

## Advanced SQL - II

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### Demo 2 –Sample Database View



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## Sample Database View

**Problem Statement:** Create a database named 'Sample' depicting employee and department details in the XYZ company then create 4 tables namely department, employee, project, and works-on and perform the following tasks.

Database description:

1) department

- **dept\_no** – It represents the unique number of each department.
- **dept\_name** – Name of each department
- **location** – The location of the corresponding department.

2) employee

- **emp\_no** – The unique number of each employee
- **emp\_fname** – First name of each employee.
- **emp\_lname** – Last name of each employee.
- **dept\_no** – The number of the department to which the employee belongs.

3) project

- **project\_no** – The unique number of each project
- **project\_name** – The name of each project.
- **budget** – The budget of each project.

4) works\_on

- **emp\_no** – Specifies the employee number.
- **project\_no** – Specifies the number of the project on which the employee works.
- **job** – Specifies the task of an employee.
- **enter\_date** – The starting date of an employee in the corresponding project.

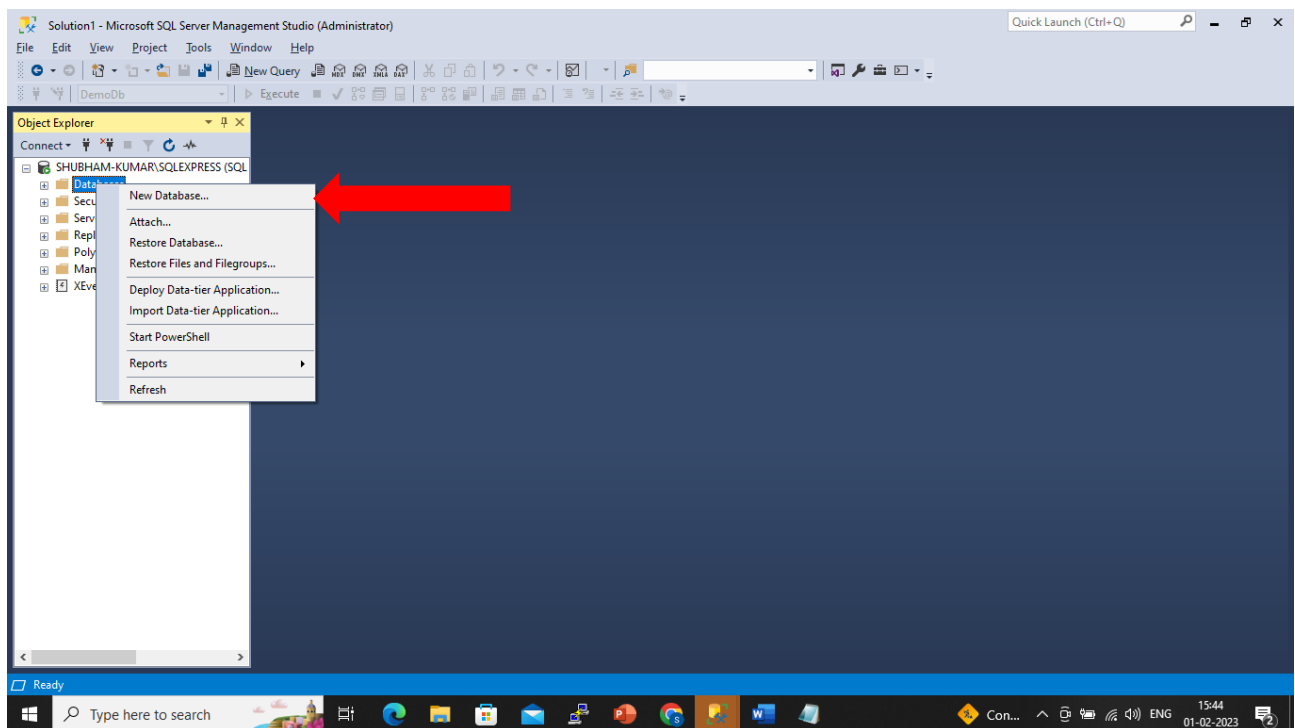
**Now, perform the following queries on View.**

- a. Create a view that comprises the data of all employees who work for the department d1.
- b. For the project table, create a view that can be used by employees who are allowed to view all data of this table except the budget column.
- c. Create a view that comprises the first and last names of all employees who entered their projects in the second half of the year 2017.

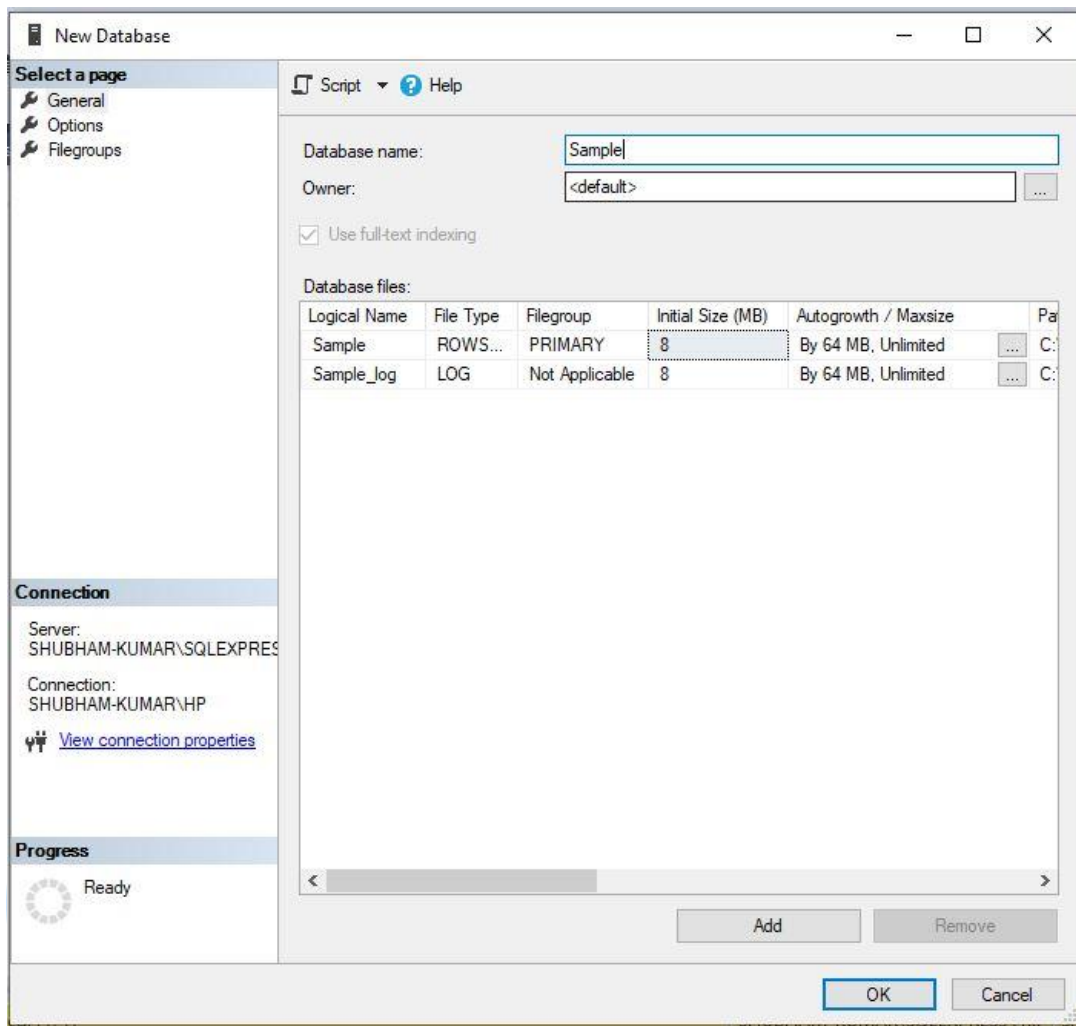
- d. Solve view v\_10\_3 (View used in 3<sup>rd</sup> question), so that the original columns f\_name and l\_name have new names in the view: first and last, respectively.
- e. Use the view v\_10\_1 (View used in 1<sup>st</sup> question) to display full details of every employee whose last name begins with the letter L.
- f. Create a view that comprises full details of all projects on which the employee named Smith works.
- g. Using the ALTER VIEW statement, modify the condition in the view in v\_10\_1 (View used in 1<sup>st</sup> question). The modified view should comprise the data of all employees who work for department d1, department d2, or both.
- h. Using the view from v\_10\_2 (View used in 2<sup>nd</sup> question), insert the details of the new project with the project number p2 and the name Moon.

### Working on the Demo

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



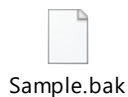
**Step 2:** Put in the Database name **Sample**.



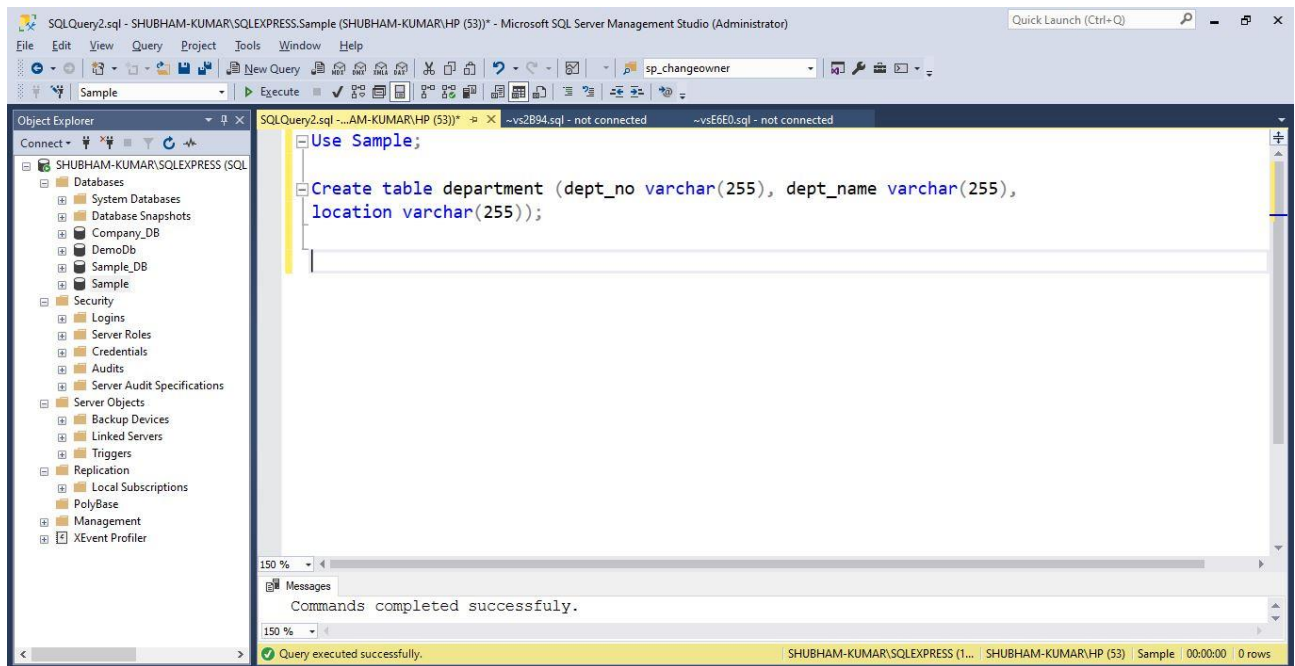
**Note:** There are two databases created Main Database File (MDF), which acts as a primary database and other one is Log Database File (LDF) which records all the changes and transactions made in the database

**Note:** Insert the values in all the respective tables.

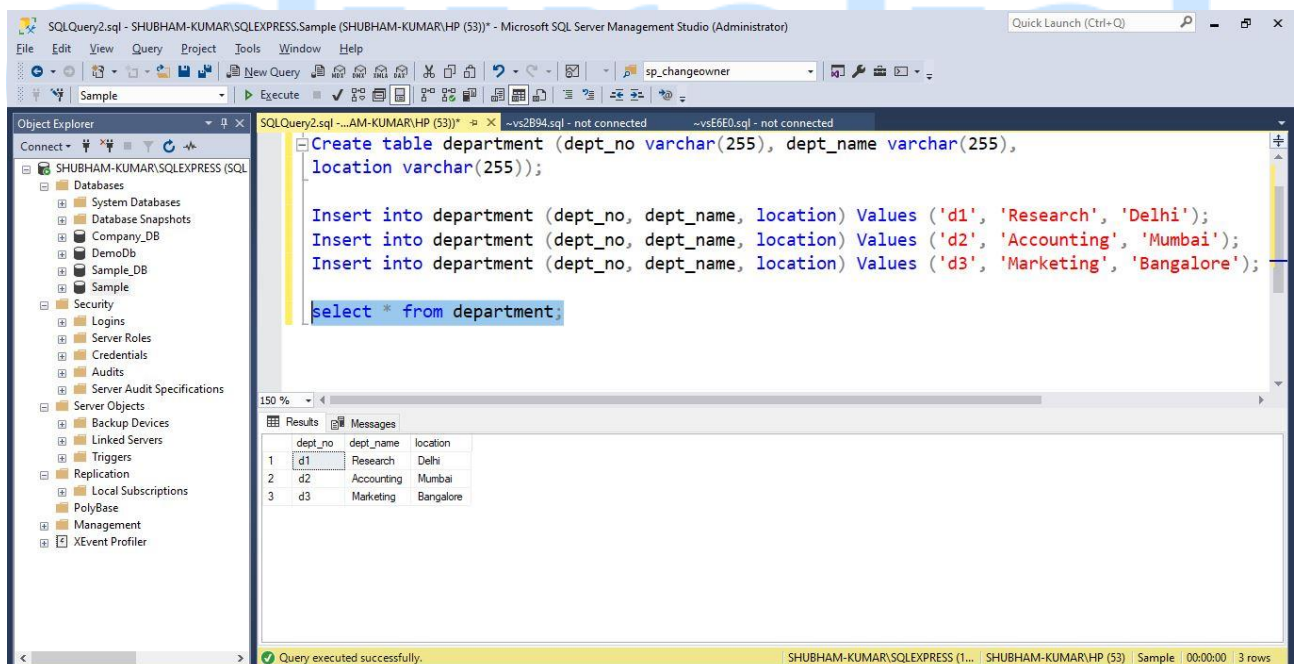
For your reference, the database 'Sample' file has been attached.



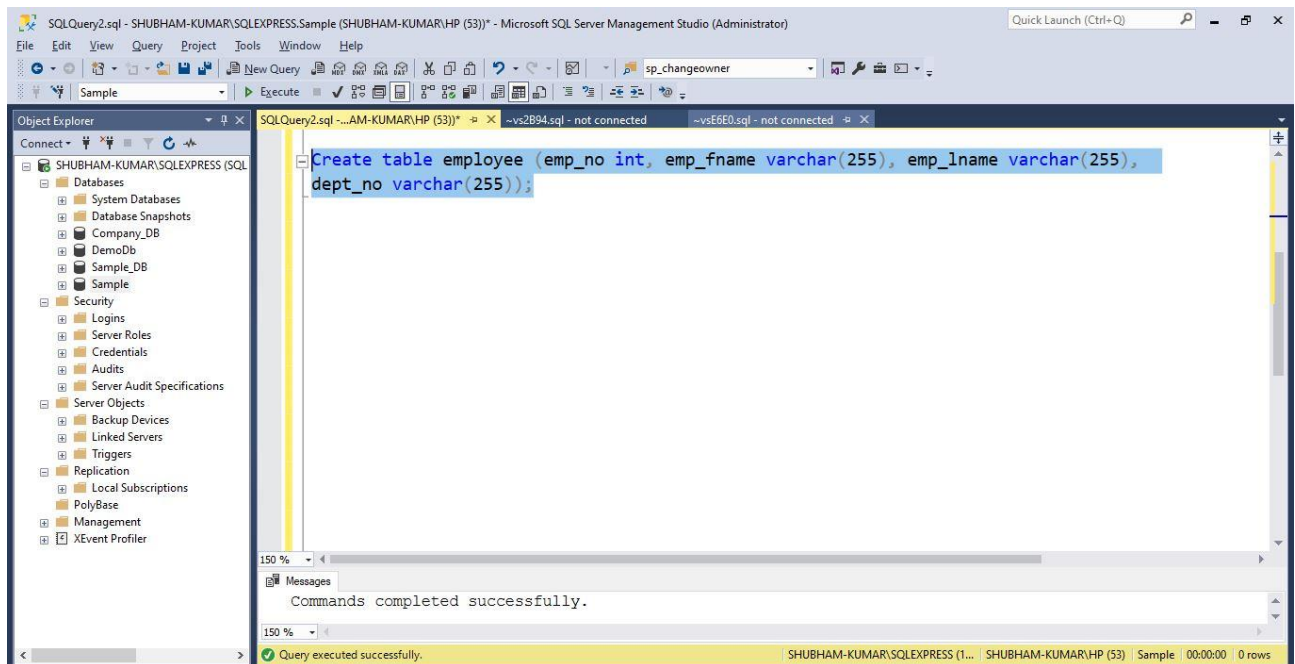
**Step 3:** Create a table department with parameters such as dept\_no, dept\_name and location.



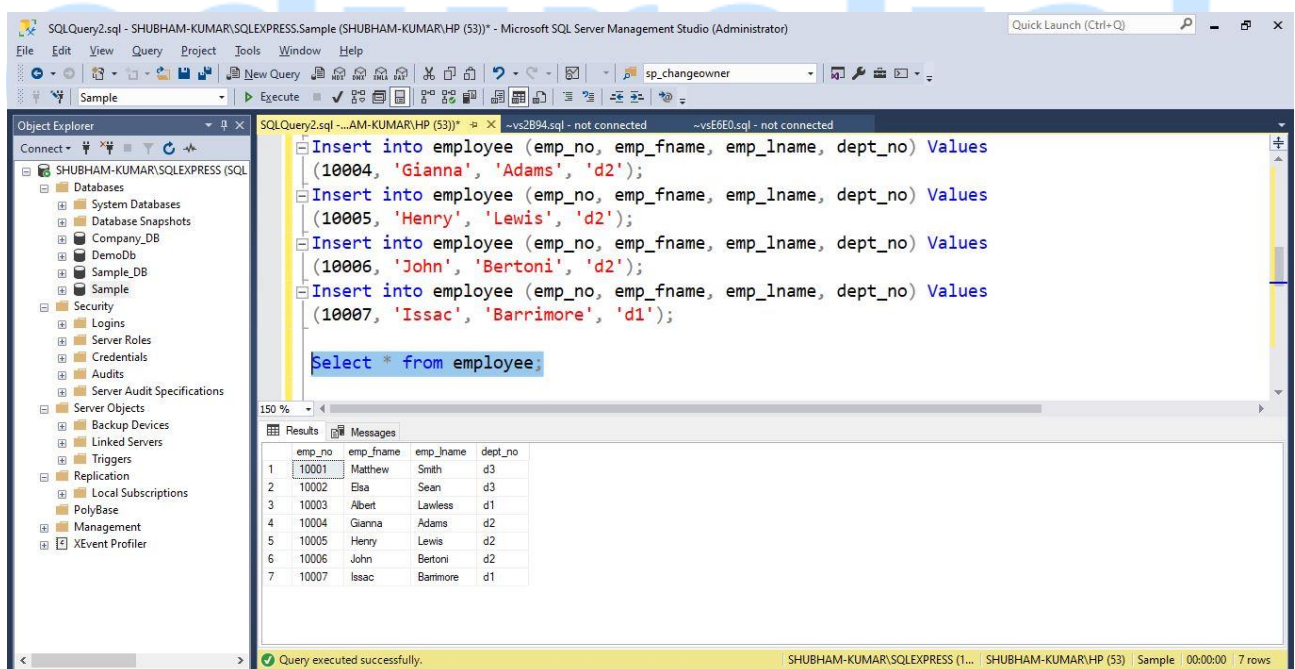
**Step 4:** Insert the data in the department table and retrieve the details using select command.



**Step 5:** Create a table employee with parameters such as emp\_no, emp\_fname, emp\_lname, and dept\_no.

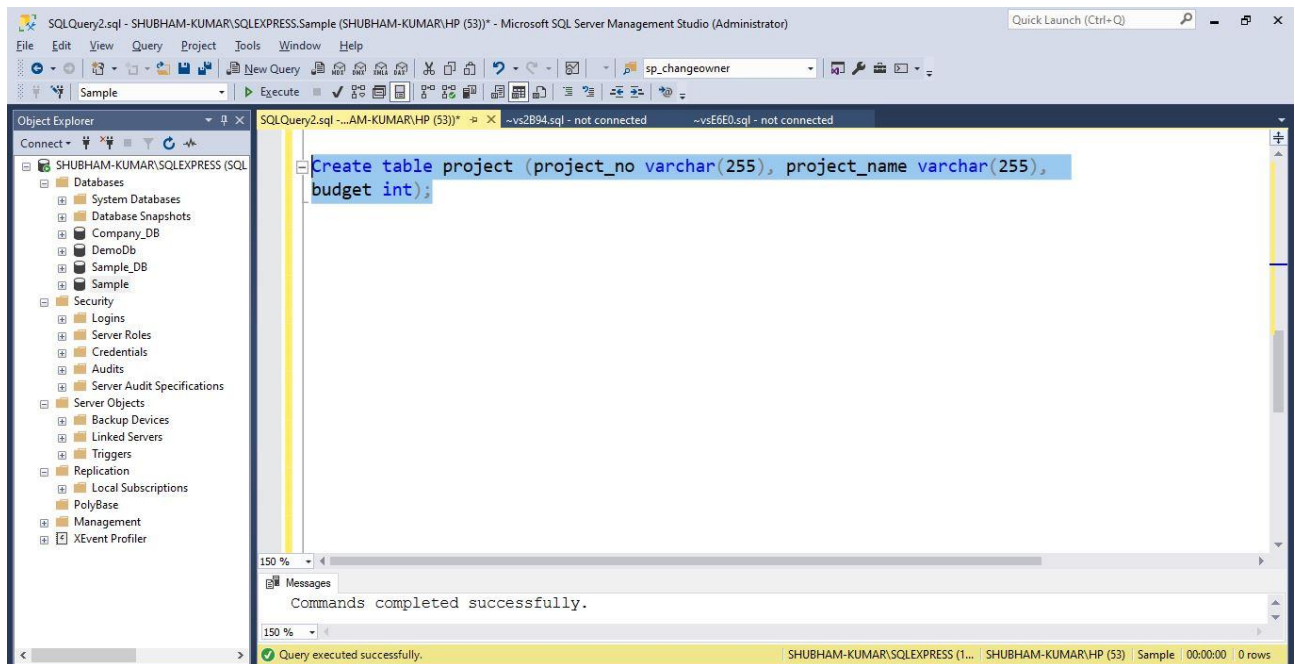


**Step 6:** Insert the data in the employee table and retrieve the details using select command.

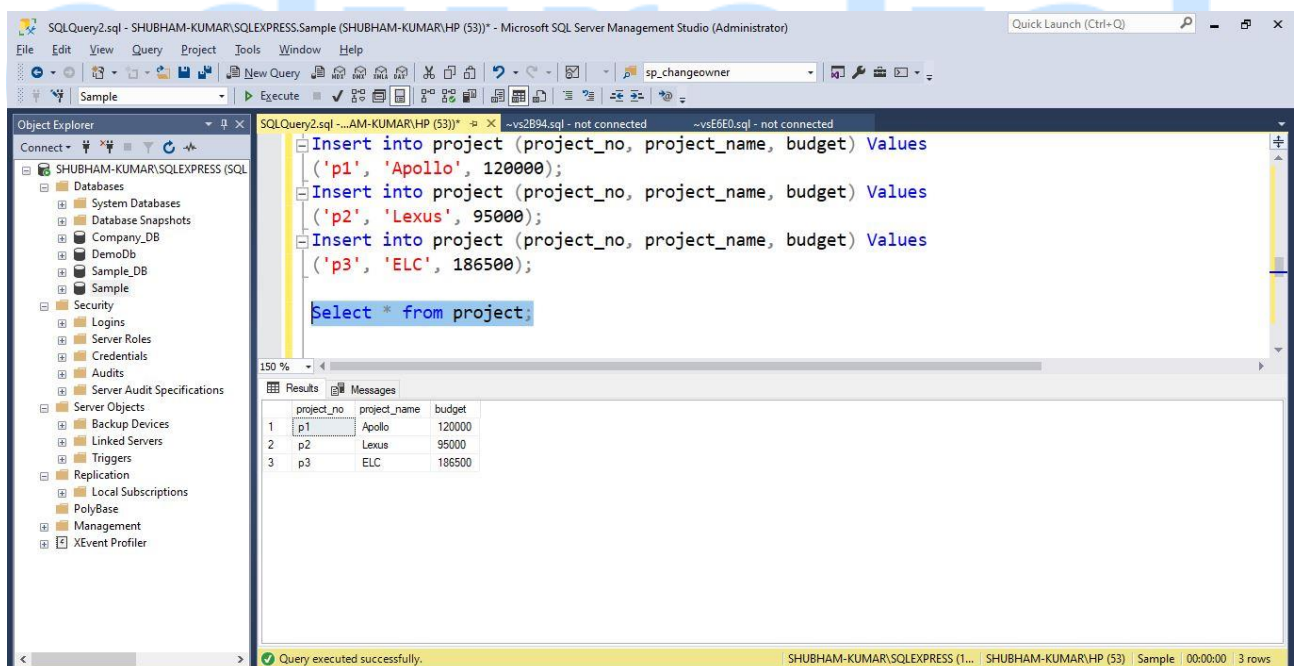


**Step 7:** Create a table project with parameters such as project\_no, project\_name, and budget.

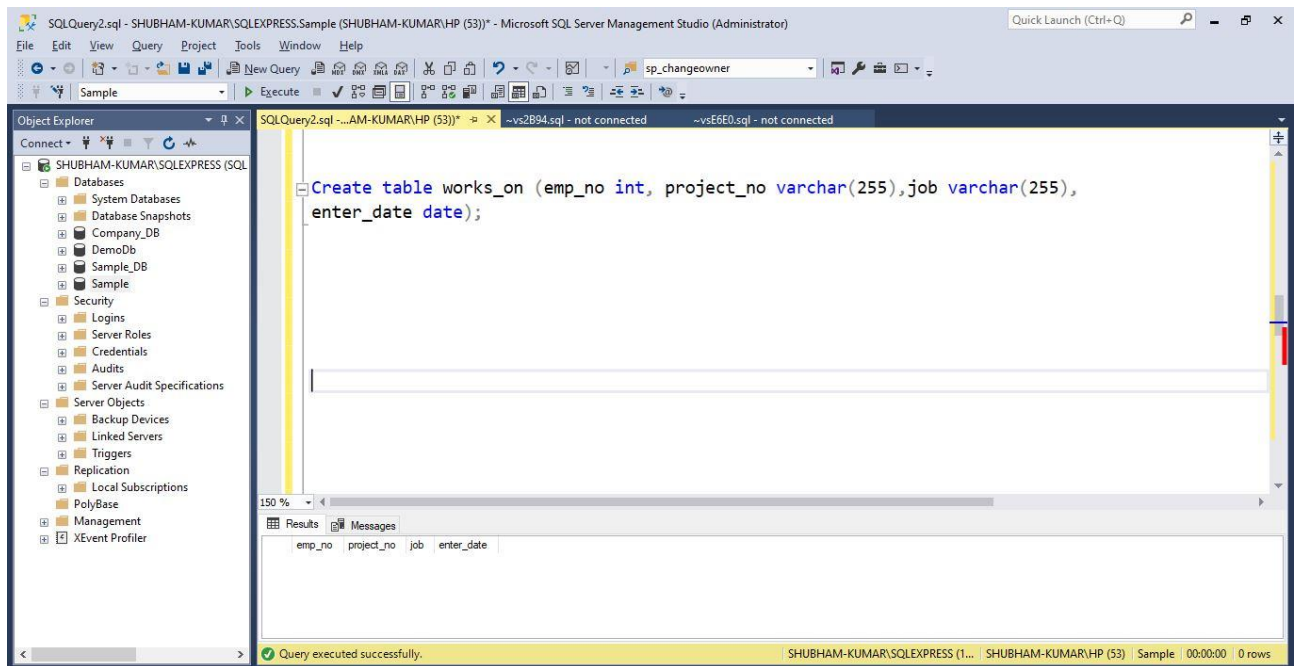




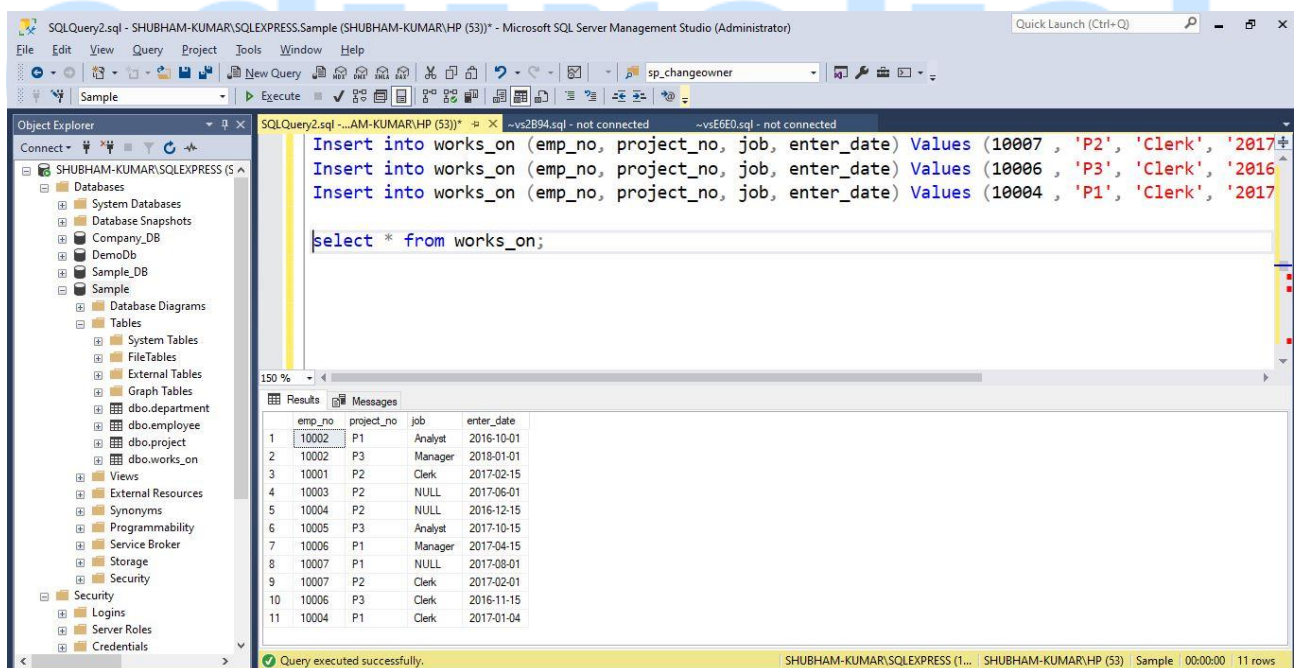
**Step 8:** Insert the data in the project table and retrieve the details using select command.



**Step 9:** Create a table works\_on with parameters such as emp\_no, project\_no, job and enter\_date.



**Step 10:** Insert the data in the works\_on table and retrieve the details using select command.



**Step 11 (a):** Create a view that comprises the data of all employees who work for the department d1.

USE sample;

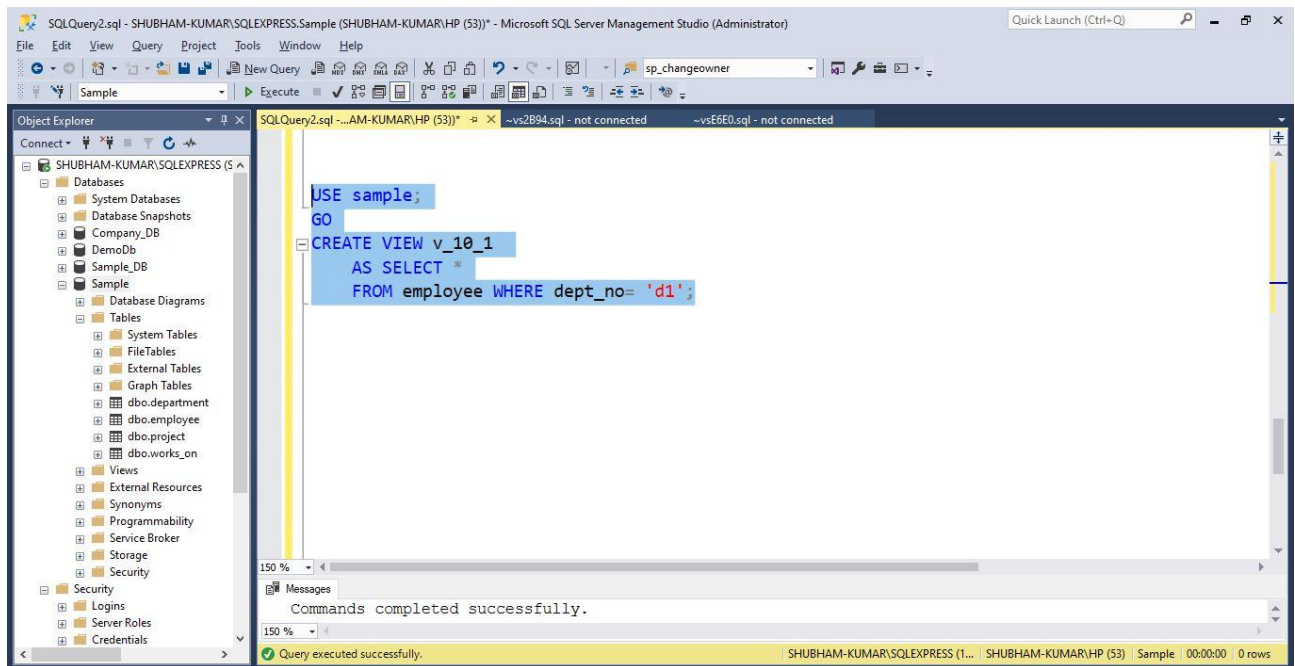
GO

CREATE VIEW v\_10\_1

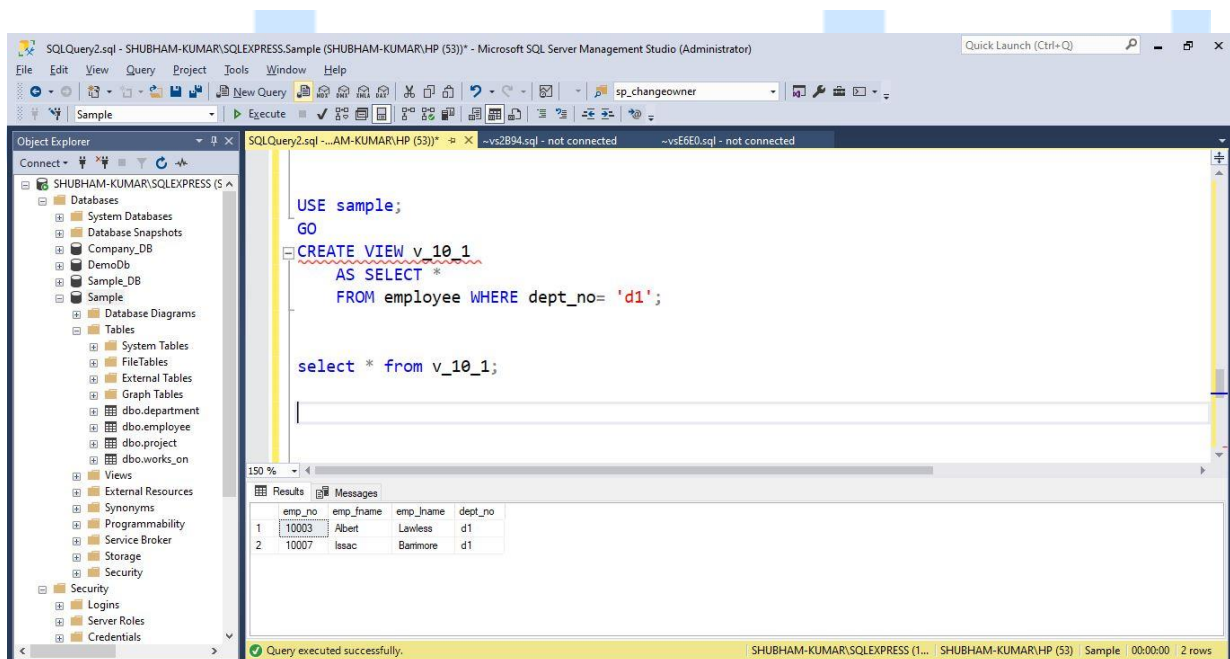
AS SELECT \*

FROM employee WHERE dept\_no= 'd1';





Step 11 (b): Retrieving the result-table of the view v\_10\_1.

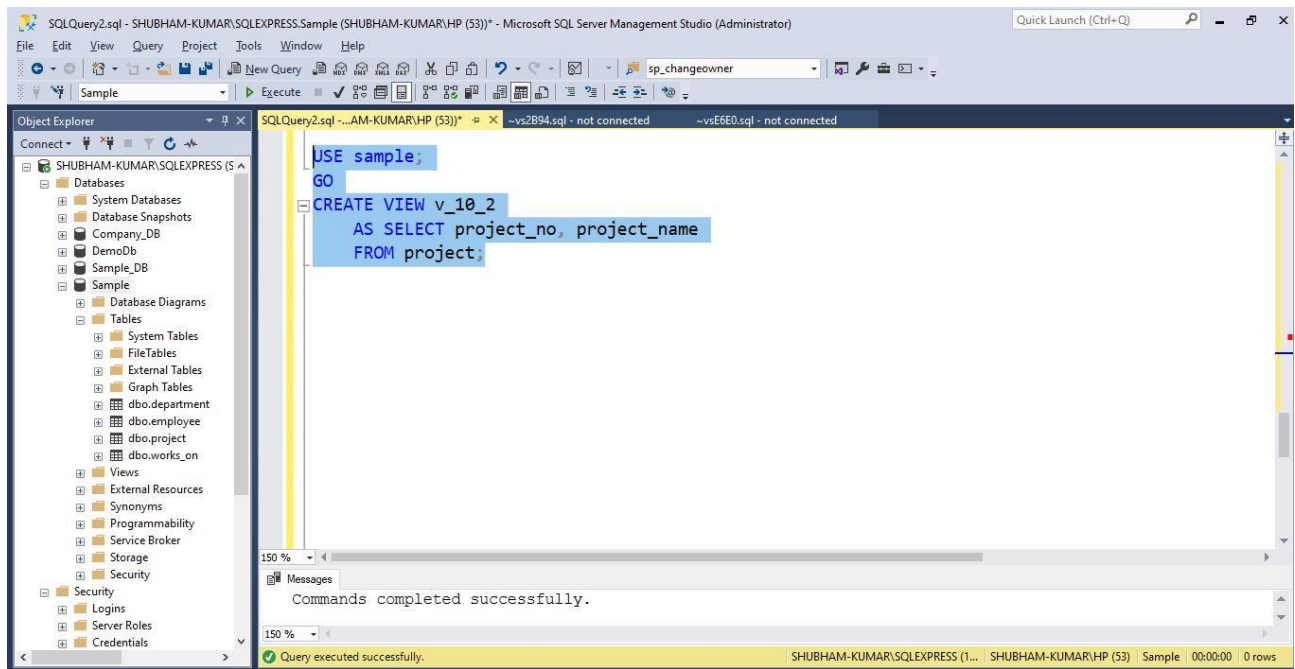


Step 12 (a): For the project table, create a view that can be used by employees who are allowed to view all data of this table except the budget column.

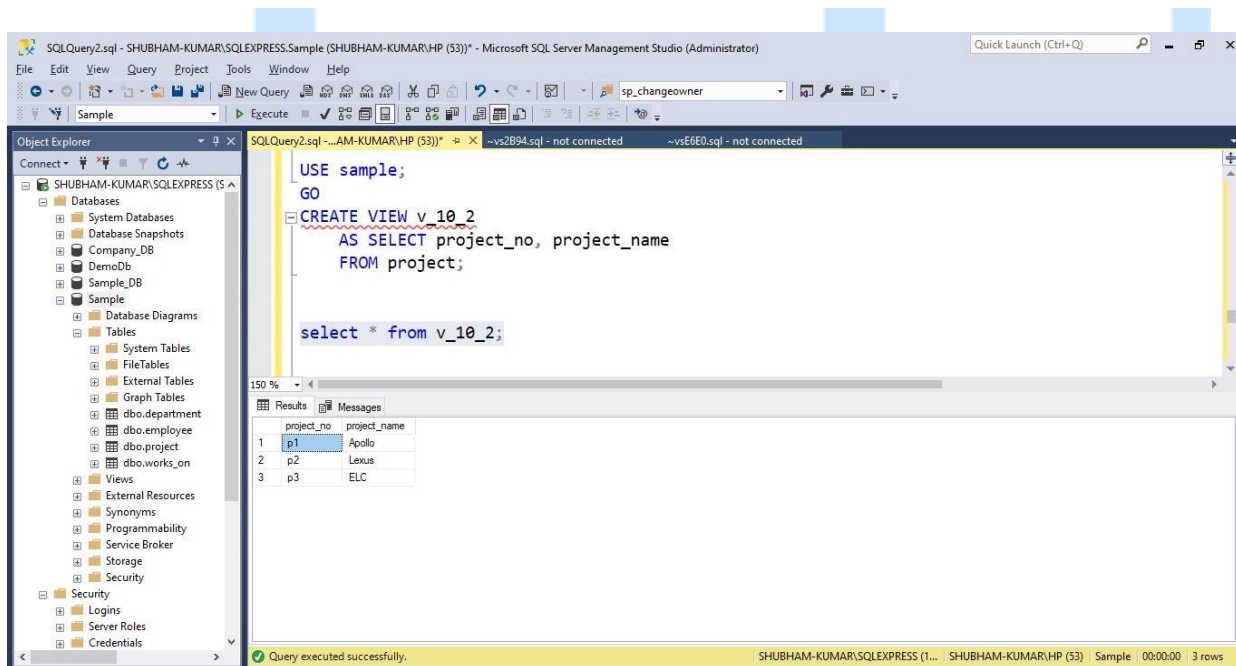
```
USE sample;
```

```
GO
```

```
CREATE VIEW v_10_2
AS SELECT project_no, project_name
FROM project;
```



Step 12 (b): Retrieving the result-table of the view v\_10\_2.



Step 13 (a): Create a view that comprises the first and last names of all employees who entered their projects in the second half of the year 2017.

```
USE sample;
```

```
GO
```

```
CREATE VIEW v_10_3
```

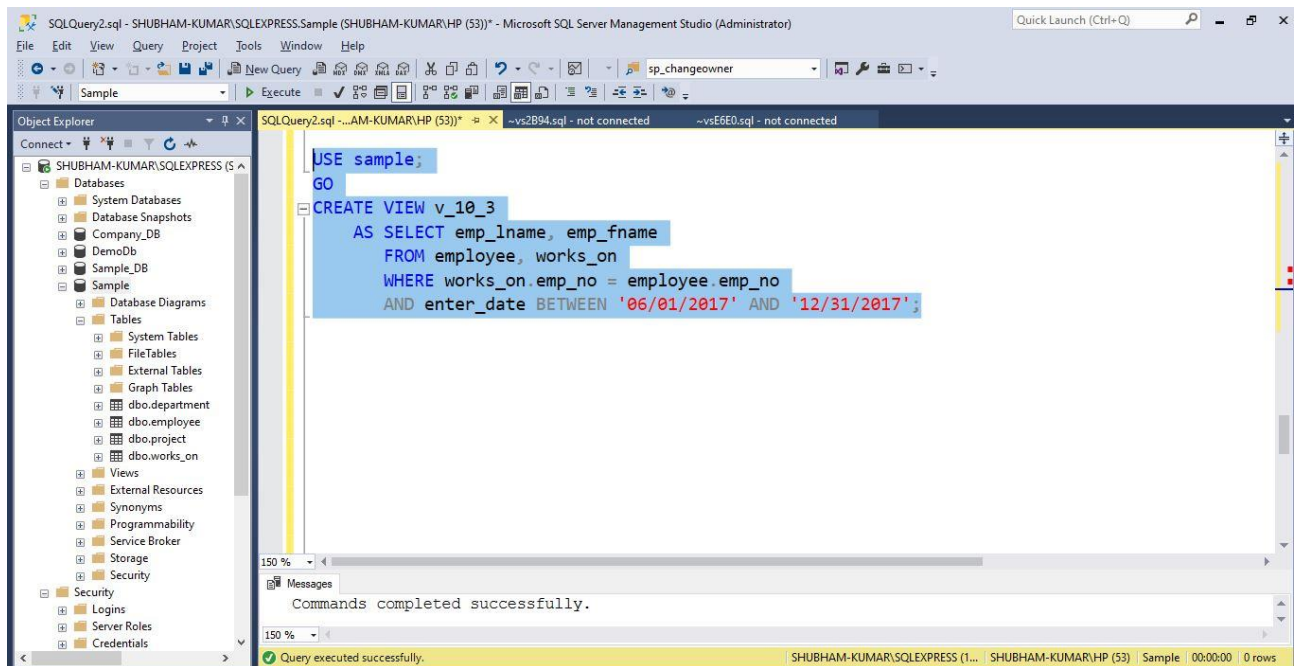
```
AS SELECT emp_lname, emp_fname
```

```
FROM employee, works_on
```

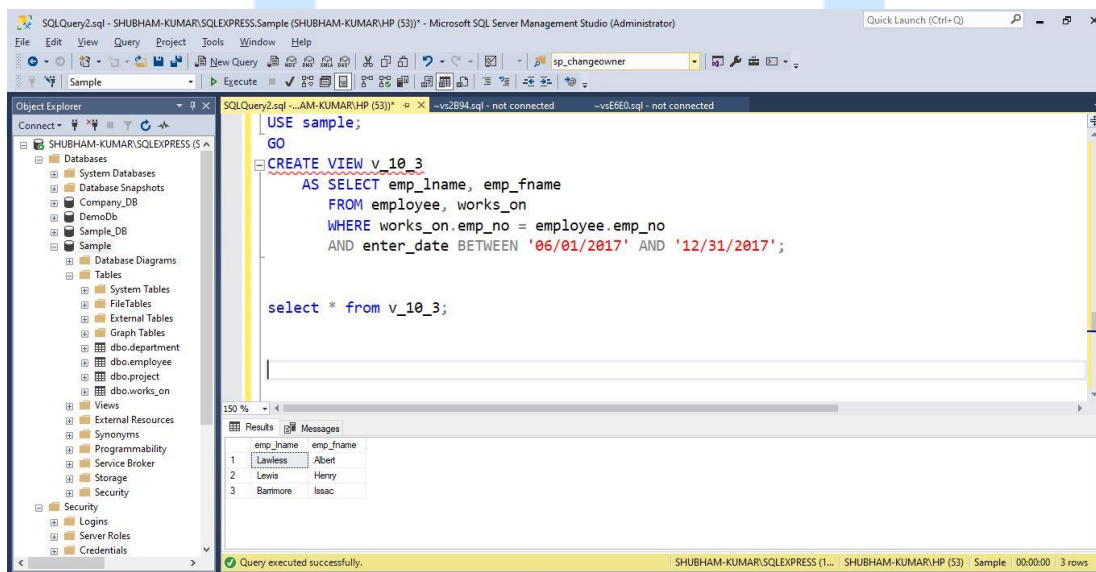
```
WHERE works_on.emp_no = employee.emp_no
```

```
AND enter_date BETWEEN '06/01/2017' AND
```

```
'12/31/2017';
```



Step 13 (b): Retrieving the result-table of the view v\_10\_3.

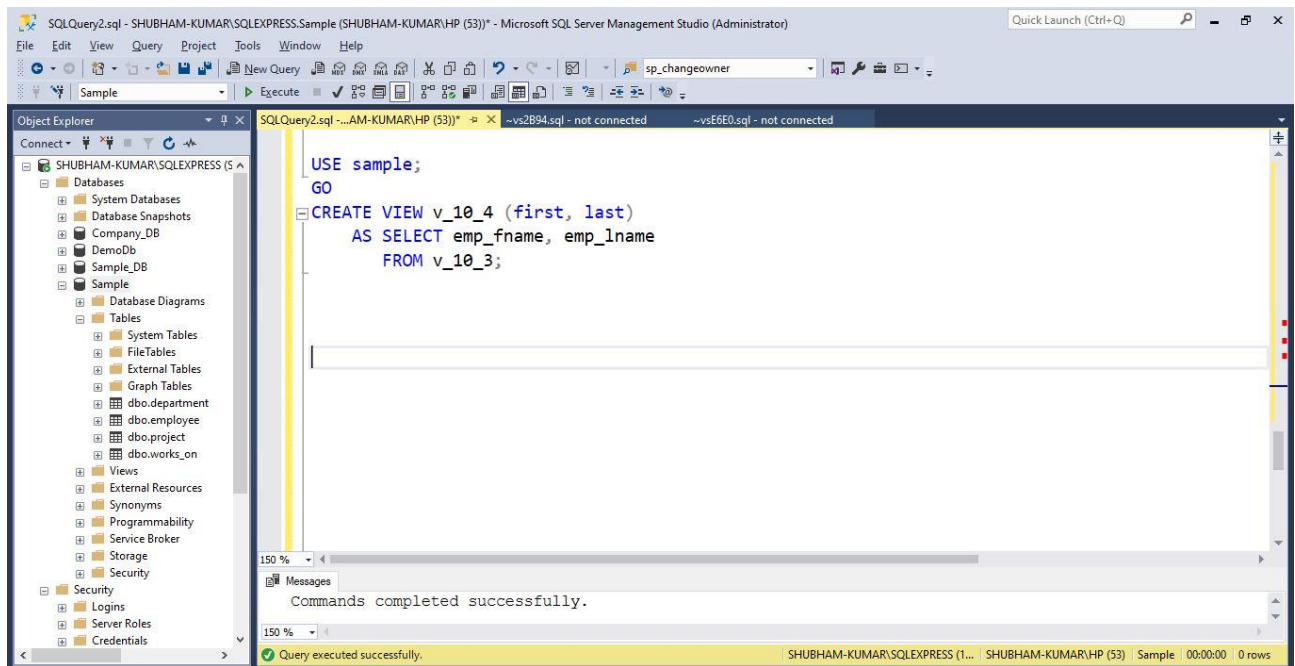


Step 14 (a): Solve view v\_10\_3, so that the original columns f\_name and l\_name have new names in the view: first and last, respectively.

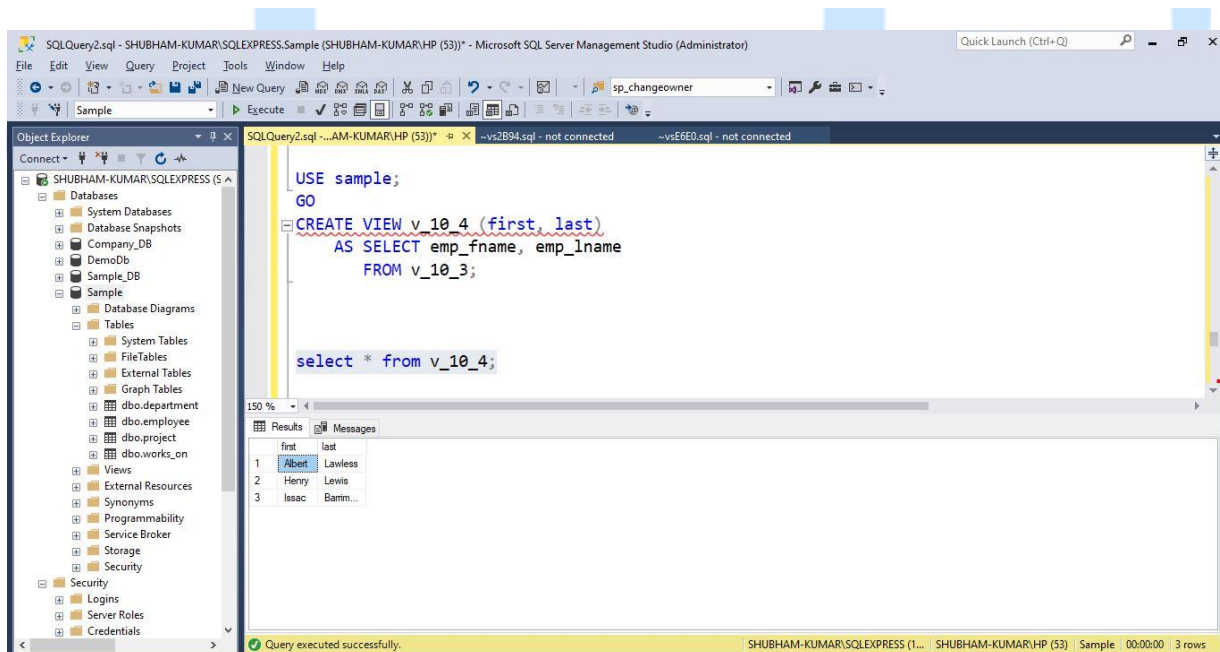
```
USE sample;
```

```
GO
```

```
CREATE VIEW v_10_4 (first, last)
AS SELECT emp_fname, emp_lname
FROM v_10_3;
```



**Step 14 (b):** Retrieving the result-table of the view v\_10\_4.



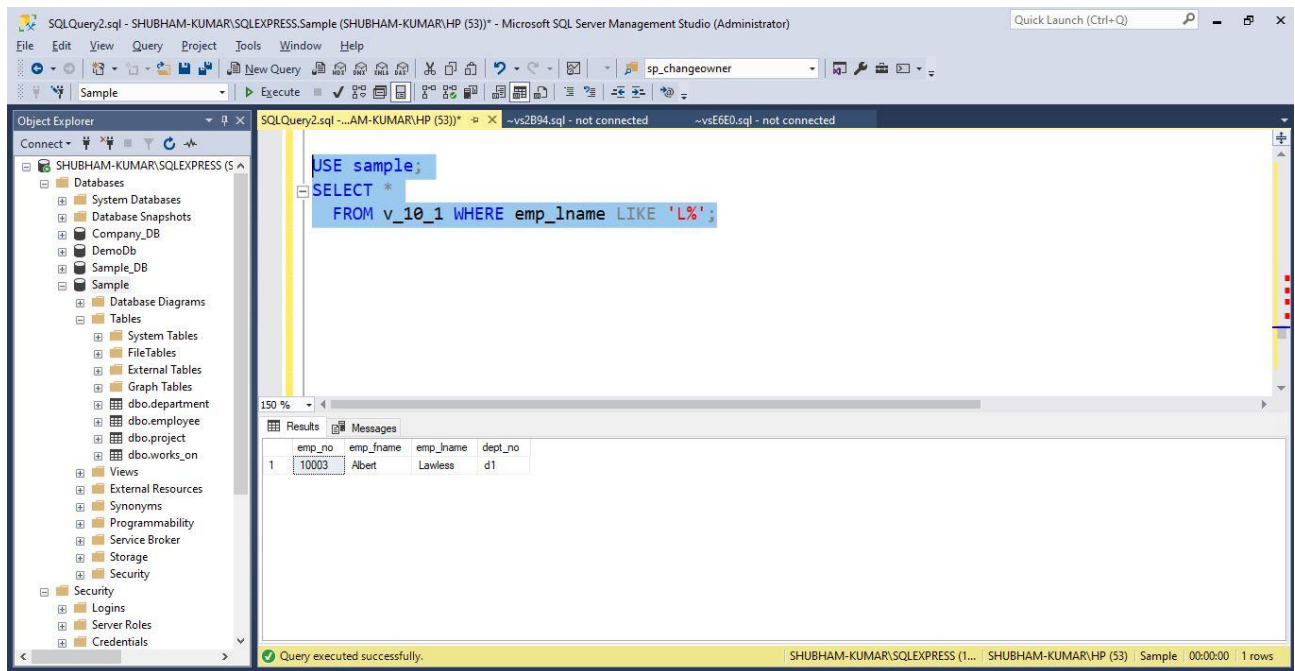
**Step 15:** Use the view v\_10\_1 to display full details of every employee whose last name begins with the letter L.

```
USE sample;
```

```
SELECT *
```

```
FROM v_10_1 WHERE emp_lname LIKE 'L%';
```





**Step 16 (a):** Create a view that comprises full details of all projects on which the employee named Smith works.

USE sample;

GO

CREATE VIEW v\_10\_6

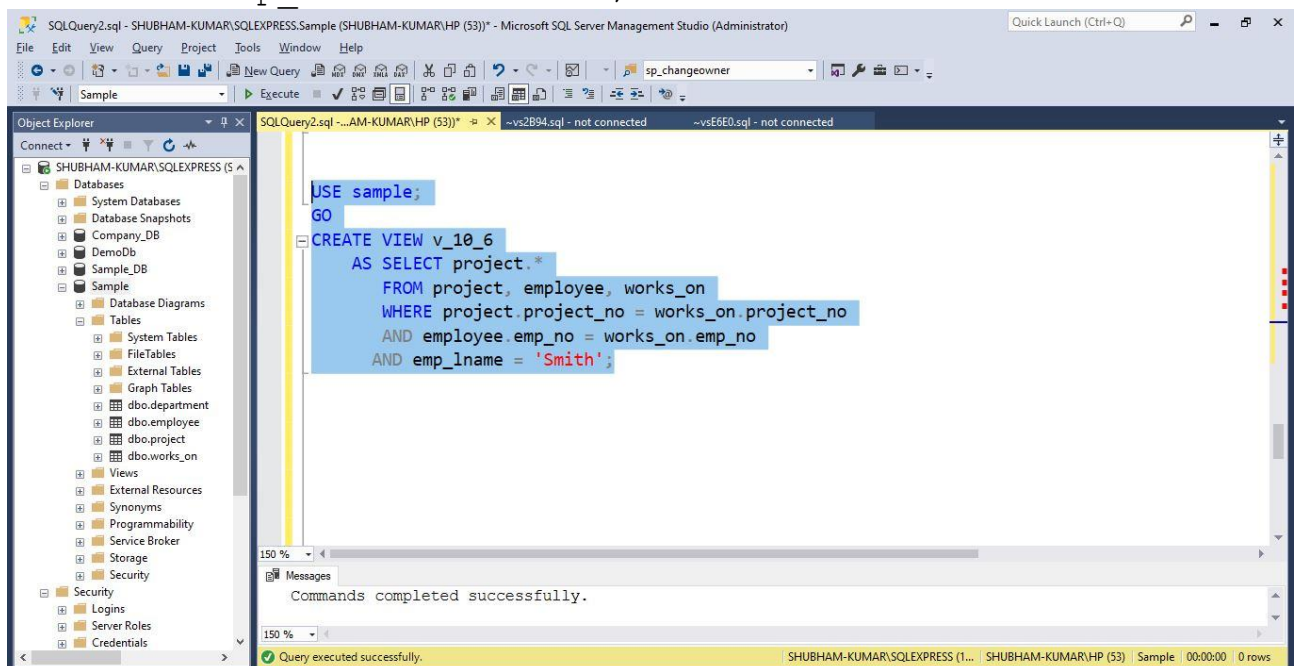
AS SELECT project.\*

FROM project, employee, works\_on

WHERE project.project\_no = works\_on.project\_no

AND employee.emp\_no = works\_on.emp\_no

AND emp\_lname = 'Smith';





Step 16 (b): Retrieving the result-table of the view v\_10\_6.

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'SHUBHAM-KUMAR\SQLEXPRESS (5)'. The main query window contains the following SQL code:

```
USE sample;
GO
CREATE VIEW v_10_6
AS SELECT project.*
FROM project, employee, works_on
WHERE project.project_no = works_on.project_no
AND employee.emp_no = works_on.emp_no
AND emp_lname = 'Smith';

Select * from v_10_6;
```

The Results pane at the bottom shows the output of the query, which is a single row with the following data:

project_no	project_name	budget
1	p2	Lexus

The status bar at the bottom indicates 'Query executed successfully.' and 'SHUBHAM-KUMAR\SQLEXPRESS (1... | SHUBHAM-KUMAR\HP (53) | Sample | 00:00:00 | 1 rows'.

Step 17 (a): Using the ALTER VIEW statement, modify the condition in the view in v\_10\_1. The modified view should comprise the data of all employees who work for department d1, department d2, or both.

```
USE sample;
GO
ALTER VIEW v_10_1
AS SELECT *
FROM employee WHERE dept_no IN ('d1', 'd2');
```

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'SHUBHAM-KUMAR\SQLEXPRESS (5)'. The main query window contains the following SQL code:

```
USE sample;
GO
ALTER VIEW v_10_1
AS SELECT *
FROM employee WHERE dept_no IN ('d1', 'd2');
```

The Messages pane at the bottom shows the output of the query, which is 'Commands completed successfully.' The status bar at the bottom indicates 'Query executed successfully.' and 'SHUBHAM-KUMAR\SQLEXPRESS (1... | SHUBHAM-KUMAR\HP (53) | Sample | 00:00:00 | 0 rows'.

Step 17 (b): Retrieving the result-table of the view v\_10\_1.

The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure, including the 'Sample' database and its tables and views. The central query window contains the following SQL code:

```
USE sample;  
GO  
ALTER VIEW v_10_1  
AS SELECT *  
FROM employee WHERE dept_no IN ('d1', 'd2');  
  
Select * from v_10_1;
```

The Results pane at the bottom displays the output of the query, showing 5 rows of data:

emp_no	emp_fname	emp_lname	dept_no
10003	Albert	Lawless	d1
10004	Gianna	Adams	d2
10005	Henry	Lewis	d2
10006	John	Bertoni	d2
10007	Isaac	Barimore	d1

The status bar at the bottom indicates "Query executed successfully." and "SHUBHAM-KUMAR\SQLEXPRESS (1... SHUBHAM-KUMAR\HP (53) Sample 00:00:00 5 rows".

Step 18 (a): Using the view from v\_10\_2, insert the details of the new project with the project number p2 and the name Moon.

Use Sample;

INSERT INTO v\_10\_2 VALUES ('p2', 'Moon');

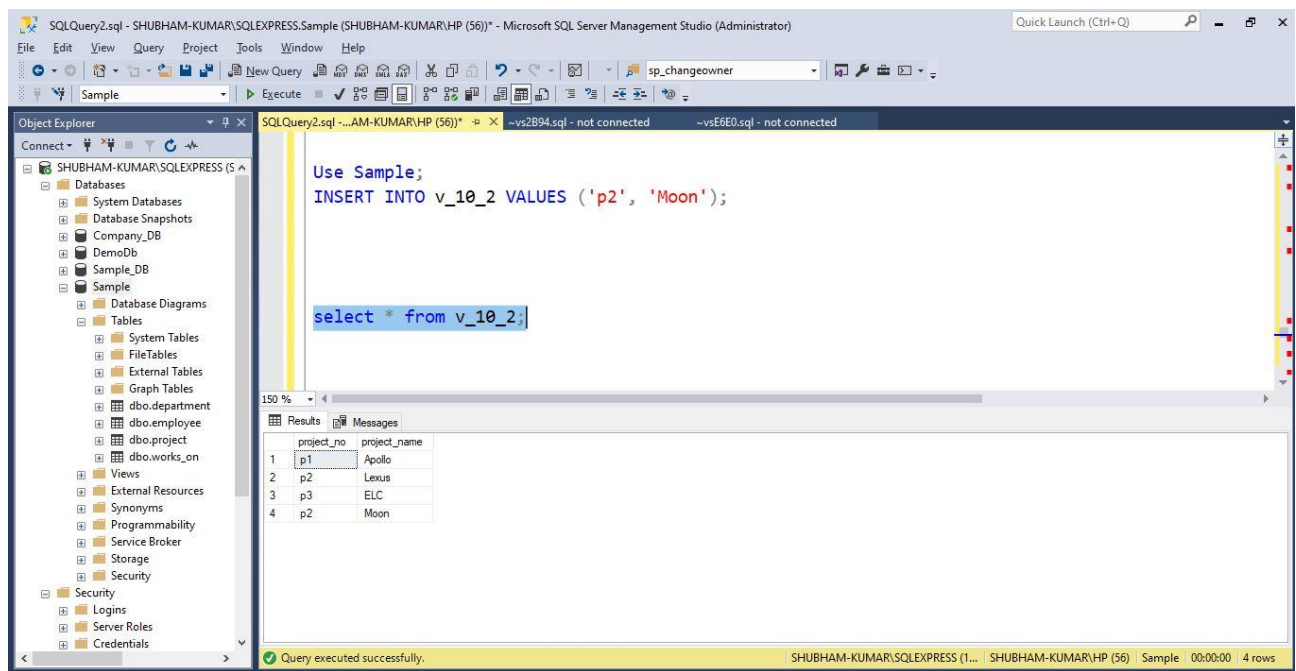
The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure, including the 'Sample' database and its tables and views. The central query window contains the following SQL code:

```
Use Sample;  
INSERT INTO v_10_2 VALUES ('p2', 'Moon');
```

The Messages pane at the bottom displays the output of the query, showing "(1 row affected)".

The status bar at the bottom indicates "Query executed successfully." and "SHUBHAM-KUMAR\SQLEXPRESS (1... SHUBHAM-KUMAR\HP (56) Sample 00:00:00 0 rows".

Step 18 (b): Retrieving the result-table of the view v\_10\_2.



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