the Demonstration

Step 1: Create a database named **Company_DB** by right-clicking on databases.



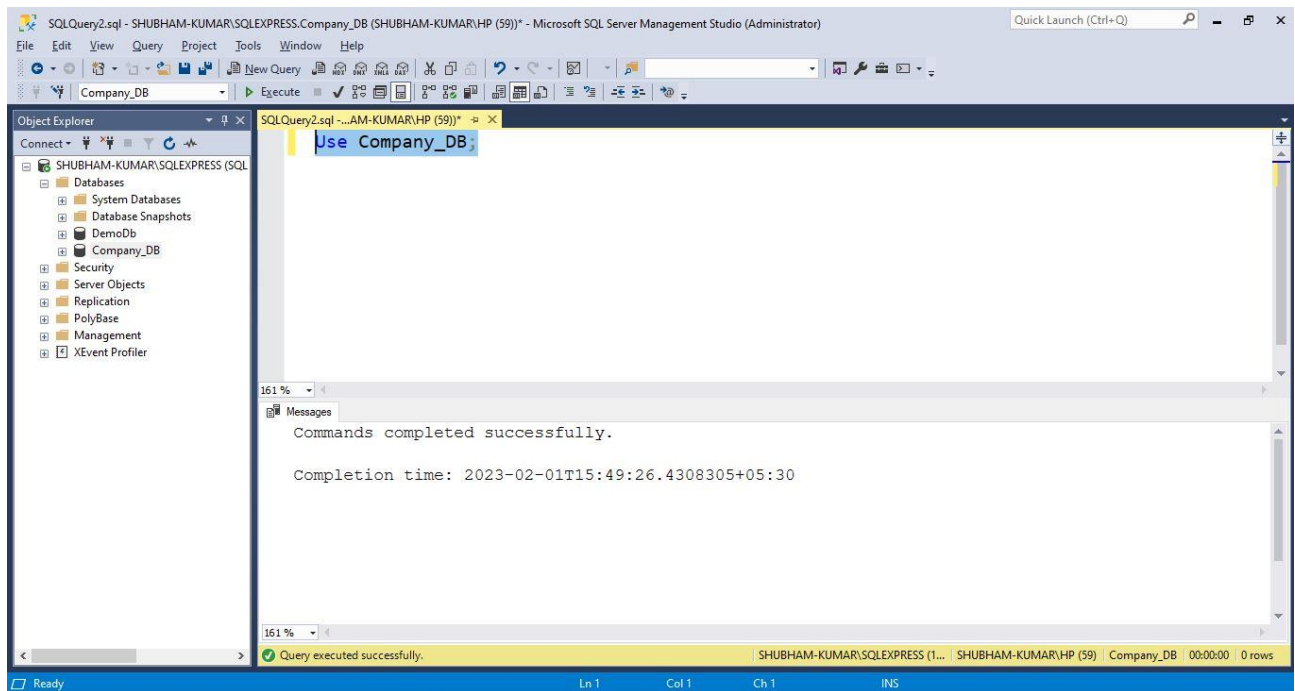
Step 2: Put in the Database name **Company_DB**.



Note: There are two databases created Main Database File (MDF), which acts as a primary database, and another one is Log Database File (LDF) which records all the changes and transactions made in the database

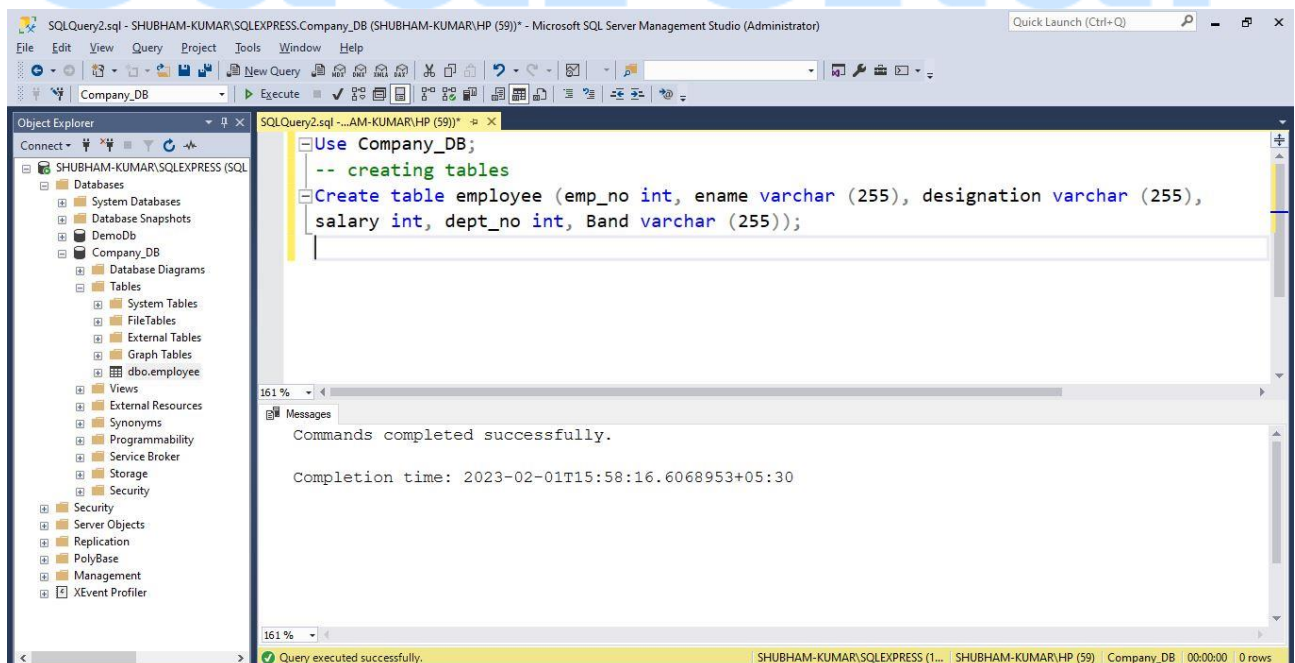
Step 3: Use the **Company_DB** in Query editor.

Use `Company_DB;`



Step 4: Create a table employee with parameters such as emp_no, ename, designation, salary, dept_no, and Band.

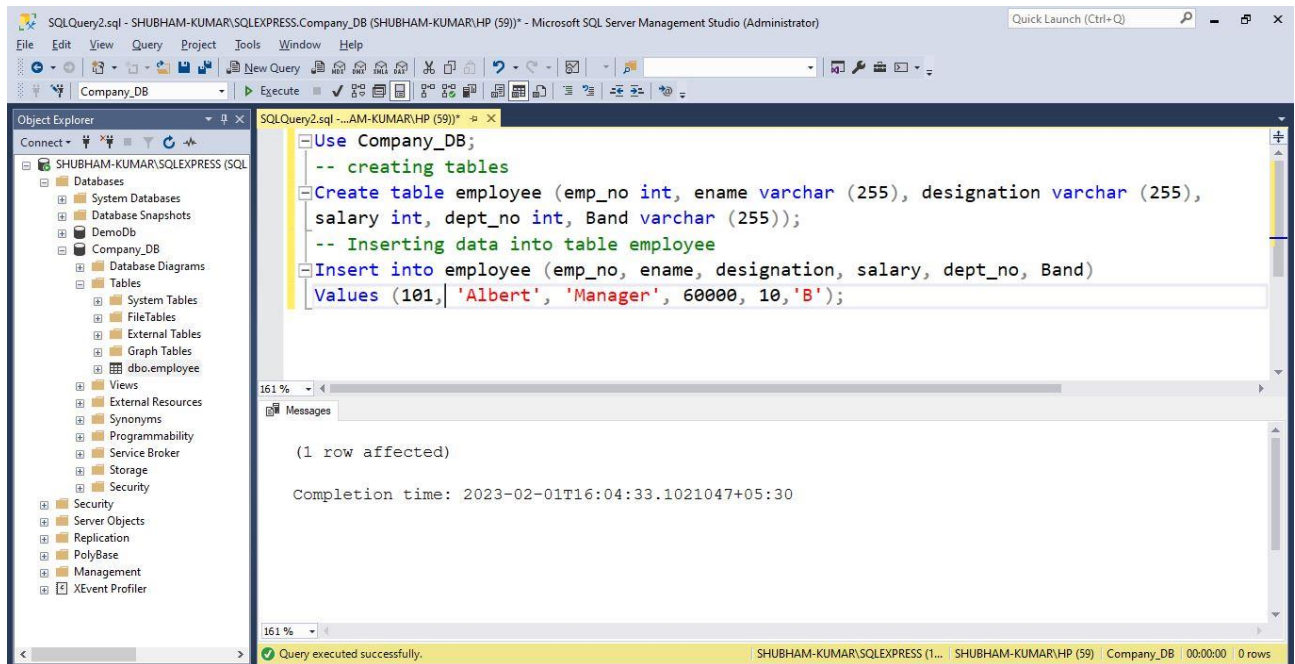
Create table employee (emp_no int, ename varchar (255), designation varchar (255), salary int, dept_no int, Band varchar (255));



Step 5: Insert the first employee details into the employee table.

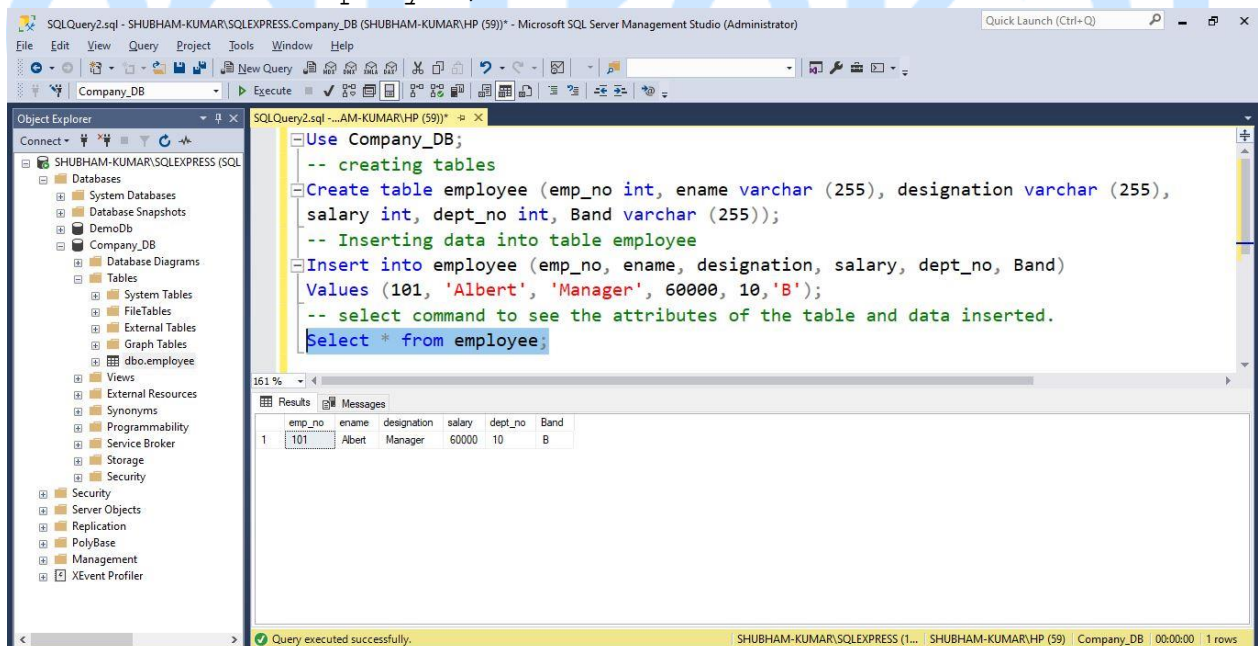
Insert into employee (emp_no, ename, designation, salary, dept_no, Band)

Values (101, 'Albert', 'Manager', 60000, 10, 'B');



Step 6: Now, select data from a database table and the data returned is stored in a result table, called the result-set.

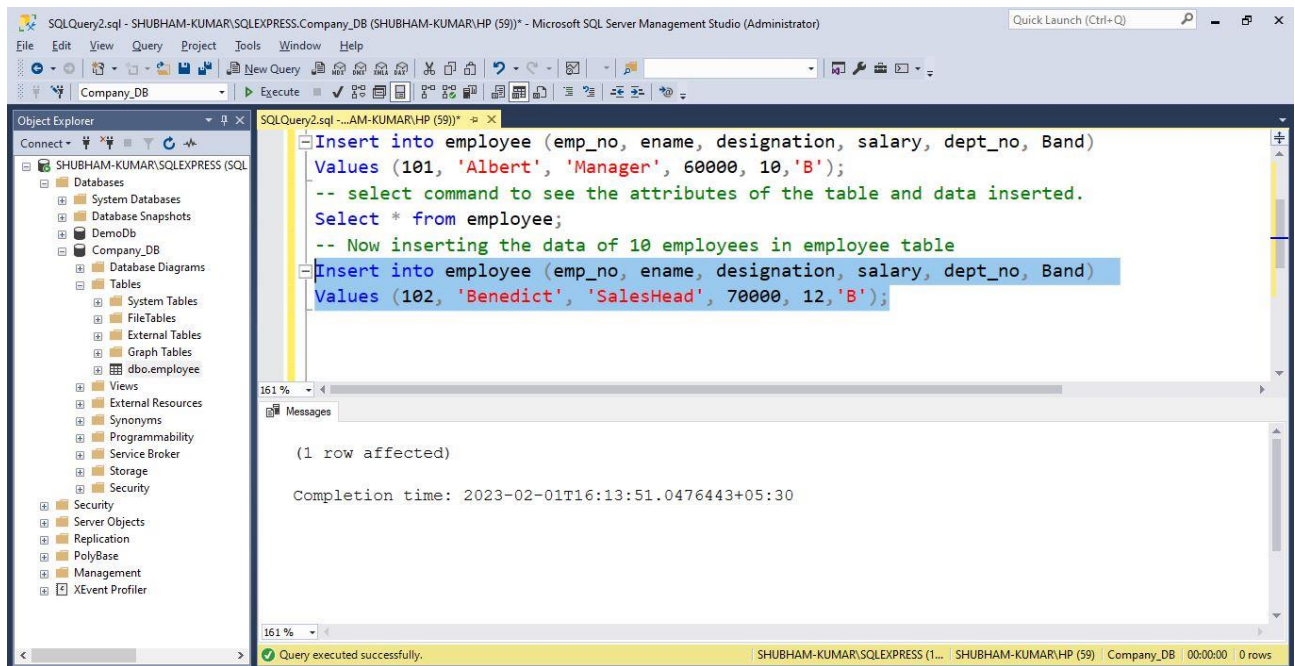
Select * from employee;



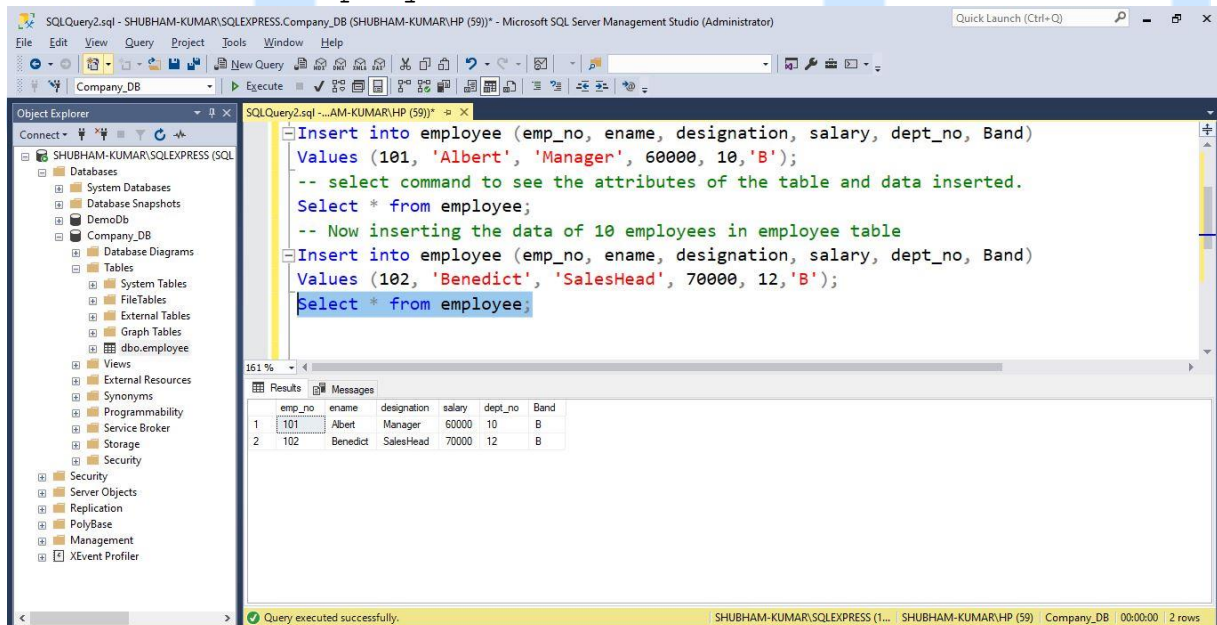
Step 7: Similarly, Insert the second employee's details into the employee table.

Insert into employee (emp_no, ename, designation, salary, dept_no, Band)

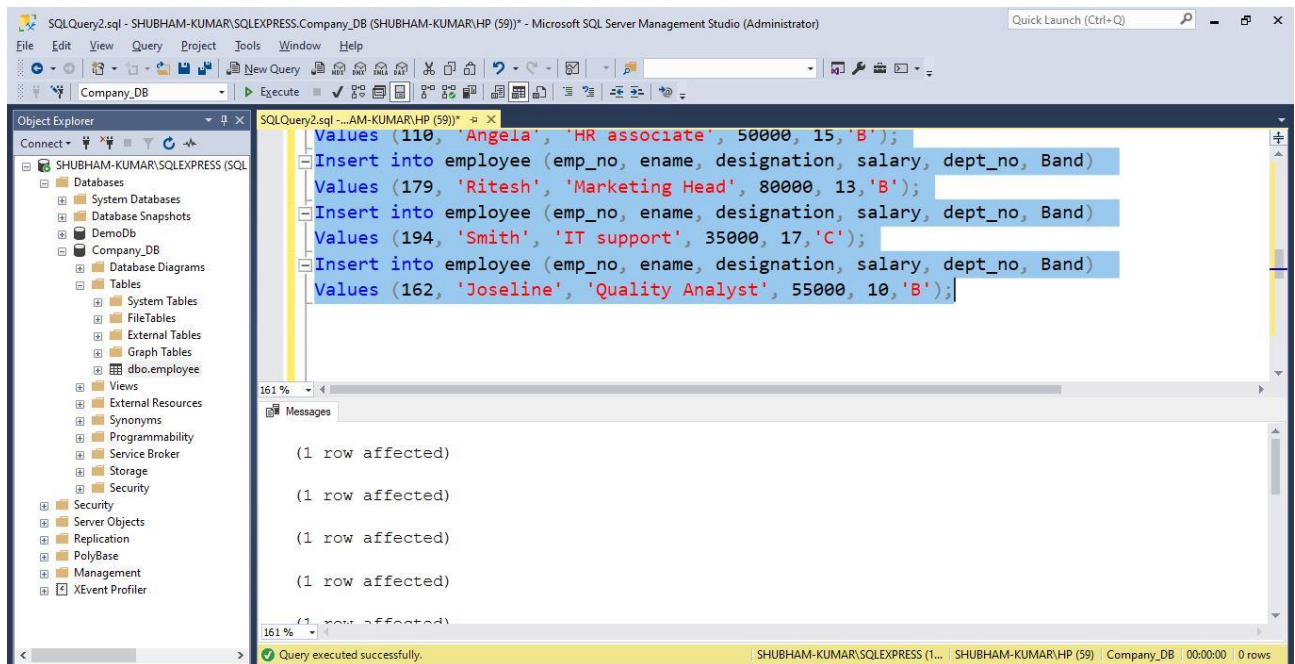
Values (102, 'Benedict', 'SalesHead', 70000, 12, 'B');



Step 8: See the attributes of the table and the employee details in the result table.
Select * from employee;

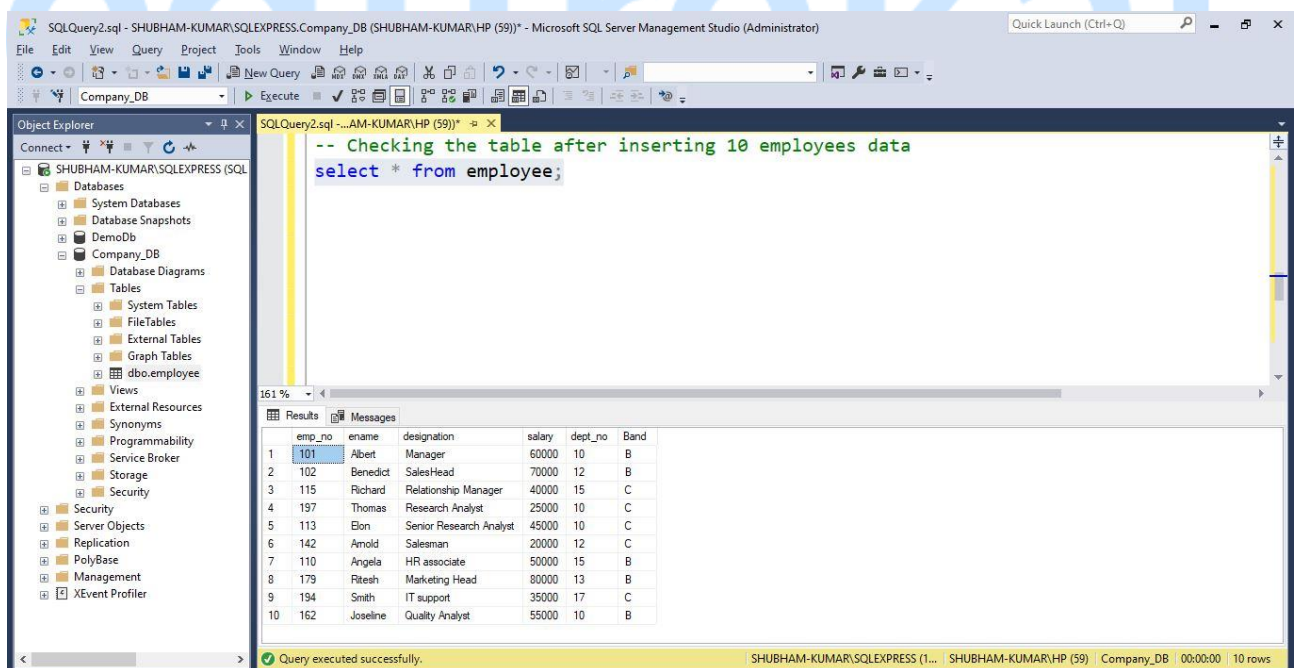


Step 9: Insert the respective details of 10 employees in the **employee** table.



Step 10: Using the select command, we can retrieve the final employee table with details of 10 employees.

Select * from employee;

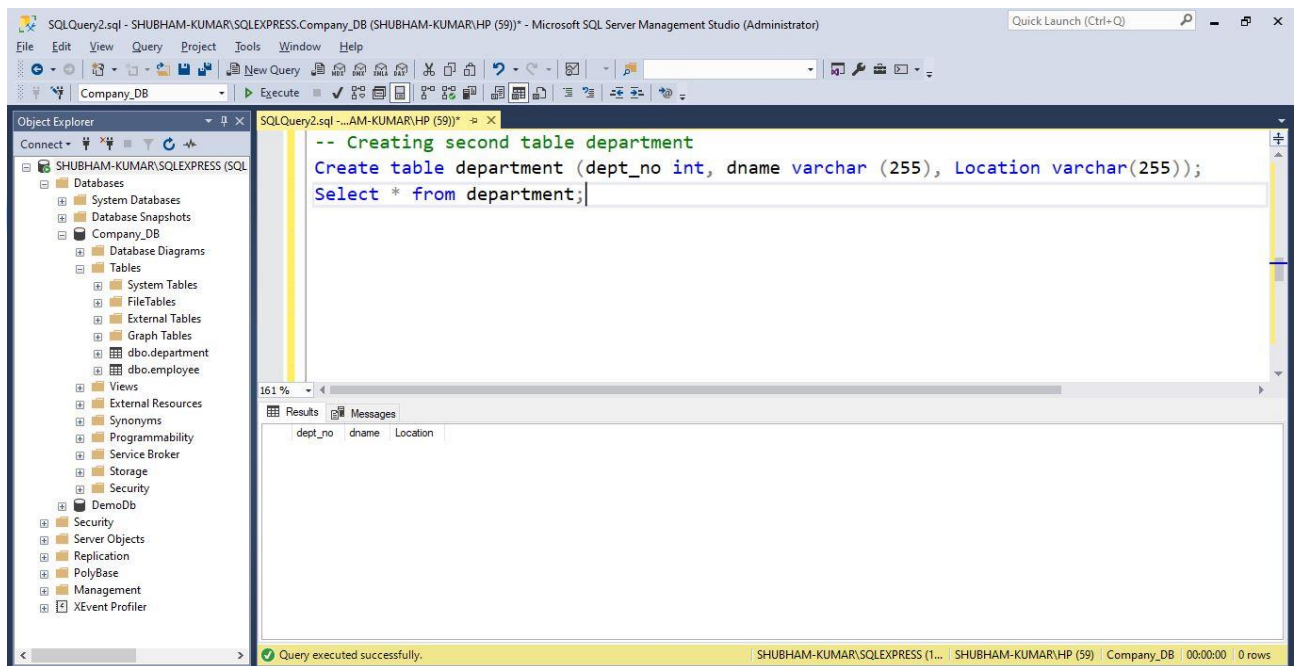


Step 11: The result table or result-set of the employee table.

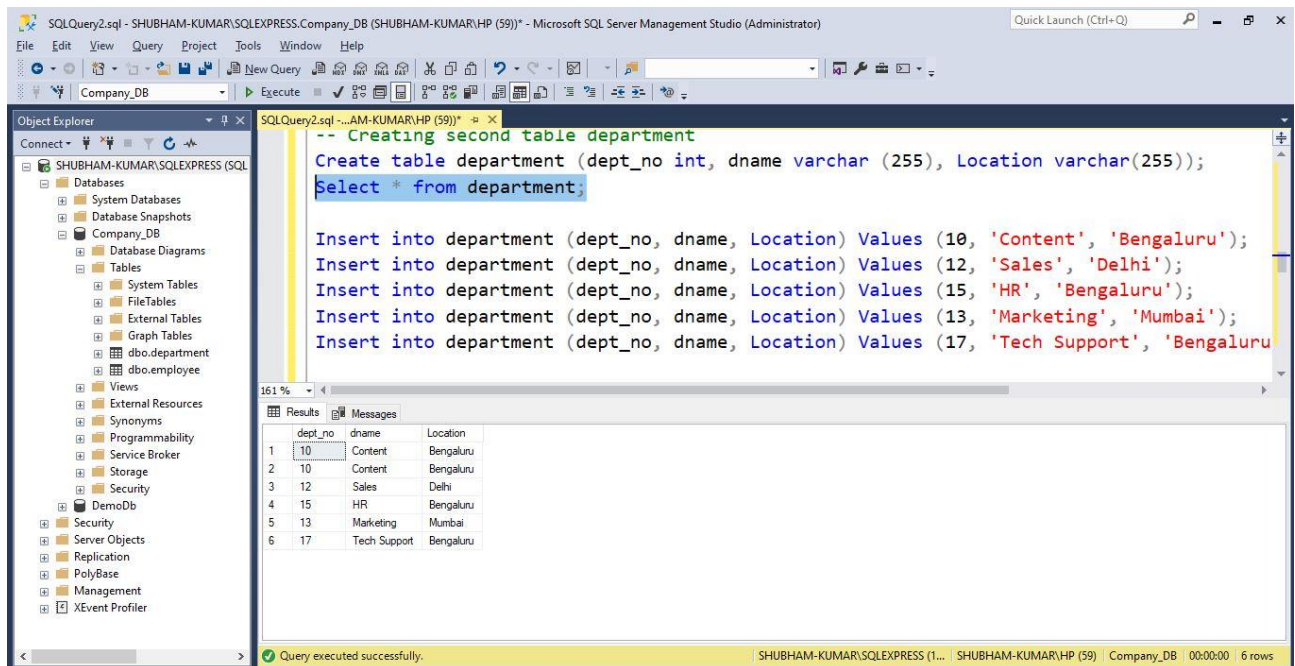
| | emp_no | ename | designation | salary | dept_no | Band |
|----|--------|----------|-------------------------|--------|---------|------|
| 1 | 101 | Albert | Manager | 60000 | 10 | B |
| 2 | 102 | Benedict | SalesHead | 70000 | 12 | B |
| 3 | 115 | Richard | Relationship Manager | 40000 | 15 | C |
| 4 | 197 | Thomas | Research Analyst | 25000 | 10 | C |
| 5 | 113 | Elon | Senior Research Analyst | 45000 | 10 | C |
| 6 | 142 | Arnold | Salesman | 20000 | 12 | C |
| 7 | 110 | Angela | HR associate | 50000 | 15 | B |
| 8 | 179 | Ritesh | Marketing Head | 80000 | 13 | B |
| 9 | 194 | Smith | IT support | 35000 | 17 | C |
| 10 | 162 | Joseline | Quality Analyst | 55000 | 10 | B |

Step 12: Create a table department with parameters such as dept_no, dname, and Location.

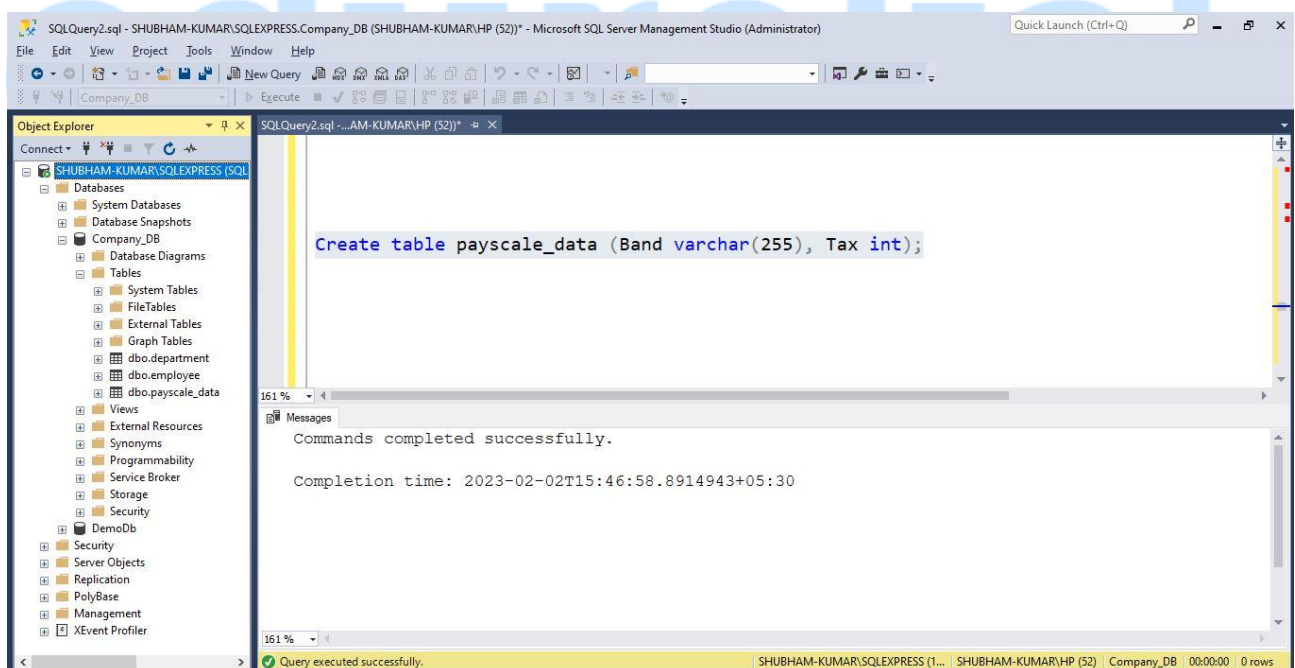
Create table department (dept_no int, dname varchar (255), Location varchar(255));



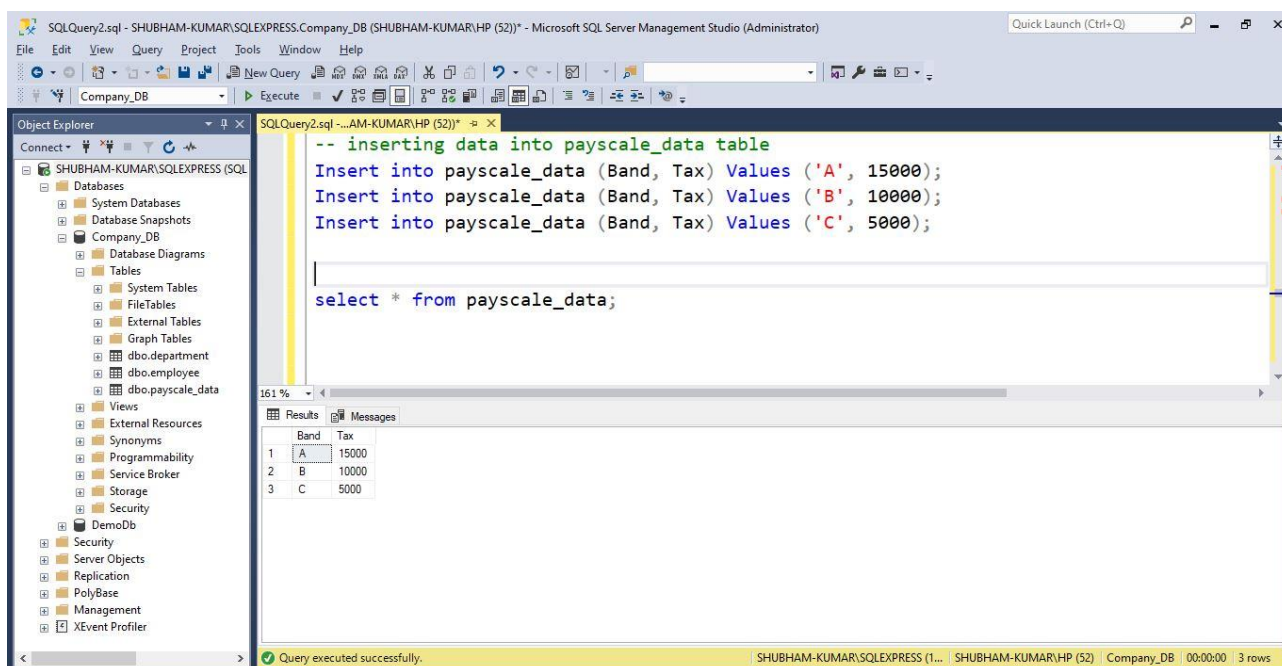
Step 13: Insert the details into the department table and retrieve the result table with all details using the select command.
 Select * from department;



Step 14: Create a new table `payscale_data` with parameters such as Band and Tax.
 Create table `payscale_data` (Band varchar(255), Tax int);



Step 15: Insert the data into the `payscale_data` table and retrieve the result table using the select statement.
 Select * from `payscale_data`;

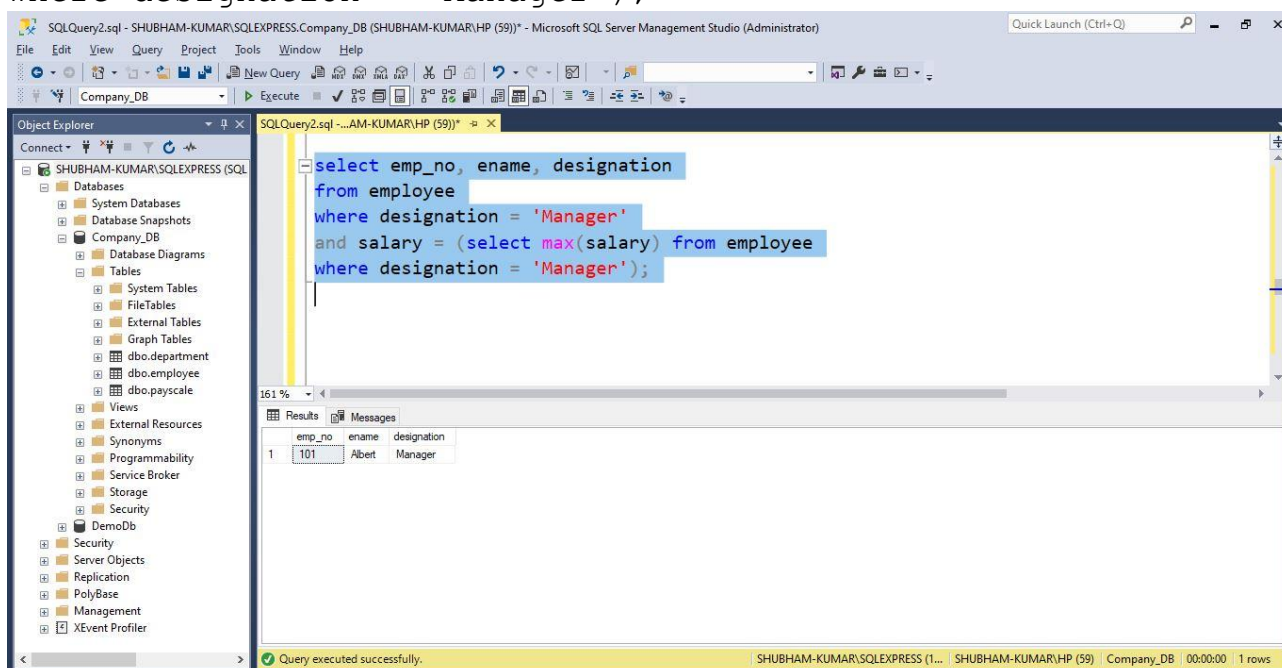


Note: The creation of the three tables employee, department, and payscale_data is done, and data is also inserted in all three tables.

We can start resolving Jim's queries.

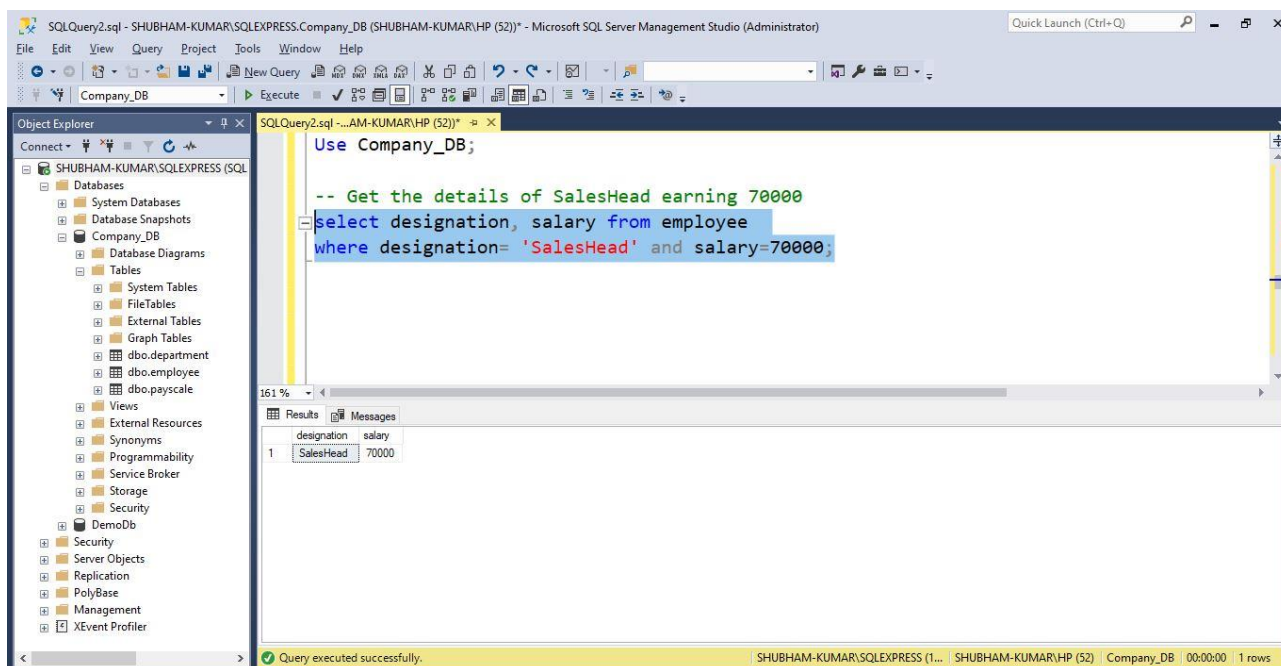
Query 1: Amongst managers, who gets the highest salary.

```
select emp_no, ename, designation
from employee
where designation = 'Manager'
and salary = (select max(salary) from employee
where designation = 'Manager');
```



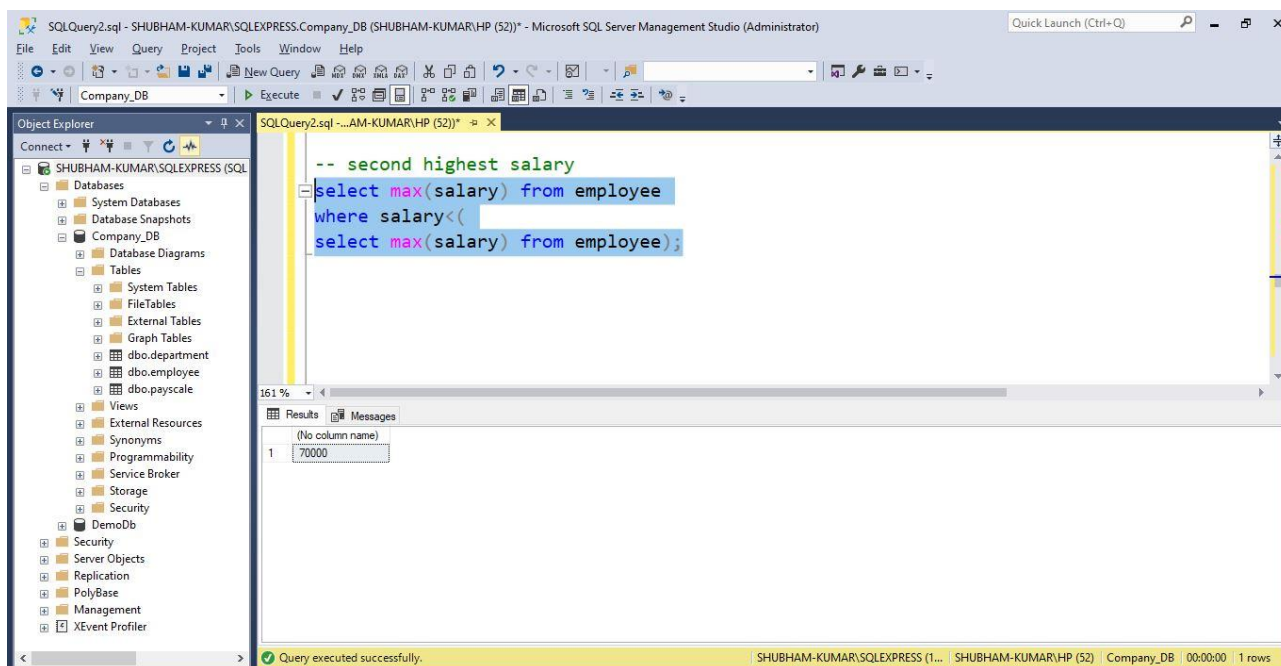
Query 2: Get the details of SalesHead earning 70000.

```
select designation, salary from employee  
where designation= 'SalesHead' and salary=70000;
```



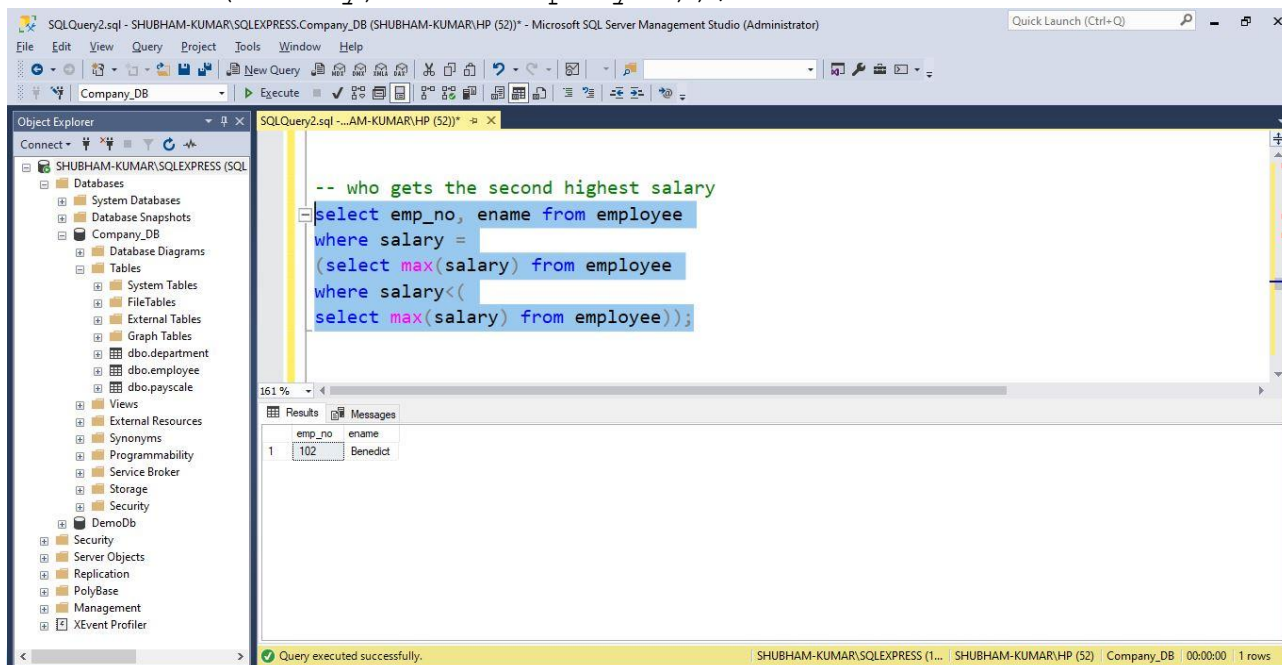
Query 3: What is the second highest salary?

```
select max(salary) from employee  
where salary < (  
select max(salary) from employee);
```



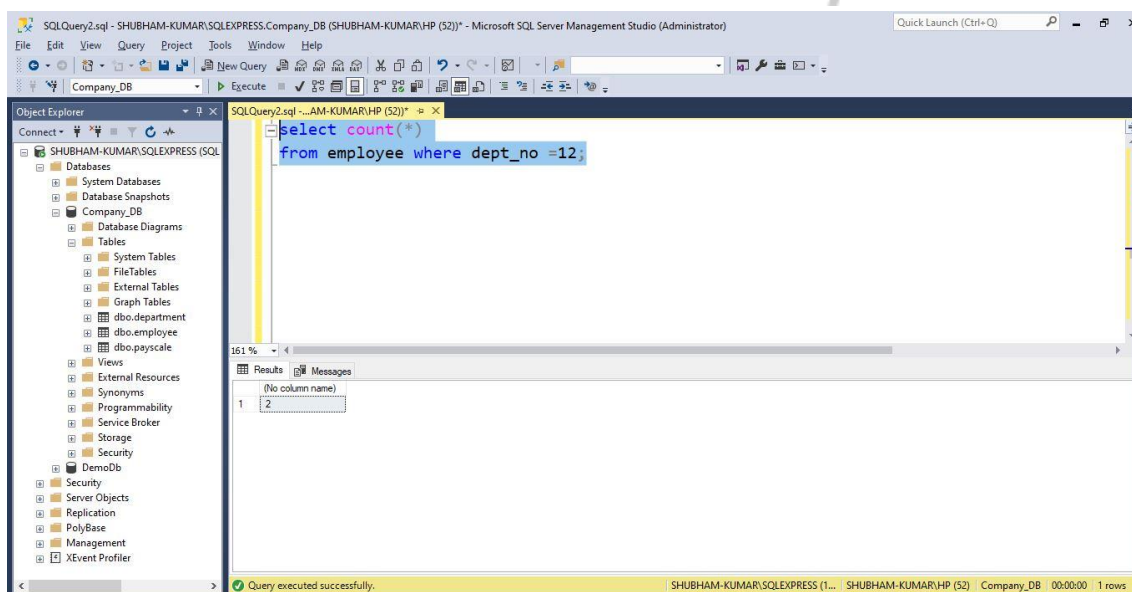
Query 4: Who gets the second-highest salary?

```
select emp_no, ename from employee
where salary =
(select max(salary) from employee
where salary<(
select max(salary) from employee));
```



Query 5: How many employees work in department number 12?

```
select count(*)
from employee where dept_no=12;
```

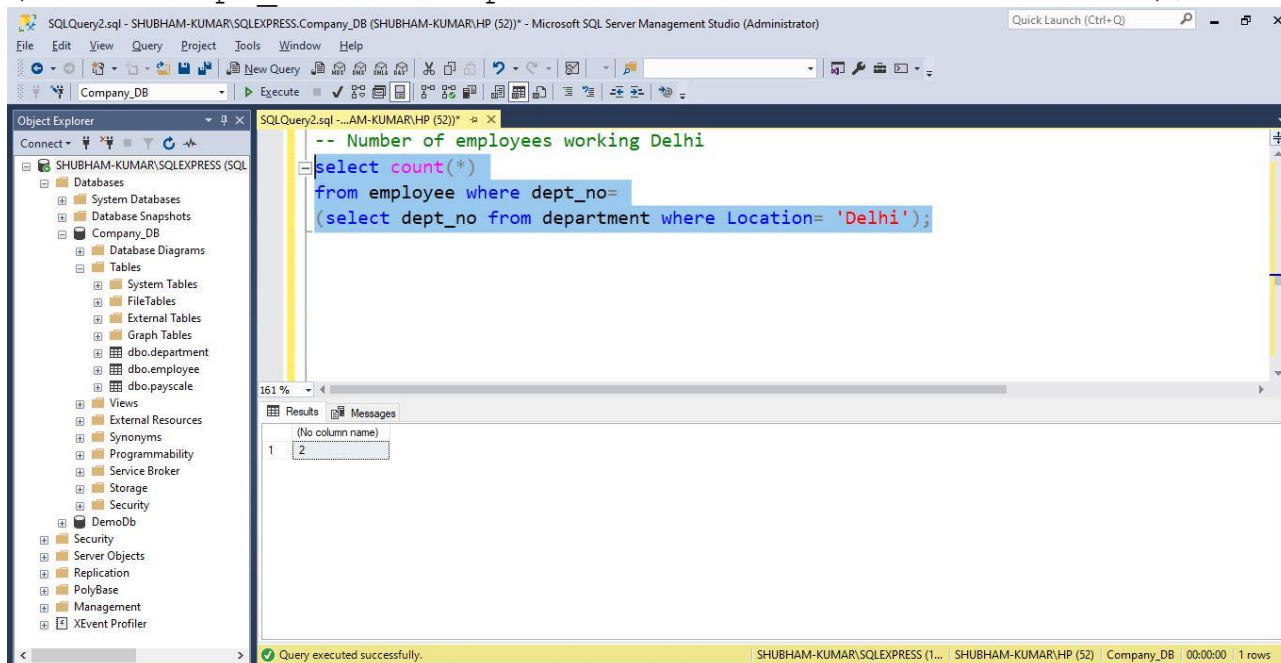


Query 6: How many employees work in Delhi?

```
select count(*)
from employee where dept_no=
```

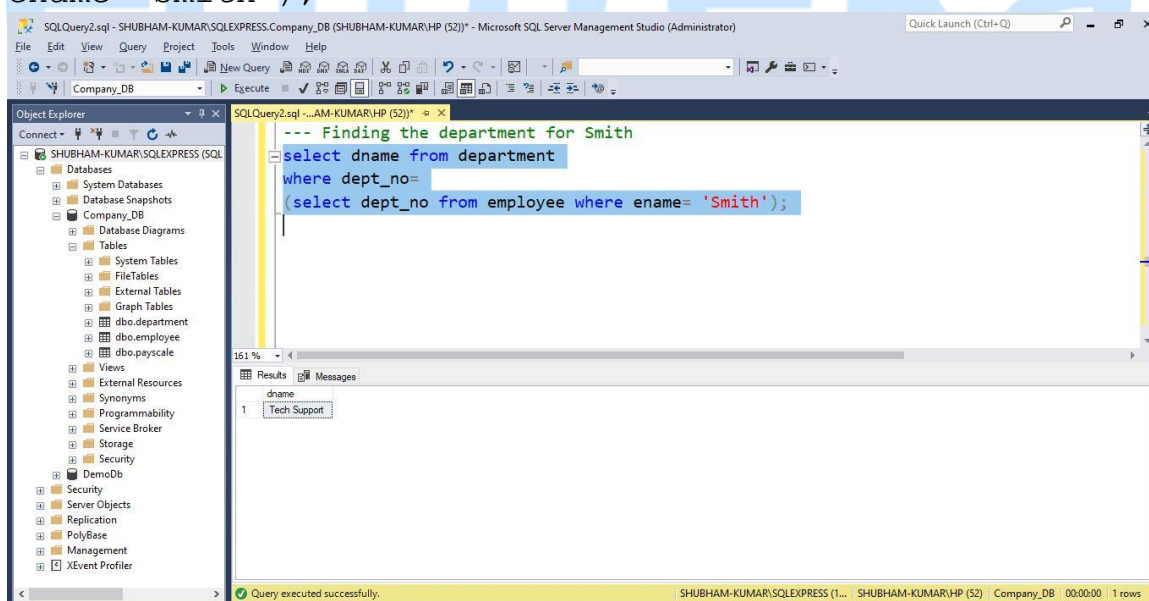


```
(select dept_no from department where Location= 'Delhi');
```



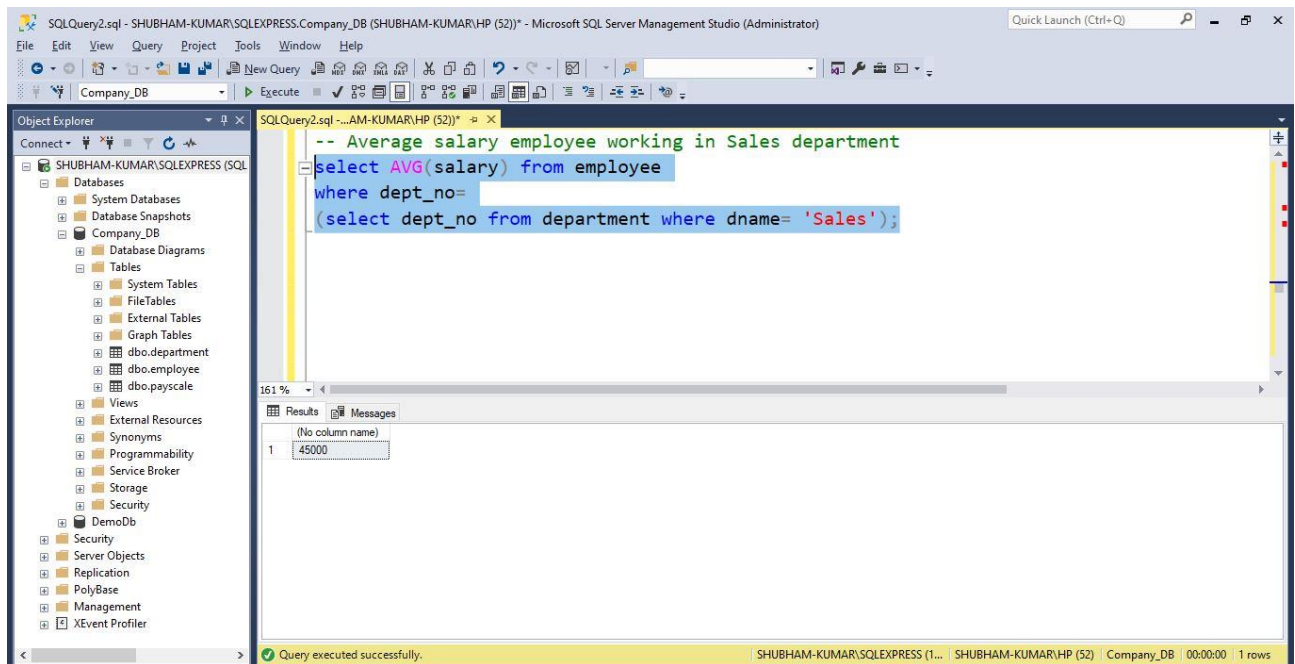
Query 7: In which 'department name' does the employee Smith work?

```
Select dname from department  
where dept_no= (select dept_no from employee where  
ename='Smith');
```



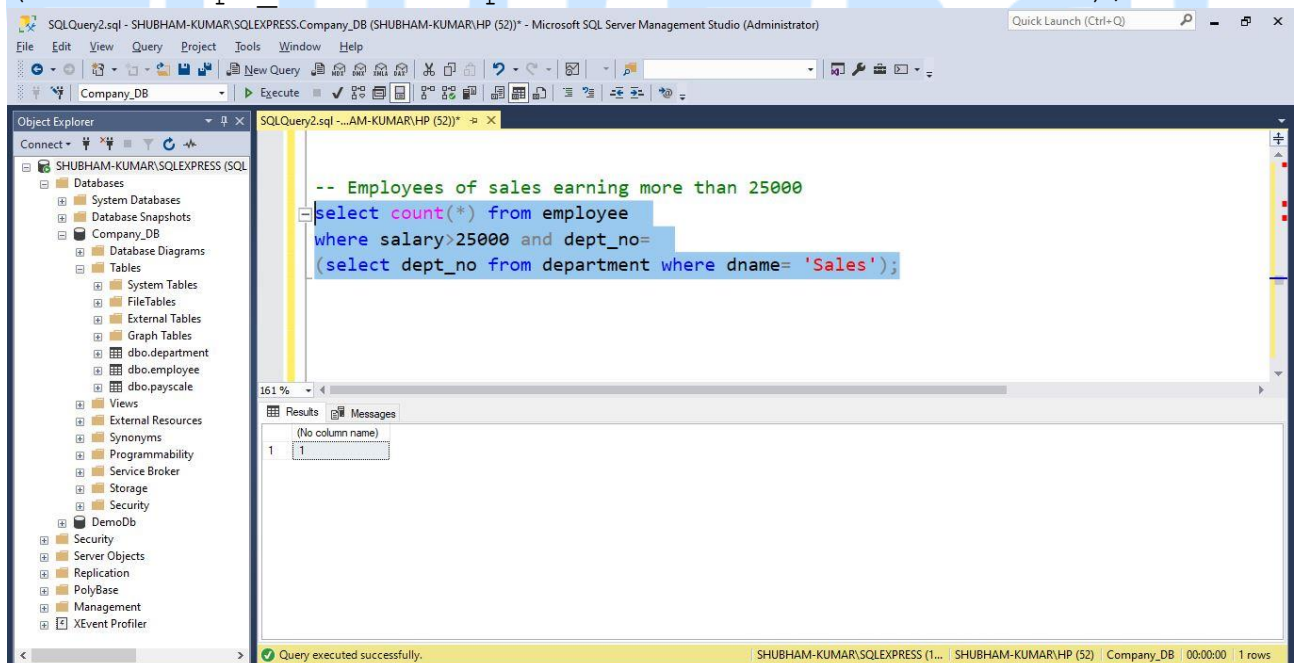
Query 8: What is the average salary of an employee working in the Sales department?

```
select AVG(salary) from employee  
where dept_no=  
(select dept_no from department where dname= 'Sales');
```



Query 9: How many employees of the Sales department earn more than 25000?

```
select count(*) from employee
where salary>25000 and dept_no=
(select dept_no from department where dname= 'Sales');
```



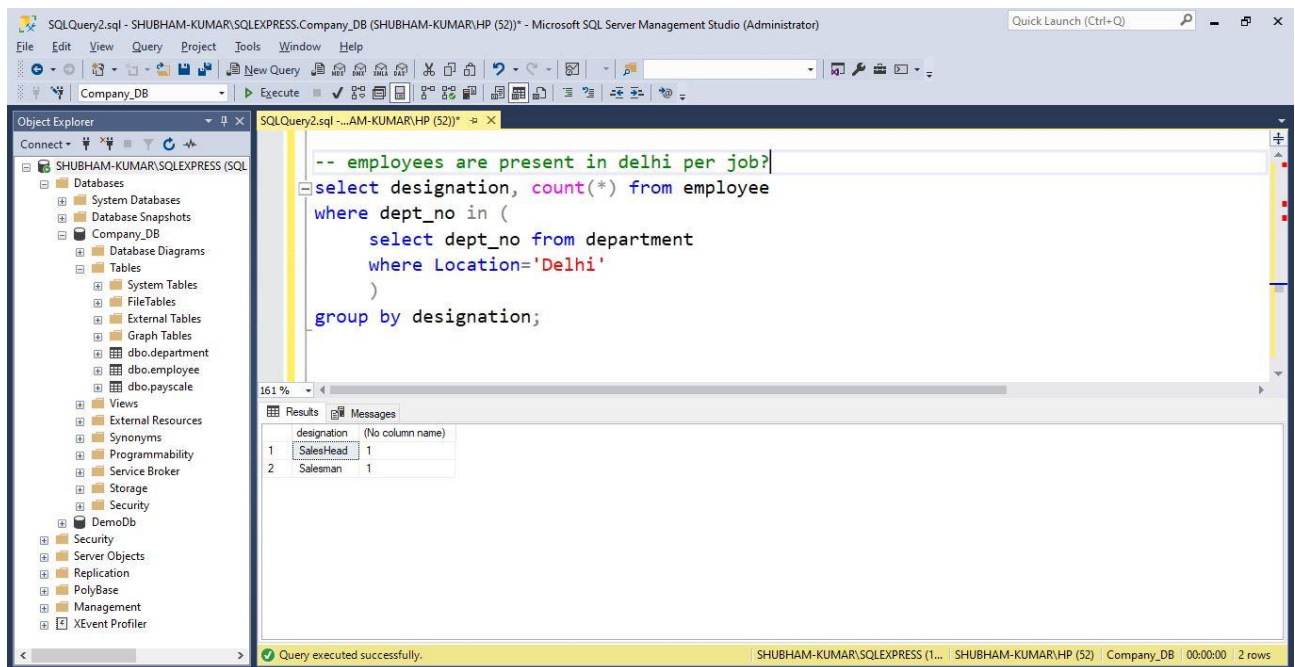
Query 10: How many employees are present in Delhi per job?

```
select designation, count(*) from employee
where dept_no in (
    select dept_no from department
```

```

    where Location='Delhi'
  )
group by designation;

```

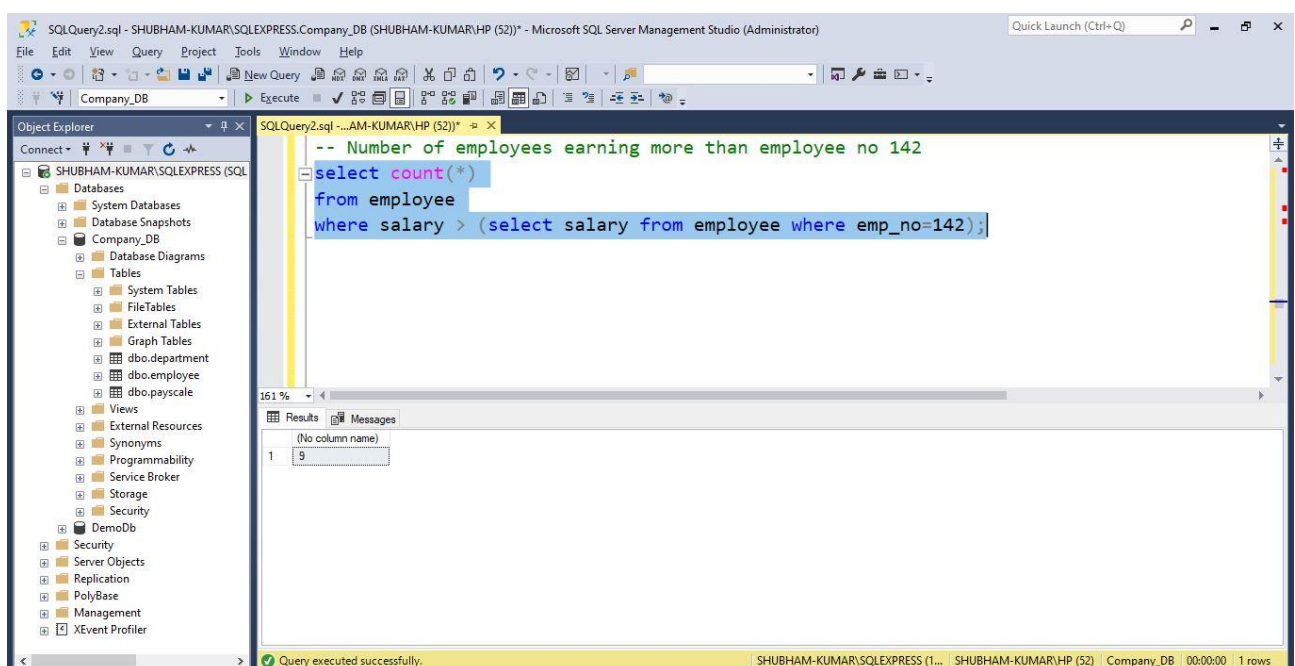


Query 11: How many employees earn more than employee no. 142?

```

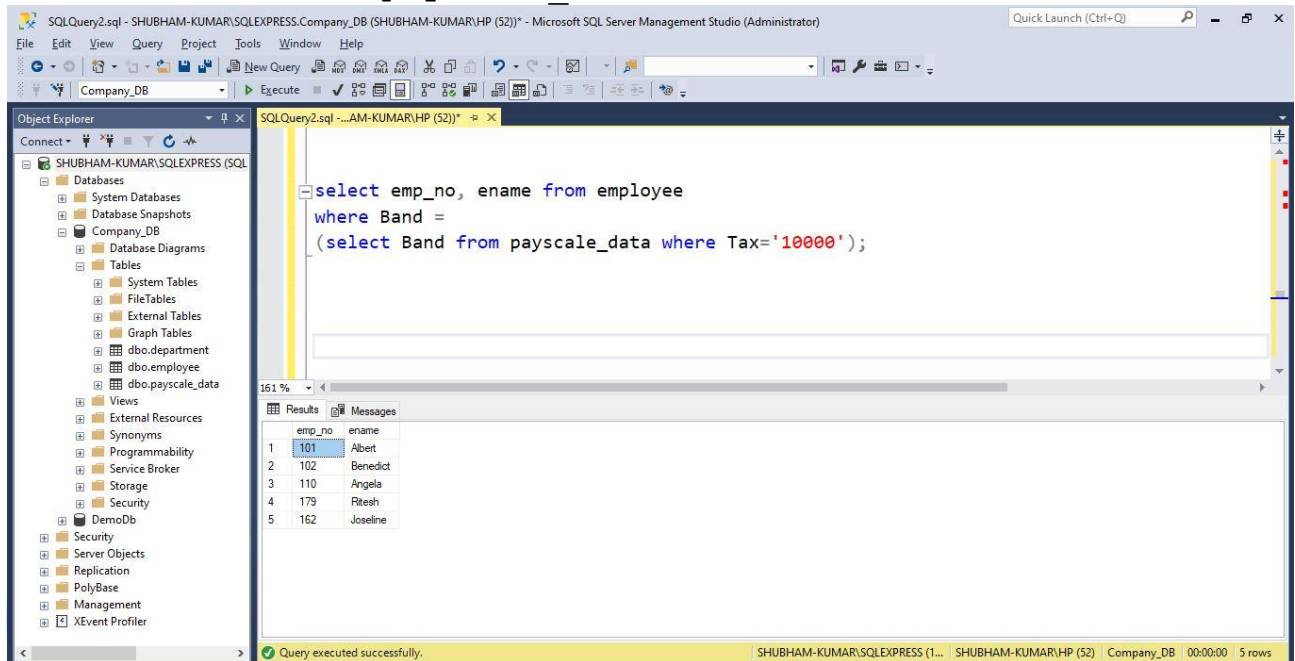
select count(*)
from employee
where salary > (select salary from employee where
emp_no=142);

```



Query 12: Details of employees paying a tax of 10000.

```
select emp_no, ename from employee  
where Band =  
(select Band from payscale_data where Tax='10000');
```



Conclusion: Hence we have resolved several queries and subqueries of Jim's problem.

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